

OUR COMMON FUTURE IN URBAN MORPHOLOGY (Vol 1)

ISUF

Editors

VITOR OLIVEIRA

PAULO PINHO

LUISA MENDES BATISTA

TIAGO PATATAS



ISBN: 978-972-99101-5-9

Editors: Vitor Oliveira, Paulo Pinho, Luisa Mendes Batista, Tiago Patatas

Cover Design by Cláudia Monteiro

The present volume contains the abstracts presented at the 21st International Seminar on Urban Form, held in Porto, from 3 to 6 July, 2014. Authors alone are responsible for opinions expressed in the book.

Cite as: Oliveira V, Pinho P, Batista L and Patatas T (eds.) (2014) *Our common future in Urban Morphology*, FEUP, Porto.

TABLE OF CONTENTS

Preface	23
0. PLENARY SESSIONS	25
0.1 Porto	25
The urban form of Porto	25
<i>Vítor Oliveira</i>	
The metropolitan area of Porto: form, structure and dynamics	26
<i>Paulo Pinho</i>	
0.2 Special book presentation	
0.3 Different approaches in the study of urban form	27
Conzenian research and urban landscape management	27
<i>Jeremy Whitehand</i>	
Morphogenetic interpretation of Medieval Ground Plans of European town	28
<i>Jurgen Lafren</i>	
Urban morphology as a disciplinary basis of architectural design	29
<i>Giancarlo Cataldi</i>	
Space syntax as a method and as a theory	30
<i>Bill Hillier</i>	
0.4 A preliminary study for a repository of urban tissue	31
<i>Karl Kropf</i>	
0.5 ISUF Task Force on Research and Practice in Urban Morphology	32
Assessing the plan, the planning process and the results on the ground: Porto case study	32
<i>Vítor Oliveira, Mafalda Silva</i>	
‘What can you offer us?’ Challenges facing the practical application of urban morphology	33
<i>Michael Barke, Kayleigh Hancox</i>	
Revitalization of Ahmedabad’s informal walled city: the role of urban morphology	34
<i>Marco Maretto, Nicola Scardigno</i>	
Urban morphological methodology and planning practice	35
<i>Laurence Pattacini, Ivor Samuels</i>	
1. URBAN MORPHOLOGICAL THEORY	37
Modern city as modular construct	38
<i>Doevendans K, Scheel A, Meulder B</i>	
The role of urban morphological theory in the contemporary urban theory	39
<i>Kukina I</i>	
The phantom figure of the town centre	40
<i>Macken J</i>	
Interior landscapes - a paradigm shift in contemporary urban regeneration strategies	41
<i>Marzot N</i>	
Reading Lefebvre morphologically: a property-based conceptual framework in urban morphology	42
<i>Bas Y</i>	

Conceptualizing the morphogenesis of the Ottoman town through urban morphological theory <i>Bessi O</i>	43
Experience of Porto: understanding the physical environment <i>Lima C</i>	44
The Village of Nossa Senhora da Vitória in the context of the Portuguese urbanistic universe <i>Pesotti L</i>	45
Spatiality of multiculturalism <i>Sarraf M</i>	46
New perspectives on the meaning of urban form <i>Camiz A</i>	47
A methodology for the analytical interpretation of the urban fabric <i>Coelho C</i>	48
Ambiguity in the definition of built form <i>Kropf K</i>	49
Disruption and origins: towards a theory of urban evolution <i>Scheer B</i>	50
From the scientific origin to current research status: the urban morphology research in China <i>Wu M, Shi C, Song F</i>	51
2. URBAN MORPHOLOGICAL METHODS AND THECNQUES	53
Morphological change in Um Al Sharayet residential neighborhood - Albirah and Ramallah <i>Awad S</i>	54
Commercial strips' evolution in a suburban context <i>Boursas A</i>	55
Urban design and transition morphologies. Prospects for intervention in Lisbon – Alcântara <i>Ferreira C</i>	56
Urban morphological elements studies: for describing generated urban form <i>Li Q, Ding W</i>	57
Urban morphology of streets in central area of Vitoria (ES) <i>Botechia F, Thompson A</i>	58
Street characteristics and pedestrian experience, Vila Real as a case study <i>Duarte J, Carvalho J, Sá F</i>	59
Emergent streets. The study of the form and type <i>Leite J</i>	60
The Demi-Block <i>O'Connell D</i>	61
Towards a qualitative density: from the block to the street as the urban fabric structuring unit <i>Vicuña M</i>	62
Studies and hypothesis on Mdina and Rabat urban form <i>Camporeale A</i>	63
Territorial and urban planning in northern Sinaloa <i>Cataldi G, Urios D, Colomer J, Portalés A</i>	64
A methodology for the analysis of pre-existing structures in contemporary urban fabric <i>Martins P</i>	65

The memory of informality: the typological cycles in the self-built environment <i>Montejano M</i>	66
From urban form to architectural design: the case of Guasave <i>Colomer V, Reig I, Armiño L, Vicente-Almazán G</i>	67
Urbanity and legibility at Av. Cora Coralina, Goiânia-GO/ Brazil, from Jane's Walk movement <i>Farias A, Andrade L, Tenório G</i>	68
The positive dissemination: interpreting a new process for urban form analysis <i>Gonçalves A, Tomé A, Medeiros V</i>	69
City or parish: dilemmas in Brasília, Brazil <i>Holanda F</i>	70
Intensity of use in public squares in the central area of Florianópolis/SC – Brazil <i>Maté C, Micheletti T, Saboya R, Santiago A</i>	71
The sociability of the street interface - revisiting West Village, Manhattan <i>Palaiologou G, Vaughan L</i>	72
Exploring the volumetric city <i>Doyle M</i>	73
The 'Projeto Orla' (Lake Paranoá, Brasília/Brazil): the production of an exclusionary margin <i>Lembi M, Medeiros V</i>	75
Connecting strategic nodes in Stockholm's suburbs <i>Locke R, Marcus L</i>	76
The network that spreads: program my house my life and urban accessibility <i>Pereira G, Silva J</i>	77
Mapping urban space based on visual perception <i>Zhuang Y, Ding W</i>	78
Changing form of the Baltic cities: resurrection of the suburbs <i>Cirtautas M</i>	79
Spatio-Structural correlates at the Regional and National scales <i>Hillier B, Serra M</i>	80
Mind the gap <i>Marras F</i>	81
The morphology of conurbation <i>Rigatti D</i>	82
Configuration of urban grid and the relationship between apartments building location <i>Corrêa A, Saboya R</i>	83
Analysis of pedestrian movement: a case study in Balneário Camboriú/SC <i>Largura A, Goettems R</i>	84
Urban morphological methods in Miralles's St Catherine's Courtyard type of urban design <i>Saura M</i>	85
Boundary Line Type (BLT) Mapping: analysing the socio-spatial and material interfaces of urban form <i>Vis B</i>	86
Mafalala grammar and the qualitative assessment of their livability requirements <i>Barros P, Beirão J, Viana D</i>	87
Generating urban fabrics in the orthogonal and non-orthogonal urban landscapes <i>Orsi F, Fiorito S, Beirão J</i>	88

Measuring morphological coherence: a performance criterion for planning <i>Çalışkan O, Mashhoodi B</i>	89
A generative design system for interventions in dispersed territories <i>Gong Q, Li J, Wang N, Zhang X, Li Y</i>	90
An area structure approach for town plan analysis <i>Marshall S</i>	91
The intensity of smallness and urban character. The case studies of Yanesen and Jiyugaoka (Tokyo) <i>Muminović M</i>	92
Mapping micromorphologies using 3D surveying technology <i>Shutter L</i>	93
Typological atlases of block and block- face <i>Vialard A</i>	94
Analysis and modeling of spatial changes: identification and quantification of urban growth <i>Weiss R, Santiago A</i>	95
Source of resilience in the urban form of Naiwan area in Kesennuma <i>Abe T, Satoh S</i>	96
Sao Paulo: A legal reading of urban form <i>Barbosa E</i>	97
Air oriented urban form: to develop an Eco-City in the tropical urban area <i>Mamun M, Begum A</i>	98
Urban form regulation methods: Garden City and Low Carbon Cities <i>Mourão J</i>	99
Analysis of tools and ‘patterns’ for assessment of urban sustainability to promote design quality <i>Otto E, Andrade L, Lemos N</i>	100
The implication of the adoption of ICT on the fractal dimension of urban systems of Lagos megacity <i>Akindeju O</i>	101
The study of territorial development cycles and settlement morphologies <i>Lombardini G</i>	102
Modeling urban growth patterns across geographical scales by a fractal diffusion aggregation approach <i>Murcio R</i>	103
Hybrid cellular automaton: agent-based model of informal peripheral development <i>Santos A, Polidori M, Peres O, Saraiva M</i>	104
Simulation of urban growth on cellular spaces using accessibility measures <i>Saraiva M, Polidori M, Peres O, Santos A</i>	106
Connections and spatial patterns of urban ecosystems for water sensitive urban design <i>Andrade L, Hills S, Blumenschein R</i>	107
Mapping urban village as a form of urban ecology <i>Dou P, Ding W</i>	108
Systemic analysis as tools for interaction. The case of Lyon Part-Dieu district <i>Meunier G</i>	109
Understanding the relationship between urban form and microclimate conditions in urban planning <i>Villadiego K</i>	110
Urban street tree modelling using high polygon 3D models with photometric daylight systems <i>White M, Langenheim N</i>	111

The recomposition of urban public spaces. Case study of the historic centre of Noale, Italy <i>Pietrogrande E, Caneva A</i>	112
Landscape design method toward tops of surrounding mountains in Japanese castle towns <i>Sugano K, Satoh S</i>	113
Measuring urban canyons with a real-time sky view factor modelling <i>White M</i>	114
An approach on describing the street skyline <i>Yang H</i>	115
Urban form and accessibility to rail transit stations: a case study of Auckland <i>Adli S</i>	116
Morphology and typology of multi-storey car park: the case of Vitória, Brasil <i>Borges H</i>	117
Reciprocities in spatial positioning of airport and city <i>Mashhoodi B, Wandl A, Timmeren A</i>	118
Systems thinking for new perspectives on urban form – a case study of urban transport corridors <i>Stevens N, Salmon P</i>	119
How urban form influences accessibility <i>Vale D, Alves R, Saraiva M, Pereira M</i>	120
3. THE EVOLUTION OF URBAN FORM	123
Polish city from conzenian perspective – fringe belt phenomenon in Toruń <i>Deptuła M</i>	124
Investigating the fringe belt concept: The case of Istanbul, Turkey <i>Kubat A, Gumru F</i>	125
Fringe belt analysis as a means to interpreting the urban evolution of Rabat <i>Safe S, Costa S</i>	126
Transformation of the fringe belt units at the perimeter of Avenida do Contorno/Belo Horizonte/MG <i>Simão K, Costa S</i>	127
The morphological evolution of Northwest and Northeast inner fringe belt in Macao's Portuguese Town <i>Zheng J, Cheong K</i>	128
Urban morphology and architectural design in small towns. The case study of San Vito Romano <i>Ciotoli P</i>	129
The urban layout evolution and the complexity of Portuguese city <i>Fernandes S</i>	130
The morphogenesis of Québec City's first suburbs <i>Gauthier P</i>	131
The building of a city: private and public agreements in Montreal 1790-1850 <i>Ruelland A, Dufaux F</i>	132
Analysis on the multi-scale morphological evolution of historic centre in Shantou, China <i>Zhou L, Chen K</i>	133
The establishment and organization of mono-axial urban fabric <i>Amado A</i>	134
Railway as a vehicle of urban transformation. Past and present of the train station <i>Čechová K</i>	135

The evolution of street cross-section proportion in Lisbon <i>Proença S</i>	136
The impact of Lisbon's subway development on 'Avenida da República' and 'Avenida da Liberdade' <i>Sampayo M, Silvestre C</i>	137
Urban chronicles: exploring the evolution of the entrepreneurial disposition of Coimbra periphery <i>Tavares A</i>	138
Syntactic approach to cemetery morphology. Two cases in Lisbon <i>Bazaraite E, Heitor T, Medeiros V</i>	139
U+D urbanform and design: a space syntax tool for design <i>Carlotti P</i>	140
Building garages: the evolution of built form on the periphery of London 1880-2013 <i>Dhanani A, Vaughan L, Griffiths S</i>	141
The evolution of house forms and the change of culture: a Turkish perspective <i>Gokce D, Chen F</i>	142
Planning new towns for Africa: the Portuguese in Asilah (1471-1550) <i>Correia J</i>	143
Outside the city walls: the mendicant complexes and the spatial dynamics of Portuguese medieval towns <i>Marado C</i>	144
The morphological lecture of the city through historic military architecture <i>Pastrana T, Montejano M</i>	145
Transformation potential of public spaces in Osijek's fortification <i>Stober D, Lončar-Vicković S, Jurković Z</i>	146
Athens and military architecture <i>Zaroulas S</i>	147
The Lisbon urban block: from shape to type <i>Justo R</i>	148
Urban block – Krakow tradition <i>Kantarek A</i>	149
Transformation of urban blocks and property relations: cases from Historical Peninsula <i>Küçük E, Kubat A</i>	150
Study on the morphological differences between areas through the comparative analysis of urban block <i>Lin X</i>	151
The transformation of the urban block in the European City <i>Oikonomou M</i>	152
From Pergamon to Bergama: revealing the 'Layer's to understand the evolution of urban form <i>Altinoz G</i>	153
From Tomar to Angra: interpretative hypothesis of geometric pattern morphology <i>Dias J</i>	154
Form follows function – morphological and functional change in the Hague and Detroit 1911-2011 <i>Kickert C</i>	155
Disparity syndrome <i>Sarshar S, Masood J</i>	156
A spatiotemporal model of growth and change in the network structure of Manhattan and Barcelona <i>Sayed K</i>	157

The making of the ‘Happiest City’ in the USA: managing urban form in San Luis Obispo, CA <i>Dandekar H</i>	158
Power strategies and everyday drawing a city of colonial Brazil <i>Filha M, Filho I</i>	159
Morphology and structure of road crossings of the modernist urban ring of Viana do Castelo <i>Lopes J, Gúlias M, Cavaleiro R</i>	160
Urbanization in the Brazilian hinterland’s ‘forgotten century’: growth patterns in Planaltina <i>Palazzo P</i>	161
From Oppidum to Suburbia: urban transformations in the medieval town of Monção <i>Torres V, Delgado J</i>	162
Urbanization life cycle of Nablus City (1946-2015) <i>Ashqar H, Hadba L, Tuqan N</i>	163
Hermann Jansen's Grünstreifen in Ankara and their transformation <i>Burat S</i>	164
Morphological process as an instrument for knowing chronological character <i>Chen C, Lin W</i>	165
The evolution of urban form since post-war period in Taiwan – a case study of Yonghe city <i>Chen C, Tsai C</i>	166
The evolution of the Anatolian townscape in the early republican period of Turkey in the Case of Mugla <i>Koca F</i>	167
Analysis of the correlated relations between ancient Chinese urban morphology and social culture <i>Dai J, Wang Z</i>	168
The impact of culture and social relations on urban form in Iran in the historical evolution <i>Daneshpour A, Taghidokht H, Sabokkhiz M</i>	169
Morphological evolution of urban form components in the historical peninsula of Istanbul <i>Kubat A, Kürkçüoğlu E</i>	170
Grasping the meaning of the modern urban form in the Philippines <i>Morley I</i>	171
A code for the Islamic cities of the Gulf <i>Petruccioli A</i>	172
Evolution, the current state and future of physical urban form of Gaborone City, Botswana <i>Cavrić B, Phuthologo B</i>	173
Beira, a modernist landscape in tropical Africa <i>Fernandes M, Mealha R, Mendes R</i>	174
From ‘a miserable town of 150 mud huts’ to ‘the city that never sleeps’ <i>Geddes I</i>	175
The role of the PDAU in the urban morphology of Saida city in Algeria <i>Zatir S, Habib B, Zatir A</i>	176
Analyzing the effects of hot and arid climate on the form of historic cities of Iran <i>Daneshpour S, Nedoushan M</i>	177
Island-City/City-Island: Island precincts and evolving urban morphology of Abu Dhabi, UAE <i>Mishra A</i>	178
Mapping the urban form. Coastal fishing villages in Algarve <i>Pacheco M, Heitor T</i>	179

Spatial and economic integration of mill towns with their surrounding urban environment <i>Rohloff I</i>	180
Evolved urban form to respond to extreme sea level events in coastal cities <i>Wang L, Han J</i>	181
Restelo neighbourhood: a paradigmatic example of urban form overlapping <i>Almeida P</i>	182
When the actions of the Office of PDRL transform planning a bureaucratic and operational discipline <i>Ferreira B</i>	183
Utopia and reality: from Étienne de Gröer to the late 20th century. Évora, Portugal <i>Monteiro M, Tereno M, Tomé M</i>	184
Campo Alegre, 1940-1994. The evolution and persistence of a territorial intend <i>Ramos S</i>	185
Is there a transversal organic pattern? Favela and its diachronic relations <i>Loureiro V, Medeiros V</i>	186
Urban planning failure and the tale of two informal neighbourhoods of Accra, Nima and Old Fadama <i>Owusu G, Awumbila M, Teye J</i>	187
The 'Ilhas' of Porto and the 'self-improvement' urbanism <i>Sena N, Doevendans K, Rousseau S</i>	188
From housing to city. Lisbon's public housing promotions – 1910/2012 <i>Serpa F</i>	189
The 'ilhas' of Oporto, a fundamental component of the city's nineteenth century urban morphology <i>Teixeira M</i>	190
4. AGENTS OF CHANGE	193
Influences of housing municipal policy in slum urban form: the case of Heliopolis (Sao Paulo, Brazil) <i>Antonucci D, Filocomo G</i>	195
From informal neighborhoods to space regularization <i>Antunes G, Lúcio J, Soares N, Julião R</i>	196
The auto representative image as an agent of legitimation and incorporation of urban settlements <i>Hollanda C</i>	197
Urbanization in large slums - the challenge of urban transformation <i>Lacerda J, Chiesse P</i>	198
Favela: informality leading spontaneity into contemporary city <i>Loureiro V</i>	199
The origins and pathways of urban (in)formality <i>Rocha M</i>	200
The New Coach Museum – a Brazilian urban narrative in Lisbon <i>Brito S, Mateus D</i>	201
Modular design in social housing: the work of Justino Morais 1960-1990 <i>Cardim J</i>	202
Fernando Távora and the Portuguese urban space design <i>Ferreira C</i>	203
Reinventing Luanda. The Urbanization Plans of the Luanda's City Council Urbanization Office <i>Fiúza F, Gama H</i>	204

Fourth dimensions urban morphologies <i>Screpanti D, Carlesi P, Mancini G</i>	205
Open-minded ‘public’. Shaping urbanity on a wave of change <i>Bravo L</i>	206
Change, utopia and ‘the public’: urban transformations and agents of survival in Brasilia and Rio de Janeiro <i>Carvalho T</i>	207
A tale of two London Squares: the place of morphology in contemporary urban life <i>Davis H</i>	208
Public involvement transformation for best future of cities in Russia <i>Gudz T, Meltsova E, Zaharova M</i>	209
Changing features of the urban structure in a transitional city <i>Wékel J, Koriakina P</i>	210
Hongta Group and its city: Danwei and its evolved Group as an agent of change in China <i>Dai Y, Song F</i>	211
Unidade Residencial da Reboleira Sul. Critical reading of the ‘optimist suburbia’ <i>Ferreira B</i>	212
Tenure of urban land <i>Junior D, Salgado I</i>	213
Agent and morphological process <i>Shi C, Wu M, Song F</i>	214
An introduction to the research on use pattern of Lushan National Park based on its cultural landscape process <i>Xiong X, Liu M, Song F</i>	215
From urban sprawl to a compact city policy: the primacy of process over form <i>Cavaco C</i>	216
Interpret planning gap caused from accomplished roads by identifying building forms <i>Chen C, Liang C</i>	217
The influence of the sacred on the urban form of Brazilian cities <i>Resende L</i>	218
Events-driven morphological process: a case study of Auckland’s Waterfront <i>Shephard T, Gibson L</i>	219
How big is my garden? The morphological impact of density regulations upon garden size <i>Wilkinson D</i>	220
Assessing the effects of governing thoughts on the form of cities <i>Daneshpour A, Soleimani A, Charbgoon N, Ashnaee T</i>	221
The evolution of neighborhood model as a manifestation of political regime shift: the case of Cairo <i>Ghonimi I</i>	222
Land use regulations in São Paulo: possible new paths <i>Silva J</i>	223
Long term urban transformations and tactical urbanism short-term actions <i>Silva P</i>	224
Power, ideology and space re-generation: Istanbul case <i>Özden P</i>	225

Tourism and mega-events: the birth of a conflict culture in Belo Horizonte, Brazil <i>Bessa A, Álvares L, Barbosa T</i>	226
Within and outside virtual walls <i>Braga A, Trusiani E, Rigatti D, Ugalde C, Zampieri F, Reckziegel D</i>	227
Analysis of urban morphology on festival space decorated on urban space <i>Matsuura K</i>	228
From planned decentralization to unplanned urban development: manipulation of 1990 Ankara Plan <i>Özler O</i>	229
Mi casa es tu casa: the creation of the Rambla del Raval in Barcelona <i>Scarnato A</i>	230
Assessing the impacts of musealisation on urban form <i>Aykaç P</i>	231
A site that has been rearranged and then rehabilitated and then renewed <i>Dinler M, Guchan N</i>	232
Public space and commons as the main resource for the rehabilitation of social housing settlements in Italy <i>Gullì L, Zazzi M</i>	233
The role of municipality in urban regeneration: the case of Lisbon's Eastern waterfront <i>Nevado A</i>	234
The re-appropriation of industrial sites in the urban form of the post-communist city <i>Statica I</i>	235
Urban mobility - Urban mutations. Means transport and morphological changes in the city of Belém <i>Andrade F, Silveira I</i>	236
Urban road and street planning as part of urbanization: integration or separation? <i>CasasValle D</i>	237
Accessibilities as an agent of change in urban form <i>Silva P</i>	238
The dynamics of Structures impacting Transit Oriented Development in 'Noorderkwartier' Area <i>Waijer A</i>	239
Tracing urban catalysts in 'Noorderkwartier' area <i>Waijer A</i>	240
Actors of formation in urban periphery: Çayyolu case <i>Kiziltaş A</i>	241
Development of a suburb, through series of unfortunate events <i>Kristjánsdóttir S</i>	242
Metropolitan dialogues: Lisbon's external and place specific agents of change <i>Moreira I</i>	243
Managing the mark of the memory <i>Moreira M</i>	244
Heavier challenges – fewer resources: lens for a new urban reality in Lisbon <i>Morgado S, Moreira I, Vargas J</i>	245
Similar processes, divergent outcomes: analyzing urban redevelopment processes <i>Kuyucu T, Daniş D</i>	246

The built form of technology campuses: an exploratory study <i>Magdaniel F</i>	247
New university complexes as a force of shaping the urban form of the medium sized cities <i>Nasserian A, Klets V, Kalbasi S</i>	248
Urban black holes: the rural in the urban as liminal spaces from where to build a new city <i>Santos P, Pena-Corvillon D</i>	249
Exploring university morphology <i>Silva L, Heitor T</i>	250
Aging as an agent of change in the way how we occupy our territory <i>Bordalo A, Matos M</i>	251
Confederations Cup 2013 in Brazil and urban conflicts manifest in Belo Horizonte / MG <i>Gonçalves R, Simão K, Araújo J, Pedroso A</i>	252
Urban conflicts observatory of Belo Horizonte / MG: sociospatial processes reading from conflicts <i>Gonçalves R, Simão K, Araújo J, Pedroso A</i>	253
Towards sustainable transformation in urban historical quarters <i>Jie H</i>	254
Urban Morphologies of Alternative Spaces: A Case Study of Tehran <i>Soleimani B, Staub A</i>	255
5. REVISITING URBAN MORPHOLOGICAL CLASSICS	257
Morphology vs typology: notes on Saverio Muratori and Ludovico Quaroni's urban projects <i>Del Monaco A</i>	258
The critical doubt in typological and morphological studies of Italian school <i>Ieva M</i>	259
Saverio Muratori. A legacy in urban design <i>Maretto M</i>	260
Re-thinking city. An exemple of Ilse's multidisciplinary approach to urban morphology questions <i>Nicosia C</i>	261
Early ideas of urban morphology: a re-examination of Leighly's The towns of Mälardalen in Sweden (1928) <i>Larkham P</i>	262
Urban form of contemporary compact city- case of Oslo <i>Marjanovic G, Thorén A</i>	263
Five elements revisited: a morphological approach of Solà-Morales <i>Monteiro E, Turczyn D</i>	264
The influence of classics on contemporary thinking Louis Kahn and Hestnes Ferreira <i>Saraiva A</i>	265
Reelationship of morphological characteristics between residential plot and building pattern <i>Zhao Q</i>	266
6. MULTIDISCIPLINARITY IN URBAN MORPHOLOGY	269
Human dynamics in the waters territory - the interaction of urban spaces and natural spaces <i>Baptista J, Junior M, Passos R</i>	270
The connection between city, river, and sea: urban planning in coastal landfills <i>Barea G, Weiss R, Monteiro E, Loch C</i>	271

The lagoon line mutation in the urban evolution of Sant'Antioco. An history of productive-natural landscape <i>Dessi A</i>	272
The study of urban form versus water management: lessons to a sustainable urban future <i>Marat-Mendes T, Mourão J, Almeida P</i>	273
City waterfront territories: urban morphology as a key factor for sustainable development <i>Mezenina K</i>	274
Interaction between rivers and morphology of cities in Sweden <i>Abshirini E</i>	275
Morphology and functioning of the metropolitan urban areas <i>Benaïche A</i>	276
Urban growth in Hanoi: a retrospective analysis based on Landsat images and field survey <i>Luong T, Cornet Y, Teller J</i>	277
The city, the river and mangroves: a case study in San José, Santa Catarina, Brazil <i>Monteiro E, Weiss R, Barea G</i>	279
Urban growth and hydrography: convergences on landscape morphology <i>Peres O, Polidori M, Saraiva M, Santos A, Tomiello F, Santos A</i>	280
The natural elements on urban form: a critical analysis on the landscape construction <i>Baptista J, Junior M, Passos R</i>	281
Experiencing the nature of the city <i>DeVuono-Powell S</i>	282
Jucutuquara Stream: understanding the dialogue between the city and its water bodies <i>Passos R, Baptista J, Junior M</i>	283
Urban form, spatial planning and the European landscape convention <i>Silva P, Gonçalves C</i>	284
A multidisciplinary approach to explore urban public spaces <i>Alvares L</i>	285
Epistemology of public spaces - a cultural approach <i>Hanzl M</i>	286
Public spaces and behavioral patterns: the case of Liljeholmstorget in Stockholm <i>Kariminia E</i>	287
Public space and morphology of neighborhoods. Case study: Tehran <i>Sohrabi N</i>	288
The urban wasteland as a stage for biogeochemical afforestation processes <i>Amaral R, Costa S</i>	289
Sustainable mobility: the morphological planning contribution <i>Dufaux F, Labarthe M</i>	290
The interaction between urban form and public art. Two examples on Lisbon's waterfront <i>Ochoa R</i>	291
Cities in the intersection of environment and public arts <i>Şimşek G</i>	292
Cities of aquifers and wind-catchers: eco-morphology of dwelling in the Persian plateau <i>Zamani P</i>	293
The urban cool islands project, a case study crossing research and practice <i>Bonneaud F, Bonhomme M, Adolphe L</i>	294

GENIUS, a tool to generate multi-scalar databases for urban energy studies <i>Bonhomme M</i>	296
Energy planning from the zero level <i>Catarino R</i>	298
The impact of urban form on wind energy potential <i>Wang B, Adolphe L, Cot L</i>	299
Analysis of the correlated relations between ancient Chinese urban morphology and social culture <i>Dai J, Wang Z</i>	300
An associated study of urban form analysis and urban morphology <i>Lustoza R</i>	301
Heritage, urban morphology and infrastructure <i>Nascimento A, Silva M</i>	302
Urban morphology and social geography, in the mid-nineteenth century, in Porto <i>Pinto J</i>	303
Impact of sectoral urban development of Muritala Muhammed Int. Airport, Lagos on traffic flow <i>Fashina O, Agamah F</i>	304
Morphological structure and system community facilities <i>Schäfer K, Oliveira L</i>	305
Housing development transformations: political directives and post-occupation life <i>Teixeira M, Maciel M, Alonso P</i>	306
2014 World Cup in Brazil: what about urban mobility in Metro Porto Alegre? <i>Ugalde C, Braga A, Rigatti D, Zampieri F</i>	307
The urban morphology around elevated station of urban rail transit in China <i>Yao M</i>	308
Unsustainable empty for inadequate use of urban space <i>Carvalho M</i>	309
Interactions between agricultural-systems and urban forms in Sardinian villages <i>Dessì A</i>	310
Resilience thinking and urban form: a contribution to the spatial analysis of the territory <i>Martins A, Cruz S, Pinho P</i>	311
Study on the sustainable development of urban fringe at the background of urban and rural co-ordination <i>Ying W</i>	312
Contributions to the study of urban morphology <i>Dias F, Campos M</i>	313
Densification process of Copacabana neighbourhood over 1930, 1950 and 2010 decades: comfort indexes <i>Drach P, Barbosa G, Corbella O</i>	314
Dynamics interactions between urban form, green spaces and environmental quality <i>Montezuma R, Pezzuto C, Albuquerque C, Monteiro V</i>	315
A construction perspective of urban morphology study in Shanghai Alleyway House <i>Ni J, Liu G</i>	316
Assessment of the ‘local climate zones’ in area residential with low-rise buildings <i>Pezzuto C, Monteiro V</i>	317
Impact of spatial structure on women’s travel in urban areas in Pakistan <i>Ahmed W, Imran M, Scheyvens R</i>	318

Evolution of sociometric layout as a reflection of cultural changes <i>Hanzl M</i>	319
The effects of urban form on levels of integration of housing schemes and social interaction among residents <i>Lay M, Lima M</i>	320
Residential vilas in Rio de Janeiro: sustainability of a historic housing type <i>Rio V, Alcantara D, Cardeman R</i>	321
Understanding the built form through the female service workers' experience of urban space <i>Sungur C, Kubat A, Guloksuz E</i>	322
Characterization of the relationship between commercial plots and building patterns <i>Jiang J</i>	323
The commercial-residential building <i>Narvaez L</i>	324
Municipal average building capacity <i>Rebelo E</i>	325
The morphological sense of commerce <i>Saraiva M, Pinho P</i>	327
Modern tendencies of the location of office functions in European cities <i>Zawada-Pęgiel K</i>	328
The systemic focus on walkability and urban form <i>Barros A</i>	329
Safety in relation to the urban form <i>Benko M</i>	330
Impact of walkable urban form on social security. A study of naragh in Iran <i>Daneshpour A, Sabokkhiz M, Jalili S, Taghidokht H</i>	331
By São Paulo sidewalks: urban form and walkability <i>Degreas H, Katakura P, Santos C</i>	332
Urban morphology: a prescription for healthy built environments? <i>Gilliland J</i>	333
The elements of urban morphology which influence residents' leisure walking activities <i>Mao J, Chen Y</i>	334
7. COMPARATIVE STUDIES OF URBAN FORM	337
The syntax role: differences among urban fabrics in Lisbon <i>Barros A</i>	338
Urban transformation in meeting places: the cases of Bursa & Yazd <i>Eslami S, Kubat A</i>	339
Environmental evaluation method of urban spaces <i>Teixeira E, Romero M</i>	340
Comparing urban forms and rules of the Pearl River delta cities <i>Tieben H, Liu D</i>	341
Research on urban spatial form in provincial areas with different levels of economic development <i>Xiong G</i>	342
The urban morphology concept in Brazil <i>Antonucci D</i>	343

Gilberto Freyre's work: between urban morphology and building typology – first approaches <i>Aragão S, Marques A</i>	344
Investigation on the common concepts and different approaches of the major schools of urban morphology <i>Costa S, Netto M, Moraes L</i>	345
Decipher the Babel Tower: a discourse analysis of urban morphology in China <i>Lu A</i>	346
A Portuguese typo-morphological line of thought: from geography to architecture <i>Marat-Mendes T, Cabrita M</i>	347
A comparison between different urban analysis methods <i>Delsante I, Bertolino N, Giorgi E, Yinan Y</i>	348
Past and present: an architectural survey of Birnin Lafiya, a Dendi village <i>Pinet J</i>	349
Urban form and its implication for the use of urban spaces <i>Reis A</i>	350
Morphogenetic analysis of Bahçelievler Housing Cooperative, Ankara: exploring the Turkish case <i>Songülen N</i>	351
Combining different morphological approaches in the study of Maputo <i>Viana D, Oliveira V</i>	352
Revaluing urban morphology as Urban Heritage: case studies on Barcelona and Kyoto <i>Abe D</i>	353
Application of morphological concepts to characterize German immigration's nucleus in Brazil <i>Andrade B, Taveira E, Almeida R</i>	354
Spontaneous and induced form: comparing Sao Paulo, Jakarta, Hanoi and Belo Horizonte <i>Barbosa E, Capanema P, Tú N</i>	355
Exhibition of city: What's next? The case of Lisbon 1940 vs Rome 1942 <i>Pegorin E</i>	356
8. INTEGRATED APPROACHES	359
Study on regeneration of downtown area through riverfront development as urban catalyst. <i>Aitani K, Arima T</i>	360
Taking a metabolic perspective in urban morphological analysis: the case of Isfahan <i>Kropf K, Changaivaiee</i>	361
Sous le pavé la plage: squares of Lisbon <i>Matos M</i>	362
Urban morphology and the ecological paradigm <i>Meneguetti K, Costa S</i>	363
The population spatial evolution impacts on urban morphology in urbanization process of China <i>Chen C, Zhou W</i>	364
Effects of migration processes on urban form <i>Guimarães A, Neto P</i>	365
Diaspora typo-morphology analysis: a study of post-colonial city in critical approaches <i>Huang P, Kuo C</i>	366
Morphological analysis of the informal city. The 'Villa 31' in Buenos Aires, Argentina <i>Maretto M, Amato A, Boggio N, Catanzano G, Corvigno A, Bandieri G</i>	367

Urbanization in the Ave Valley region: more than a sum of building projects? <i>Travasso N, Casas Valle D</i>	368
The implementation of urban plan strategies in Sintra: integration, identity and development <i>Cardim J, Borges T, Fiúza F</i>	369
Integration of public spaces into the urban environment in case of Perm <i>Kuznetsova A, Maximova S</i>	370
Urban form in a system view <i>Perdicoúlis A</i>	371
In between public and private space: the role of cul-de-sacs in the historic urban form of Antakya <i>Rifaioğlu M, Güçhan N</i>	372
A method for planning viewing spots and cityscape control <i>Yamamoto D, Kawahara S</i>	373
How to find spatial patterns for criminality in urban areas <i>Almeida H, Serdoura F, Guinote H</i>	374
Assessing the impacts of urban barriers on the arterial system of the city: a case study in Montréal <i>Buzzetti J, Gauthier P</i>	375
Urban form and orientation in urban space <i>Kantarek A</i>	376
Urban form and social output <i>Krafta R</i>	377
Mapping and morpho-typological inferences in low-lying coastal Tianjin <i>Wang, L, Li L, Gong</i>	378
Industrial-housing ensembles at Lisbon – morphology and specialization <i>Antunes G, Lúcio J, Soares N, Julião R</i>	379
An urban taboo <i>Falsetti M</i>	380
Classical ideas, progressive aspirations: academicist urbanism designing northern Paraná new towns <i>Rego R, Ribeiro T, Taube J</i>	381
Graphing history: the example of early American studies of Japanese settlements forms <i>Santini T, Taji T</i>	382
European spatial paradigms. Urban infrastructural morphologies <i>Triggianese M, Berlingieri F</i>	383
9. TEACHING URBAN FORM	385
A constructivist approach to urban morphology: engaging students in the study of urban form <i>Guaralda M</i>	386
Exploring pedagogical intersections between urban design and morphological methods <i>McClure W</i>	387
Urban form in diagrams <i>Monteiro E</i>	388
Learning about urban form in Spain. A comparative study <i>Ruiz-Apilanez B, Solis E, Ureña J, Alfaro J</i>	389
Teaching and seminar of urban morphology in Peking University, China <i>Xiong X, Song F</i>	390

Building-type and permanence of layout-plan: a study on the densification of Los Mochis urban fabric <i>Armiño L, Reig I, Colomer V, Vicente-Almazán G</i>	391
Teaching urban form in urban design program: experiences from South Korean context <i>Kim K</i>	392
Imagining Ranha, Porto, from the subtropics <i>Richards P</i>	393
Teaching urban form in public administration context: aims and challenges <i>Silva P</i>	394
Serious urban play – a digital game for teaching urban spatial design <i>Stevens N, Rosiera J, Rolfeb B, Tertone U, Jones C</i>	395
10. THE RELATIONS BETWEEN RESEARCH AND PRACTICE	397
The impediments for small-scale development in Miami-Dade County <i>Firley E, Frey A</i>	398
Towards a flexible definition of limits in urban planning: controlling urban form under uncertainty <i>Moreira B</i>	399
The role of morphology in redesigning old downtown in The Dalles, Oregon <i>Neis H</i>	400
Interpretation of morphological data to inform design Bridge to Bridge <i>Sanders P</i>	401
‘Recovery Machizukuri’ through the creation of a ‘network community’ for Namie, Fukushima <i>Shiraki R</i>	402
Urban form study for better future of the city <i>Kantarek A</i>	403
The relation between research on urban morphology and planning <i>Maistrout E</i>	404
The morphological dimension of planning documents: case study Belgrade, capital of Serbia <i>Niković A, Đokić V, Manić B</i>	405
Future urban changes through design guidance: new principles <i>Sepe M</i>	406
Changing patterns of urban development in Turkish cities: an investigation into planning practice <i>Ünlü T</i>	407
Density, urban form and quality of life <i>Beaurin C, Raymond G, Andersen I, Dias S</i>	408
Study on relationship between urban morphology and policy in China <i>Gao C, Ding W</i>	409
Re-trial the role urban morphology in Taiwan’s modern planning mechanism <i>Huang Y</i>	410
A subtropical urban taxonomy: the tension of research informing practice <i>Richards P</i>	412
Current urban regulation and its limits regarding urban form in Brazilian cities <i>Silva J</i>	413
Shaping the city. Public space in the (re)construction of Portuguese contemporary city <i>Coelho R</i>	414

An urban analysis method for the historic city the Castelo and Alfama hill in Lisbon <i>Costa A, Crespo A, Gonçalves J</i>	415
Empty vacant – redefining interior’s block voids in Guimarães <i>Dias J, Ochoa R, Suárez M</i>	416
Urban design and transition morphologies. Prospects for intervention in Lisbon – Alcântara <i>Ferreira C</i>	417
Morphological analysis as support for interventions in public spaces in historic cities <i>Filha M, Azevedo M, Silva A</i>	418
Reviving the heart of a historical metropolis: comparative study between different urban forms <i>Ismail K</i>	419
Urban design guideline for upgrading environmental quality of Niayasar <i>Lari S, Dehkordi N</i>	420
Employing typomorphology to restore collective city memory through urban design in Taiwan <i>Lin M, Tsao C</i>	421
Project MEAVS / Mapping East Asian vernacular settlements <i>Shutter L</i>	422
Urban morphology of historic fabrics and contemporary architectural design. The case study of Lazio <i>Strappa G</i>	423
11. SPECIAL PARALLEL SESSIONS	425
11.1 Urban food and urban form: an underexplored intersection <i>Nasr J, Gilliland J, Hardman M, Komisar J, Mees C</i>	425
11.2 Chinese network of urban morphology	427
CNUM and the evolution of chinese discourse on urban form <i>Ding W, Lu A</i>	
The typological process and the morphological period: a cross-cultural assessment <i>Gu K</i>	427
An application of urban morphology to a structural preservation urban design project <i>Hu Y</i>	428
The mode of landscape and village pattern in Changzhou <i>Hua X</i>	429
Spatial patterns of urban growth in Xi’an, China: a fringe-belt approach <i>Ren Y</i>	430
An exploration of complementary utilization of Space Syntax and Spacemate methods in urban design <i>Xiaoxi L, Zhang Y</i>	431
11.3 Turkish network urban morphology	433
A look at the past, present and future: an overview of urban morphology research in Turkey <i>Kubat A</i>	433
The role of ‘TNUM’ in furthering urban morphology research in Turkey <i>Ünlü T</i>	434
11.4 The Middle Eastern cities and Isfahan School of Urban Morphology	435
Discussion about the similarity of the forms of the cities of Porto and Qazvin <i>Jabbari M, Ramos R</i>	435

11.5.1 Open spaces and the new Brazilian urban form	436
The open spaces systems and the Brazilian urban form – a national research network first results <i>Queiroga E, Macedo S</i>	436
Open spaces and urban form: a systemic relation <i>Campos A, Queiroga E, Custódio V</i>	437
Landscape units as territorial analysis procedure <i>Montezuma R, Tangari V, Isidoro I, Magalhães A</i>	438
The sprawl landscape: relationship between urban and environmental dynamics <i>Coelho L, Macedo S</i>	440
Urban form and land value: morphological types and patterns from spatial segregation in Campinas <i>Silva J, Lima F</i>	441
Integrated approaches in Vitória workshop: a study on open space system and the urban form <i>Mendonça E</i>	442
11.5.1 Brazilian morphology	443
Simulation techniques to analyze transformations of urban form, landscape and micro climate <i>Tângari V, Cardeman R</i>	443
The urban form of the housing policy ‘Minha Casa Minha Vida’ in the Metropolitan Area of São Paulo <i>Donoso V, Queiroga E</i>	444
Open spaces system: describing the urban morphology of Vila Mariana’s district <i>Degreas H, Macedo S</i>	445
Urban form and multidisciplinary: contributions to the São Paulo Master Plan revision <i>Queiroga E, Meyer J, Macedo S</i>	446
Public policies towards river and streams restoration: perception and appropriation <i>Galender F, Campos A</i>	447
Morphologic transformations of public spaces in the surroundings of Nova Lima’s churches <i>Maciel M, Teixeira M</i>	448

Preface

This year the International Seminar on Urban Form (ISUF) celebrates its twentieth birthday. Over the last two decades, the ISUF annual conferences and the journal *Urban Morphology* have steadily established as the main references of morphological debate worldwide.

The development of ISUF included the formation of affiliated networks. The Portuguese Network of Urban Morphology (PNUM) was established in 2010 at the Hamburg conference. In June 2011 the PNUM launched its annual conference and in December 2013 it published the first issue of the *Revista de Morfologia Urbana*. Against this dynamic background, and for the first time in two decades of history, the ISUF annual conference takes place in Portugal.

‘Our common future in urban morphology’ has a record number of presentations. Almost 400 presentations are included in the conference programme comprising four plenary sessions and 80 parallel sessions. This book, composed of two volumes, follows the structure of the conference. Volume 1 gathers the abstracts of all communications included in the conference programme. Volume 2 includes the full papers submitted to the conference.

The plenary sessions of ISUF2014 include an overview of the urban form and structure of Porto; a debate on different approaches in the study of urban form (the German morphogenetic approach, the Conzenian school, the Muratorian school and space syntax); the description of a repository of urban tissue; and, finally, the presentation of recent work developed by the ‘ISUF Task Force on Research and Practice in Urban Morphology’, particularly of four case studies of application of morphological concepts and methods in professional practice and of the ‘Porto Charter’ including ISUF’s fundamental principles.

The 80 parallel sessions are structured around ten fundamental themes (including also five special sessions): urban morphological theory; urban morphological methods and techniques; the evolution of urban form, agents of change; revisiting urban morphological classics; teaching urban form; comparative studies of urban form; multidisciplinary in urban morphology; integrated approaches; and, finally, the relations between research and practice. The debate of these themes should help us to understand what should be our main contribution as urban morphologists, how it could be part of wider integrated research on cities, and how this could be applied into day-to-day practice.

Vítor Oliveira
Paulo Pinho



0.

Plenary Sessions

0.1 Porto

The urban form of Porto

Vítor Oliveira

CITTA – Centro de Investigação do Território, Transportes e Ambiente, Faculdade de Engenharia, Universidade do Porto, Rua Roberto Frias 4200-465 Porto, Portugal.

E-mail: vitorm@fe.up.pt.

This paper offers a description and explanation of the urban history of Porto, focusing on the evolution and main characteristics of its streets, plots and buildings. After considering the origins of Porto in the twelfth century (despite some previous forms of human occupation, the *foral* was attributed to the city in 1123) attention is given to the city within its fourteenth century wall. In the third part, the paper moves to a decisive period in the urban history of Porto, comprised between 1764 and 1833, when the *Junta das Obras Públicas* was responsible for planning and managing the city. After the extinguishment of the *Junta*, its role and functions were divided by different entities carrying different goals; the process of urban expansion in the second half of the nineteenth century was not as effective as it has been in the first half. Yet, the importance of two fundamental axes in structuring the expansion towards north and west, the *Rua da Constituição* and the *Avenida da Boavista*, is highlighted. The fifth part of the paper focuses on the 20th century. Particular attention is given to the main residential types, including the public promotion (first constituted by single-family houses and then by multi-family buildings) with the permanent concern of eradicating the working class housing, the *ilhas*, and the private promotion of housing. Finally, the paper identifies some of the future challenges of Porto, in terms of its urban form and structure: the conservation of built heritage, the promotion of mixed land uses in the different parts of the municipal territory and, finally, the steady integration of spatially segregated areas of the city.

Key Words: Porto, urban form, streets, plots, buildings.

The metropolitan area of Porto: form, structure and dynamics

Paulo Pinho

CITTA – Research Centre for Territory, Transports and Environment
Faculty of Engineering, University of Porto, Portugal
E-mail: pcpinho@fe.up

An overview of the major changes and developments in the social and economic profile of the Metropolitan Area of Porto, as well as of the major investments in transport systems throughout the last decades, is initially provided as an introduction and an operational framework to address the analysis of the changing form and structure of this Portuguese metropolis, with around 1.5 million inhabitants. From a typical polycentric structure, this metropolitan area evolved into a rather more complex region, in which continuous centrifugal sprawl end up blurring and down grading existing centralities. These spatial restructuring trends had profound consequences on the levels of mobility and accessibility to goods and services of both the resident and the commuting population. Indeed, the territorial impacts of the investments in the trunk road system and, to a lesser extent, in the different railway systems, the new forms of urban space production, and the weak responses provided by the municipal planning system, institutionally and politically fragmented, despite the emergence of a Metropolitan Junta, gave raise to new patterns of urban development and to a new and rather more complex geography of centralities and spatial interdependences. From an environmental quality and energy efficiency point of view the whole metropolitan area is now facing more demanding challenges, particularly in present times of financial constraints and deep economic recession. In this context, more ambitious and comprehensive planning policies and policy instruments are needed to pave a new road map to a post carbon, competitive and inclusive metropolis.

0.3 Different approaches in the study of urban form

Conzenian research and urban landscape management

J. W. R. Whitehand

Urban Morphology Research Group, School of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham B15 2TT, UK.

E-mail: J.W.R.Whitehand@bham.ac.uk

The findings of research in urban morphology should be fundamental to urban landscape management. There are parallels with the relationships between the pure and applied sciences. In this paper the development and application in practice of one approach to urban morphology – the Conzenian approach – is examined. The contrast with the approach to historical urban landscapes taken by urban conservation and heritage organizations is explored and ways in which Conzenian urban morphology can benefit the management of historical urban landscapes are considered. The need to identify and recognize the significance of urban landscape ensembles – as distinct from individual sites and structures – is stressed and a method of achieving this is described. The importance of historico-geographical understanding and mapping is emphasized. A key underpinning of the application of the method in planning practice, especially in relation to urban conservation and heritage, is the recognition of urban landscapes as embodiments of human experience.

Key Words: research, practice, urban form, conservation, heritage, ensemble.

Morphogenetic interpretation of medieval ground plans of European towns. A critical balance

Jürgen Lafrenz

Institut für Geographie, Universität Hamburg

E-mail: jurgen.lafrenz@uni-hamburg.de

The objective of morphogenetic investigation of medieval towns is to analyze their spatial development in urban layers. The exhaustive advances to decipher the genesis of fairly composite ground plans came about in the second half of the 20th century. Since then, the earliest detailed cartographic survey (which originated in every respect at the point of the Industrial Age) has always been used as the established source to determine the phases of long-term topographical evolution. In some exceptional cases, the first cadastral map was taken to reconstruct the spatial structure retrospectively by perusing archival property transfer records. Until now, the only in-depth case study that went back as far as the beginnings of a settlement was made by Otto Treptow in respect of Siegburg in the Rhineland.

There are two principal different types of medieval towns. The ground plans of most of the earlier towns reflect an “instinctive growth” – probably the result of successive spontaneous decisions – which consequently led to an irregular layout. The plans of most of the later towns suggest planning activities but although they partly complied with rules, a strict geometrical rectangular model was seldom applied.

The cadastre’s actual interpretation assumes persistence in the topographical pattern. However, some of the reconstructions meanwhile indicate that textures handed down possibly only evolved through subsequent divisions and a more broadly defined plot model would have been in existence originally. The paper tries to formulate a critical balance of the methods to detect the sections of development of towns. The morphological examination of the cadastral topography can be divided into morphographic and morphometric methods, whereby the town-plans of “instinctive growth” mainly fall under the scrutiny of the first, the “classical”, method only. The urban historian Erich Keyser was the most prominent scholar in the development of *morphographic analysis*. He examined over 40 small and large towns, using all accessible types of sources. The pattern of land allocation was to itemize meticulously the regularity as well on the disruption of its geometrical complexity. These findings are impulses of a topographical interpretation which tries to integrate the functional requirements in the medieval towns. Keyser was one of the initiators of the Historic Atlas of European Towns. Meanwhile, such manner of town-plan analysis has undergone conceptual richness and analytical depth in numerous volumes of this international project. The morphometric analysis, first used by the geographer David Hanneberg, involves the measurement of the block and plot pattern in the light of surviving cartographic sources. The method is based on the supposition that the lengths and width of the blocks and plots were laid out as multiples of a fixed measuring system. The method concentrates mainly on the reconstruction of the primary layout of a settlement. Such processes were used for the reconstruction of the grid of Roman settlements and their after-effect on the ground plan framework of medieval cities built on the same sites and, furthermore, to establish an initial geometric impression of a not fully rectangular layout of more planned towns of Late Medieval Times. An innovative study was made by the architect Klaus Humpert. Starting with the ground plan of Freiburg in Breisgau, he found measurement signs, module columns and radiuses which he conceived as evidence that the town was based on geometrical measurement structures. The ideosyncratic fiction of an artificial town planning system he engages to identify for Bern, Lübeck, Munich, Speyer and numerous other Late Medieval towns.

Urban morphology as a disciplinary basis for architectural design

Giancarlo Cataldi

Dipartimento di Architettura, Università di Firenze, Via San Niccolò 89a/95, 50125
Firenze, Italy. E-mail: giancarlo.cataldi@gmail.com

Architecture: art or science? From the first Vitruvian definitions of architecture, the status ambiguous and multi-faceted of the architectural profession has always oscillated between these two poles, considered from non-architects apparently oppositional. This question becomes even more complex and problematic if projected backwards to the investigation of the spontaneous world of architecture without architects. From which no doubt is derived classical architecture, whose historical developments clearly show the tendency to converge in the figure of architect an increasing amount of diverse and heterogeneous knowledge. Up to specialisations of the modern world, which on the basis of forced division of his main branches (historical, technical, urban and artistic) has led both teaching and practice of architecture in increasing complexity levels, inversely proportional to the not excellent quality of its current production. Hence the need to try to reverse the trend to restore the unity shattered. The urban morphology seems to indicate a possible way, with a view to find in the city the meeting point between different disciplines, which feel the need to compare their 'professional' approaches to correct their inevitable distortions. To point to finally put together a corpus of coherent and shared notions, especially able to clarify the dialectical relationship between theory and practice, 'reading' and design, town-plan analysis and town-planning.

Space syntax as a method and as a theory

Bill Hillier

University of London. E-mail: b.hillier@spacesyntax.com

Space syntax is commonly thought of as a set of techniques for analysing architectural and urban space and foreseeing functional outcomes. It is of course both, but it aspires to be more than this: a theoretical model of human space: how it is structured, how it works, how it is understood, and how it is part of the thing we call society. Part of the theoretical model, as it has so far developed, is a theory of the city as a 'partially ordered system'. In this paper, I will explain the space syntax theory of the city, and why and how it reflects fundamental dimensions of societies as spatial systems.

0.4 A preliminary study for a repository of urban tissue

Karl Kropf

Department of Planning, Oxford Brookes University; Urban Morphology Research Group, University of Birmingham. E-mail: kkropf@brookes.ac.uk

The paper sets out the results of a preliminary investigation into the merits and feasibility of establishing a repository of urban tissue. In simple terms, such a repository would be a searchable library of sample types of urban tissue from around the world, both historical and contemporary. The long term aim of the repository is to provide a common resource for academic research, teaching and applications in urban design, architecture and planning practice. Most significantly, the repository would make it possible to undertake comparative studies of urban form with much greater ease than is currently the case. The repository would also bring major benefits in: i) providing a foundation for investigations into the development and evolution of urban form; ii) recording and improving our understanding of the urban landscape as a cultural asset and manifestation of ethno-diversity; iii) providing a design resource, something like a 'seed bank', preserving the accumulated learning from different periods and 'bottom up' solutions or 'wild types'; iv) providing a core evidence base for investigating the environmental performance of different types of urban form. The core conception of the repository is an open access, community based project along the lines of open source software. Ideally the presentation would be brief and allow for significant interaction, questions, criticism, ideas and suggestions.

Key Words: urban morphology, comparative study, digital resources, open access.

0.5 ISUF Task Force on Research and Practice in Urban Morphology

Assessing the plan, the planning process and the results on the ground: Porto case study

Vítor Oliveira, Mafalda Silva

CITTA – Centro de Investigação do Território, Transportes e Ambiente, Faculdade de Engenharia, Universidade do Porto, Rua Roberto Frias 4200-465 Porto, Portugal.
E-mails: vitorm@fe.up.pt , mflld.slv@gmail.com.

At the end of 2011, the President of ISUF launched a Task Force to report on ways in which ISUF could build better bridges between researchers in urban morphology and practitioners. The Task Force promoted discussion of ways in which ISUF could provide leadership and it prepared an interim report with concrete suggestions for action. That report contained four main proposals. One of these proposals was the production of a good practice catalogue of how and where urban morphology is being used successfully. In early 2013, the Council of ISUF started promoting the development of assessments that would make a direct contribution to this proposal. Four case studies were developed. This paper describes the assessment of the first case study, the 2006 *Plano Director Municipal* for Porto. The selection of Porto reflects the well articulated typological approach developed in this plan. The assessment is in three parts: i) the contents of the plan, with a particular focus on its typological approach; ii) the results ‘on the ground’; and iii) the planning process (including the involvement of different agents) developed under the framework of the plan. Benefiting from a first appraisal of the plan carried out soon after its ratification in 2006, this study traces the implementation of the plan over the last 6 years. It focuses on a sample of 50 building permits, 34 of which have already been implemented, and is supported by 20 interviews of politicians and practitioners from the local authority, and the architects and developers of a number of the projects.

Key Words: urban morphological research, planning practice, assessment, plans, urban tissue.

‘What can you offer us?’ Challenges facing the practical application of urban morphology: South Jesmond Conservation Area, Newcastle upon Tyne, UK

Michael Barke, Kayleigh Hancox

Department of Geography, University of Northumbria, Newcastle Upon Tyne, NE1 8ST, UK. E-mail: Michael.barke@northumbria.ac.uk

Amongst urban morphologists there is a broad consensus that the quality of the urban environment would be considerably enhanced through the application of urban morphological principles in both design and management. However, the obstacles in the path of achieving successful applications remain considerable, not least because of their multi-faceted character. Based on some preliminary findings from an on-going research project in a small conservation area in Newcastle upon Tyne, UK, this paper will illustrate some of the problems involved. Based upon analysis of applications for planning permission over a period of 40 years and interviews with key practitioners in both conservation and planning within the area, an attempt will be made to conduct an audit of the extent to which urban morphological principles either are or could be applied. From this experience it will be argued that – before any comprehensive and successful applications of urban morphological principles in urban development can take place – a range of theoretical and practical issues need resolution. These include the precise relationship to other key actors, the specific role to be played, the appropriate point of intervention in any scheme and the sheer complexity relating to the range and nature of morphological components involved. Despite the almost overwhelming character of these problems, it would be wrong to be unduly pessimistic but for urban morphologists to achieve any impact a degree of pragmatism and compromise may be necessary.

Ahmedabad's informal walled city: the role of morphology within a project of urban regeneration

Marco Maretto, Nicola Scardigno

Department of Civil Engineering, Environment, Land and Architecture. University of Parma, Parco area delle Scienze n°181/A, 43124 Parma, Italy.

Department of Civil Engineering and Architecture. University of Bari, Via Edoardo Orabona, n°4, 70126 Bari, Italy; Department of Architecture. Roma Tre University, Largo Giovanni Battista Marzi, n°10, 00153, Italy

E-mail: nickscardigno@yahoo.it , marco.maretto@unipr.it

This research investigated the regeneration project of Ahmedabad's walled city led by Ahmedabad Municipal Corporation (AMC). Particularly, the analysis of the experimental case of the Aka-Sheth-Kuwa-ni-Pol showed how such process of urban regeneration (today still in progress) essentially basis on a binomial: the understanding of the morphological structure of the informal city and a direct involvement of urban community within the transformative process. Thanks to this binomial the transformation of the walled city into a contemporary city is occurring in such a way that the city is preserving its historical meaning: not a 'museum city' but a city which is lively, active, dynamic and conscious of its own identity. Specifically, under the guidance of AMC, house's owners within the walled city, instead abandoning their real estate property for benefit of new building in the western city, have started to conceive their house as part of a common heritage, and the restoration of it as an adaptation to new standards of contemporary living. After this research and a brief analysis of some recent results of this transformative process, it can be stated how strategies of urban regeneration, morphologically based, might represent a solution technically, economically and socially efficient in case of historicized contexts.

Key Words: urban morphology, urban regeneration, history, Pol, urban community, India.

Urban morphological methodology and planning practice: the 'Plan d'Occupation des Sols' for Saint Gervais Les Bains (Haute Savoie, France). A case study

Laurence Pattacini, Ivor Samuels

University of Sheffield, Birmingham University

E-mail: l.pattacini@sheffield.ac.uk , ivor.samuels @googlemail.com

The study draws from previous research and publications related to the use of typological and morphological methodologies to prepare and produce local land use plans (Plan d'Occupation des Sols, POS) for local authorities in France (Samuels, 1993; Samuels and Pattacini, 1997; Samuels, 1999; Pattacini, 2001). The focus is on the evaluation of the practical application of the plan for Saint Gervais Les Bains in the past ten years and the resulting built environment. Saint Gervais Les Bains is a market town and tourist resort in the Val Montjoie, below the Mont Blanc massif in the French Alps. Following the adoption of the 'Loi de Montagne' in 1985, two land use plans (POS), which had zoned much of the land in Saint Gervais as constructable, were declared nul and void. A new plan was then commissioned from Qualipos, a multidisciplinary team of consultants in 1997. The main aim of the new local plan, ratified in 2001 was to identify specific characteristics and qualities of the local environment in order to devise rules and design guidance to generate new developments better integrated in the existing landscape and the traditional built environment. Similarly to the evaluation work undertaken for another French local plan in Asnieres-sur-Oise using the same typomorphological approach (Samuels and Pattacini, 1997), the study analyses some of the major projects implemented since the adoption of the POS and evaluate the extent to which the planning policies have influenced the form of these developments. Interviews with the relevant stakeholders and principle actors provide evidence to evaluate the effectiveness and limitations of the local plan since its adoption more than ten years ago. The aim is to identify how the morphological content of the local plan has influenced the planning and design process and how it has contributed to develop the specific local character of this alpine town. Fieldwork is scheduled to take place during February 2014 and it is intended to have the research completed in time to be presented at the ISUF conference in Porto in July 2014.

Key Words: typology, morphology, planning practice, local character, evaluation.

References

- Pattacini, L. (2001) 'Landscape and design guidance: Saint Gervais -les Bains', *Journal of Urban Design* 6, 317-325.
- Samuels, I. (1993) 'The Plan D'Occupation de Sols for Asnieres-sur-Oise: A morphological design guide', in R. Hayward and S. McGlynn (eds.) *Making bettr plces; Urban design now* (Butterworth heinemann, Oxford) 113-121.
- Samuels, I. (1999) 'A typomorphological approach to design: the plan for St Gervais', *Urban Design International* 4, 129-141.
- Samuels, I. and L. Pattacini (1997) 'From description to prescription: reflections on the use of morphological approach in design guidance', *Urban Design International* 2, 81-91



1.

Urban Morphological Theory

Theory in urban morphology is necessarily diverse and often reflects its origins in the habitual ways of thinking about urban form that have been conducted in the contributing intellectual disciplines. It is desirable that this diversity be accepted, welcomed, and strenuously engaged – not merely tolerated in a compartmentalized way in which there is no effective dialogue between dissimilar methods. At the same time, there is a great need to link the different approaches to morphological theorizing so that a path to ultimate integration can be enabled. In recent years, the clearest identity of theoretical formulations has belonged to what may be termed the ‘process typological approach’ (Italian architectural tradition), the ‘historico-geographical approach’ (British geographical tradition), the ‘configurational approach’ (space syntax), and the ‘spatial modeling approach’ (mathematical simulation). It is possible that a ‘geo-ecological approach’ may also be emerging in the literature, drawing on concepts common in the physical-environmental sciences, although this strand is least assimilated into current discourse over the theoretical content of urban morphology. Each of these theoretical domains offer only a partial and often highly selective account of the underlying principles that explain urban form in all its expressions and scales around the world. These underlying principles themselves, we may presume, should unite in some way to form a fundamental theory, the direct applications of which can help elucidate the circumstances of any and all cases—ultimately. This is not necessarily a super-theory, but rather a platform of interconnected logical relationships between form elements and their progenitors that can give firmer foundations for situating specific theoretical propositions within an all-encompassing framework of process-pattern signification. Therefore, it seems desirable to cultivate two streams of thought simultaneously in building theory in urban morphology. First, a stream that encourages the articulation of new types of theoretical thinking that may at first glance seem only poorly tied to existing thought, in order to test their relevance in explaining certain types of empirically discovered and described urban forms. Whereas the second stream ought to follow a line of basic inquiry into the ‘deep structure’ of urban morphological explanations, in order to find their commonalities and thereby improve their interrelatedness and power.

Michael P. Conzen

Modern city as modular construct

Kees Doevendans, Antonio Zumelzu Scheel, Bruno de Meulder

TU Eindhoven, the Netherlands and KU Leuven, Belgium

E-mail: c.h.doevendans@tue.nl

In its fight against a culture of contingency 20th Century urbanism was driven by two main assumptions inherent to modernity: i) Construction of a rational order by social-technical normalization – taking the city as a machine of progress – and ii) Construction of an abstract reality by means of aesthetic sovereignty – the world as autonomous work of art (Makropoulos, 1995). These tendencies determined morphology and typology of the modern city. This will be shown from a theoretical and practical perspective. The presentation will focus on: i) how above mentioned assumptions led towards a design method of modularization, which had radical consequences for morphology and typology of the city. Modularization was applied on different scales, such as functional zoning at the scale of the city, formation of neighborhood units on district level and so called stamps at the level of allotments. The concept of the *dwelling unit* figured as a key word; ii) examples of morphological modularization at the level of allotments, taking the *strip* as point of departure, theoretically in the creation of *stamps* as morphological and social building blocks for the modern city, aiming at the creation of society; iii) an analysis of the practice of modularization at the different scales in Woensel, the Northern part of Eindhoven, The Netherlands, a typical example of a modern industrial city; iv) an evaluation of the modularization method of modernism, especially its postwar ‘downfall into contingency’ and an attempt to rescale the Woensel-district in the line of modularization by formation of new modules anticipating needs of the future city by a pragmatic rather than theoretical approach.

Key Words: modernism, contingency, morphology and typology, modularization

References

Makropoulos, M. (1995) ‘Tendencies of the 1920s: On the discourse of classical modernity in Germany’, *Theory, Culture & Society* 12, 103 – 129.

The role of urban morphological theory in the contemporary urban theory (theory of the city)

Irina Kukina

Department of Urban Design and Planning, Institute of Architecture and Design,
Siberian Federal University. E-mail: ikukina@inbox.ru

Understanding of the contemporary ideal city-dream is focused primarily on the model of the compact city which consists of the unique multifunctional high density communities - kernels. Second attitude towards high quality of urban life is associated with understanding of dynamic synergetic uncontrolled urban processes and growing interest in the ways in which cities are changing their structures in this regard. Historical approach was developed in the search for the logical structure of the contemporary large city. In particular, a solution was sought to one of the biggest problems of the twentieth century – preventing urban sprawl. Terms such as ‘urban fabric’, ‘environment’, ‘landscape’, ‘genetic’ and ‘ecosystem’, and others borrowed from the natural sciences, became prominent in urban theory. Researching into, and adopting principles of, biology and geography became familiar aspects of urban analysis, design and planning. Ideas relating to landscape unity and heterogeneity, and the nexus of physical, biological and social processes came into urban analysis from the theoretical works. The urban landscape has become of increased interest in the practice of design and building. Town builders understand landscape as a spatial unit – as an integral combination of urban form and landscape form. The mapping of morphological units became a part of the historico-morphological and landscape approach to urban structural analysis. Historical successions of forms in the landscape were evidenced in surviving forms. Understanding of the morphological concepts such as ‘market concretion’, ‘landscape units’, ‘fringe belts’, other becoming necessity for the successful decisions in the urban planning and design.

Key Words: morphological concepts, contemporary urban theory

The phantom figure of the town centre

Jared Macken

ETH-Zürich. E-mail: macken@arch.ethz.ch

By the middle of the twentieth century, city officials and citizens of the metropolis were seeking methods and tools for revitalizing their city centres. Economic decline, destructive wars, and entropic planning doctrines all contributed to the decline of the city centre, a place once associated with a concept of collective identity and coherent urban form. As a result, cities began commissioning architects to design and implement town centre projects as redevelopment strategies with the expectation that these kinds of projects would provide moments of coherence in the already existing urban fabrics of the city. The outcome of these commissions is a consistent body of town centre projects designed in the 1960's and 1970's, each sharing common typological characteristics. Up to this moment in architectural history the town centre had not been implemented in this manner as a design strategy. In order to demonstrate that these town centre projects of the 60's and 70's are a product of their time, that they meet the characteristics described by architectural discourse, and that they have relevance within the historical record of the metropolis, this research utilizes a theoretical lens through which these projects will be analyzed. This lens comes from architectural theory and discourse produced in the middle of the twentieth century. The discipline of architecture at this time was dominated by a discussion about what urban form should be produced as a response to the newly constructed 20th century city. As a result, architectural theorists, such as Colin Rowe, Fumihiko Maki, and Anthony Vidler, were obsessed with describing what this new typology could look like and how it would respond to the urban forms that came before it. However, they never explicitly pinpointed what this typology is. Instead, this discourse about urban form has become a search for an elusive '*phantom figure*' of the city, a term introduced here as a way of defining this mysterious typology that was described but never actually found. The main output of this theoretical lens will be to show that the town centre projects are a sighting of this phantom figure and therefore provide a theoretical completion of a discussion within the discipline of architecture.

Key Words: architecture, urbanism, theory, figure, plan, third typology.

References

- Maki, F. (1964) *Investigations in Collective Form*, (School of Architecture, Washington University. St. Louis).
- Rowe, C. and Koetter, F. (1983) 'The crisis of the object: The predicament of texture' in *Collage City* (MIT Press, Cambridge, Mass.) 50-85.
- Vidler, A. (2013) *The third typology and other essays* (Seaforth Publishing, Barnsley).

Interior landscapes - a paradigm shift in contemporary urban regeneration strategies

Nicola Marzot

Department of Architecture – TU Delft. E-mail: nmarzot@tudelft.nl

Focusing on the European situation, the contemporary city is highly characterized by a building surplus, which is basically increasing. Paradoxically, the emerging framework is not anymore prompted and governed by the financial capitalism, as Saskia Sassen and Manuel Castell were describing it, but by its emblematic crisis. The world we have witnessed coming into existence over the last two decades, suddenly went into a process of unavoidable decay. As an immediate tangible effect, the European city urban landscape starts inheriting an embarrassing emptiness, punctuated by vacant buildings and waiting lands. In addition, the economic recession also brought to a labour emergence, which went crossing through all social classes, urgently affecting the most talented young generations. The encounter between the above mentioned lines is challenging the architectural practice on a new perspective. The traditional approach to urban design, defined by consistent program of brownfield refurbishment, necessitating of high density program to tackle the required investments in soil reclamation and infrastructures, is consequently leaving space to an unexpected experimental field of investigation. By comparing the most interesting case studies, urban regeneration programs seem to consider the existing urban morphology as an over exceeding landscape to be re-colonized on a tight time based perspective. The adopted strategies tend to partially ‘parasite’ the emerging field, performing as interior design practices. The new condition is also bringing to an interesting shift in paradigm at a theoretical level. Consequently, the structural approach to urban morphology needs to be verified and up to date. The proposed paper offers a selection of European best practices as a general premise, to focus on the city of Bologna, Italy as a new potential challenging laboratory, to drown conclusion on a methodological level of general validity for both urban morphology analysis and design.

Key Words: financial capitalism, crisis, vacant buildings, waiting lands, Bologna.

References

- Ciorra, P. and Marini, S. (eds.) (2001) *Re-cycle. strategie per l'architettura, la città e il pianeta* (Electa, Milano).
- Muratori, S. (1967) *Civiltà e territorio* (Centro Studi di Storia Urbanistica, Roma).
- Sassen, S. (1994) *Global cities in a world economy* (Pine Forge Press, Thousands Oaks).

Reading Lefebvre morphologically: a property-based conceptual framework in urban morphology

Yener Bař

Department of City and Regional Planning, Mersin University

E-mail: yenerbas@gmail.com

This paper proposes a conceptual framework based on property relations through a reading of Lefebvre's 'Production of Space' in morphological terms. The core of this framework is defined by a Lefebvrian notion, 'the dialectics of work and product'. Morphological implications in Lefebvre's conception of space are examined at two levels. Firstly, focusing on the role of (private) property relations in the production of urban form, the paper discusses the correlation between Lefebvre's main proposition –'each society produces its own space'– and the Conzenian notion of urban landscape as 'the objectivation of social mind'. Secondly, Lefebvre's work-product dialectic is reviewed as a historical process, through which urban space is formed both as 'work' and 'product'; as the unity of conflicting tendencies towards uniqueness and repetition, difference and homogeneity, creation and production. Lefebvre conceives the capitalist city as the domination of commodity production over urban space by its inherent violence of abstraction and quantification. Contradictions and illusions of abstract space are also internalized and represented in urban design approaches by the works of architects and city planners. In this context, the 'parcel' as a morphological element is analyzed as a unit of 'commodity'. The characteristics of parcel, subordinated by the requirements of commodity production, are extended into the broader categories of urban morphology, so that urban landscape is conceptualized as a contradictory outcome of private property relations and capitalist production. The paper is concluded with an evaluation on the potentials of a Lefebvrian framework in morphological research.

Key Words: Lefebvre, urban morphology, property relations, work and product, commodity.

Conceptualizing the morphogenesis of the Ottoman town through urban morphological theory: an interdisciplinary methodology

Ourania Bessi

Center for Balkan and Black Sea Studies, Yildiz Technical University, Istanbul Turkey
Centre for Byzantine, Ottoman and Modern Greek Studies, University of Birmingham,
UK. E-mail: OXB815@bham.ac.uk

This paper presents an innovative method of analysis which lies on the interdisciplinary investigation of the relationship between “defterology” and “urban morphology” (Lowry 1992, Conzen 1960). The devised methodology aims by paying tribute to M.R. Conzen’s theoretical apparatus to establish basic concepts applicable to recurrent phenomena in the morphogenesis of the early Ottoman town (Conzen 1960, 1988, 2004). Through the comparative analysis of the town plans of three towns (Didimoteicho, Komotini, Serres), which constitute the earliest Ottoman conquests in Europe (first half of the 14th century) within the strictly defined geographical area of the lower Balkans, we mean to explain the arrangement and diversity of the urban area in terms of plan types and resulting geographical divisions. The recovery of defterological (archival) data cross-referenced with miscellaneous metadata serves towards the reconstruction of the nowadays corrupted Ottoman town plan of the towns under discussion. Followingly, the adaptation of an evolutionary viewpoint spanning the reigns of six sultans over the course of a century and a half (14th-16th c.) means to trace existing and reconstructed forms back to their formative processes and to interpret them within a rationalized conceptual framework. The findings are striking and can be applicable to the study of the Ottoman city in general: the geographical result emerging gradually from the Ottoman settlement is a system of successive, broadly, concentric fringe belts (Whitehand 1967, 2007) separated from the kernel, i.e. the Byzantine (Christian) citadel. The Ottoman town corresponds exclusively to the development of the fringe belt. This evolution is attributed to specific historical circumstances which dictated that the kernel could only receive restricted accretional development during the fixation phase of the IFB, since it was occupied by the pre-existing Christian population.

Key Words: urban morphology; Ottoman morphogenesis; Historical Topography; Balkan urbanism; Fringe belt.

References

- Conzen, M.R.G. (1960) *Alnwick Northumberland: a study in town-plan analysis* (Institute of British Geographers, London) 4-11.
- Conzen M.R.G. (1988) ‘Morphogenesis, morphological regions and secular human agency in the historic townscape as exemplified by Ludlow’, in D.Deneke and G.Shaw (eds.) *Urban historical geography: recent progress in Britain and Germany*, 258-272
- Conzen M.R.G. (2004) *Thinking about urban form: papers on urban morphology 1932-1998*, (Bern).
- Lowry H. (1992) ‘The Ottoman Tahrir Defterleri as a source for social and economic history: pitfalls and limitations’, *Studies in Defterology*, Ottoman society in the fifteenth and sixteenth centuries, (Isis Press, Istanbul): 3-19.
- Whitehand J.W.R (1967) ‘Fringe Belts: A neglected Aspect of Urban Geography’, *Transactions of the Institute of British Geographers* 41, 223-233
- Whitehand J.W.R (2007) ‘Urban fringe belts: Development of an idea’, *Planning Perspectives* 3, 47-58.

Experience of Porto: understanding the physical environment

Cláudia Gonçalves Lima

Faculdade de Arquitectura e Artes, Universidade Lusíada do Porto

E-mail: clima.arch@gmail.com

This paper analysis uses a both objective and personal perspectives of the physical environment of Porto. People experience the city as it is in reality and also as it is imagined and conveyed by its representations. However, what people see is subjective and that varies for every individual. Direct experience is understood as experience, which is made through close relations, being also a reflection of people's memories and life experiences. The perceptions and experiences that are of interest for this study are those that are generated by individuals as they engage with and experience city life. The aim, as a result of these analyses, is to reach an understanding of how the physical environment facilitates people's behaviours and interrelations, conceptualising Walter Benjamin's notions of 'porosity', 'threshold' and 'shock' and drawing upon a multidisciplinary body of research works that has studied the multiple relations and impacts between the physical environment and people.

Key Words: physical environment, city life, experience, perception.

The Village of Nossa Senhora da Vitória in the context of the Portuguese urbanistic universe: matrices and singularities

Luciene Pessotti

Departamento de Arquitetura e Urbanismo, Centro de Artes, Universidade Federal do Espírito Santo. E-mail: [luciene.pessotti@terra.com.br/](mailto:luciene.pessotti@terra.com.br)

The territory of Portuguese America was a vast field of urbanistic experimentation during the colonization period. Portuguese references and matrices originated different urban morphologies that possess elements of erudite and vernacular tradition adaptable to the local conditionality. The physical-spatial configuration and the urban landscape of the first foundations possess traces of this cultural process which involved the adaptation of the scientific principles of Military Engineering, the Portuguese tradition on building cities, and the conditions that the environment and the process of consolidation of a new society had determined. The Portuguese expansion is a relevant contribution to the history of cities and urbanism. Different experiences in Africa, Asia, India and in America have given rise to urban forms that are at the same time exceptional and unique. These experiences possessed a global and local character because the references of Portuguese culture were used in the territories of the Metropolis and the colonies. In an effort to contribute with studies on this thematic, we will present in the form of a case study the urban morphology and landscape of the Village of Nossa Senhora da Vitória, founded during the period of 1551, its spatial matrices and the multiple references of the Portuguese urban culture.

Key Words: urban morphological theory, colonial urban morphology, spatial matrices, urban forms, modeladore agents.

Spatiality of multiculturalism

Mohammad Sarraf

School of Architecture and the Built Environment, KTH-Royal Institute of Technology
Sweden. E-mail: msarraf@kth.se

Living with cultural diversity, as but one aspect of social justice, has been the nub of the concern for an abundance body of the contemporary urban planning and design theory. How does the theory of urban form conceptualize the contemporary multicultural city of the West, where varieties of people, notwithstanding their differences, converge on, and share the built environment? The question of living with cultural differences is at the core of this research. The paper conveys a clear vision of multiculturalism ideology (Parekh, 2006), its emergence in political theory and its practice in the context of national to local scales, despite the widespread backlash against it. Exploring the contemporary urban planning discourse, the paper argues that gaining a deep “understanding of difference” (Sandercock, 2009) is set as the underlying ground for different approaches towards multiculturalism in the theory of urban planning. Elucidating the potentials of physical encounter, the research challenges the plausibility of the emergence of a deep recognition of difference through spatial encounter in the diverse society of today. Consequently, it proposes the ‘civility of indifference’ (Amin, 2012) to difference as an alternative ground for living with difference. Given the proposed common ground, the research tries to re-interpret multiculturalism policy within the urban design theory and its spatial application within the urban form studies. The crux of the argument is that in order to discern its inherently spatial dimensions, the multiculturalism idea should be recapitulated through the lens of ‘space’. Therefore, the morphological patterns of the spatial structure of the city, and its influence on the complexity of movement flow and social groupings (Hanson and Hillier, 1987), are discussed as a means of conceptualizing multicultural urban form.

Key Words: multiculturalism, living with difference, civility of indifference, urban form, urban morphology.

References

- Amin, A. (2012) *Land of strangers* (Polity Press, Cambridge).
- Hanson, J., and Hillier, B. (1987) ‘The Architecture of community: Some new proposals on the social consequences of architectural and planning decisions, *’Architecture et Comportement/Architecture and Behaviour* 3, 251 -273.
- Parekh, B. (2006) *Rethinking multiculturalism: cultural diversity and political theory* (Palgrave Macmillan, Basingstoke).
- Sandercock, L. (2009) ‘Towards a cosmopolitan urbanism: from theory to practice’, in Sandercock, L. and Attili, G. (eds.) *Where Strangers Become Neighbours: integrating immigrants in Vancouver, Canada* (Springer) 193-230.

New perspectives on the meaning of urban form

Alessandro Camiz

Dipartimento di Architettura e Progetto, Laboratorio di lettura e progetto
dell'architettura, 'Sapienza', Università di Roma.

E-mail: alessandro.camiz@uniroma1.it

The recent proposal to include 'meaning' in the ISUF definition of urban morphology (Conzen, 2013) was followed by some discussion (Kropf and Malfroy, 2013). Since the structuralist approach to architecture (Eco, 1967) and to urban studies (Barthes, 1967) urban semiotics has developed into an almost autonomous discipline: in the presence of a large amount of literature, this topic cannot be left to sociological studies alone. Urban form is the consequence of architects' and planners' activities and if there is some intentionality in their work, the result must have some significance (Strappa, 2013). In the absence of a written code, it could be argued that there cannot be meaning in urban form: we hypothesize a code developed by city builders through history (Smith, 2007) and hidden in urban fabric, where sometimes anthropomorphic and zoomorphic patterns appear (Guidoni, 1976). Two sculpted felidae aside of a gate bear the same meaning, 'be aware: this is an important entrance!' in a pre-Columbian city, in medieval Bergamo, in III millennium B.C. Egypt and in the Yuan dynasty China. The discussion on the recipients of urban meaning is central: across time urban spaces can pursue different levels of meaning (Rossi, 1966) and be aimed at different classes of recipients, with different purposes: to orient, to symbolize political powers, or to express spatial exclusion and inclusion. Urban meaning must differ from architectural signs which refer to one building, one set of users and one owner; the meaning of urban form, instead, is related to collective entities. The paper will consider different theories, comparing a selection of meaningful case-studies, with a focus on communities where more importance is given to collective values (Strappa, 1995) outlining why urban meaning has become ancillary nowadays and why it should be included in urban morphology studies in the future.

Key Words: urban-morphology, urban-semiotics, urban-design, history, theory.

References

- Barthes, R. (1967) 'Semiology and the Urban', in Leach, N. (1997) *Rethinking Architecture: A reader in cultural theory* (Routledge, London) 166-171.
- Conzen, M. P. (2013) 'Substance, method, and meaning in urban morphology', *Urban Morphology* 17, 132-134.
- Eco, U. (1967) 'Proposte per una semiologia dell'architettura', *Marcatré*, 34-36, 56-76.
- Guidoni, E. (1976) *Architektur der primitiven Kulturen* (Belser, Stuttgart).
- Kropf, K. and Malfroy, S. (2013) 'What is urban morphology supposed to be about? Specialization and the growth of a discipline', *Urban Morphology* 17, 128-131.
- Rossi, A. (1966) *L'architettura della città* (Marsilio, Padova).
- Smith, M.E. (2007) 'Form and meaning in the earliest cities: A new approach to ancient urban planning', *Journal of Planning History* 6, 3-47.
- Strappa, G. (2013) 'Territorial organism and urban knotting. Design methods for minor centers of Lazio', *FA magazine* 23, 19-23.
- Strappa, G. (1995) *Unità dell'organismo architettonico. Note sulla formazione e trasformazione dei caratteri degli edifici* (Edizioni Dedalo, Bari).

A methodology for the analytical interpretation of the urban fabric

Carlos Dias Coelho

FormaUrbis Lab, CIAUD and Department of Project, Faculty of Architecture – University of Lisbon. E-mail: cdcoelho.luotp@gmail.com

The urban fabric, as a physical reality, condenses the whole evolutionary process of the urban form, its whole history, which translates into a very specific outcome in each moment, the foundation of the formal richness of our cities. In this sense, the interpretation of the city shape should articulate the understanding of the urban fabric evolution with the interpretation of its features in a specific moment. The concept of urban fabric expresses the reality of the built city, a matter with real and temporal existence, which inextricably includes the open and the built space, the public and the private, that is, streets, parcels, buildings, infrastructures, etc., in other words all the physical city. The inseparability of its components refers the concept of urban fabric to a concrete and threedimensional reality, whose dismemberment in any analytical and fragmental system can only be carried out in order to identify its individual elements and facilitate its interpretation. This paper seeks to address this analytical facet of the interpretation of the urban fabric, which refers to its disaggregation in homogeneous areas and samples, and its decomposition into systems or elements, held at a given moment and abstracting all its evolutionary process. This methodology can be performed only as a theoretical approach of simplification of the variables involved, in order to allow an understanding of the composition of the urban fabric, its properties and characteristics, which should imperatively be combined with the evolutionary interpretation.

Key Words: urban fabric, morphological analysis, urban elements.

References

- Coelho, C. D. and Lamas, J. (eds.) (2007) *A praça em Portugal: Inventário de espaço público – Continente, Squares in Portugal: Public space inventory – Mainland* (DGOTDU, Lisboa).
- Coelho, C. D. (eds.) (2013) *Cadernos de Morfologia Urbana: Os Elementos Urbanos 1*, (Argumentum, Lisboa).
- Caniggia, G. and Maffei, G. L. (1979) *Composizione architettonica e tipologia edilizia, 1: Lettura dell'edilizia di base* (Marsilio Editore, Venezia).
- Cozen, M. R. G. (1969) *Alnwick, Northumberland: A study in town-plan analysis* (Institute of British Geographers, London).
- Merlin, P. and Choay, F. (1988) *Dictionnaire de L'Urbanisme et de l'Aménagement* (Édition Dunod, Paris).
- Muratori, S. (1960) *Studi per una operante storia urbana di Venezia* (Istituto Poligrafico dello Stato, Roma).
- Panerai, P., Depaule, J-Ch., and Demorgon, M. (1999). *Analyse Urbaine* (Éditions Parenthèses, Marselha).
- Solá-Morales, M. (1993) *Les formes de creixement urbà* (Edicions UPC, Barcelona).

Ambiguity in the definition of built form

Karl Kropf

Department of Planning, Oxford Brookes University; Urban Morphology Research Group, University of Birmingham. E-mail: kkropf@brookes.ac.uk

The paper reports on a detailed critical analysis of the definitions of built form as used in urban morphology. The analysis reveals ambiguities that are inherent to the generic structure of built form. The results reinforce the point made by Christopher Alexander in his essay, 'A city is not a tree', that the built environment is more accurately characterized by overlapping rather than strictly nested sets. A given element can be in more than one category and so can have more than one meaning. But if we seek to take a comparative approach to the study of built form, how do we deal with that ambiguity? How do we ensure we are comparing like with like? The overarching aim of the analysis reported here was to establish a common reference point for examination of the different aspects and elements of urban form in the comparative study of cases from different times and places. Seminal works examined in detail, include those of M. R. G. Conzen, Gianfranco Caniggia and Gian Luigi Maffei. The starting point is the common conception of a hierarchical relationship between buildings, plots and streets and the overlapping of aspects and elements. Different types of ambiguity inherent in the generic structure of built form are identified. Incorporation of these into a rigorous conception of the hierarchy allows for the richness of overlapping sets, reconciles earlier conceptions and accommodates a wide range of specific forms.

Key Words: urban form, structure, hierarchy, abstraction, comparative study.

Disruption and origins: towards a theory of urban evolution

Brenda Case Scheer

University of Utah. E-mail: scheer@arch.utah.edu

Taking on the challenge presented by a recent review of the book *The Evolution of Urban Form* (Scheer, 2010) and others in *Urban Morphology* (Kropf, 2013) this paper will summarize a few key concepts and constructs arising from previous research that must be examined before a larger theory can be proposed. For this work, the construct of an analog of the organic evolution with its “parts making up the whole” is discarded, which is a radical departure from much of the theory that has already been produced. Instead, I am seeking: i) a level of wholeness abstracted from observations of the reality of urban form and its change, ii) a theory that corresponds to most urban form not just traditional closed cities, and iii) a theory which is particularly useful for practice. The components of form that we have all found useful: buildings, plots, streets, tissues, districts, remain in this analysis, but they are reconfigured with different kinds of emphasis, for the sole purpose of understanding change over time, classifying common patterns, and identifying disruptions. Urban physical elements are thus arranged as simultaneously present at the same scale, and having relationships that can be characterized as origination or disruption. The elements are further animated in time by an understanding of the effects of typical persistence on each element separately and by the effects of one element on another due to differing rates of change.

Key Words: typology, practice, evolution, theory, disruption.

References

- Kropf, K. (2013) ‘Evolution and urban form: Staking out the ground for a more mature theory’. *Urban Morphology* 17, 136-49.
- Scheer, B. (2010) *The evolution of urban form: Typology for planners and architects* (Planners Press, Chicago).

From the scientific origin to current research status: the challenge and prospect of the urban morphology research in China

Menghe Wu¹, Chunhui Shi², Feng Song¹

¹College of Urban and Environmental Sciences, Peking University,
Beijing 100871, China.

²Yuanpei College, Peking University, Beijing 100871, P.R. China.
E-mail: shich1991@163.com , viola_wumenghe@163.com ,
songfeng@urban.pku.edu.cn

The urban morphology research of China has its own tradition and has absorbed theories from western countries, in the practice of which, however, has come across several difficulties, including the ones caused by the different understanding of researchers about the nature of urban morphology and the ones that caused by the differentiation of research objects. This paper starts with the tracing back of the science of morphology. Urban morphology, as a branch of morphology, is a discipline studying urban form and in accordance with morphology in nature, primary aim, object, research methods, etc. Based on these aspects, this paper then puts emphasis on the comparative analysis of the tradition and status in quo of urban morphology research in China and western countries, in order to figure out the underlying causes of the current problems and go for a promising future in the urban morphological research of China.

Key Words: origin of morphology, theory, comparative study, China, western countries, Conzenian School.



2.

Urban Morphological Methods and Techniques

The identity of any field of study or discipline is inextricably bound up not only with what the discipline does but the way it does it. We are defined, in part, by our methods not least because methods to a large extent fall out as a logical consequence of the subject matter. At the same time, our methods are a reflection of where we want to go with the subject and what we want it to become. But what happens when the field is multi-disciplinary and the subject as multi-faceted as the city? What happens when 'we' are architects, archaeologists, anthropologists, geographers and historians? The multiplicity of methods potentially becomes a liability rather than an asset. The step back out of this corner is the recognition that urban morphology is, in part, a meta-discipline, a fact that goes back to the inception of the field. Goethe in his preliminary notes on morphology set out the following sequence of thoughts. "Characterization and limitation of the field in which we are working; i) phenomenon of organic structure; ii) phenomenon of the simplest structure which appears to be a mere aggregation of parts but often explainable just as well through evolution and epigenesis; iii) necessity of considering all expository methods together, not to thoroughly explore a thing and its nature, but to give at least some description of the phenomenon, and to impart to others what has been perceived and seen (Goethe 1952, p85). The last note provides the perspective that gets us out of the corner. The multiplicity of methods becomes an asset when we see that one of the roles of morphology is to coordinate the findings of other disciplines around the unifying aspect of *form* (Wilkinson 1962). This is not to say we don't have 'in-house' methods, far from it. It is to say that the coordinating framework is part of morphological method. So, whether the primary investigation is in-house or not, part of what we need to do is to *situate* the results within the framework. To make the most of the information we need to see where it sits within to the body of accumulating knowledge and how it is related to the other parts.

Karl Kropf

References

- Goethe, J.W. (1952) *Goethe's Botanical Writings*, translated by Bertha Mueller (University of Hawaii Press, Honolulu).
- Wilkinson, E. M. (1962) 'Goethe's Conception of Form' in Wilkinson and Willoghby (eds.) *Goethe: Poet and Thinker* (Edward Arnold, London).

Morphological change in Um Al Sharayet residential neighborhood - Albirah and Ramallah

Shaden Q. Awad

Department of Architectural Engineering, Birzeit University, Palestine

E-mail: sqasem @birzeit.edu

Um Al Sharayet neighborhood in the twin cities of Ramallah and Al Bireh, Palestine is one facet of rapid urbanization in the Palestinian context. This area was transformed from agricultural-undeveloped land to one of the most dense residential neighborhoods that evoked the major urban restructuring and transformation in both cities during the 1990-now. The aim of this paper is to study the evolution of Um Al Sharayet as an area that located at the periphery of Al Bireh City, surrounded by residential neighborhoods, Al Amari refugee camp, area C and Jerusalem municipality land. The study also will analyze the interrelation between the neighborhood urban transformations and the spatial and urban development of Ramallah and Al-Bireh and define the main factors that affected the urban change. Finally the study will examine the urban fabric and the neighborhood's spatial quality. In order to read and analyze the neighborhood of Um Al Sharayet an analysis of the morphological aspects will be done so as to understand. An analytical approach based on the Conzenian School and space syntax method will be applied in the study.

Key Words: Ramallah, Al Bireh, Um al sharayet, urban transformation, spatial quality, morphological analysis.

Commercial strips' evolution in a suburban context: a morphological analysis of Taschereau Boulevard in Brossard (Quebec, Canada)

Adnan Boursas

School of Architecture, Université Laval (Quebec, Canada)

E-mail: adnan.boursas.1@ulaval.ca

The Commercial Strip is a quintessential feature of the North American Suburban Sprawl. Taschereau Boulevard, located on Montreal's south shore, displays the collage of big boxes, extensive parking lots, road segregation and disconnected residential developments. Since Venturi, this landscape is vested with cultural meanings about the American dream. Indeed, Taschereau Boulevard contributed to the growth of Brossard (1958), a new suburb that became home for a higher ratio of immigrants in the metropolitan area. While cultural identity and social aspirations provide sociological clues for the selection of a neighbourhood, Brossard's urban form adopted conventional North American suburban patterns of streets' hierarchy, land use zoning, and building types for residential and commercial premises. After 50 years, the resilience and stability associated with the suburban lifestyle is challenged. The infrastructures and buildings confront the end of the original life cycle planned for 40 years. The demographic fabric stretches to include a wider range of classes and age groups. The land values and profitable investments require higher density of urban development. Finally, residents and investors express new expectations regarding the amenities and images for their neighbourhood. With a degree of bravado, Brossard's mayor declared that Taschereau Boulevard should be redesigned as the Champs Élysées. Thus the central question: how could transformed this commercial strip? Using the tool developed by Vitor Oliveira, a morphological analysis explores the evolving degree of urbanity, in the past 50 years and how it could evolve in future proposals. This exploration raise both issues regarding the effectiveness of the analytical method in a suburban environment, and the capability to redesign such environment, between the urban and suburban ideals and their spatial consequences on land use, mobility and the public and private spaces.

Key Words: 'morpho assessment tool', 'commercial strip', and 'morphological analysis'.

Urban design and transition morphologies. Prospects for intervention in Lisbon – Alcântara

Carlos Henriques Ferreira
CIAUD, FAUL. E-mail: cferr@fa.utl.pt

Urban growth forms revealed the interactions of social and economic contexts with geomorphological nature of the territory. Some parts of the city became a successive challenger on the ability to adjust and response between its morphological and architectural nature. In this sense, Alcântara is one of these paradigms processing in Lisbon, assuming as a defensive barrier and as the motor area of great transformations, as the limit of urban growth and opportunity to further accessibility test. The areas of historical transition in the cities represent a permanent challenge to review the process of urban expansion and also new ways to approach the project. Transition areas call for a process of reflection and intervention where opportunities are as appealing as constraints encountered, especially at the level of the infrastructure commitments. The work presents a set of guidelines for the areas of transition as Alcântara considering the historical and cultural context of these areas and the strategies/opportunities for urban projects in a sustainable development. The results presented include a set of guidelines, which includes a critical perspective on the various instruments of territorial management in place, as well as the interaction of these with the conceptualization mechanisms of the project.

Key Words: urban design, intervention in Alcântara, urban morphology, projects for Lisbon, rehabilitation of the city fringes.

Urban morphological elements studies: for describing generated urban form

Qian Li, Wowo Ding

School of Architecture and Urban Planning, Nanjing University
liqian82@nju.edu.cn, dww@nju.edu.cn

Urban morphology represents entire city areas or built environment consisting of two parts: generated form and planned form, in terms of their growing processes and morphological characteristics. In classic urban morphological theories three morphological elements, such as streets/blocks, plots and buildings have perfectly defined urban physical form. However, these elements are constituted as the top-down hierarchical mechanisms, which could not fully express morphological feature of generated form. Following previous morphological studies, it is worthwhile to further examine these uncertain conditions.

To clarify the relevance of morphological elements and characteristics of two forms, four cases including both generated form and planned form were chosen from the same area: southern Jiangsu province. Based on morphological analysis a comparative study was made among those cases. This paper will present that two factors: topography and street crossing pattern should be employed for identifying the morphological feature of generated form. In conclusion, the generated form can be defined by integrating new factors into the existing morphological elements. It also shows the value of urban morphological research for urban design method.

Key Words: Generated Form; Morphological Element; Topography; Street Crossing Pattern

References

- Conzen, M.R.G. (1960) *Alnwick Northumberland: a study in town-plan analysis*, Institute of British Geographers, London.
- Ding, W.(2001) *The generation of a village—the study of villages in the ZJG region* (ETH University Press, Zurich).
- Kropf, K. (1993) ‘An enquiry into the definition of built form in urban morphology’, unpublished PhD thesis, University of Birmingham, UK.
- Levy, A. (1999) ‘Urban morphology and the problem of the modern urban fabric: some questions for research’, *Urban Morphology* 3, 79-85.
- Moudon, A. V. (1997) ‘Urban morphology as an emerging interdisciplinary field’, *Urban Morphology* 1, 3-10.
- Osmond, P.,(2010)‘The urban structural unit: toward a descriptive framework to support urban analysis and planning’,*Urban Morphology* 14(1), 5-20.
- Oliveira,V. (2013) ‘Morpho: a methodology for assessing urban form’, *Urban Morphology* 17, 21-33.

Urban morphology of streets in central area of Vitoria (ES)

Flavia Botechia, Agnes Thompson

College of Architecture and Urbanism, Brazilian Faculty Multivix - Vitória (Brazil)

E- mail: flaviabotechia@yahoo.com.br , nisthompson@gmail.com

It is proposed the construction of frame-type morphology, representative of the urban form, from the analysis of streets and its typological variations, of the central area of Vitória (ES), featuring characterizing the relationships between physical elements (buildings, lots and streets) through analysis of floor plan and cross-sectional profiles, produced with graphic scale, in order to allow for correlations between studied elements of different typologies. The theoretical framework is based on Panerai et al. (2013), Oliveira (2013), Proença (2011), Borthagaray (2010), Busquets et al. (2004) and Moudon (1994). This research is justified by the necessity of studying the city of our century, through the demonstration of how they were built and transformed in Latin American cultures, using the case study. The central area of Vitória (ES) – the first urban area to be occupied in the island and with Portuguese urban form influence cause of the colonization in 1551 – was chosen as a pretext and context for the development of a study group, with reference in urban morphology, because it is the subject of frequent analysis of the student of architecture and urbanism in our school, holds proximity to the urban reality of the students, and has current reliable cartographic bases do make the analysis and the maps. The registration and analysis of cycles of urban transformation of the physical dimension of certain tissues, give a meaning to the study of morphology, when combined with the practice of urbanism and the potential to be effective instrument for design of the city.

Key Words: morphology, center, typology.

References

- Borthagaray, A. (2010) *Conquistar a Rua!: Compartilhar Sem Dividir* (Romano Guerra, São Paulo).
- Busquets, J. et al (2004) *El centro historico de Barcelona: un pasado con futuro* (Ajuntament de Barcelona, Barcelona).
- Moudon, A. V. (1997) 'Urban morphology as an emerging interdisciplinary field', *Urban Morphology* 1, 3 – 10.
- Oliveira, V. (2013) *A evolução das formas urbanas de Lisboa e do Porto nos séculos XIX e XX* (Universidade do Porto, Porto).
- Panerai, P. et al (2013) *Formas Urbanas: a dissolução da quadra* (Bookman, Porto Alegre).
- Proença, S. S. B. (2011) 'A diversidade da rua na cidade de Lisboa. Morfologia e morfogênese', *IV Seminário Internacional de Investigación en Urbanismo* (DUOT; UPC, Barcelona) 257-271.

Street characteristics and pedestrian experience, Vila Real as a case study

Joana Duarte, Jorge Carvalho, Frederico Sá

Department of Social, Political and Territorial Sciences, University of Aveiro

E-mail: jmduarte@ua.pt , jcarvalho@ua.pt , fredericomsa@ua.pt

This manifesto – draws from a master research – focuses on the streets while vital organs of public space. The streets and their small enlargements are geared to accommodate pedestrians and other soft modes of transportation. Denying its importance as a stage for pedestrian experience means hindering its essence as public space. Under this assumption, the research goal was to investigate how important are the street characteristics for pedestrians experience. This study was assumed to be an asset for urban planning because it paid attention to the pedestrian's perspective. This work provides a specific typology of streets that can influence planning and design options. The methodology adopted included two different phases: i) The first aims to develop two theoretical frameworks, for further application to the study area (one regarding the pedestrian experience indicators and another related to the street characteristics); ii) The second concerns the application of both theoretical frameworks, as a preliminary test, implemented to a sample of twelve streets, in the city of Vila Real. Although the outcomes about the selected and characterized streets and study area are just exploratory, the results are relevant. It was concluded that the characteristics that comprise the load of the marginal buildings have a great influence on the level of pedestrians experience. On the other hand their physical characteristics or the load arising from the automobile functional performance has less influence. Although the hypothetical nature of the framework and its need of improvement and validation, it arises as a potential contribution for future investigations.

Key Words: street, pedestrian experience, characteristics of the street, public space, urbanism.

Emergent streets. The study of the form and type

João Silva Leite

FormaUrbis Lab, CIAUD and Department of Project, Faculty of Architecture –
University of Lisbon. E-mail: jao.mleite@gmail.com or joaoleite@fa.ulisboa.pt

The introduction of some mobility infrastructures or their simple positioning in certain urban contexts led, in last decades, to urban transformation processes in the territories that go through. It prints, on the infrastructure, changes of character and form. This acquires, now, new qualities, accumulating on themselves the ability to withstand urban fabric. Emerge on the territory linear urban elements with complex morphologies that have points of contact with the classical definitions of street, seen that unite, support and structure the contemporary territory. Thus, the communication exposes a typification essay of two different urban layouts typologies of these emergent urban elements. Urban morphology classic techniques are used for this purpose, allowing the creation of transversal lines of analysis between these emergent elements and other consolidated urban structures. The typification exercise is the result of detailed study of two specific cases, the N378 and N117, located in the Lisbon Metropolitan Area, and were duly crossed with other comparable cases located in different urban contexts in Portugal. The communication seeks to draw the attention of the increasing relevance of these emergent urban elements and how the study and understanding of the basic features of their urban layouts could allow a more effective knowledge of the function and capabilities of such urban structures in support, aggregation, structure and hierarchy of certain territories. It is intended to enhance the process of typification as an important tool in the study of these morphological structures, and its final product, seen as a didactic object of production of urban spaces with more balance and quality.

Key Words: emergent street; mobility axis, typification, structural element, metropolitan territories.

The Demi-Block

Derry O'Connell

School of Geography, Planning and Environmental Policy, University College Dublin,
Ireland. E-mail: derry.oconnell@ucd.ie

The study of urban form tends to focus on the block rather than the street and because urban planning tends also to do so, the city is reproduced block by block. In the traditional town, the street was the binding line, along which plots collected individually. In such arrangement, the transect from centre line of street to tail seam of plot represented the axis of individual participation with the town, carrying within it such spatial distinctions as front and back, or public and private, the clarity of which is somewhat diffused in the now-popular perimeter block layout. When city form is defined by blocks, and the individual no longer addresses the city through a plot façade, the street as focal axis has less clarity and the block core becomes a competing space. In such arrangement the street may become a dividing boundary. There have been some attempts in planning to correct or modify this trend. A common part of both street and block is the demi-block, or the area, defined by one side of the street and its plots, which forms half of the street or half of the block, according to how it might be viewed. If in the way we perceive the city we transfer the concept of boundary from the street to the block core, the true boundaries of character areas and morphological regions can sometimes be seen differently. Drawing from a current research study on Irish towns, this paper considers the demi-block and its transect as a subject of urban study, looking at current metamorphosis in plot structure and the emergence of such concepts as block inversion, the rise of semi-private place, and the significance of change in the relationship between street and block core.

Key Words: urban block, plot transect.

Towards a qualitative density: from the block to the street as the urban fabric structuring unit

Magdalena Vicuña

Pontificia Universidad Católica de Chile. E-mail: mvicunad@uc.cl

Contemporary urban growth trends necessarily imply that urban policies must orient towards densification. In this context, density must be addressed not only as a quantitative parameter, but also from the role it plays in the strengthening of urbanity and qualifying the public sphere. The principal aim of this research is to clarify and re-conceptualize density, in order to find criteria that allow integrating the abstract and quantitative vision of density, and the qualitative components that define urban form. A re-conceptualization of density would imply a shift in the focus of urban analysis: if residential density is measured in the block, that is, in the private sphere; qualitative density is expressed and experienced in the street, that is, the public sphere. Indeed, Phillipe Panerai proposes that the urban fabric basic unit not necessarily corresponds to the block, but it can be represented as a portion of street that distributes on both sides a set of plots. In this sense, we can pose the following question: Is the street the morphological unit that allows a transition to a qualitative density? The proposed methodology consists on the survey of 3 representative streets of contemporary Great Santiago, Chile: i) the peri-urban social housing condo street, ii) the affordable housing street in the peri-center, and iii) the street of intensive densification in the city's central core. Density-related indicators are raised for these streets, in order to understand its relation with qualitative variables of urban fabric's morphology. Therefore, this article explores methods for analyzing qualitative density from the street as morphological unit, with the aim of providing new approaches to city planning and design, proposing a change in the focus of urban analysis and urban project.

Key Words: qualitative density, urban morphology, Santiago de Chile.

Studies and hypothesis on Mdina and Rabat urban form

Antonio Camporeale

Department of Architecture and Project, University of Rome 'La Sapienza'

E-mail: antonio.camporeale.7@gmail.com

The study presented here deals with the theme of the reading of the urban form of the city of Mdina, the old capital of the island of Malta, and Rabat. The interest in the study of these two urban centers, whose fortunes are inextricably linked to structural reasons, arises from some geographical considerations. The island of Malta, in fact, lies at the center of the Mediterranean Sea, in a central position respect to cultural exchanges between the peoples who inhabited its shores and the resulting hybridization dynamics that have characterized its history. Dynamics that can be researched in Maltese architecture, built result of contributions and strong exchanges between the different cultural areas and during different historical periods. Mdina, with Rabat, still preserves its urban form, readable and comparable with other centers such as Birgu and Valletta. The analysis of its urban form aims to highlight some typical features of the Mediterranean: the presence and persistence of the house with a courtyard in the building tissues. It was also possible to advance a hypothesis, based on the method of study and reading of the alignments walls, identification of medieval pathways, advances and the size of the bands attributable to the built, of any planned reorganization by Romans, more evident in the tissues of Rabat.

Key Words: method, urban tissues, typological process, urban organism, Mediterranean Sea.

Territorial and urban planning in northern Sinaloa

Giancarlo Cataldi, David Urios, J. Colomer, A. Portalés

E-mail: giancarlo.cataldi@gmail.com, umdav@urb.upv.es, vcolomer@urb.upv.es

A scientific reading of the territorial structure of both municipalities of Guasave and Ahome, in northern Sinaloa, has been carried out starting from the urban analysis through three successive workscales: territory, city and quarter. In the first approach, the agricultural planning of a vast portion of the coastal plain where a hierarchical grid of roads and canals modulate the territory with high precision is detected. At the city scale, it is revealed the presence of natural and historic traces, that compete with the geometric rigidity of the territorial grid to configure the present urban fabric of Guasave. The Sinaloa river and the courses that interconnected the old Sinaloa missions of the 17th century are historical paths that become incorporated into the urban planning of the 20th century, where the development of the central quarter (Colonia Centro) acquires a differential character. The old core mission of the Nuestra Señora del Rosario Church generated, since 1930, a urban grid that followed the geometric pattern of the colonial city with square blocks on orthogonal axes deviated slightly from the traces of the agricultural macroplanning. It is flexible in any case, because settles into the plot divergent paths departing north from the church square and sets its limits to the natural accidents or historical traces.

Key Words: Guasave, Ahome, Sinaloa, Mexico, urban and territorial planning.

Typological series - A methodology for the analysis of pre-existing structures in contemporary urban fabric

Pedro Martins

Forma Urbis Lab, CIAUD, Faculdade de Arquitectura da Universidade de Lisboa

E-mail: pedro.vasco.martins@gmail.com

The shape of the city is made of constant construction and reuse of a multiplicity of urban elements. These elements overlap each other in space and time through various processes in continuity or rupture, creating a complex evolutionary structure. One of the most interesting processes of urban transformation is the urban sedimentation, in which different time periods and cultures contribute with information to form the urban fabric, constantly reusing and reinterpreting the past in new urban structures. The urban fabric thus preserves in a particular way fragments of a past form into the fabric of the new structures that overlap them, allowing through the conduction of a detailed analysis, the detection and interpretation of the remains of missing structures, as well as rediscovering their original shapes by comparing them with typologically similar structures. In this presentation we address the typological series method as a tool for the study of the urban fabric that results from processes of urban sedimentation. In this method we complete and expand the partial and fragmentary nature of the information available through conventional sources like history and archeology, by comparing the remains of pre-existing past structures with the typological matrix extracted from similar structures for which there is better documentation. So in addition to improvement of the analysis of the known remains from history and archeology, the method of typological series allows the understanding of the surrounding urban fabric, enabling the discovery of new remains or even contributing to the construction of new hypotheses identifying previously unknown structures.

Key Words: urban morphology, urban sedimentation, urban fabric, typology, urban preexistences.

The memory of informality: the typological cycles in the self-built environment

Milton Montejano Castillo

School of Architecture and Engineering, Instituto Politécnico Nacional, Mexico

E-mail: mmontejanoc@ipn.mx

Informal or self-built settlements are concentrations of dwellings, built without compliance to official norms or urban planning. Today, it is estimated that there are approximately one billion people living in these conditions. This represents about one third of the world population living in cities today. In order to understand and upgrade the conditions of these settlements, it is of crucial importance to monitor their speed of change along the time. However, such a task represents a challenge because these settlements are rarely documented in records or official sources. Departing from this situation, an attempt to track these changes based on the example of one of these settlements: ‘Ciudad Nezahualcóyotl’, a 1 million people city, that during the last fifty years has been informally developed as part of the Metropolitan Area of Mexico City. Such a method is based on the identification and analysis of the typology of dwellings and their transformation through the time. Based on empirical evidences, we may say that morphological changes in informal settlements do not occur at random or chaotically. Rather, such changes are susceptible to be explained and traced back at the urban scale, by means of the observation of building types and the logic of changes they follow in time. That is to say, a particular morphological arrangement of the “informal city” itself. With the latter, we may confirm the idea that urban morphology goes beyond giving answers to the logic of the built environment patterns, and may also provide us with powerful tools to decide and prioritize public upgrading actions.

Key Words: informal settlements, typologies, morphology, building cycles.

From urban form to architectural design: the case of Guasave

Vincente Colomer, Ignacio Reig, Luis Armiño, Gonzalo Vicente-Almazán

E-mail: vcolomer@urb.upv.es, ibosch@pra.upv.es, luis@arminoarquitectos.com,
gvalmazan@arquired.es

The article is aimed at putting to test a method to address urban and territorial issues, by means of using primarily the resources of architectural project as a basic tool. This method requires a formal and functional synthetic reading of the addressed object (a city, or a part of its territory), to identify some of the imbalances whose correction is needed to enhance its potential values. It is also necessary to identify and delineate the areas, and their corresponding action programs, in which architectural projects may be undertaken in a coordinated manner. Finally, the propositional development requires the completion of architectural proposals, including consistent plans and drawings, elaborated both in the dihedral classic representation system, elevations and sections, as well as models and virtual images. The material thus obtained shall be the basis for the participation of stakeholders in planning policy decisions, allowing for greater action and urban and architectural quality. Guasave is presented as a case-study recently conducted

Key Words: urban morphology, urban project, intervention strategies, regeneration by induction, territorial rebalancing.

Urbanity and legibility at Av. Cora Coralina, Goiânia-GO/ Brazil, from Jane's Walk movement

Ana Farias, Liza Andrade, Gabriela Tenório

FAU/UnB, REABILITA

E-mail: carol@sobreurbana.com , lizamsa@gmail.com , gabrielaTenorio@gmail.com

Throughout the twentieth century, urban planning was applied in Brazil to build several cities, like Goiânia, where a picturesque residential neighborhood, the South Sector, was inspired by the organic design of the garden city. However, this neighborhood suffered interventions that contradict its own nature, such as the implementation of Av. Cora Coralina, projected to ease the traffic in the region. That avenue cut culs-de-sac and crossed through green areas and is bounded by closed, uniform and passive edges, unattractive to walk or stay. Monotonous landscapes like this led to criticisms of planning models, by neglecting the reality of the intervention areas. With the failure of the planning, the urban design discipline appeared, offering an interdisciplinary humanist approach and treating the space on local scale and linked to other reality aspects. Authors like Jacobs, Lynch, Appleyard, Whyte, Gehl, Hillier and recently Kohlsdorf, Holanda and Tenório, intensified research on the relationship between space and society, forming the conceptual framework of legibility and urbanity. This research aims to demonstrate a method of evaluating the morphological performance of the avenue, regarding its urbanity and legibility, validated by the Jane's Walk movement, a community walk tour inspired by the ideals of Jacobs. During a walk in 2013, participants revealed not feeling welcome in the public spaces that avenue. Starting from the user's perception and urban design guidelines on pedestrian scale, we elaborated a diagnosis on the study area and pointed paths for its rehabilitation, aiming to provide attractive spaces for walk, stay and social life.

Key Words: urbanity, legibility, walkability, Jane's Walk, morphologic dimensions.

The positive dissemination: interpreting a new process for urban form analysis

Andrea Gonçalves, Ana Tomé, Valério Medeiros

Instituto Superior Técnico, Universidade de Lisboa

E-mail: andrea.goncalves@tecnico.ulisboa.pt

This paper discusses the role of the urban form for the positive dissemination processes inherent to urban phenomenon. Positive dissemination means the interrelation of urban elements/factors, so that a particular action is analysed according to its propagation effects, resulting in a continuous transformation over the urban system, with impact on its regeneration. It is assumed that certain places, public spaces or buildings, by their syntactic, typological and/or functional features, have the capacity to trigger these processes. A diachronic study of Évora (Portugal) urban form, under the Space Syntax perspective, was the research focus. Throughout this study configurational changes were identified and interpreted as the reflex or the origin of new urban dynamics which contribute to urban dissemination processes. The results and corresponding discussion enabled the creation of a conceptual and methodological framework to categorize the selected cases, aiming at the distinction between positive and negative urban dissemination focus, as well the differentiation of their morphological, functional and resilience characteristics. The methodological approach, first, requires a record for each selected case/focus of urban dissemination, analyzed both as individual system and as part of a global system, and, second, implies the research and critical reflection of theoretical references that support a category system able to characterize each type of case/focus. By integrating a wider research that aims the creation and validation of an urban regeneration strategic model boosted by positive dissemination processes, this study intends to contribute to the understanding of these processes that are directly dependent from the type of case/focus.

Key Words: focus of positive dissemination, urban regeneration, category system, urban morphology, Évora.

City or parish: dilemmas in Brasilia, Brazil

Frederico de Holanda

Faculdade de Arquitetura e Urbanismo, Universidade de Brasília

E-mail: fredholanda4@gmail.com

Surprisingly enough, neighbourhood unit related concepts have lasting appeal. Time and again it resuscitates in urban morphological debates. This is the case concerning current controversies about the preservation plan of Brasilia, Brazil's Federal Capital, as a World Cultural Heritage site. A proposal has been prepared by the Local Government, submitted to the Legislative Power, and widely publicised so that contributions from Civil Society might arise. One wonders what is worst: the governmental proposal or its critique stemming from Civil Society. On the one hand, the governmental proposal sticks to modernistic principles of urban design, considering individual buildings or city blocks in themselves, not in their relation with the surroundings. A piecemeal approach predominates, not one which is about the attributes and qualities of *space between buildings*, or of *sets of blocks* defining *morphological urban types*. Units under analysis are delimited by road *axes*, not by a set of *built volumes* and the *public places* they define. On the other hand, outstanding speakers on behalf of Civil Society do not consider *the city as a system*, but rather as i) a patchwork of isolated parts and ii) the sum total of, again, isolated dimensions, not a phenomenon which involves simultaneously *practical* and *expressive* aspects – functional, bioclimatic, economic and sociological, in the first case, imagistic, affective, symbolic and aesthetic, in the second. The critique does not understand that, *e.g.*, traffic and built densities are both *variables* in a plan; it rather attacks a more compact city because of purported traffic jams therein implied (it sees nothing beyond the car paradigm that presides over the city since its inception). They also demonize supposedly bad impacts (and highly mythical, one might add) of measures in local communities, ignoring that such measures have a wide and important effect on the city as a whole – as a *system*. This paper draws on a set of theoretical, methodological and technical trends, ranging from Kevin Lynch, through Jan Gehl and Alain Bertaud, to Bill Hillier and Space Syntax Theory, besides our own findings. The benefits of a systemic approach of the city are revealed – one that does not consider it a sum total of parishes nor of isolated disciplinary approaches.

Key Words: Brasilia, preservation policies, architectural ideology, conflicting interests.

Intensity of use in public squares in the central area of Florianópolis/SC - Brazil

Cláudia Maté, Talita Micheleti, Renato T. Saboya, Alina G. Santiago

Universidade Federal de Santa Catarina – UFSC, Brasil

E-mail: claudiaamate@gmail.com , tali.micheleti@gmail.com , rtsaboya@gmail.com
alina@arq.ufsc.br

The shortage of public open spaces is a common problem in Brazilian cities due to their rapid urbanization processes. As a consequence, open spaces are fragmented and isolated, or difficult to access, which inhibits their use by the population (Kohlsdorf, 2002). Moreover, there is a general agreement that relates the vitality of a space exclusively to their local design variables (Campos, 2000), restricting the analyzes to the space morphology regardless of how it is embedded in the urban grid (Campos, 1997) and its possible implications on the levels of pedestrian movement and occupation of squares. According to Hillier and Hanson (1984), the intensity of use of public squares or, in other words, the levels and distribution of pedestrian movement and active people within the space, are to a great degree determined by the configuration of the urban grid in which it is inserted.

This paper investigates this relation in six public squares of the central area of Florianópolis using different syntactic measures: integration, which captures ‘closeness’, and choice, which captures ‘betweenness’. *In loco* observations were made to quantify the levels of use of these spaces and the data obtained through the observations were summarized in tables-charts and maps, and subsequently correlated with the syntactic measures. The results indicate that the levels of use of the public squares of the central area of Florianópolis are more related to proximity (integration) than to the property of falling on the shortest paths between pairs of spaces (choice).

Key Words: space syntax, urban morphology, urban grid, public squares, Florianópolis.

References

- Campos, M. B. M. A. (1997) ‘Strategic Spaces: Patterns of Use in Public Squares of The City of London’, *Space Syntax First International Symposium*, London.
- Campos, M. B. M. A. (2000) *Urban Public Spaces: A study of the relation between spatial configuration and use patterns*, (University College London, London).
- Hillier, B. and Hanson, J. (1984) *The social logic of space* (Cambridge University Press, Cambridge).
- Kohlsdorf, M. E. (2002) *Metamorfoses nas áreas livres públicas das cidades brasileiras: identidade cultural e interação social*, (Universitt Stuttgart, Stuttgart).

The sociability of the street interface - revisiting West Village, Manhattan

Garyfalia Palaiologou, Laura Vaughan

The Bartlett School of Graduate Studies, University College London

E-mail: g.palaiologou@ucl.ac.uk , l.vaughan@ucl.ac.uk

This paper examines the *micromorphology* of street interfaces, considering how street life is shaped by the emergent pattern of spatial layout and built form. In an effort to reassess Jane Jacobs's conception of liveability, the study uses urban form and space syntax methods to record the changing micro socio-spatial texture of West Village, Manhattan. The paper shows that West Village contains a wide range of morphological street vistas, in which residential buildings are differentially interspersed with institutional and commercial uses while being in close proximity with the industrial west waterfront. The paper considers the way in which pedestrian experience varies and changes as the characteristics of street facades change: from the postmodern solid block front to an alignment of short row house facades or from a wholly domestic setting, to a street lined with shops and businesses. In order to understand the urban streetscape as a place of social activity, the study uses novel techniques for measuring built volume in terms of building-street connections aggregated within a block frontage. The resulting pattern is analysed to consider how morphological properties might give rise to street interaction. The study also maps the mixture of buildings by age and relates this pattern to the spatial distribution of non-domestic land uses, the street network configuration and associated urban interfaces to draw the conclusion that – notwithstanding the area's conservation status – it has maintained its street-life characteristics in part due to the stability of its built form coupled with its inherent spatial adaptability.

Key Words: micromorphology, urban interfaces, Jacobs, West Village, row house.

Exploring the volumetric city: a methodology for investigating the topology and morphology of surface and subsurface urban spatial networks

Michael R. Doyle

Deep City Project, École polytechnique fédérale de Lausanne

E-mail: michael.doyle@epfl.ch

The urban underground has historically been developed as a series of sporadic responses to surface land shortage or to hide unsightly urban activities (Parriaux et al 2004; 2010). The Deep City project at the École polytechnique fédérale de Lausanne in Switzerland is questioning this piecemeal approach through the development of a methodology to qualify and map the spatial potential of the city subsurface. An important part of this methodology is identifying and critically reflecting upon the spatial configurations that characterize complex urban underground ensembles (like the Montreal underground). Although past research has explored the relationship between form and pedestrian movement in the underground (Zacharias 2000, 2011), the topological relationships of the subsurface to neighbouring surface spaces has not yet been investigated. Furthermore, attempts at characterizing the morphology of underground spaces has been limited to generalizations around very few types (Carmody & Sterling 1993), while ignoring the particularities of the spatial and functional contexts in which such projects are situated. This communication will present a methodology to investigate urban underground spaces within their three-dimensional spatial context drawing from graph theory (Hillier 2007; Sevtsuk 2010) and urban morphology's approach to investigating city form (Cannigia & Maffei 2001; Oliveira 2013). The objective of the topological analysis is to be able to aid spatial configuration decisions made both in the conceptual phase of underground space design as well as to diagnose and test alternatives to problematic existing spatial configurations of underground spaces and their topological relationship to surface spaces. The morphological analysis seeks to identify patterns that could serve to guide form-based urban legal instruments. The conclusion will present preliminary results of this method taking Montreal's underground as a case study.

Key Words: 3D urban diagnostic tools, urban underground, spatial configuration, urban morphology; GIS.

References

- Cannigia, G., and Maffei, G. L. (2001) *Architectural Composition and Building Typology: Interpreting Basic Building* (Alinea, Florence, Italy).
- Carmody, J., and Sterling, R. L. (1993) *Underground space design: a guide to subsurface utilization and design for people in underground spaces*. (Van Nostrand Reinhold, New York).
- Hillier, B. (2007) *Space is the machine: a configurational theory of architecture* (Cambridge University Press, Cambridge).
- Oliveira, V. (2013) 'Morpho: a methodology for assessing urban form' *Urban Morphology*, 17, 21–33.
- Parriaux, A., Tacher, L., and Joliquin, P. (2004) 'The hidden side of cities—towards three-dimensional land planning', *Energy and Buildings* 36, 335–341.
- Parriaux, Aurèle, Blunier, P., Maire, P., Dekkil, G., and Tacher, L. (2010). *Projet Deep city: ressources du sous-sol et développement durable des espaces urbains*. (Lausanne: vdf Hochschulverlag AG an der ETH Zürich).

- Sevtsuk, A. (2010) 'Path and place: a study of urban geometry and retail activity in Cambridge and Somerville', MA (Doctoral Dissertation). (Massachusetts Institute of Technology, Dept of Urban Studies and Planning, Cambridge, MA).
- Zacharias, J. (2000) 'Modeling Pedestrian Dynamics in Montreal's Underground City', *Journal of Transportation Engineering* 126, 405–412.
- Zacharias, J. (2011) 'The Dynamics of People Movement Systems in Central Areas', *Challenges* 2, 94–108.

The 'Projeto Orla' (Lake Paranoá, Brasília/Brazil): the production of an exclusionary margin

Marcelo Lembi, Valério Medeiros

Faculdade de Arquitetura e Urbanismo, Universidade de Brasília
E-mail: marcelolembi@gmail.com , medeiros.valerio@uol.com.br

The study explores morphological features at two sites (poles) of the 'Projeto Orla' (Fonseca, 2001) in Lake Paranoá (Brasília – Brazil), in order to understand how the configurational characteristics affect the local vitality. Relationships between built form and movement are explored, following the Theory of Social Logic of Space or *Space Syntax* approach (Hillier and Hanson, 1984; Hillier, 1996; Medeiros, 2006). The research variables are: land use, relationship between solids and voids, density, axial structure, intelligibility/perception, blind spaces, transports, infrastructure, imagistic potential, monumental scale and bioclimatic aspects, focusing on four dimensions of architecture: topoception, functionality, copresence, expressive and symbolic issues (Holanda et al., 2005; Holanda, 2010). The case studies correspond to Brasília Palace Complex, located between 'Bosque dos Leões' and 'Clube da Imprensa', and 'Pontão do Lago Sul', nearby 'Costa e Silva' Bridge. The findings allow to distinguish the study areas in the paradigms of formality (Brasília Palace) and urbanity ('Pontão do Lago Sul'), with subsidies for the discussion of the differences between pre-modern and modern cities (Holanda, 2002). In addition, provide subsidies for design exercise, launching strategies or recommendations that can be applied in future development stages of the remaining poles.

Key Words: morphological features, vitality, formality and urbanity.

References

- Fonseca, F. (2001). *Olhares sobre o Lago Paranoá* (Secretaria de Meio Ambiente e Recursos Hídricos, Brasília).
- Hillier, B. (1996) *Space is the machine* (CUP, Cambridge).
- Hillier, B., Hanson, J. (1984) *The social logic of space* (CUP, Cambridge).
- Holanda, F. (2002) *Espaço e organização social* (EdUnB, Brasília).
- Holanda, F. (2010) *Brasília: cidade eterna e cidade moderna* (FAU UnB, Brasília).
- Holanda, F., Kohldorf, M., Kohsdorf, G. (2005) *Dimensões morfológicas dos lugares: a dimensão copresencial* (FAU UnB, Brasília).
- Medeiros, V. (2006) 'Urbis brasiliae ou sobre cidades do Brasil: inserindo assentamentos urbanos do país em investigações configuracionais comparativas', PhD Thesis, Universidade de Brasília - Faculdade de Arquitetura e Urbanismo, Brasília.

Connecting strategic nodes in Stockholm's suburbs - utilizing the Place Syntax Tool in the analysis and design process

Ryan Locke, Lars Marcus

School of Architecture and the Built Environment, KTH – Royal Institute of Technology. E-mail: ryan.locke@abe.kth.se , lars.marcus@arch.kth.se

This paper investigates how suburban areas in Stockholm can be densified in an attempt to increase the urban qualities of suburban areas without reducing accessibility to the green spaces. Rooted in the fields of architecture and urban design, and following the tradition of Space Syntax and urban morphology research, Place Syntax (Karlström et al. 2005) adds the social performativity dimension of urban form to the analysis and captures accessibility values to attractions such as population density and plot diversity. These will be measured with the Place Syntax Tool (PST), a plug-in for the GIS software MapInfo. The paper focuses on using Place Syntax as an analytic-generative tool for urban design practice. These theoretical outlines and methodological framework are applied in a design case. The urban network of two existing modernist suburbs surrounding a large public green-space in Stockholm is analyzed and using the described methods, measures 'urbanity' as accessibility to density and plot diversity as a way of informing the design process. The design section of the paper shows how applying a spatial morphology densification strategy based on the analysis can connect suburban areas. The analysis technique is again applied to the design to reevaluate the effects of the proposed design in relation to the goals. The results suggest how suburban densification at one-site impacts the values and measures of Spatial Capital in the surrounding areas, without altering the structure of those areas. The paper concludes by suggesting that urban analysis utilizing the Place Syntax Tool can aid the urban design process, especially in the context of un-built green fields in suburban areas.

Key Words: urban form, urban design, spatial capital, place syntax, Stockholm.

References

Karlström, A., Ståhle, A, Marcus, L, (2005) 'Place Syntax - geographic accessibility with visibility in GIS', *5th International Space Syntax Symposium*, Istanbul, Turkey.

The network that spreads: program my house my life and urban accessibility

Gislene Pereira, Jussara Silva

Department of Architecture and Urbanism, Universidade Federal do Paraná, Curitiba,
Brazil

Faculty of Architecture and Urbanism, Universidade Positivo, Curitiba, Brazil

E-mail: jumaria25@gmail

Curitiba is the capital city of the state of Paraná, Brazil, and it is also the hub-city of its metropolitan area, which had a total of 2,768,394 inhabitants in 2010. This paper aims to interpret the relationship between the form of provision of affordable housing, translated by Minha Casa Minha Vida (MCMV), and the socio-spatial organization of the Metropolitan Area of Curitiba. Using space syntax, the text evaluates the integration of MCMV projects in twelve municipalities in the region of Curitiba, checking the spatial mobility of the population living in these areas.

Key Words: space syntax, affordable housing, Curitiba

Mapping urban space based on visual perception

Yue Zhuang, Wowo Ding

School of Architecture and Urban Planning, Nanjing University, Nanjing, China
22 Hankou Road, Nanjing, China. E-mail: ppmountain@163.com , dww@nju.edu.cn

Urban space plays a very important role in urban morphological studies, while 2-dimension based urban patterns were often used as a research basis. Many researchers have tried different ways to make urban pattern with 3-dimentional information as study basis, however the results were not entirely satisfactory until now. Isovist is a method used for testing visibility of the plan or space, which has been used for describing spatial character of urban street. Along that line our research tries to develop a method to read urban pattern with height information, to create better urban physical space model for further spatial study. 3D urban physical space model is built by Matlab, and new database for the space is formed simultaneously. Our approach is setting a viewpoint forming a Viewsphere within the urban physical space built by Matlab, which can measure the urban space and collect 3D information as well. Based on Isovist idea, new mapping method is developed. This paper tries to show our working process and discuss how to convert three-dimensional data to two-dimensional plan.

Key Words: urban space, 3-dimentional information, isovist, viewsphere.

Changing form of the Baltic cities: resurrection of the suburbs

Matas Cirtautas

Urban Research Lab, Department of Urban Design, Vilnius Gediminas Technical University. E-mail: matas.cirtautas@vgtu.lt

Urban sprawl is one of the dominant types of urban development (Bruegmann 2005). It is described as process of gradual conversion of rural areas into partly urbanized environment. This kind of urban growth is often considered as uncoordinated process creating fragmented suburban landscape (Sieverts 2003). However, tools of morphological research can be adopted to study contemporary suburban fabric (Levy 1999). This is crucial for urban regions which experience significant structural changes as in the Baltic States. Over the last century Lithuanian cities have experienced several fundamental transformations of their urban form. From historical compact towns they became large cities with distinct characteristics of late-soviet era (e.g. monofunctional districts scattered in the manner of polycentric structure). Currently Lithuanian cities face three major challenges that will determine their future form: regeneration of central parts (Aistratovaitė 2004), modernization of large housing estates (Džervus 2013) and development of emerging suburban zones (Cirtautas 2013). The latter is chosen as the main research area, as suburban structures are still poorly investigated because of their relative newness and complex form. The study covers analysis of centrally collected statistical data with detail analysis of morphostructure of suburban settlements. This helps to identify zones of intensive suburban development pressure and establish a link between development processes (as condition) and the prevailing form of the suburban settlement (as consequence). According to the study's results, the fragmented urban fabric can prevent future sustainable development of suburban areas. Closer examination of changes around major Lithuanian cities suggests that morphological knowledge can upgrade current urban planning and design principles.

Key Words: urban sprawl, suburban development, post-Soviet city, Baltic States.

References

- Aistratovaitė, I. (2004) 'Transformations of urban morphological structure in the central business district (on the example of Lithuania)', Summary of doctoral dissertation, Vilnius Gediminas Technical University, Vilnius.
- Bruegmann, R. (2005) *Sprawl: a compact History* (University of Chicago Press, Chicago).
- Cirtautas, M. (2013) 'Urban sprawl of major cities in the Baltic states', *Architecture and Urban Planning* 7, 72-79.
- Džervus, P. (2013) 'Postmodern discourse of post-Soviet large housing districts: Modeling the Possibilities', *Architecture and Urban Planning* 7, 51-58.
- Levy, A. (1999) 'Urban morphology and the problem of the modern urban fabric: some questions for research', *Urban Morphology* 3, 79-85.
- Sieverts, T. (2003) *City without city: Between place and world, space and time, town and country* (Spon Press, London).

Spatio-Structural correlates at the Regional and National scales

Bill Hillier, Miguel Serra

The Bartlett School of Graduate Studies, University College London

E-mail: b.hillier@ucl.ac.uk , m.serra@ucl.ac.uk

Throughout the last 30 years, space syntax has imposed itself as a reliable analytical technique for quantifying structural properties of urban spatial networks, which have shown to be strongly associated with a wide range of social and functional urban phenomena. However, space syntax studies have, until very recently, been almost exclusively dedicated to the inner urban scale - territorial scales beyond that of the city have not been systematically explored. In this paper we take a step in that direction, extending space syntax analysis into the regional and national scales, through the study of two very-large spatial systems in the UK, namely the complete road network (1,208,674 nodes) of three contiguous NUTS1 regions (the East of England, South East of England and Greater London) and the top-tier road network of the entire country (170,007 nodes). We compare the results of such analysis with several types of socio-economic data, finding clear statistical associations between the structure of those networks and the spatial distribution of several socio-economic variables. We conclude by arguing that space syntax models and analysis hold their value at very-large territorial scales, being highly robust and producing coherent results between datasets of different sources, themes and dimensionalities.

Key Words: space syntax, territorial scale, regional, national.

Mind the gap

Francesco Marras

DICAAR- University of Cagliari. E-mail: francesc.marras@gmail.com

The expression ‘mind the gap’ refers to the act of paying attention to crossing pass from one element to another. In urban transformation and architecture project it is necessary to reflect on the concept of distance and crossing in particular in relation to the theme of the change of scale and especially from urban design to the architectural design and detailed design. Roberto Gambino talks about the concept of ‘scaling gap’, that is a multi-scale approach to urban design that can go through all the steps of the project and it tries to give control to a transformation. The method is based on a deep morphological analysis of the territory and the landscape and detections of elements and invariants inside, after establishing the invariants you are able to define a formal grid that keeps continuing at all scales of design, starting the territorial scale up to reach the scale of architectural detail. Supporting this reflection may present a set of projects that participated in the competition European 12 which show that the multi-scale approach can be a way to control an urban transformation. The site of Hoganas can be considered a research field of this approach that involves urban, rural and coastal morphologies, and their relationship. The project at multiple scales can be a basis to monitor and study the existing urban form and to reflect on the possibilities of future transformations going to define development scenarios and guidelines for the territories.

Key Words: multi-scale, urban morphology, geography, urban project, landscape.

The morphology of conurbation

Décio Rigatti

Faculdade de Arquitetura e Urbanismo UniRitter – Laureate International Universities

E-mail: driga2000@yahoo.com.br

One of the main features of metropolitan regions is the spread of urban fabrics belonging to different municipalities and their tendency to conurbation. Former relatively isolated parts slowly tend to connect to each other, making up a spatial unit of a different scale and complexity where the whole and not only the parts of its structure follow a new logic. The main goal of this paper is to make a further investigation on how the morphology of conurbation is produced. By using space syntax methodology, it is possible to understand that when a conurbation is strong, syntactic measures tend to be more robust than those presented by the isolated units. This can be measured through the Conurbation Index. From a theoretical model, eighteen pairs of contiguous municipalities of the *Porto Alegre* Metropolitan Region were examined, together with four wider systems made up of three or more contiguous municipalities. The same methodology used in the theoretical model was applied to two groups of municipalities, presenting different morphological features. The results so far suggest that, although spatial contiguity of the urban fabric is required in order to build conurbation, this condition does not suffice; whenever contiguous urban fabrics share spaces on their borders that cross the spatial systems, the conurbation becomes stronger; different levels of conurbation, urban compactness and spatial contiguity not have qualitative implications and correspond to different roles of the parts in the metropolitan region; emergent processes can produce higher conurbation indexes among contiguous urban fabrics through the overcome of the centrality and visibility paradoxes whenever the urban transformations are consistent with both local and global needs for the functioning of the metropolitan structure as a whole.

Key Words: conurbation, metropolitan regions, urban morphology, space syntax conurbation index.

Configuration of urban grid and the relationship between apartments building location: case Florianópolis, Brazil

Amanda Corrêa, Renato Saboya

Universidade Federal de Santa Catarina. E-mail: amanda@carvalhoepatricio.com

The verticalization process is one of the most determining factors of the production and growth of the cities, since it allows the “multiplication” of urban land and its profit maximization. The location is an important factor in this process and, among other things, is related to the configuration of the urban grid, which conforms to a great extent the pedestrian movement on the grid (Hillier et al, 1993) and is able to make certain spaces more or less attractive, thus assigning greater or lesser degree of probability for these areas to be developed or redeveloped. The aim of this paper is to investigate the patterns of configuration of the urban grids associated with the location of apartment buildings in the central area in Florianópolis. In order to do this, we used the Space Syntax Theory (Hillier and Hanson, 1984; Hillier et al, 1987). Its two main measures, integration and choice, were applied in global (Rn) and local (R3) scales. Both have been successfully correlated in previous studies with pedestrians and vehicles movements (Hillier and Iida, 2005), although to capture different properties: the first measures how close a space is from all others in the system, in terms of changes in direction. The second measures the degree to which a space falls on the shortest paths between other pairs of spaces. Results show that apartment buildings are mostly located on both globally (Rn) and locally (R3) highly integrated spaces. On the other hand, for the choice measure buildings are situated in low global choice (Rn), and medium to high local choice (R3). Thus, apartment buildings seem to prefer locations close to the rest of the city, but which, however, prioritize relatively quiet roads detached from the passageways to other spaces.

Key Words: verticalization, space syntax, configuration of the urban grid.

References

- Hillier, B and Hanson, J. (1984) *The social logic of space* (Cambridge University Press, Cambridge).
- Hillier, B and Lida, S. (2005) ‘Network and psychological effects: A Theory of Urban Movement’, in Cohn, A. and Mark, D. (eds.) *Spatial information theory. Lecture notes in computer science* 3603 (Springer, Verlag) 473-490.
- Hillier, B et al (1987) ‘Creating life: or, does architecture determine anything?’, *Architecture and Behaviour* 3,.233-250.
- Hillier, B. et al (1993) ‘Natural movement: or, configuration and attraction in urban pedestrian movement’, *Environment and planning b: planning and design* 20, 29–66.

Analysis of pedestrian movement: a case study in Balneário Camboriú/SC

Aline Estela Largura, Renata Franceschet Goettems

Departamento of Architecture and Urbanism, Universidade Federal de Santa Catarina

E-mail: alineestela.1@gmail.com , arqrenatagoettems@gmail.com

This article aims to explore the application of space syntax as a tool used to understand the built environment as well as to understand its importance in the analysis of these spaces. Thus, the present study took place in the city of Balneario Camboriú, using Depthmap program with the purpose of relating the flow of pedestrians with the analysis of integration maps generated by this software. We sought to identify its applicability as a tool for identifying more or less flow in order to propose urban interventions, such as squares in appropriate locations that provide the greatest use of these public spaces. To survey the possible flows of pedestrians two methods were used: firstly applied to the survey data, by counting pedestrians in a central belt, where some roads were chosen according to their uses, and secondly we developed a axial map to make comparative analysis between the results of the counts and the result of the integration of maps generated by Depthmap software. Comparing counting pedestrian with maps of integration can be seen that there are some differences between analysis developed by the program and used the counts performed at the study site, identified primarily due to some flaws in the tool that does not allow the inclusion of cultural behavior of each site.

Key Words: space syntax, pedestrians, flows, analysis.

Urban morphological methods in Miralles's St Catherine's Courtyard type of urban design

Magdalena Saura

magdalena.saura@upc.edu

The courtyard St Catherine's Market is an architectural type of urban space studied through space syntax mapping and other urban morphology, multi-disciplinary. Post occupancy analysis evaluates the programmed transformation of the urban fabric around the courtyard. Almost the whole market, built in 1848 by the demolition of a cloister and an abbey church, was renovated by the architect Enric Miralles and took a long time to be built, from 1997 to 2005. Remodeling action improved not only a commercial structure but also controlled the quality of life of children playing there. The residential area around the market, and the market itself, were built on the old site of a thirteenth-century, black friars monastery. Multidisciplinarity in urban morphology has been achieved in the St. Catherine's courtyard case through archaeological, university research and architectural, urban design practice. Unexpected archaeological remains appeared at early stages of construction. At that time the author was teaching a graduate course with Miralles, at the School of Architecture of Barcelona (ETSAB), was involved in St Catherine's research and participated with her students in the archaeological survey; she advised him to continue renovations by including in his original project some of the ruins which had been recently found. Foundation walls and street layouts date from Late Antiquity to Early Christian periods; Miralles drew then new plans to define the courtyard, public space placed in the back of the market and at the intersection of the cloister, open space and abbey-church apse. Courtyard defined as an architectural type as an architectural type because it was constructed first in "the mind of the builders". Typology has been questioned in earlier ISUF debates (*Urban Form*, 1997, vol. 1, pp.49-60) and in St Catherine courtyard has provided tools for post occupancy evaluation through quantitative method of Bill Hillier's 'Space Syntax' mapping, which has provided in turn a framework for qualitative, ethnographic data gathering process. The *syntax depth model*, which Hillier applied in other parts of the urban environment of Barcelona, maps dating from 1891 to 2005 has been implemented to the network of courtyards laced around St Catherine. The study includes urban integration and social interaction (*connectivity*) by observation of how children use this in this type of urban spaces planned in the second half of the nineteenth century by Cerdà and renovated today by Miralles and other contemporary architects. To summarize, post occupancy has recorded use of space of the St Catherine courtyard and that use has been compared to that of other courtyards built in different periods of time and very alive today in Barcelona's urban fabric. In future typology debates must involve a reflection on other urban morphology constructs such as space syntax and multidisciplinary approaches for understanding transformation of different kinds of historic, urban spaces.

Boundary Line Type (BLT) Mapping: analysing the socio-spatial and material interfaces of urban form

Benjamin Vis

School of Geography, University of Leeds. E-mail: B.N.Vis10@leeds.ac.uk

This paper introduces the new research method of Boundary Line Type (BLT) Mapping and explores its potential for the comparative social study of urban built environments. Differing from classic urban morphology, BLT Mapping reveals the social functioning of inhabiting urban form, but aims not to reconstruct historical city development. To this end, the method views the structure of urban form as a contiguous configuration of socio-spatial and material interfaces: boundary concepts. The occupiable spatial subdivisions in which urban life takes place are composed of these 'built boundaries', which turn out to be highly variable. No other approach reveals the multiplicity and composition of socio-spatial relations constituting how spaces of a city are divided. Furthermore, a focus on subdivisions also structures rigorous reasoning to resolve the ambiguity and fragmentary nature of e.g. archaeological spatial data, maximising long-term comparative research potential on urban social life without requiring comprehensive cultural contexts. The fundamental ontology of Boundary Line Types has been carefully defined and tested on a variety of outline base plans, which convey the ground-level layout of past and present cities. In keeping with its general social theoretical basis, its comparative applicability is ensured to be as broad as possible. Preliminary results demonstrate not only that a variety of mapping sources (archaeological to contemporary) can be used, but also that both synchronic and diachronic analyses are possible. Furthermore, its comparative ability is evidenced by successful application on urban traditions as diverse as the ancient Maya and historical British.

Key Words: mapping method, socio-spatial ontology, urban form, archaeology, urban geography.

Mafalala grammar and the qualitative assessment of their livability requirements

Pedro Barros, José Beirão, David Viana

CIAUD, Faculdade de Arquitetura, Universidade Técnica de Lisboa, Portugal.
CIESG, Escola Superior Gallaecia, Portugal. E-mail: prbarros.arq@gmail.com.

One of the main challenges in African cities is the rapid expansion of areas of informal settlements, often regarded as ‘slums’. According to the UN-Habitat, Maputo, the capital city of Mozambique, has 1.3 million inhabitants, of which 70% live in these settlements. “Slum” cities grow daily by self-organization where the collective creates rules and builds social and cultural structures, which are the base for ‘urbanity’. The lack of integrated tools to analyse the complexity of these fabrics hampers the ability to maximize the response of plans and strategies to these contextual conditions. This paper shows preliminary results of an ongoing research that aims to develop such tools, integrating generation and evaluation capabilities. It focuses on the correlation of urban form and spatial quality requirements analyses applied to the *Bairro de Mafalala*, one of the oldest ‘slum’ settlement of Maputo. This methodology uses Stiny’s Shape Grammars formalism resorting to its analytical and generative capabilities. The analytical process enables the identification of the rules that generate informal urban fabrics; hence it permits the description through Shape Grammars of the emergent phenomenon of the informal. In other words it will infer the shape rules inherent to the selected sample, Mafalala, defining a grammar able to capture the syntactic rules of generation of the existent fabric. By comparing with Branco Pedro’s neighbourhood indicators we can identify objective qualities and flaws present in the informal settlements and propose a set of grammar transformations that can transform the pure representation of “slums” as they are, into improved structures. The paper discusses how the proposed method can be used for developing and monitoring urban interventions based on incremental upgrades resulting from the application of the transformation.

Key Words: Maputo urban analysis, informal settlements, Shape Grammars, regeneration, computation.

Measuring morphological coherence: a performance criterion for planning

Olgu Çalışkan, Bardia Mashhoodi

Middle East Technical University, Faculty of Architecture, Department of City and Regional, Turkey

TU Delft, Department of Urbanism, Julianalaan 134, 2628 BL Delft, The Netherlands.

In the contemporary urbanism, the central role of urban planning is apparently to coordinate multiple design applications on the basis of a certain regulatory framework. In the context of complexity, the actual challenge of any (urban) design control system is therefore to ensure spatial coherence in the larger context of plan applications. However, despite being widely used for justification of any planning proposal, the concept of urban coherence still needs to be a concise morphological definition to be utilised as a measurable performance criterion in planning. In this regard, the paper suggests a method of analysis for the assessment of urban coherence, which is generated after the long-term application of a design control process. Following the conceptual and analytical definition of the concept (based on the key morphological indicators, spatial proximity and consistency), the authors apply the proposed model of analysis on a series of tissues from the planned urban districts in the Netherlands and Turkey. Discussing the different design control approaches with reference to the results of the coherence analysis, the paper basically tends to test the relevance of the method as a tool for assessing the (morphological) quality of any actual design control process.

Key Words: coherence, spatial pattern, fabric, design control, urban morphology and planning.

Generating urban fabrics in the orthogonal and non-orthogonal urban landscapes

Qingyu Gong¹, Jingzhu Li¹, Na Wang², Xuzhou Zhang¹

¹Tianjin University, School of Architecture, P.R. China

²Pacific Northwest National Laboratory, USA. E-mail. gong@tju.edu.cn

A good urban form records and is situated in the continuum of urban evolution, which, however, is interrupted by the bulldozing with top-down plans for large-scale redevelopment. This article presents two bottom-up approaches based on shape grammars to emulate the intensification process and generate building footprints in both orthogonal and non-orthogonal urban landscapes. The planar grammars of both methods are inferred by the existing configuration of the un-planned coastal and riparian one-story settlements in Tianjin, whereas the overall floor-spaces are intended to consist with the current land-use planning. The orthogonal patterns were implemented in a shape grammar interpreter (SGI) and the non-orthogonal compositions were derived manually. To create an orthogonal pattern, we scattered transforming labels across the rule space, and facilitated the growth by the four- or nine- cell neighbourhoods centred on the labels. By using the SGI, the orthogonal method is also applicable for generating the windows for façades and roofs. For the non-orthogonal planar grammar, the direction and length of laneway segments govern the piecemeal growth and global distribution of courtyards. The results suggest that the grammars may capture some features of the exiting fabrics while achieve three times the existing FAR as required by the current development in Tianjin. The grammar rules will provide a systematic urban design tool that can be operated manually or semi-automatically.

Key Words: morphogenesis urbanism, shape grammar, bottom-up, low-rise high density, large-scale redevelopment.

Acknowledgements

This work is supported in part by NSFC-51178295 and B13011.

A generative design system for interventions in dispersed territories

Francesco Orsi, Stefano Fiorito, José Nuno Beirão

Centro de Investigação em Arquitectura, Urbanismo e Design

Faculdade de Arquitectura da Universidade de Lisboa

E-mail: orsi@fa.utl.pt , fiorito@fa.utl.pt , jnb@fa.utl.pt

Land-consuming practices and overall costs implied by dispersed urbanism constitute serious issues to the Portuguese territorial management (Carvalho, 2013). Urban and regional policies able to mitigate such effects are therefore urgently needed. The main goal of our research is to improve urban performances in such dispersed territories by promoting compactness and coherence in the urban fabric within the lowest manageable growth ratio. To do so we introduce an integrated approach based on the comparative analysis of urban form, density indicators and network configuration. The novel character of the research lies in the use of an urban design framework (Beirão et al., 2011) connecting spatial databases (GIS) with a parametric design system embedded in a CAD environment by means of a visual programming interface. This framework allows for a seamless and interactive workflow of analysis-design-assessment loop of information accessible any time during the design decision process. Such methodology allows to cross-reference different kinds of data to be used in urban design (and policy-making processes) and to fine-tune design hypotheses to match predefined goals and benchmarks. The research is focused on two case-study areas — Sintra and Óbidos / Caldas da Rainha. They are analysed first in terms of morphological characteristics, detecting their main urban elements, then assessed in term of the degrees and type of dispersion, network configuration and finally compared in terms of statistical data about economic activities and land value seeking for patterns of correlations between the urban form and the amount of social and economic activity of a place.

Key Words: generative design system, density studies, GIS, dispersed urbanism.

References

- Beirão, J., Nourian, P., Mashhoodi, B. (2011) *Parametric urban design: An interactive sketching system for shaping neighborhoods* (eCAADe 2011, Ljubljana).
- Carvalho, J. (2013) *Ocupação dispersa. Custos e benefícios à escala local* (Direcção-geral do Território. Lisboa).

An area structure approach for town plan analysis

Stephen Marshall

Bartlett School of Planning, UCL. E-mail: s.marshall@ucl.ac.uk

A town plan may be interpreted as a geometric object: as such, there is an inherent mathematical underpinning to urban morphology by town plan analysis. This paper presents research which makes this mathematical aspect explicit and uses it to analyse urban morphological structure, by identifying morphological elements as areas and ‘area structures’. An area structure is an abstraction from the town plan, which omits some geometric details but is not as abstract as a graph (e.g. Krüger, 1979) nor as limited as linear representations of urban space. An area structure maintains relationships of containment (e.g. building footprints within plots) and continuity of plot boundaries (e.g. retaining identity of plot series) and so helps focus on items of typical morphological interest (e.g. Kropf, 2011). Hence, building footprints, plots, plot series, blocks and street-space can all be represented as areas, and their relationships analysed and compared. This approach may be applied to any morphological investigation employing town plan analysis. A newly advanced system of ‘area structure analysis’ is presented, making explicit patterns of containment, subdivision, part-whole relations, and typical ‘urban syntax’ relationships (Marshall, 2009). Area structure attributes are contrasted with geometric and graph theoretical representations, and suggested axioms are set out. Sample town plans’ area structures labelled with a symbolic notation are used to identify and quantify different kinds of plot series in relation to building types (terraces, etc.). The paper reflects on the scope of urban morphology and town plans in relation to other kinds of morphological structure at different scales.

Key Words: representation, geometry, urban syntax, morphological elements, town plan analysis.

References

- Kropf, K. (2011) ‘Morphological Investigations: Cutting into the Substance of Urban Form’, *Built Environment* 37, 393-408.
- Krüger, M. J. T. (1979) ‘An approach to built-form connectivity at an urban scale: system description and its representation’, *Environment and Planning B: Planning and Design* 6, 67-88.
- Marshall, S. (2009) *Cities, Design and Evolution* (Routledge, Abingdon).

The intensity of smallness and urban character. The case studies of Yanesen and Jiyugaoka precincts in Tokyo

Milica Muminović

Faculty of Science and Technology, Keio University, Japan

E-mail: arh.muminovic@hotmail.rs

The smallness represents an important quality of urban character in Tokyo. This characteristic can be found at all scales of built environment: from the architectural detail all the way to the urban scales of whole neighbourhoods. This paper focuses on the intensity of smallness which is produced in the structure of built environment. The research explores qualities formed through the relationships between elements of built environment rather than those deriving from the elements themselves. The objective of the paper is to develop a method in order to analyse the intensity of smallness in built environment. The research aims to explore the ways in which intensity of smallness is assembled by elements of built environment (streets, blocks and building footprint) and how that intensity contributes to the particular character of the place. The analysis of the relationships between elements of built environment is developed based on the statistical classification model of standard deviation and uses the Arc GIS software. The intensity of smallness is explored through mapping of two case studies in Tokyo, Yanesen and Jiyugaoka. Both areas have distinct urban character, the former deriving from the past and historical urban landscapes and the latter based on the stylish family oriented home town. The paper discusses relationships between intensity of smallness and urban character through comparison of these two precincts. The results show differences in diversity and distribution of the intensity of smallness that supports the distinctive urban character of Yanesen and Jiyugaoka.

Key Words: relationships, intensity; smallness, built environment, standard deviation.

Mapping micromorphologies using 3D surveying technology: 'Qilou' architecture in the Xiguan district of Guangzhou

Leigh Shutter

Griffith School of Environment, Griffith University. E-mail: l.shutter@griffith.edu.au

In recent decades there has been rapid development in the capability of geospatial analysis and simulation technology and software, creating new opportunities and perspectives for the analysis and understanding of urban form. A thread of this work has focused on laser scanning techniques and the rapidly evolving technology facilitating the real time production of dimensionally accurate virtual models of physical settings. Much of the focus has been on recording single iconic and culturally significant buildings, however, current development of this technology is now enabling the survey of larger urban areas and this offers new potential for urban morphology. More accurate and extensive surveys can be completed in a fraction of the time taken using traditional techniques. This new capability now enables the accelerated mapping of urban precincts, and the compilation of data rich models of urban areas not previously surveyed. In turn the virtual models produced provide a platform to measure, compare and analyse urban forms in ways not previously possible. This paper will interrogate the opportunities of this new technology for the discipline with particular reference to a pilot application to be undertaken in the Xiguan district of Guangzhou in February 2015. The Xiguan district is to the west of Guangzhou's ancient city core. This important precinct has historically formed the key 'foreign' gateway to the city. This connection has helped to nurture the development of the 'Qilou' architectural typology, an indigenous architectural type that evolved in southern China in the early 20th Century. Qilou incorporates local Chinese characteristics while also displaying a blend of architectural qualities present in buildings of both the East and West of that period. The use of this building type has had a substantial influence on the changing urban pattern of the precinct. The 3D survey of the precinct will form the basis of an urban analysis examining the impact of the Qilou typology on the changing urban form.

Key Words: mapping, micromorphology, 3D surveying, Qilou, Xiguan.

Typological atlases of block and block-face

Alice Vialard

School of Architecture, Georgia Institute of Technology. E-mail: alicevial@gmail.com

The classification of blocks and block-faces according to several morphological characteristics is used in this paper as a basis for assessing urban form. Classification aggregates discrete data into categories which can subsequently become associated with specific considerations, requirements or solutions regarding city planning and design (Steadman, P. et al. 2000). The issue, then, is to present similarities, co-variations or contingencies in a meaningful and legible manner so that the resulting typology of urban conditions can support planning or design actions. The intent is to represent and characterize urban units according to numerical profiles and to group them into clusters, using the k-means method (Gil, J. et al. 2012). As a second step, clusters are depicted on maps to produce typological atlases. They serve to assess existing urban conditions or test future urban conditions. Two typological atlases are proposed. The first concerns the morphology of blocks based on shape and size; the second concerns block-faces as the interface between street and building, coalescing external and internal loads. Syntactic measures such as metric and directional reach (Peponis, J. et al. 2008) characterize the external load exercised by the street system and morphological measures such as setbacks and building frontages (Talen 2005; Oliveira 2013) represent the internal load exerted by buildings. The typological atlases help visualize the prevailing building and street patterns and facilitate the evaluation of urban conditions so as to distinguish between saturated areas and areas with greater potential for future development.

Key Words: block-face, typological atlas, block morphology, metric reach.

References

- Gil, J. et al. (2012) 'On the discovery of urban typologies: data mining the many dimensions of urban form', *Urban Morphology* 16, 27.
- Oliveira, V. (2013) 'Morpho: a methodology for assessing urban form' *Urban Morphology* 17, 21-33.
- Peponis, J. et al. (2008) 'The connectivity of streets: reach and directional distance', *Environment and Planning B: Planning and Design* 35, 881-901.
- Steadman, P. et al. (2000) 'A classification of built forms', *Environment and Planning B: Planning and Design* 27, 73-91.
- Talen, E. (2005) 'Evaluating good urban form in an inner-city neighborhood: An empirical application' *Journal of Architectural and Planning Research* 22, 204-228.

Analysis and modeling of spatial changes: identification and quantification of urban growth in Florianópolis-SC-Brazil

Raquel Weiss, Alina G. Santiago

Universidade Federal de Santa Catarina

E-mail: rwarqui@hotmail.com , alinagsantiago@hotmail.com

The urbanization process is one of the most remarkable manifestations of human actions on space, highlighted by the progressive population growth in urban centers. Such growth is what makes cities big and complex structures, representing the peak of the way of life, appropriations, transformations and manifestations that humankind is capable of imposing, be them economic, social, or environmental (Barredo and Demicheli, 2003; Yu and Ng; 2007). Thus, scenarios with a tangled, intrinsic and dynamic physical and territorial structure emerge, reflecting the changes in the morphology and functionality of such places, thus becoming urban spaces rather than rural areas (Herold et al, 2005; Yu and Ng, 2006; Thapa and Murayama, 2009; Ramachandra et al, 2012). Among the trends in urban expansion, it can be highlighted *urban sprawl*, characterized by low density, fragmented, poli-nuclear, and often uncontrolled urban dispersion (Inostroza, Baur and Csaplovics, 2013). Considering this, and taking as case study the city of Florianópolis-SC-Brazil, marked by the distribution of several urban nuclei consolidated throughout its insular territory, the present study aims at understanding, identifying and quantifying the dynamics and spatial organizations of the city areas. In order to do so, spatial-temporal analyses of land use through photo interpretation in GIS platforms of representative spatial cutouts representing different existing urban morphologies have been conducted. Besides that, geoprocessing techniques and the use of spatial metrics are employed in the evaluation and classification of variables through numeral indicators. Thus, the mapping and quantification of the alterations represented by Human vs Space interaction throughout the analyzed period allows a better understanding and a higher accuracy of the spatial dynamic processes.

Key Words: urban morphology, spatial metrics, GIS, spatial-temporal analysis, urban sprawl.

References

- Barredo, J. L. and Demicheli, L. (2003) 'Urban sustainability in developing countries' megacities: modeling and predicting future urban growth in Lagos', *Cities* 20, 297–310.
- Herold, M., Couclelis, H. and Clarke, C. (2005) 'The role of spatial metrics in the analysis and modeling of urban land use change', *Computers, Environment and Urban Systems* 29, 369–399.
- Inostroza, L., Bauer, R. and Csaplovics, E. (2013) 'Urban sprawl and fragmentation in Latin America: A dynamic quantification and characterization of spatial patterns', *Journal of Environmental Management*. 115, 87-97.
- Ramachandra, T.V., Aithal, B. H. and Sanna, D. D. (2012) 'Insights to urban dynamics through landscape spatial pattern analysis', *International Journal of Applied Earth Observation and Geoinformation* 18, 329–343.
- Thapa, R. B. and Murayama, Y. (2009) 'Examining spatiotemporal urbanization patterns in Kathmandu Valley, Nepal', *Remote Sensing* 1, 534–556.
- Yu, J. X. and Ng, C. N. (2007) 'Spatial and temporal dynamics of urban sprawl along two urban–rural transects', *Landscape and Urban Planning* 79, 96–109.
- Yu, X. and Ng, C. (2006) 'An integrated evaluation of landscape change using remote sensing and landscape metrics: a case study of Panyu, Guangzhou', *International Journal of Remote Sensing* 27, 1075–1092.

Source of resilience in the urban form of Naiwan area in Kesennuma

Toshihiko Abe, Shigeru Satoh

Institute of Urban and Region, Waseda University
Dept. of Architecture, Waseda Univ. E-mail: abetoshi@aoni.waseda.jp

Kesennuma City, which is in Northern part of the Miyagi Prefecture in Japan, was struck by the Tsunami in March 11th, 2011. The city has an area of 46 square kilometers, and that of 9.6 square kilometers, 20.5% of the area, were flooded. Reconstruction of city center, “Kesennuma Naiwan” area, was making little headway, since stakeholders have focused their arguments on the seawall construction. In fact, they should have more discussion about comprehensive reconstruction, including land-use plan, scenery and townscape, which would give the vibrancy around the waterfront. After two years after the earthquake, they established Community Conference organization comprising city planners and architects, and the recovery program has made by citizens, and progressing towards revival. There are two sources of the power of the resilience is in the urban form of Naiwan area. One is the dynamic urban form structured by townscape updated again and again taking in an advanced architectural design from overseas at every tsunami and conflagration. The other is static urban form, consisting of landscape, the sea and a mountain weave, climate, and scenery. The object of this research is to clarify the urban form that contributes to develop the resilient city, through the study on the contents and the process of making the recovery program of Naiwan area.

Key Words: Tsunami, resilience, seawall, scenary, hazardous area.

Sao Paulo: a legal reading of urban form

Eliana Barbosa

Faculty of Architecture and Urbanism Universidade Presbiteriana Mackenzie São Paulo,
Faculty of Architecture Universiteit Katholieke Leuven, Faculty of Sciences, Landscape
Architecture Universidade do Porto. E-mail: queirozeliana@hotmail.com

To those who are not used to it, the complexity of Sao Paulo's urban landscape is commonly described as chaotic. Waisman (2012) while dealing with Latin American cities in general, pleads the opposite. The author sustains the necessity of developing new conceptual tools, enabling the proper reading of urban phenomena, developed according to the local context, which are engraved by time-space discontinuities in its developments. The typology, she argues, cannot be defined as a symbolic and structuring element in this context, since it does not hold symbolic and historic sedimentation, quite the opposite, it is the driver of change, a symbol of transformation (Waisman, 2012). The paper intends to explore analytical instruments which are capable of dealing with the complexity of the city's urban form, developing a legal reading of urban morphology, in which typology appears as a consequence, not a cause, of the urban form. This way, a comparative analysis is proposed, using the city of Sao Paulo and different fragments as an Object, in which three different urban samples (the neighbourhoods of Santa Cecília, Jardim Paulistano and Vila Leopoldina), mainly developed according to different urban regulations (Masterplan of 1954, Zoning Law of 1972, Parcelling Law of 1979, and Masterplan/Zoning 2002), will be tackled. The aim is to identify the possible influences of each urban regulation in the rise and fall of certain typologies in the city and understand in which ways these urban regulations contributed to the urban morphology in the city.

Key Words: urban form in the south, urban regulations, contemporary typology, high rise, urban morphology.

References

Waisman, M. (2012) *O interior da História* (Perspectiva, São Paulo).

Air oriented urban form: to develop an Eco-City in the tropical urban area

Md Mustiafiz AL Mamun, Anjuman Ara Begum

Department of Architecture, Chittagong University of Engineering & Technology,
Chittagong; Doshomik Sthapathi. E-mail: mustiafiz@gmail.com

The quality of city's living environment spaces has an impact on all aspects of life. It is essential that the spaces we create and improve through the principles of sustainable urban planning will influence how we feel. For the fast expansion of globalization with the unplanned organization of an urban area has affected to develop a city's sustainability within the means of the environments, social and economical foundations. However, those inappropriate approaches of development strategies such as, city's geometric force of density, undefined land-use pattern, different transformation systems and build forms could tremendous change to our urban climatology. Air circulation as one of the most prominent urban principles of urban climate is an effective question for our local and global area where air circulation flows are discontinuing by different level of building form, its height, wrong orientation and building to building buffering spaces. Due to no contact with sunlight, some buildings are obtained cold temperature and during seasonal change it absorbs more cold temperature and increase running expenditure with discomfort living situation. On the other hand, sun orientated surfaces of the build forms are also absorb heat and urban area's temperature extensively space heater than its surrounding rural areas. In this paper we focus on urban build-form orientations, analysis those, its performance and how to reduce solar heat gain through the sustainable indicators of proper air flow circulations to develop an eco-city in the tropical area.

Key Words: air circulation, orientation, urban form, eco-city, built environment.

Urban form regulation methods: Garden City and Low Carbon Cities

Joana Mourão

DINAMIA'CET-IUL, ISCTE. E-mail: jfmimo@iscte.pt

The control of atmospheric emissions is an objective of urban form regulation, at least since the XIX century, when the effects of the industrial revolution turned visible in the urban environment. At the beginning of the XIX century, Climate Change and “Our Common Future” challenges brought this environmental concern again to urban form research and planning, demanding specific urban form regulation methods to control urban Greenhouse Gases Emissions (CO₂). Analysing the concepts of “smokeless cities” and of “low carbon cities” this article analysis the ecological purposes of urban form regulation methods (on what concerns to urban atmospheric emissions control) in different times of Urban Planning. First, it analyses the concept proposed by Ebenezer Howard for the formation of urban form (1898) in England; secondly, it analyses an experimental low carbon urban form regulation method, proposed by the author and tested in municipalities in Portugal (PhD, 2012). This article evidences that, although it is not possible to identify a unique ecological urban form, nor an universal method for ecological urban form regulation, it is important to use specific methods for urban form regulation in order to achieve a “more sustainable urban future”. The relation between urban form regulation and the control of ecological performance of cities and territories will be discussed, on what concerns to energy demand and its environmental externalities (e.g. atmospheric emissions), within the framework of ecological urban planning practices trough time.

Key-Words: urban form, garden city, climate change; carbon balance; ecological urban planning.

Analysis of tools and ‘patterns’ for assessment of urban sustainability to promote design quality

Érika Otto, Liza Andrade, Natália Lemos

Faculdade de Arquitetura e Urbanismo – Universidade de Brasília - Brasil.

E-mail: erika_passosotto@hotmail.com , lizamsa@gmail.com ,
lemos.natalia@gmail.com

This research on methods and requirements to forward urban environmental regeneration aims to investigate the requirements and patterns of assessment of urban sustainability to the process of urban design. In the environmental certification of urban developments there is a wide range of evaluation methods that work different versions developed and disseminated by various countries and organizations. In Brazil, the main evaluation methods adopted focus at classificatory typology (LEED-ND - EUA; AQUA/HQE - French and Selo Azul/CE - Brazil). Even adopting different criteria, the quantitative system is common to achieve the certificate. But none of them deals directly to the spatial shape or patterns as qualitative parameters of architectural and urban projects. As a methodology aimed to the urban environmental regeneration, it integrates studies of ecological urbanism principles for resilient cities (Spirn, 2011) and the principles of sustainability urban environmental (Andrade, 2008), relating them to “patterns” of Alexander et al (1977) identified by Moehlecke (2010). The patterns illustrate design strategies through the auxiliary codes for project process, and offer interventions that designed more sustainable human settlements. For the in depth examination, research picked the method of BREEAM Communities (UK) by his approximate approach with projective parameters that mitigate impacts of the built environment. This method related with 108 patterns selected by Moehlecke (2010) that has brought satisfactory results showing the contemplation of the categories of sustainability in social, economic and environmental dimensions. Also, it allows to check other certification systems, resulting in great quality for the project.

Key Words: urban regeneration, sustainability principles, urban patterns, environmental certification.

References

- Alexander, C. et al (1977) *A Pattern Language* (Oxford University Press, New York).
- Andrade, L. M. S. (2008) ‘Princípios de sustentabilidade para a reabilitação de assentamentos urbanos’, in Romero, M. A. B. (ed.) *Reabilitação ambiental sustentável arquitetônica e urbanística* (PPG-FAU/UnB. Brasília), 344-411.
- Moehlecke, J. (2010) ‘Uma contribuição para o desenvolvimento de assentamentos humanos mais sustentáveis: identificação de padrões urbanos relacionados aos princípios de sustentabilidade’, Master thesis, UFRGS, Porto Alegre.
- Spirn, A.W. (2011) *Ecological Urbanism: a framework for the design of resilient cities* (Massachusetts Institute of technology).

The implication of the adoption of ICT on the fractal dimension of urban systems of Lagos megacity

Oluyemi Akindeju

Department of Urban and Regional Planning, Faculty of Environmental Sciences,
University of Lagos, Nigeria. E-mail: email.fakindeju@unilag.edu.ng

Lagos, a rapidly urbanizing morphological entity, as the only Megacity in Nigeria and the other of the only two in Africa, has been studied with much efforts directed at the functional aspect of urban evolution without consideration for the geometric evolution of cities and what influences these patterns/form. These approaches have dwelled on euclidean geometry which isn't sufficient to explain or predict a complex phenomenon such as (Lagos) Megacity. More importantly, when the adoption of Information and Communication Technology (ICT) influences the city morphology. This paper therefore considers the fractal analysis imprints of African urban morphology as influenced by the ICT thereby providing avenues to understand and predict emerging African cities' morphology. Comparative Analysis of the Spatio-Temporal attributes of selected communities (both organic and planned) in the Lagos Megacity Region between 1960 and 2010 (using 10 years interval) to determine the fractal qualities and dimension of the city and consequently a comparism of impact of ICT adoption on the fractal structure of the selected areas in the Megacity. The study establishes the heterogeneous properties of urban areas through the Fractal dimension and lacunarity values for the different communities to be studied thereby being able to justify the non -functionality of generalized policies adopted by the existing planning legislation and agencies. As well as outline the trend of spread in the adoption of ICT on city form. This will inherently have implications on the transport, health, informality, city administration, housing, governance, technology adoption, sustainability of infrastructure and other areas of concern.

Key Words: city morphology, fractal dimension, ICT, lacunarity, Lagos megacity.

The study of territorial development cycles and settlement morphologies through of geosimulation techniques

Giampiero Lombardini

Dipartimento di Scienze per l'Architettura, University of Genoa (I)

E-mail: g.lombardini@arch.unige.it

The urbanization of recent decades has radically changed the original morphology of the territorial systems. Recognize the traces of long-term urban and territorial plants, on a large scale, can help land use policies and building control and design, in order to make the settlements more sustainable (in terms of environmental and landscape perspectives) and consistent with the process of their historic formation. The aim of the paper is to analyze the long-term urban plan for the whole territory of the coastal and its villages and boroughs of Eastern Liguria. Settlements are analyzed together with the basic territorial structures that have generated them during the historic long period. The study starts from the diachronic reading of cycles of territorial development that have gradually formed the present settlement. The matrix elements that determine the shape of the settlements are, in the first instance, the paths and the plot (including land uses), detectable by comparing different historical maps. In our hypothesis, settlement morphologies are derived from these two basic elements of spatial configuration. Subsequently small towns, villages, boroughs, farmhouses, together with their county territories, are classified into “morpho-territorial typologies” that characterize different geographical areas (valleys, coastal zones, rivers, ridges). The representation of the settlement into different temporal stages is the result of processing carried out through the use of GIS and spatial morphological analysis techniques. In particular, we have used simulation models based on cellular automata. Through geosimulation techniques it is possible to rebuild both the process of formation and transformation of the settlements, and to represent the structure of long-term of territorial ‘morpho-types’. The use of the techniques of geosimulation also allows the construction of scenarios in which it is represented how the process of urbanization of the last 50 years has radically altered the original settlement structures and also allows us to represent the possible evolutions of the settlement system.

Key Words: morphology, territorial development cycles, geosimulation, GIS, long-term urban and territorial.

Modeling urban growth patterns across geographical scales by a fractal diffusion aggregation approach

Roberto Murcio

Centre for Advanced Spatial Analysis, University College London,
1ST Floor, 90 Tottenham Court Road, London W1T 4TJ, UK. E-mail: r.murcio@ucl.ac.uk

A multi-scale urban growth model to capture the different spatial morphologies and urban dynamics observed when more than one city is interacting on a specific region is introduced. To model growth at local scale, our model is based on two well-known fractal growth process: diffusion and percolation (Makse et. al., 1998; Witten and Sander, 1981; Meakin, 1998; Batty 2007), in order to represent two of the main urban growth drivers: people migration and economics of agglomeration respectably (Korotayev et al., 2006; Fujita, 2002); growth at regional scale is derived from a Self-Organized Criticality (Bak and Tang, 1987) model adapted for urban interactions to explore the possible relations between “avalanches” and cities redensification processes. Our model intends to provide a better understanding about the complex dynamics that eventually controls and regulate the spatial distribution of towns over the physical terrain. We address the inherent complex nature of cities and systems of cities in global terms, given up local information which is normally coming from small scale human decisions. From this, experiments are performed to simulate the spatial distribution of the urban areas, particularly, the Greater London Area. The emerging patterns obtained from our model, without external tuning, give us a clue about cities self-organization capabilities, and how these patterns at small scales are almost independent of the process taking place in larger ones.

Key Words: urban models, cities, aggregates, fractals.

References

- Makse, H.A., Andrade Jr, J.S., Batty, M., Havlin, S., Stanley, H.E. (1998) ‘Modeling urban growth patterns with correlated percolation’, *Phys. Rev. E* 58 7054.
- Witten, T.A., Sander, L.M. (1981) ‘Diffusion-limited aggregation, a kinetic critical phenomenon’, *Phys. Rev. Lett.* 47 1400.
- Meakin, P. (1998) *Fractals, Scaling and Growth Far from Equilibrium* (Cambridge University Press, MA).
- Batty, M. (2007) *Cities and Complexity: Understanding Cities with Cellular Automata, Agent-Based Models, and Fractals* (The MIT Press, MA).
- Korotayev, A., Malkov, A., Khalitourina, D. (2006) *Introduction to Social Macro Dynamics: Secular Cycles and Millennial Trends* (Moscow).
- Fujita, M., Thisse, J.F. (2002) *Economics of Agglomeration. Cities, Industrial Location, and Regional Growth* (Cambridge University Press, MA).
- Bak P., Tang C., Wiesenfeld K. (1987) ‘Self-organized criticality’, *Phys. Rev. A* 38, 364.

Hybrid cellular automaton – agent-based model of informal peripheral development in Latin American cities

Alexandre Santos, Maurício Polidori, Otávio Peres, Marcus Saraiva

Laboratório de Urbanismo da Universidade Federal de Pelotas

E-mail: alexandre.pereira.arq@gmail.com , mauricio.polidori@gmail.com ,
otmperes@gmail.com , marcus.saraiva@gmail.com

The study of the complex dynamics that engage urban form presents powerful instruments to understand the driving forces of contemporary urban development. The research intends to test traditional urban growth tendencies against informal development mechanisms and decision making behaviours of cooperation and competition in geosimulated environments. The empirical objectives are to investigate the morphological patterns of peripheral poverty and its interactions in which accessibility, centrality and urbanization potential (Krafta 1994; Polidori 2004) have played important parts sided by informal processes from Latin-American contemporary cities (Barros 2004; Batty, Barros, and Alves-Junior 2004). The paper will present a theoretical review of agent-based models (Heppenstall et al. 2012; Macal and North 2010) in cellular environments stressing urban growth and decision making processes (Epstein and Axtell 1996; Axelrod 1997) and a proposal for a hybrid agent-based model in cellular space. The contemplated model expands the CityCell© modelling framework (Saraiva, Polidori, and Peres 2013) by including the interpretation of the model's landscape – composed of explicit urban, institutional and natural features – by heterogeneous collective agents which settle and promote growth in cooperative or competitive dynamics according to each agents' preferences and hierarchy. The expected result is a landscape of urban development intensities, natural features and agent-types concentration which should allow one to analyse urban form expansion and fragmentation, socioeconomic segregation, urban policies effects and other issues.

This work succeeds the research by the LabUrb/UFPEL (Polidori 2004; Peres 2010; Toralles 2013; Saraiva 2013) which has yielded insights on the linkages between urban morphology, social and environmental attributes through emergent urban phenomena simulation focused on temporal and spatial dynamics.

Key Words: urban morphology, urban growth, social process dynamic simulation, cellular automata, agent-based models.

References

- Axelrod, R. M. (1997) *The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration* (Princeton University Press, Princeton).
- Barros, J. X. (2004) *Urban Growth in Latin American Cities Exploring Urban Dynamics through Agent-Based Simulation* (University College London, London:). http://www.dpi.inpe.br/cursos/environmental_modelling/joana_phd_thesis.pdf.
- Batty, M., Barros, J. X. and Alves-Junior, S. (2004) 'Cities: Continuity, Transformation, and Emergence' *CASA Working Papers* 72.
- Epstein, J. M. and Axtell, R.. (1996) *Growing Artificial Societies: Social Science from the Bottom Up* (Brookings Institution Press, Washington DC).
- Heppenstall, A. J; Crooks, A. T.; See, L. M. and Batty, M. (2012) *Agent-Based Models of Geographical Systems*. Edited by Alison J. Heppenstall, Andrew T. Crooks, Linda M. See, and Michael Batty. Dordrecht, Heidelberg, London, New York: Springer.
- Krafta, R. (1994) 'Modelling Intraurban Configurational Development' *Environment and Planning B: Planning and Design* 21, 67–82.

- Macal, C. M. and North, M. J. (2010) 'Tutorial on agent-based modelling and simulation' *Journal of Simulation* 4, 151–162.
- Peres, O. M. (2010) *Crescimento Urbano e Hidrografia: Dinâmicas Morfológicas e Articulação à Paisagem Natural* (Universidade Federal de Pelotas).
- Polidori, M. C. (2004) 'Crescimento urbano e ambiente: Um estudo exploratório sobre as transformações e o futuro da cidade', PhD Thesis, Universidade Federal do Rio Grande do Sul, Porto Alegre
- Saraiva, M. V. P. (2013) *Simulação de crescimento urbano em espaços celulares com uma medida de acessibilidade: Método e estudo de caso em cidades do sul do Rio Grande do Sul* (Universidade Federal de Pelotas).
- Saraiva, M. V. P.; Polidori, M. C. and Peres, O.M. (2013) *CityCell* (Pelotas: Laboratório de Urbanismo LABURB).
- Torralles, C. P. (2013) *Cidade e crescimento periférico: Modelagem e simulação da formação de periferias urbanas com autômatos celulares* (Universidade Federal de Pelotas, Pelotas). http://prograu.ufpel.edu.br/uploads/biblioteca/cidade_e_crescimento_periferico_dissertacao_cptorralles_mar2013ufpel.pdf.

Simulation of urban growth on cellular spaces using accessibility measures

Marcus Saraiva, Mauricio Polidori, Otávio Peres, Alexandre Santos

Laboratory of Urbanism, Faculty of Architecture and Urbanism of the Federal University of Pelotas, Brazil. E-mail: marcus.saraiva@gmail.com.br

This work is committed to verify the capability of an accessibility measure to identify areas prone to high urban growth, related to the presence of higher locational advantages. This issue is addressed via urban modeling, using techniques of urban growth simulation based on cellular automata. Accessibility measures have proven effective in studies about the urbanized space and the natural landscape, with theoretical and methodological similarities. An expanded version of one of such measures is proposed, called Weighted Accessibility, considering the characteristics of the surrounding city, both natural and modified by human action. This measure was implemented in a cellular environment and used in a dynamic urban growth model. The model was tested in southern Rio Grande do Sul cities. Two types of constraints external to the city were considered: i) environmental factors, represented by the topography and hydrography ii) anthropic factors, represented by the city traffic network. These conditions were grouped into four scenarios: i) absence of external factors; ii) presence of anthropic factors; iii) presence of environmental factors; iv) simultaneous presence of environmental and anthropic factors. Evaluations were made using techniques of cell-by-cell comparison and fuzzy similarity. The best results were obtained in simulations that considered the influence of environmental factors alone or in combination with anthropic factors. These results suggest that city surroundings have an important influence on the urban growth process and that this influence can be identified by the accessibility measure at issue.

Key Words: urban growth, accessibility, environment, urban modelling, computer simulation.

Connections and spatial patterns of urban ecosystems for water sensitive urban design in the Housing Sector Taquari - DF Brazil

Liza Andrade, Shinelle Hills, Raquel Blumenschein

Faculty of Architecture and Urbanism - University of Brasilia - Brazil.

E-mail: lizamsa@gmail.com , shinelle.hills@gmail.com , raquelblum@terra.com.br

In Brazil, the urban planners work using a multidisciplinary approach that contributes to the analysis in the global plan of the urban structure, 'create order'. However, there are no connections, as occurs in the organic order (Alexander et al, 1978) established from the richness of patterns of 'spatial heterogeneity' found on the local scale (Cadenasso and Pickett, 2013). This research has as objective to make important connections between the disciplinary field of Urban Design and Ecology of the city through the study of spatial patterns of urban ecosystems to contribute to the building of a method with transdisciplinary approach to the process of water sensitive urban design (WSUD). The area chosen for the application of the method, the expansion of the Housing Sector Taquari, in 'Asa Nova Norte', cited by Lucio Costa, in The Basin of the Lake Paranoá, in Federal District, a region characterized by high environmental sensitivity with several water courses. After evaluating the Spatial Syntax map and the guidelines of the plans of the territory, it was found that these direct the parceling out of land for low density occupation, do not promote the urbanity and mobility and, consequently, stimulate social exclusion. As a way to illustrate new scenarios, new spatial patterns (Alexander et al, 1977) were systematized and applied in 'process' of the project to promote a water sensitive urban design for the Phase 2 plot. In this way, it is expected to help the sustainability of water resources in the region, promoting social and environmental justice.

Key Words: ecology of the city, the water sensitive urban design, transdisciplinary, patterns of organization, urban sustainability.

References

- Alexander, C et al. (1977) *A pattern language* (Oxford University Press, London).
- Alexander, C et al. (1978) *Urbanismo y participación* (Editorial Gustavo Gili, Barcelona).
- Cadenasso, M. L. and Pickett, S.T.A (2013) 'ThreeTides: The development and state of urban ecological science', in: Pickett, S.T.A., Cadenasso, M .L. and McGrath, B. *Resilience in ecology and urban design. Linking theory and practice for sustainable cities* (Springer Science. New York) 29-46.

Mapping urban village as a form of urban ecology

Pingping Dou, Wowo Ding

School of Architecture and Urban Planning, Nanjing University, China

E-mail: pinnydou@gmail.com

Urban village is a by-product of the rapid development of Chinese cities and is often treated negatively as an unplanned and undisciplined phenomenon. One of the key characteristics of urban village is the co-existence of urban high-density and rural land ownership, which results in a compromised urban form of economy, policy and everyday life. This paper takes Shenzhen, the migrant city with a total number of over 300 urban villages, as the case study city, to build up an in-depth understanding of this distinctive urban form. We conduct field studies of selected urban villages that represent various urban locations and developmental stages, and then develop a method of mapping these urban villages in a multi-dimensional, context-sensitive and quantitative manner, thus facilitating a richly layered description of this collective urban form. By analysing the achieved mappings, the study improves the understanding of urban village in three aspects: first, it deciphers the underlying formative logic of this urban form; second, it identifies the evolutionary processes of this urban form; third, it proposes urban village as a form of self-sustained ecological sub-system that is sympathetic to the larger urban ecology.

Key Words: urban village, mapping, evolution, urban ecology.

Systemic analysis as tools for interaction. The case of Lyon Part-Dieu district

Guillaume Meunier

4, rue Ibarruri, TSA 80006, F-93188 Montreuil, France. E-mail: g.meunier@elioth.fr

One of the future challenges of building evaluation is the management of an increasing number of data. Whether we talk about the environment, acoustics or building itself, the information available or desirable in order to understand the situation is only growing. Worse, the evolution of a project on its entire life-cycle cannot be read in the light of one isolated information, but it can be addressed on indicators that provide a systemic approach to a set of changing factors. It is in this context that we sought to find a way to aggregate, analyse, evolve and present environmental information on the neighborhood level. The first idea is to use a database of the area and to create a data warehouse by injecting data we create or get from various sources: heterogeneous data must be made consistent and standardized. Then we need to visualize those data but our concern was to be more realistic and less diagrammatic so we use a 3D modeler to really see things. The 3D modeler was then the enhanced platform that interacts and visualizes data evolution over time. We propose also to share our experience in the case study of the district of Lyon Part-Dieu in France. First part will be about systemic analysis Second part will be on visualization Third part will be the case study We will conclude with the feedback we've had on our project and what future improvements can be made.

Key Words: systemic, interaction, tools, analysis, datawarehouse.

Understanding the relationship between urban form and microclimate conditions in urban planning

Kattia Villadiego Bernal

ABC Laboratory - National School of Architecture - ENSAM
CIRTA Laboratory, Institute for Urbanism and Regional Planning (IUAR) – IUAR,
Aix-Marseille University. E-mail: katth27@hotmail.com

The impact of urban form on microclimate conditions has been established by several investigations (Makaremi et al., 2012; Mallick, 1996). Energy consumption, vulnerability of cities and human thermal comfort are all affected by climate. We are particularly concerned about human thermal comfort, especially in cities with hot and humid climates. In many such cities socio-economic conditions do not permit residents to avoid uncomfortable thermal conditions. We carried out a survey in Barranquilla (Colombia), a tropical city with 1,193,952 inhabitants. Using tools and knowledge from urban climatology (Stewart, 2011), we classified the urban forms of the city by taking into account the parameters related to microclimate at the street scale. Results confirm the fact that adaptation plays an important role in thermal comfort, as other authors have suggested (Nikolopoulou and Lykoudis, 2006). But adaptation is not synonymous with comfort. Interviews with urban planners and designers (most of them architects) in Barranquilla's Local Urban Planning Department showed that they are not well familiarized with urban climate knowledge, and as expected, this subject is not being integrated into the city's urban policy. Planning and urban design can improve difficult thermal conditions, but first, urban planners need a better understanding of urban climate and more effective methods and procedures to incorporate climatology and bioclimatology in urban projects and urban policies. We present our study of urban form and thermal comfort in order to help architects and urban planners understand climate variables and introduce such considerations in urban projects to improve thermal comfort.

Key Words: urban form, microclimate, thermal comfort, Barranquilla.

References

- Makaremi, N., Salleh, E., Jaafar, MZ, and GhaffarianHoseini, A. (2012) 'Thermal comfort conditions of shaded outdoor spaces in hot and humid climate of Malaysia', *Building and Environment* 48,7-14.
- Mallick, F.H. (1996) 'Thermal comfort and building design in the tropical climates', *Energy and Buildings* 23, 161-167.
- Stewart, I. (2011) 'Redefining urban heat island', Thesis dissertation, The University of British Columbia, Vancouver.
- Nikolopoulou, M. and Lykoudis, S. (2006) 'Thermal comfort in outdoor urban spaces: analysis across different European countries', *Building and Environment* 41, 1455-70.

Urban street tree modelling using high polygon 3D models with photometric daylight systems.

Marcus White, Nano Langenheim

Architecture Building and Planning, University of Melbourne.

E-mail: mrwhite@unimelb.edu.au

The choice of street tree species, size and placement is an integral part of street design in any city, but particularly in cities with large seasonal temperature variation such as those experienced in Melbourne, Australia. The arrangement and choice of street tree can make a street seem too dark in winter or not provide enough shade in summer. Trees have traditionally been difficult to model digitally and have been considered “polygon-heavy” (thousands of polygons) making them computationally prohibitive to use for three-dimensional modelling and rendering analysis, particularly on an urban design scale. Thus street tree assessment is typically limited to spreadsheet /database form, two-dimensional plans and sections or photographic collage to test aesthetic implications. In this paper we discuss methods which bring together developing research into mathematical algorithm tree simulation, increasing processing power in affordable personal computers along with improvements in render engines with photometric daylight analysis along with efficient ‘proxy objects’ which allow large numbers of highly detailed three-dimensional representations of trees to be rendered. We discuss the initial results of this study demonstrating that it is now feasible to use high quality three dimensional polygon street trees in urban models with photometric daylight analysis. We report that it is now possible to assess the solar amenity and shade impact of a variety of tree species at different seasonal and time intervals with an iterative design process allowing multiple scenarios to be tested effectively in short periods of time.

Key Words: tree modelling, urban modelling, liveability, urban forest.

The recomposition of urban public spaces. Case study of the historic centre of Noale, Italy

Enrico Pietrogrande, Alessandro Dalla Caneva

Department of Civil, Environmental and Architectural Engineering, University of Padua
E-mail: enrico.pietrogrande@unipd.it

The theme of this paper is the recomposition of public spaces in the ancient town when compromised by old and recent speculative interventions. The working method is based on the belief that, in the study of urban morphology, is basic to analyse the history of the city, clarifying the relationship between permanent structures on the one hand and temporary ones on the other. The history becomes an indispensable tool to know the deep reasons of the urban structure which is the memory and the image of the community. The paper is based on fundamental 1960s studies and following about typological analysis (Aldo Rossi, 1966; Carlos Martí Arís, 1993) specifically oriented towards the theme of public spaces and establishing relationships between these ones and private spaces. The spatial aspects and formal image of the transformations in the city are studied as a premise for the design of the new architecture. Noale, not far from Treviso (Italy), was one of the subjects the students on the course of Architectural and Urban Composition 2 at the Department of Civil, Environmental and Architectural Engineering of the University of Padua specifically investigated as an opportunity to redesign the unity of the historic centre of this town that had previously been lost. The order and hierarchy of the elements that characterize the form of this old place has been compromised by subsequent actions of speculation operated in the second half of the twentieth century. The ancient town is used as a case study in which the analysis and proposals for a new urban design concentrate.

Key Words: public space, urban analysis, identity of the community, memory, history as a tool for the project.

References

- Rossi, A. (1966) *L'architettura della città* (Marsilio Editori, Padua).
Martí Arís, C. (1993) *Le variazioni dell'identità. Il tipo in architettura* (CittàStudi, Milan).

Landscape design method toward tops of surrounding mountains in Japanese castle towns

Keisuke Sugano, Shigeru Satoh

Graduate School of Science and Eng., Waseda University, Japan

E-mail: keisukesugano@gmail.com

The crowned mountaintops of almost all Japanese castle towns are visible from the streets. This landscape composition is common in Japan and, evidently, in most countries of East Asia, seeking to pay respects to mountains and Nature with belief – a landscape design worthy of consideration. Yet, although this landscaping phenomenon can be verified via large scaled map or field inspection, the landscape design with specific aims, religious worshipping for example, must be processed with scientific methods for accuracy. Thus, this paper concerns itself with the relation between mountaintop and centerline of street; accurate typological locations cannot be pinpointed to serve the aimed landscape design without applying GIS and GPS. This research, based on street location variation, seeks to manifest the landscape characters and mountain variances with the following three points. First, the centerline of main street as Town's frame must be mathematically linked to the mountaintop; accordingly, the town's streets may be built using the mountaintop as reference point for measure. Second, streets being town's details, the street-centerlines do not always perpendicularly face the mountaintop. As the street bends, the mountain view changes; the mountaintop leans and shifts, also. This is landscape aesthetics; the mountain view must be grasped visibly from the streets, whilst designing the town. Third, for the mountain as sacred object, the worshipping paths of temples and shrines must be accurately measured to face the sacred mountaintop.

Key Words: landscape design method, Sacred Mountain, castle town, GIS, GPS.

Measuring urban canyons with a real-time sky view factor modelling

Marcus White

Architecture Building and Planning, University of Melbourne.

E-mail: mrwhite@unimelb.edu.au

Many Australian cities are currently experiencing rapid urbanisation and densification with the unintended consequence of creating dense city fabric with deep urban canyons. Dense urban areas have a profound impact on the local atmospheric conditions in particular, the urban heat island (UHI) which can increase temperatures within urban centres considerably when compared to surrounding rural areas. As Australian cities are presently experience record heat waves with temperatures in excess of 40 degrees Celsius for five consecutive days, there is a critical need to better understand urban form and heat retention in city centres – urban heat island effect (UHI) and the associated heat related morbidity. This paper describes the development of a new three-dimensional analysis approach based on a modified daylight modelling system to improve an established method of UHI prediction – sky view factor (SVF). A rapid SVF is calculated in a digital modelling and visualisation environment allowing iterative design decision making informed by UHI and SVF impacts on an urban design scale. The new technique provides ‘real-time’ SVF feedback for of complex three-dimensional urban scenarios enabling city designers to have a greater understanding of existing and proposed urban forms and identifying potential UHI problem areas; improve decision making, community engagement and design advocacy; potentially have an impact on city’s temperature – reducing cooling energy load costs; and more importantly, potentially reduce heat related mortality.

Key Words: sky view factor, urban heat island, urban canyon, urban modelling, liveability.

An approach on describing the street skyline: a framework for identifying street's spatial significant lines

Hao Yang

School of Architecture and Urban Planning, Nanjing University

E-mail: byldhc@126.com

In urban morphology, researchers have developed many methods on describing the characteristics of urban street patterns. However, a simplified representation of urban texture in just two-dimensions, which does not take into account the dimensional property of street's elevation (later referred to as 'metric'), therefore, the topological representation of cities discards precious metric information and is rather limiting. Some researchers have attempted to add the information (such as the fractal dimension) about the street skyline to study the street configuration. However, when preparing a street skyline for this method, several critical decisions must be made about which street skyline features should be included in the representation and why. Without a consistent, reasoned way of making such decisions, isolated fractal dimension results for streets are potentially meaningless. Therefore, the present paper draws on postpositivist reasoning to propose a framework for deciding which lines in a street representation are significant for a study and why. The framework contains several levels of representation that are defined and mapped against comparable research agendas. These levels are described and demonstrated using a street skyline from 12 blocks which contains 6 housing blocks and 6 mix-use blocks in urban area of Nanjing, China. The results of the fractal dimension analysis of different representations of the street skyline are used to demonstrate how decisions about significant lines have a direct impact on measures derived from fractal analysis. By using different layers to express the spatial significant lines, we can interpret the average and properties of block.

Key Words: street skyline, framework, fractal dimension, layers, interpretation.

Urban form and accessibility to rail transit stations: a case study of Auckland.

Saeid Nazari Adli

School of Architecture and Planning, University of Auckland

E-mail: saeid.nazari-adli@auckland.ac.nz

Urban train stations (UTSs) are important destinations for every day walking and cycling, and providing them with quality pedestrian access improves urban rail ridership. However, little research has been done to explore how the characteristics of urban form along these routes that provide pedestrian access to UTSs can influence urban rail travel demand. Urban morphology in general and the idea of urban fringe belts in particular have been recognised as a powerful means of understanding the physical form. This study examines how urban forms in different morphological periods affect a person's decision to walk to a UTS. All 38 UTSs in Auckland, New Zealand have been grouped into three categories, based on their location and the corresponding morphological period that relates to the development of Auckland. Using GIS, a multiple regression model will be applied to each of the three categories of stations. It is expected that the results show that the transit ridership between the inner, middle and outer fringe belts and beyond that, are influenced by the morphological characteristics of their urban form. The results provide policy implications for a city to improve its walkability and increase urban rail ridership. More specifically, the results will help to inform the evaluation, design and development of more walkable surroundings near train stations. Despite the fact that the findings will be validated in Auckland, the methodological framework is expected to be applicable in different contexts.

Key Words: urban form, pedestrian accessibility, urban train station, Auckland.

Morphology and typology of multi-storey car park: the case of Vitória, Brasil

Heraldo Borges

Faculdade de Arquitetura e Urbanismo, Universidade Presbiteriana Mackenzie

E-mail: heraldofborges@gmail.com

From the 50s, the automobile, as few inventions, became, with the endorsement of the literature, Hollywood and advertising, status symbol and expression of freedom and individuality. Currently, this same invention is associated with serious urban and environmental issues becoming uncool for recent generations. However, as Louis Khan can vouch, the automobile is a means of transportation as important, necessary and legitimate as any other, and do not constitute itself in a problem but how it is currently used, especially in Latin America's large cities, still very deficient in mass transportation. So, how to deal with this ambivalent nature and how to embrace it according contemporary paradigms such as sustainability and low-carbon cities? To answer this question the investigation will use the city of Vitória – a Brazilian mid-size metropolis – which offers various examples of multi-storey car park scattered in distinct urban situations within its historic center and, in the next future, will be reviewing its Urban Planning Code to cope with typical latin american urban problems as real state speculation, traffic congestion, social and territorial inequalities and lack of public spaces.

Therefore, the paper investigates how the morphology/typology of multi-storey car park holds potentialities to be a viable alternative for the improvement of dense urban fabric with low quality public space and is divided in three parts: i) Theoretical and conceptual framework about multi-storey car park and its impact in the surroundings; ii) Typological and morphological analysis of four case studies in downtown Vitória; iii) Final considerations about how this morphology/typology can contribute to the planning and designing of the public and constructed space.

Key Words: urban morphology, building typology, multi-storey car park, Latin America, Vitória.

Reciprocities in spatial positioning of airport and city

Bardia Mashhoodi, Alex Wandl, Arjan van Timmeren

TU Delft / Faculty of Architecture & the Built Environment

Department of Urbanism, Julianalaan 134, 2628 BL Delft, The Netherlands

E-mail: b.mashhoodi@tudelft.nl

The vocabulary of urban morphology is dominated by the terms which try to explain the morphological properties of a location such as urban fringe, centre, suburb, corridors, etc. However, in most of the cases, such words are either ill-defined or merely refer to a single type of morphological property (such as a *space syntax* analysis). This research, aims to explore the relation between location of airports and regional economy across Europe. To do so, a method has been developed to describe the location of an airport through obtaining the relative centrality values (by means of *Kernel density*) of an airport, in regards to its different morphological properties. In this case, an assessment on topological *Betweenness* in 45km, population, and three types of land cover: urbanized, agriculture and leisure/green (see the histogram), is presented. Based on the centrality values, different typomorphologies of airports' locations are obtained by means of *Hierarchical cluster analysis*. At the end, we compare different typomorphologies of the airport location in terms of employment and prosperity, which they bring to their urban region (employment and GDP per passenger, compared by *ANOVA*, one way analysis of variance). The proposed method is generic and adaptable, in a sense that it can be applied for different purposes by using different types of geographic information. It also can be applied by different users, because its components (*Kernel density* and *Hierarchical analysis*) are well known techniques and are supported by variety of software (such as Arc map, spss, R, MATLAB, etc).

Key Words: Europe, centrality, airport, typomorphology, urban economy.

Systems thinking for new perspectives on urban form – a case study of urban transport corridors

Nicholas Stevens, Paul Salmon

Regional and Urban Planning Program, University of the Sunshine Coast,
Maroochydore, Australia

USCAR, University of the Sunshine Coast, Maroochydore, Australia

E-mail: nstevens@usc.edu.au

Urban planning and design require new ways of interpreting urban form that allows for the understanding of multidisciplinary approaches and cooperative outcomes. This innovative study brings together the disciplines of Human Factors with Urban Design to investigate the form and design of urban transport corridors (Stevens and Buksh, 2013). These connectors of people and place go beyond the roadway and consider the dynamics of adjacent urban form. They are defined by the disparate demands of engineering, urban planning, urban design, property development and community expectation. Using Cognitive Work Analysis (CWA) this study investigates and identifies the interdependencies and ability of these urban corridors to operationalize best practice road user hierarchies that give highest priority to walking and cycling. CWA (Vicente, 1999) is a systems analysis and design framework that identifies the constraints imposed on activities and designs new systems that better support the activities of interest. CWA has been used in a variety of design activities in several domains, including defence, disaster management, process control, and road safety (Salmon et al., 2010). This research is the first to apply CWA as a tool to interpret the interdependencies of urban form and its component elements. The application and extension of sociotechnical systems theory in an urban setting has allowed for unique insights. A key aspect of the framework is that it is formative in nature describing what could happen if design modifications are undertaken, rather than provide normative analyses of what should happen. The results of this study allow for a clearer interpretation of the relationships between all of the physical elements of the corridor and its intended functional purposes. Through the analysis of case study urban corridors, this research provides a means to understand the multidisciplinary requirements for establishing urban form which supports safe and accessible use by pedestrians and cyclists.

Key Words: Cognitive Work Analysis, urban corridors, systems analysis; multidisciplinary design framework.

References

- Salmon, P. M., Stanton, N. A., Jenkins, D. P. and Walker, G. H. (2010) 'Hierarchical task analysis versus cognitive work analysis: comparison of theory, methodology, and contribution to system design', *Theoretical Issues in Ergonomics Science*. 11, 504-531.
- Stevens, N. and Buksh, B. (2013) 'A leading practice framework for sustainable urban transport corridors', *Proceedings of the 2013 Planning Institute of Australia National Congress*, March.
- Vicente, K.J. (1999). *Cognitive work analysis: Toward safe, productive, and healthy computerbased work*. Mahwah, NJ: Lawrence Erlbaum Associates.

How urban form influences accessibility: calculating several measures for distinct urban contexts in Portugal

David Vale¹, Rui Alves², Miguel Saraiva¹, Mauro Pereira¹

¹ CIAUD, Faculty of Architecture, Universidade de Lisboa

² Instituto Politécnico de Castelo Branco

E-mail: dvale@fa.ulisboa.pt

There is a vast literature about the relationship between urban form and travel, in which six dimensions of the built environment that influence travel are identified – density, diversity, design, destination accessibility, distance to public transport and demand management – besides the influence of demographics, forming the so called ‘7 Ds’. However, we argue that these dimensions in themselves do not have a straightforward relationship with travel, but only an indirect relation by changing the accessibility of places, which in turn has a clear influence on travel. Urban form in itself is such a variable with an indirect relationship, included in the ‘design’ dimension identified above. Specifically it influences the topological accessibility of places, one of the four main categories of active accessibility. In this paper, we calculate several accessibility measures applied to distinct urban form typologies, in order to understand the impact of urban form on topological accessibility and also to understand the limitations of the available topological accessibility indexes. Our results show that there is a clear influence of urban form on accessibility, but also that the parameters used to calculate the indexes have a strong impact on the value of the accessibility itself. Therefore, in order to understand which parameter best represents the influence of urban form on accessibility, further sensitivity analysis is needed, based on an analysis of mobility patterns of residents and workers and of the urban characteristics of their residential and workplaces.

Key Words: accessibility, urban form, active travel, topology, urban morphology.



3.

The Evolution of Urban Form

Analysing urban forms almost always involves a time dimension since human societies are not static. There were dramatic changes in town plans in the 12th and 13th centuries in European cities. Architects rediscovered geometrical techniques that had been lost since Roman times and applied them to both buildings and town plans. At the same time, and on a different scale, more stable building materials came into use (timber-framing and brick) which enabled buildings to survive for much longer time periods so that it was economically sensible to adapt them rather than rebuild. With the industrial revolution of the 18th and 19th centuries European cities grew rapidly and new house forms were developed to provide cheap housing for industrial workers. City centres were re-planned, adapted and rebuilt to provide greater functional utility. At the same time a multiplicity of new building types were developed to cater for new functions: from banks to prisons and shopping arcades to city halls. From the 17th to the 19th centuries European economies were extending their reach to new colonial territories and ‘exporting’ urban layouts to provide the necessary central-place and military functions, and the *entrepôt* economic functions, necessary in these colonial territories. Most of these new urban places were based on grid street patterns and common plot sizes and growth was demarcated by grid extensions, not always in congruence with their predecessors, based on underlying land-ownership patterns. The end of the 19th century saw a new morphological period develop in many parts of the world with low-density housing layouts characterising much of the Anglophone world and much higher density apartment blocks in other parts of the world. In city centres technological innovations led to taller office towers and the pace of morphological change at all scales became more rapid. In many city centres the life of buildings from new-built to demolition and redevelopment could be as short as 25 years, whilst concentration of capital resources has meant that huge developments can wipe out a thousand years of an intricate town plan and replace it with layouts lacking any historicity. Urban morphologists are still struggling to get to grips with the scale of some of these modern changes and integrate them into their models of townscape change.

Terry R Slater

Polish city from conzenian perspective – fringe belt phenomenon in Toruń

Magdalena Deptuła

Department of Political Geography and Regional Studies, University of Łódź, ul.
Kopcińskiego 31, 90-142 Łódź, Poland. E-mail: magbar81@wp.pl

The fringe belt idea is one of the most important concepts of urban morphology originating from conzenian tradition. Being developed through over half a century it significantly evolved becoming not only an integral part of the detailed town plan analysis but also a tool for synthetic comparisons of towns and cities of different regions and cultural contexts. In the current literature on the subject a great attention is paid, among the others, on the influence of various processes, especially those resulting from different political and economic systems and ideologies, on patterns of fringe belt development. An often raised question is also the role of fortification systems in the process of fringe belt formation. The analysis of fringe belt phenomenon in the city of Toruń makes it possible to take an attitude towards above-mentioned issues in relation to Polish conditions. As an important political and administrative urban centre of medieval genesis Toruń experienced turbulent history, which was not indifferent to its urban structure. This paper seeks to outline how the following morphological periods, especially partitions of Poland, when Toruń was transformed into an important Prussian stronghold with double fortification zone, but also socialism period with associating it industrialization and controlled urbanization, influenced the specificity of fringe belt in Toruń.

Key Words: fringe belt, fixation lines, stronghold, historical development, socialism, Toruń, Poland

Investigating the fringe belt concept: The case of Istanbul, Turkey

Ayşe Sema Kubat, F. Belgin Gumru

Department of Urban and Regional Planning, Istanbul Technical University. E-mail:
kubat@itu.edu.tr

Urban fringe belts are substantial morphological elements that enable the interpretation of the physical form of urban areas, urban growth and transformation. This paper presents the findings and results of the preliminary study of fringe belts in Istanbul, Turkey with a specific focus on the inner fringe belt formed with the fixation effect of the Theodosian Land Walls. The analysis of Istanbul's fringe belts was conducted by examining the land uses that are classified as fringe belt uses and parcel sizes. Eventually, the existence of an almost continuous fringe area in Istanbul was identified. This area begins with the inner fringe belt formed along the Byzantine Theodosian Land Walls, is then followed by the fringe belts along the E-5 Highway and Kurbagalidere, a river on the Asian side of the city. This fringe area is evaluated through historical and spatial points of view. The paper, then, further analyzes the inner fringe belt along the Theodosian Land Walls. In this context, three areas with different characteristics along the inner fringe belt are identified: 'Fixation cemeteries' between Ayvansaray-Edirnekapi, 'fixation parks' between Edirnekapi-Topkapi, and 'fixation farms' between Topkapi-Yedikule. It is concluded that the unique characters of the fringe belts of Istanbul should be carefully analyzed and evaluated by urban planners, urban designers and landscape architects. The conservation of this unique character should be considered as a priority.

Key words: fringe belt; fixation line; Istanbul; urban morphology

Fringe belt analysis as a means to interpreting the urban evolution of Rabat

Simone Safe, Stael de Alvarenga Pereira Costa

School of Architecture, UFMG

E-mail: simonesafe@globbo.com , staelalvarenga@gmail.com

Fringe belts, extensive areas of low density and wide open spaces designated for institutional use, are a morphological element in the urban landscape. Rabat, capital of Morocco, conceived during the French protectorate, received in 2012 a UNESCO World Heritage title for representing a modern urban planning model that integrates an open space system with its historical nucleus. The aim of this study is to investigate the evolution of urban Rabat according to the morphological periods of developments, in order to, ascertain whether or not the fringe belts can reveal the historic areas in which the city has evolved over time. It also seeks to understand how fringe belts have contributed or may contribute to the formation of an integrated open space system. The spatial boundary used in this research follows the Henri Prost designed city. Units of fringe belts and open spaces were identified based on historical and fieldwork research. The detection and analysis of existing fringe belts can widen our understanding of the integration of the open space system. Moreover, recognition of these elements may apply to public management planning parameters and possible interventions in the environment, incorporating the fringe belts in an open space system policy. This methodological application can also assist in urban planning as being in control of fringe belt occupation can help in preservation. Furthermore, anticipation of new uses assists in keeping low density areas intact and can prevent high density, high profit developments, which effectively destroy urban quality. Considering the relevance of this morphological element to the urban landscape and the scarcity of studies on the fringe belts in Morocco, the approach adopted in this work demonstrates how the application and dissemination of a methodology may be practically employed and opens new perspectives for studies on the subject.

Key Words: urban morphology, fringe belts, open space system, Rabat.

Transformation of the fringe belt units at the perimeter of Avenida do Contorno/Belo Horizonte/MG

Karina Machado Simão, Stael de Alvarenga Costa

Urbanism Department, Architecture School Federal University of Minas Gerais, Brazil

E-mail: karinamdc@yahoo.com.br , staelalvarenga@gmail.com

This article reports the transformations that have occurred in inner fringe belt units located within Avenida do Contorno, Belo Horizonte / MG. Fringe belts, according to urban morphology concepts, are spaces for institutional use, low density and have a higher amount of free space in relation to nearby residential areas. They are classified, according to M.R.G. Conzen (1960), as inner, middle and outer, depending on their development over time and location. Conzen (2004) contended that, the transformation of fringe belts included growth or reduction that may occur by alienation or transference. This issue has been reported in European and American institutions that follow the English School of urban morphology. In this article, fringe belt units are identified and their transformation is analyzed individually. An evaluation is also made of the transformation of the three elements recommended by Conzen that make up the urban landscape (urban plan, built fabric and land use) of each fringe belt unit. The process of transformation mapped out in the study is reported in terms of increases or decreases and indicates that, for example, 30% showed an increase, whilst the remaining 70% manifested a reduction. Therefore the study concludes that there has been substantial and detrimental reduction in fringe belt units in Belo Horizonte.

Key Words: fringe belts, transformation, urban form, process, Belo Horizonte.

References

- Conzen, M.R.G. (1960) *Alnwick Northumberland: a study in town-plan analysis* (Institute of British Geographers, London).
- Conzen, M. R. G and Conzen, M. P. (2004) *Thinking about urban form: papers on Urban Morphology, 1932-1998* (Peter Lang Publishing, European Academic Publishers, Bern).

The morphological evolution of Northwest and Northeast inner fringe belt in Macao's Portuguese Town influenced by Fujian-Canton ethnic culture

Jianyi Zheng, Kuantai Cheong

School of Architecture, Huaqiao University. School of Architecture, South China
University of Technology

Fujian Zhongjing (Xiamen) Architectural Design Co., Ltd

E-mail: archi_yi@163.com , 546590928 @qq.com,

Macao, known as a port city for trade between modern China and the West, had formed a unique double-city space structure, namely the Portuguese Town in the southern city governed by Portugal and the Chinese Village in the northern city governed by Ming&Qing Dynasty. With the economic development and ethnic struggle and fusion, the IFB had gradually develop along the fixation line based on the wall of Portuguese Town and the original coastline. In this article, we have a deep research on this area by field survey, map analysis, ArcGIS, Depthmap according the method of M.R.G Conzen theory. It concludes: i) the fixation line was constructed by man-made city wall for fortifications in the northeast and geographic boundaries in the northwest and southeast; ii) it was the Fujian-Canton ethnic culture that had greatly developed the IFB, especially those Chinese merchants who were the intermediaries between the Portuguese Macao government and Chinese government. In the northeast, the motivation was the invasion of Chinese ancient villages and the urbanization by force. However, in the northwest, it was the great demand for port trade lands and commercial-residential lands reclaimed from sea; iii) then, it showed the big blocks composed by large plots and grid street patterns in northeast. In the northwest, it showed the unique Patio-Beco blocks composed by organic plots which were similar to Chinese traditional market streets.

Key words: Macao, Portuguese town, Fujian-Canton ethnic culture, inner fringe belt, Patio-Beco blocks

Urban morphology and architectural design in small towns. The case study of San Vito Romano

Pina Ciotoli

Departement Diap, Doctorate Draco, University of Rome 'Sapienza', Italy

E-mail: giusiciotoli@libero.it

This paper presents a case study of an ongoing research on urban morphology and design in small towns, following a experimented methodology (Strappa, 2013) focused on special building types, and the relationship between consolidated urban tissues and contemporary design. This methodology is applied in the case study of San Vito, analyzing the place as a text, identifying the elementary structures and subsequent changes of the historical fabrics. Reading the place in different scales, territorial, urban organism, urban fabric, building (basic, specialized) we understand the formation process, corresponding to a phenomenological reduction necessary to solve the organism's complexity. Reading San Vito's urban fabrics was accomplished first by surveying ground plan walls and the orientation of houses along the routes. Following these alignments we can recognize the paths's hierarchy within the urban organism. The presence of trapezoidal form buildings is due to the shift of the front housing or maybe to the less importance of a matrix route. Reading buildings and public spaces is substantial and integral part of the project. The specific characteristics of housing expressed by type's notion are transformed over time through continuous updates. The most important of these changes is recognizable as a specific character of Italian architecture, the increasing of basic buildings to form specialized ones. The project is based on the concept of a building as a synthesis of all these processes, so were considered the relations established over time between routes, public spaces, buildings. All this constitutes the primary structure of the project.

Key Words: urban-morphology, architecture, urban-design, small-towns, knotting.

References

Strappa, G. (2013) 'Territorial organism and urban knotting. Design methods for minor centers of Lazio', *FA magazine*, 23, 19-23.

The urban layout evolution and the complexity of Portuguese city

Sérgio Fernandes

Forma Urbis Lab, Department of Project, Faculty of Architecture - University of Lisbon. E-mail: sergiopadrao@gmail.com

The morphological reading of the built city is developed with the aim of identifying and understanding the complexity of urban form and the phenomena that act in the production of urban layouts, focusing on the Portuguese cultural context as an observation and analysis privileged space. The paper addresses the theoretical urban layout composition principles present at the city shaping's initial moment. This phase of the urban construction is always a consequence of an urban idea, a project, or simply a prior conceptualization that can be drawn or not, but which always originates a built reality. It may include the entire city layout or just a single part of it. Considering the conceptual framework of actions, operations and rules that involve the urbanization process and, consequently, the production of urban forms, we clarify, through the reading of the layout sedimentation process, that the Portuguese city's morphological identity reveals itself on particular conception of the urban layout. The urban layout imprint can be understood as a phased process of urban formation throughout the time and its specificity is generated by the sensitive interpretation of the site, the adjustment to the topography and the rational use of pre-existences in which the city shape is mainly a result of applying composition principles and urban space organization systems. The methodological approach is based upon the constitutive strata decomposition of the Portuguese cities layouts and upon their comparative reading by the sedimentation process reconstitution. From this point of view we examine the urban form today, in its current state, and particularly the facts that determined or led to the origin of its production.

Key Words: urban morphology, urban layout, urban evolution, public space, Portuguese city.

The morphogenesis of Québec City's first suburbs

Pierre Gauthier

Department of Geography, Planning and Environment, Concordia University

E-mail: pierre.gauthier@concordia.ca

Relying on the theory and methods of process typology, this paper presents the results of a case study on the morphogenesis of Québec City's first suburbs from the 18th and 19th centuries onward. Drawing heavily on cartographic documentation, urban iconography, and archival material on land development, it sets about retracing the initial edification and later evolution of the urban tissues of the Saint-Roch and Saint-Jean suburbs, before unveiling the typological process that affects their residential architecture. In a classical urban morphology manner, the study tells the tale of an urbanization process that sees modest residential forms of rural origin gradually transform into denser multifamily structures once transplanted in an urban context. But these were times of rapid urban growth and a period that saw an old-regime economic and juridical system giving way to a capitalistic mode of production. Here, the narrative gains in complexity as one could read in the fine folds and articulations of the domestic and urban spaces, shifting modes of spatial symbolization that denote rapidly changing economic and building practices as well as evolving dwelling habits. The research highlights the fact that the morphogenesis of Québec City's old suburbs is both strongly rooted in the vernacular architectural tradition on the one hand, while manifesting a collective and localized response to broader political economy and historical circumstances on the other. The fact that such complex dialectics can be accounted for by process typology's analytical framework, testifies to the pertinence and robustness of that approach.

Key Words: Québec City, urban morphogenesis, process typology, building and development practices.

The building of a city: private and public agreements in Montreal 1790-1850

Alexis Ruelland, François Dufaux

École d'architecture de l'Université Laval, Québec

E-mail: alexis.ruelland.1@ulaval.ca , francois.dufaux@arc.ulaval.ca

The production of private and public spaces – housing, squares and streets – in Montreal's first half of the 19th century is framed by observations and paradigms about why and how was conducted the planning and development of the American city and the colonial town (King) in the 18th century (Latouche) or after 1850 (Gilliland). The analysis of the provision of the public spaces in the growing 'faubourgs' highlights the peculiar balance between private interest and the public common good. A combination of limited means and modest speculative expectations favoured an array of small procedures, from top-down planning proposal by a civic ordinance and expropriations, to private initiatives of selling or giving the right-of-way opening streets' segments. The range of right-of-ways and land subdivisions patterns are morphological components making the urban space. A similar and parallel study of building contracts in the notaries' archives depicts similar small scale processes in the housing patterns and the construction methods. The contracts and the specifications set the commitments between clients and builders defining the common assumptions for the erection of a building, and the specific features answering a site condition and location. Construction materials describe another set of morphological components for the production of the built space. Both scales described the morphological translation of an emerging urban form and culture. It renews the interpretation about the relationship between public and private processes, colonial order and vernacular opportunities. The morphological analysis is a demonstration of a material culture, and the disclosure of political agreement between the public good and the private interest.

Key Words: colonial city, street planning, building specification, public and private interest.

Analysis on the multi-scale morphological evolution of historic centre in Shantou, China

Lin Zhou, Keshi Chen

School of Urban Planning and Design, Peking University

E-mail: lin.zhou@pku.edu.cn

With the fast speed of Chinese urbanization and economic development, urban spatial growth has experienced noticeable changes. Most large and medium-sized cities are representing recessions of historic centres in varying degree nowadays. In this context, how to correctly understand the evolution of historic centre in urban spatial morphology is important. This research combines space syntax techniques with digitized historic maps and socio-economic variations in order to take the morphological evolution of Small Park conservation districts of historic sites, Shantou, China from the 1860s onwards. The result shows that the evolution has mainly experienced three stages, which are self-organization period, urban planning-directed period and commuter network control period. Two embedded urban renewals, either of which took place in different social system played an important role in the evolution. The living center transforms from its original form of centralization into the later one of decentralization in multi-scale. This research also reveals that Small park area has been featured with the local centrality in different periods. However, with the expansion of city, it has lost its capacity to integrate social and economic activities in the whole city. On the basis of content analyse, some useful pieces of advice have been put forward for historic centre development. Objective and quantitative researches on the multi-scale morphological evolution are of extreme importance to clarify the history of urban planning. It can also give some methodological suggestion for the renewals of the historic centres in Chinese cities.

Key Words: space syntax, morphological evolution, multi-scale, historic centre, Shantou.

The establishment and organization of mono-axial urban fabric: the ‘Rua Direita’ in the Portuguese city

Ana Amado

Forma Urbis Lab, CIAUD, Faculdade de Arquitectura da Universidade de Lisboa

E-mail: ana.martinho.amado@gmail.com

In the Portuguese urban and cultural environment ‘art of making the city’ and ‘specificity of the Portuguese city’ have been argued and characterized as a group process that clusters and contains a synthesis of knowledge developed over centuries that will materialize specifically at the time of expansion overseas. The expansion model of the Portuguese city, generally recognized as complex and subject to numerous and different principles, has been questioned especially in contrast with the models of other European nations based on orthogonal meshes. Thus, we present the object of study ‘Rua Direita’ (‘Straight Street’) as a structural element of many cities of Portuguese origin. The ‘Rua Direita’ is identified as a common element in this cultural context, which is expressed through a wide range of features, revealing a specificity and complexity, particularly in relation to their morphological diversity. From a methodological process based on comparative reading of representative cases and on the construction of a Typological Framework that identifies the type and summarizes its variants, characterizing this mono-axial model and reflecting the tradition of ‘Rua Direita’ with medieval origin, demonstrating its importance as a translator for an order and hierarchy, as a structural element and as a generator of urban fabric.

Key Words: Rua Direita (‘Straight Street’), urban morphology, urban fabric, Portuguese City.

Railway as a vehicle of urban transformation. Past and present of the train station

Kateřina Čechová

Department of Urban Design, Faculty of Architecture, Czech Technical University,
Prague. E-mail: cechokat@fa.cvut.cz

This paper aims to analyze the impact of railway development on the European city, and the evolution of this impact from the middle of the 19th century until nowadays. A core question underlies the analysis and directs the paper on the morphological path: The urban form of the 19th century was significantly redefined by the presence of the railway in all scales (Schievelbusch, 1986 and Veselý, 2008). On the single unit level, the train station, as the object of major evidence of railway presence in the city, caused whole city structure to reconfigure, from the position of city centre to the infrastructural network definition (Hons, 1961, Krejčířík, 1991, Musil and Maur, 2002). In the beginning of 21st century, the European railway celebrates its renaissance, despite not enjoying the exclusivity of its 19th century predecessor. The railway has changed significantly over the 150 years, so has the train stations. The hybrid objects, emblematic for the city, remind us remotely of the 19th century railway stations (Beneš and Ševčík, 2011). Back to the core question: Is there any transformative force in the contemporary nature of train station, affecting the urban structure in any way comparable to the force of the 19th century train stations? Is there any reconfiguration of urban patterns present in the contemporary city, that can be granted to the train station of present times? The examples of several European train stations are used to identify and specify the changes in urban structures, taking place all over Europe right now.

Key Words: railway, train station, urban transformation, urban structure.

References

- Beneš, O. and Ševčík, O. (2011) 'Architektura: Devadesátá léta a první desetiletí 21.století', *Architektúra a Urbanizmus* 45, 221-251.
- Hons, J. (1961) *Šťastnou cestu: vyprávění o pražských nádražích* (Orbis, Praha).
- Krejčířík, M. (1991) *Po stopách našich železnic* (Nadas, Praha).
- Musil, J. and Maur, E. (2002) *Zrod velkoměsta: urbanizace českých zemí a Evropa* (Paseka, Praha).
- Schivelbusch, W. (1986) *The railway journey. The industrialization of time and space* (University of California Press) 171-178.
- Veselý, D. (2008) *Architektura ve věku rozdělené reprezentace: problém tvořivosti ve stínu produkce* (Academia, Praha) 320-350.

The evolution of street cross-section proportion in Lisbon

Sérgio Barreiros Proença

Forma Urbis Lab, CIAUD, Department of Project, Faculty of Architecture, University of Lisbon. E-mail: sergiobarreirosproenca@gmail.com

Streets have always played a key role in the history of cities and city planning and configure both banal urban fabric and structural elements of the urban layout. Streets have such a seminal role for the urban artifact that some authors state that without them there would be no city, at least as our culture understands it. The morphological richness of the urban fabric of Lisbon allows to compose a broad and representative corpus of the city with Portuguese urban cultural matrix. In this study, this characteristic is relevant and significant of the morphological and morphogenetic diversity of the predominant urban element in the constitution of the consolidated urban fabric of the city – the Street. Despite the most common two-dimensional representation of the street space be made in plan, the one that is more immediately seized by who walks the street is its cross-section. The width and height of the street as well as the characteristics of its lateral limits are essential for the definition of the public space that constitutes the street channel. Based on a morphological reading and interpretation of the city streets, this communication addresses the evolution of the street cross-section proportion in Lisbon, and the rules that were at the base of its definition in each period from the XVI to the XX century, defining street types regarding the proportion ratio of the cross-section.

Key Words: urban morphology, typology, street, street cross-section, Lisbon.

The impact of Lisbon's subway development on 'Avenida da República' and 'Avenida da Liberdade'

Mafalda Sampayo, Carina Silvestre

Departamento de Arquitectura e Urbanismo, ISCTE-IUL. E-mail: mgts@iscte.pt

In an environment of political regeneration, Lisbon expansion during the XX century is marked by the 'Avenidas Novas' (new avenues) project. This expansion is defined by the progressive urbanism of Frederico Ressano Garcia. The avenues are the concretization of the 'Plano Geral de Melhoramentos de Lisboa' (plan for the improvement of Lisbon) ordered in 1864 by the public affair minister. The 'Avenida da Liberdade' is publicly opened in 1886 and is followed soon after by the remaining avenues. These are separated into four phases of construction: the first ending in 1920, the second going up to 1959, the third ending in 1989 and the fourth since then and into the present days. To each construction phase there is a correspondence with several constructive typologies. Many of the original buildings of these avenues have been replaced during the past few decades by new buildings with different functions and typologies. In this work we show how the development of the 'Avenida da República' and 'Avenida da Liberdade' is affected by the development of the Lisbon subway. The opening of a new subway station is transformative event that has potential impacts on the development of different sectors and of the growth of the city. We show the influence in the urban fabric of the opening of the subway stations of 'Restauradores', 'Avenida', and 'Rotunda' in 'Avenida da Liberdade' and 'Saldanha', 'Campo Pequeno' and 'Entrecampos' in 'Avenida da República'. This work was done by in several phases: i) critical reading of works that focus the space and time of the object of this study; ii) identification and analysis of several specific moments of the growth of both avenues; iii) assessment of the urban form of the 'Avenida da Liberdade' and 'Avenida da República' through a comparative analysis of the results.

Key Words: urban form, urban fabric, Lisbon subway, Avenida da Liberdade, Avenida da República.

Urban chronicles: exploring the evolution of the entrepreneurial disposition of Coimbra periphery

Ana Tavares

Department of Architecture, Faculty of Sciences and Technology, University of Coimbra. E-mail: contact.anatavares@gmail.com

Having recently evinced that roadway infra-structuration plays a significant role as engine of urban reorganization and territorial cohesion in the peripheral areas of the Coimbra city (Portugal), and having also tested it's attraction role for a diversified set of urban equipment that prioritizes the connection to the transportation networks of people and goods instead of the proximity to the consolidated urban core, the ensuing development of this line of investigation raises the question about how far the narratives of high topological accessibility and connectivity that I observed are in fact supported by a long-term perspective on historical evolution of the morphology of the Coimbra periphery and of its land uses. To answer this question I propose to examine the eastern parishes of Coimbra, long known for their industrial and entrepreneurial character, though the delineation of a longitudinal dataset on the human appropriation of their territory. The methodology will entail the construction of chronological series of axial maps of the area (based on the Social Logic of Space Theory, or Space Syntax) which will be associated with data collected from the publications of the National Statistical Institute and other relevant resources, both historic and contemporary, whereas providing adequately disaggregated data. By achieving this aim I will be able to identify both the morphological and socio-cultural parameters of change and/or continuity that would account for the maintenance of the economic strength of these parishes throughout the years and to summarize the reasons for their success inside Coimbra municipality.

Key Words: space syntax, Coimbra periphery, roadway infra-structuration, entrepreneurial character, economic strength.

Syntactic approach to cemetery morphology. Two cases in Lisbon

Egle Bazaraitė, Teresa Heitor, Valério Medeiros

DECivil Departamento Engenharia Civil Arquitectura e Georrecursos

Instituto Superior Técnico, UTL

E-mail: egle.bazaraitė@tecnico.ulisboa.pt , teresa.heitor@tecnico.ulisboa.pt ,
medeiros.valerio@uol.com.br

With the urban sprawl of the cities, the cemeteries and graveyards have been growing as well, turning into the metaphors of the cities themselves. At the moment a city faces a difficulty to maintain live and dead in decent conditions and side-by-side. Putting the cemetery outside of the city and dedicating an individual grave to each one were the solutions for the 18th century urban society, however today the situation goes back to the previous times becoming the same problem of confusion and loss of individuality. This paper studies the questions of orientation in two 19th century Lisbon cemeteries (Alto São João and Prazeres). Prazeres grew twice its size; while Alto de São João has grown by 3 times since it was founded. Using Space Syntax theory and Depthmap® software the paper approaches the parameters of integration, intelligibility inter alia, that are put into a cross comparison with the questionnaire results, retrieved from the visitors of both cemeteries. The questionnaire focuses on intelligibility of the cemetery and correspondent's relation to the cemetery's qualities.

Key Words: burial, cemetery, place ballet, space syntax, urban morphology.

U+D urbanform and design: a space syntax tool for design

Paolo Carlotti

University of Rome 'Sapienza' DIAP. E-mail: paolo.carlotti@uniroma1.it

It's time for a reflection about architectural design through European geographical's thought of the late nineteenth century (LEIGHLY, 1965), developed further especially in English and Italian cultures and particularly in urban morphology (urban morphology – Conzen) (Conzen, 1969) and architecture design (building typology – Caniggia) (Caniggia Maffei, 1979). This subject, initiated by Richter and Ratzel's thesis, advances to the primary synthesis with the idea of "region" by Vidal de la Blanche, and afterwards with the Sauer's idea of landscape as an 'organic body' (Sauer, 1925). Later it was improved by Conzen in urban morphology's field, and Muratori and Caniggia in the field of architecture relatively to the concept of 'tipo'. Morphology and architecture, landscape and building process are, actually, complementary scientific fields, essential for designers of historical landscape (Nevter, 2009). Several research and comparative studies between these two schools, have been the focus and a field for reflection. This has produced some major studies like that of space syntax. Landscape and historical spaces are texts that one should learn to read (Strappa, 2011), with this point of view the tissue and the urban body are words of a paper written by many authors, that shall be interpreted. They are like sentences and words of a collective work to be interpreted in order to build a grammar and syntax for architectural and urban design. U+ D wants to bring the Italian exception (typological analysis-Muratori-Caniggia) to a wider international discussion of urban morphology and in the same time it wants to emphasize the architectural aspect of this theme, which is essential for further and more effective architectural design dimension.

Key Words: space syntax, urban morphology.

References

- Caniggia, G. and Maffei, G.L. (2006) *Interpreting basic building* (Alinea, Firenze).
- Conzen, M.R.G. (1969) *Alnwick, Northumberland: a study in town-plan analysis* (George Philip & Son, London).
- Leighly, J. (1965) *Land and life. A selection from the writing of Carl Ortwin Sauer* (Berkeley press, Los Angeles).
- Nevter, Z. (2009) 'Testing an integrated methodology for urban typo-morphological analysis on Famagusta and Ludlow', Master's and Ph.D Theses, Eastern Mediterranean University.
- Sauer C. (1925) *Geography* (University of California publications, Berkeley).
- Strappa, G. (2011) 'The fabric as text', in P. Carlotti, *Studi tipologici sul palazzetto pugliese*, (Polibapress, Bari).
- Valente V. (2012) 'Space syntax and urban form: the case of late-medieval Padua', in *PCA. Post classical archeologies* (Mantova).

Building garages: the evolution of built form on the periphery of London 1880-2013

Ashley Dhanani, Laura Vaughan, Sam Griffiths

Bartlett School of Graduate Studies, University College London

E-mail: ashley.dhanani@ucl.ac.uk

This paper considers how the peripheral settlements of London have developed since 1880. Using a detailed reconstruction of built form and street networks for three historic epochs, an extensive area surrounding the town centres of Surbiton and South Norwood is studied. The study period captures the transformation of the areas from being relatively independent settlements to forming parts of the continuous urban fabric. This spatial transformation encompasses dramatic changes in building mass and type. This is modelled using novel semi-automated digitisation techniques to redraw the building footprints for each period. The detail achieved in the building footprint reconstruction allows for direct analytical comparison between historic and contemporary street maps. Similarly, cartographic redrawing techniques are used to reconstruct the street networks for the study periods. Rather than a simple linear increase in mass, the trajectory of built form is shown to be the dual outcome of shifts in land use patterns and the evolution of building types. In particular, the appearance of the domestic garage and the widespread adoption of personal motor vehicles are shown to coincide with a significant shift in the spatial development of the city: with large-scale road network infrastructures and changing patterns of street network densification. In order to contextualise the growth of peripheral built form structures in relation to the wider urban region, the study also includes diachronic analysis of the street network of Greater London overall. The results highlight the interdependencies between technology, network infrastructures and building typologies in the historical development of urban form.

Key Words: built form, garages, networks, peri-urban, London.

The evolution of house forms and the change of culture: a Turkish perspective

Duygu Gokce, Fei Chen

Liverpool School of Architecture, University of Liverpool.

E-mail: duygu.gokce@liverpool.ac.uk

The paper aims to investigate the interplay between the evolution of house forms and the change of residents' life styles. People continuously modify their living environment to improve their life quality. This has been done in a piecemeal manner traditionally where both the physical forms and life styles could be gradually adapted. However, high transformation rate of cities at the modern age has caused incompatibility of physical forms and the local culture. It is therefore important to study the dynamic link between house forms and the residents' everyday life and needs over time. Within the Turkish context, this paper will explain the change of Turkish house types within 5 different morphological phases (from the late Ottoman period to the present: 1890-1923, 1923-1950, 1950-1980, 1980-2000, and 2000s) when external influences have been received and indigenised. The house types are traditional Turkish houses, terrace houses, garden houses and apartments. The spatial arrangements of each house type will be analysed through case studies and special attentions will be paid to the everyday use in those houses and the relationships between private, semi-private and public spaces. The conclusion will be drawn on the house form in relation to people's way of living and will shed light on socio-culturally sustainable development and regeneration in contemporary Turkey. This paper will also contribute to the argument of positive impact of typological processes of physical environment on the local culture.

Key Words: urban transformation, house form, spatial organisation, residential satisfaction, quality of life.

Planning new towns for Africa: the Portuguese in Asilah (1471-1550)

Jorge Correia

School of Architecture, University of Minho, Portugal

E-mail: jorge.correia@arquitectura.uminho.pt

Asilah is a small town in Morocco, around 40 km south of Tangier. Its present size doesn't match the magnitude and importance of its past, especially as far as architectural and urban aspects are concerned. This paper examines one of its thinnest layers, yet extremely relevant: the Portuguese occupation (1471 to 1550). Asilah suffered intense processes of urban growth and shortening during the last millennium. After its medieval Islamic heyday, when the city occupied a large area, the perimeter was drastically shortened and reset upon the arrival of the Portuguese. Christian occupants decided a significant surface short cut, which still corresponds to the present-day walled medina. Through urban fabric analysis and resulting from recent field research, this paper wishes to state how the narrow Portuguese stratum has marked the urban image of the town at a time when urban concepts and practices were being modernized not only through the experience with the founding of medieval new towns, but also by adjusting to a hygienist spirit intertwined with an announced modernity in Europe. The search of a new identity related to a new lord and faith has induced strategies of fabric regularisation, now subordinated by a permanent re-Islamization process. Urban morphology methodologies allow retrospective keys to the reading of an important urban clash occurred in the early 1500s that still marks Asilah's present dimension, street display and touristic dynamic. Thus, dual concepts are also questioned, such as: colonial vs. autochthonous or Christian vs. Muslim urban images.

Key Words: Islamic city, European new town, urban morphology, Early Modern.

Outside the city walls: the mendicant complexes and the spatial dynamics of Portuguese medieval towns

Catarina Almeida Marado

CES-Centre for Social Studies, University of Coimbra. E-mail: catarinamarado@ces.pt

Mendicant communities have settled in a large number of European medieval towns. In medieval Portugal the most important cities had at least two or more mendicant religious houses. Their presence had an important impact in the social, political, economic and topographical structures of towns. Urban convents reshaped the urban form in many different ways and they were also connected with the major urban transformation that occurred in Portuguese towns in the late Medieval Ages. This paper examines briefly the settlement characteristics of mendicant friaries in the Portuguese medieval towns and discusses the factors that determined their locations. Finally, it analyses the impacts of mendicant houses in the development of the urban form, particularly their role in the formation of a 'new urban centrality' outside the city walls. Several cities will be analysed, and regarding this final issue, the city of Santarém will be presented as one of the most significant case.

Key Words: medieval city, Portuguese towns, urban dynamics, mendicant architecture, urban periphery.

The morphological lecture of the city through historic military architecture

Tarsicio Pastrana Salcedo, Milton Montejano Castillo

Instituto Politecnico Nacional Mexico.

E-mail: taarpaa@msn.com , mmontejanoc@ipn.mx

Military architecture during the viceregal period, in what is now Mexico, was based on a strategy of defense. It was designed by the Spanish crown, constructing systems mainly made of fortifications and walls entrusted to military engineers that used renaissance military treatises as a model. The work shown here is about the historic reading of two Mexican cities that were fortified during the viceregal period. The first one is the port of Veracruz, the walls and the systems built during this time left scars that established the urban development of the city, and that nowadays are perceivable even after the disappearance of the majority of its elements. The second example is the city of Campeche, which holds a category of World Heritage, and that in its fortified systems, partially conserved, show their imprint in the city that has developed from them. Both examples allow us to analyze how the techniques of historical reading, at urban level, allow us to obtain parameters of validation and establish lines of intervention that preserve the urban architectural patrimony. Hence the importance of their teachings and applications in education centers relative to the conservation and patrimonial restorations.

Key Words: military architecture, military engineering, viceregal engineering, Mexico, world heritage.

Transformation potential of public spaces in Osijek's fortification

Dina Stober, Sanja Lončar-Vicković, Željka Jurković

Department of Architecture and Urban Planning, Faculty of Civil Engineering Osijek
E-mail: dstober@gfos.hr

Tvrđja fortress, urban core of the city of Osijek, Eastern Croatia, was built at the beginning of 18th century following military planners' blueprints. Public spaces within the fortification walls originally concentrated around three squares, each containing a separate function – main square, church square and army drill square. Through the centuries, Tvrđja's urban texture remained almost intact, while its contents and significance in Osijek's development transformed into an illegible spatial image. The research presented in this article documents the chronological, functional and morphological evolution of public squares in Tvrđja with the aim to detect their revival potential. The authors set out to review Tvrđja's public spaces as one entity and to apply elements of vibrant, 'successful' places like the main square on spaces that were less visible, less frequented and misused. Three main criteria of comparison between the three squares were elements of physical structure, level of activity and revival potential, each specified by a set of different indicators. Indicators were defined according to latest references in the field of urban form research, modified following Tvrđja's inhabitants preferences (survey, interviews). Preliminary results indicate that a certain amount of spatial flexibility is a major advantage in a developmental cycle of encapsulated urban entities like the Tvrđja fortress.

Key Words: fortification, public spaces, urban image, vitality.

Athens and military architecture

Sotirios Zaroulas

Politecnico di Milano, facoltà di Architettura Civile. E-mail: sotirios.zaroulas@polimi.it

This paper describes the relation between military areas and the form of the current city of Athens, as it derives from the main urban plans and their elements during the nineteenth century and the purpose is to show how the settlement of military areas has influenced the construction of the modern city. In addition, nowadays all these buildings have been left to stand derelict and have become a dual challenge for the city: on the one hand, to manage to reuse this important architectural heritage and on the other to succeed in reconnecting these projects with the city. Through a certain number of plans and an urban scale analysis, the objective is to study the projects of these military areas, focusing on the design, the typology and their settlement principles. In other words, the aim is to analyse them so as to understand the process of their construction and their influence on the evolution of the modern city of Athens. What emerges from this analysis is the fact that the early projects of the barracks during the nineteenth century are closely related to the city plans, the urban elements and the history of the city. Moreover, it's important to underline that even in those cases the military buildings have been demolished, many urban voids have been created that have offered new opportunities for the growth and the expansion of the city.

Key Words: settlement principles, military building, nineteenth century, urban types, urban growth.

The Lisbon urban block: from shape to type

Rui Morais Justo

Faculdade de Arquitectura – Universidade de Lisboa. E-mail: ruijusto87@gmail.com

The urban fabric, both in his public and private component, translates the parallel stress of tension and change, transformation and permanence, which characterize the space and architecture that builds the city. This dynamic process of urban production is reflected in the continuing evolution of the shape and organization of the urban block as an intermediary between the housing function and other urban activities. The urban block has proven repeatedly to be able to adapt several types of buildings and adapt to changing urban and architectural models that developed over time, occupying a place in its own right in the design of the city. This study addresses the Lisbon urban block types, a city where the richness, diversity and typological representation of the object of study allows to recognize different morphological characteristics as well as different production processes of the urban block. We thus rely on a morphological interpretation of this element that involves its relations with the shape of the city. The types are defined through the aggregation of different blocks according to common matrices, allowing the support of possible comparative readings between very different study objects, or between objects that are possible to read comparatively when reduced to its essential elements. The construction of this typological framework of the Lisbon urban blocks presupposes an approach supported by an interpretative mechanism that will inform issues related to the problem of the production of the urban fabric from the private space of the city.

Key Words: block, typology, urban morphology, built fabric, Lisbon.

Urban block – Krakow tradition

Anna Agata Kantarek

Faculty of Architecture, Cracow University of Technology.

E-mail: akanta@poczta.onet.pl

Development of settlements in the area of today's Krakow dates back to the Paleolithic era and began about 50 thousand years ago. However, the first mention of the city as a big urban center dates back to 965 /Ibrahim ibn Jakub/. The bishopric of Cracow was established in 1000.

The fact important from the point of view of the development of urban block form was the expansion of the city in 1257. New location on Magdeburg Law was the beginning of Cracovia - defined by an orthogonal system of blocks with huge market place /200x200 m/. This new, defined urban complex became the center of a developing city over the centuries. Until today is the undisputed center of the City. Further expansions benefited from the experience of Cracovia, referring to the model elaborated here. It was not until the twentieth century brought further expansion of the city, whose regular, defined form can compete in terms of regularity and extent of the geometric definition of the Old City. It is Nowa Huta - an industrial city from the fifties of the twentieth century. Nowa Huta is today one of the districts of the City. Against the background of Krakow urban history article proposes to look at the urban block form as developed in Krakow. This two extremely different models of urban quarter could be seen as generating other forms of city urban fabric.

Key Words: Cracow, history of urban form, urban block structure, urban design, regulation plan.

Transformation of urban blocks and property relations: cases from Historical Peninsula

Ezgi Küçük, Ayşe Sema Kubat

Faculty of Architecture, Istanbul Technical University

E-mail: ezgikucuk89@gmail.com , kubat@itu.edu.tr

Urban form which is defined as the union of streets, plots and buildings, in the historical evaluation of the towns, also represents legal entities which imply tools for urban planners and designers to design, to transform or to conserve the sites. In this context, this study aims to recognise urban form as a product of property relations and investigate the morphological regions in the case of Istanbul's Historical Peninsula by constituting its discussion on basic concepts of M. R. G. Conzen's morphologic analyses of historical towns. The elaboration for the transformations of urban blocks between 19th century Ottoman period, early republican period of Turkey and historical persistence of the urban form up to today are analysed in Beyazıt and Aksaray regions in particular. Further, Fener-Balat region as a conserved urban fabric sample since 19th century is discussed in terms of the renewal projects which appeared in late 20th century. Thus, it is observed that subsequent to the effects of modernisation movement on urban form in Istanbul, big scaled physical interventions transformed urban blocks and contributed to changes in property patterns. The dependence between urban morphology and property relations is emphasised in terms of the development of urban form within historical process.

Key Words: historical peninsula, morphological regions, urban blocks, urban morphology, property relations.

Study on the morphological differences between areas through the comparative analysis of urban block

Xiaoyin Lin

School of Architecture and Urban Planning, Nanjing University,
Hankou Road 22, Nanjing 210093, China. E-mail: 124065644@qq.com

The comparative study about the urban block employed in the describing morphological differences between cities has a long research tradition. Previous researches focus on the characteristics of block in the level of block and sometimes are unable to capture the different character of cities. This paper aims to present a method to discriminate the morphological characteristics between the different areas. At the core of the proposed method is comparing characteristics of block in the level of block, sub-block and plot. The paper takes two districts of the city of Nanjing as a test case, and the two districts are similar in the area and the number of blocks. Based on the more than 200 samples of block, this paper investigates on the morphological differences between two districts. Through the use of the method, the paper picks up the blocks which perform distinctive differently between two districts level-by-level and classifies them based on their performance. Finally, the paper describes the characteristics of all kinds of classification and summarizes the morphological differences between two districts. The consequences reveal the relation between the urban morphology and the urban development, and the method used offers a systematic basic for other studies of describing the characteristics of urban form.

Key Words: urban morphology, comparative study, block, sub-block, plot.

The transformation of the urban block in the European City

Maria Oikonomou

School of Architecture, Aristotle University of Thessaloniki, Greece

E-mail: moikono@arch.auth.gr

The main focus of the research is on issues about European cities' urban form and social characteristics by analyzing the element of the urban block through history. The aim is not to analyze the whole history but to focus on specific periods and case studies, which show the metamorphosis of the urban block. European cities are diverse in several scales but meanwhile they are linked in a common urban development. By studying examples from the Greek Polis, where the urban blocks are created by organized city planning focused on the grid, to the urban block of the medieval city, where different built structures can be seen, to the compact blocks of the industrial Berlin, to the large blocks of Transvaalbuurt in Amsterdam, where the traditional urban block opens up as well as Le Corbusier's modern city and the refusal to the traditional closed block, the reader will be able to understand the significant vital role of the urban block in the urban tissue. These case studies are examined, analyzed and in the end illustrated in diagrams based on indicators, which show spatial and social characteristics of the blocks. In that way one can observe urban transformations and social changes of the European cities always in comparison with the historical framework.

Key Words: urban blocks, European cities, metamorphosis.

From Pergamon to Bergama: revealing the ‘Layer’s to understand the evolution of urban form

Güliz Bilgin Altinoz

Middle East Technical University Department Architecture.

E-mail. bilging@metu.edu.tr

Being subject to continuous inhabitancy beginning from early ages onwards, majority of the towns in Anatolia retain physical traces of different cultures as different layers within their historical development processes, thus denoting them as ‘multi-layered towns’. In multi-layered towns, different layers and their relation with each other contribute to their contemporary urban form through ‘diversity’ and ‘specificity’. Thereupon, in analysing and assessing the urban form of such towns, ‘multi-layeredness’ should be considered as a core issue. Bergama, uninterruptedly inhabited from prehistoric ages onwards, through Hellenistic, Roman, Byzantine, Turkish Principalities, Ottoman and finally Turkish Republican Periods, is a representative of multi-layered Anatolian towns. Contemporary urban form of Bergama, is a result of formations, transformations, continuities and discontinuities due to continuous inhabitancy from its foundation as Pergamon, the capital of the Pergamon Kingdom and a ‘showcase’ of Hellenistic urbanism, till today’s Bergama. In order to understand and assess the evolution of the urban form of Bergama, a method re-considering the tools, methods and processes used by other disciplines dealing with stratified contexts, is used. Necessitating to process complex and huge amounts of spatio-temporal data, GIS is chosen as the main tool. This paper presents the method, process and tool used for understanding and assessing the evolution of urban form of Bergama as a multi-layered town. Accordingly, the first part of the paper explains the general structure and content of the method. In the second part, the spatio-temporal analysis of the urban form from Pergamon to Bergama is presented, following the defined method. The paper concludes with a discussion on the pros and cons of a ‘layered’ re-look at the evolution of urban form of towns with continuous inhabitancy.

Key Words: multi-layered towns; Pergamon; Bergama; spatio-temporal analysis; GIS.

From Tomar to Angra: interpretative hypothesis of geometric pattern morphology

José Cabral Dias

Faculty of Architecture, University of Porto. E-mail: jdias@arq.up.pt

Tomar is an unavoidable settlement, as regards the medieval conquest of the Iberian Peninsula and the Portuguese overseas expansion (started in the fifteenth century). It is usually pointed as directly resulting from the French bastides, nevertheless, that should be a simplistic hypothesis. It is effortless to accept the importance of the Catholic Military Orders, as a possible unifying factor of the European urban phenomenon and a base factor for the emergence of the urban medieval regularity. A morphological point of view shows geometric principles common in key territories for the Order of the Temple: the site of its emergence, in the pilgrimage place to the Holy Sepulcher – Jerusalem – at its European headquarters – Paris (Marais) – at its headquarters in Portugal, created in the context of the founding of the country – Tomar – and at the beginning of the Portuguese Discoveries, on the route of the ships to Indies and northern Europe, the Azores - we will focus on Angra, in Terceira island, whose spiritual domain belonged to that religious order. By Knowing those geometric principles it is possible to achieve a different interpretation of the medieval urban phenomenon, and to overcome the idea that medieval geometric urbanism was exclusively originated in France. Thus this article focus on the study of urban form of Tomar, *travelling* from Jerusalém to Angra, knowing that this approach is crucial to deepen knowledge not only about the medieval geometric urbanism but also about the *Portuguese City*. We notice, as we believe, the insularization of a model imported from Jerusalem, We conclude, therefore, that the Roman-Byzantine tradition inherited from Jerusalem as well as the same regularity that we point in Jerusalém as in Paris, and a urban structure of elongated blocks mark the course of the Templars and their portuguese heirs, the Order of Christ, from Tomar to Angra.

Form follows function – morphological and functional change in the Hague and Detroit 1911-2011

Conrad Kickert

Taubman College of Architecture and Urban Planning
University of Michigan, United States

This paper explores the relation between urban form, economy, architecture and public space in The Hague (Netherlands) and Detroit (United States) over the past century. It is based on my dissertation research at the University of Michigan's Taubman College of Architecture and Urban Planning. This research focuses on how ground floor frontages interact with public space, and how this street level interaction has increasingly deteriorated in many downtowns over the past century as a result of economic, cultural, political and social forces. Beyond form, frontage interactivity is linked to the ground floor land use of buildings, ranging from highly interactive retail businesses to dwellings and less interactive offices, parking structures and warehouses. Historical mapping and business directories in 10 to 25 year intervals are combined to form an image of frontage interactivity change as a function of morphological change and functional change in a series of synthesizing maps. While familiar patterns of fringe belt formation and urban erosion are found in the morphological maps, new transformation patterns are discovered in the land use maps. Functional erosion of downtown fringe properties (i.e. the departure of retail businesses and completely vacated premises) precede morphological erosion, and hence serve as 'canaries in the coal mine' of fringe belt formation. Furthermore, the discovered functional erosion demonstrates distinct patterns of accelerated decline followed by a rapid morphological change – a pattern that is surprisingly similar in both cities.

Key Words: downtown, frontage interactivity, morphological transformation, functional transformation, fringe belt.

Disparity syndrome

Saboohi Sarshar, Javeria Masood

School of Art and Design & Architecture, National University of Science and
Technology- Islamabad. E-mail: saboohi.sarshar@gmail.com

Created capitals (Glenn, 1970) of the past have been relatively small in size with the major focus to set up a city with a unilateral administrative role. They were not envisaged as capable of becoming metropolitan cities or cities with strong regional cores but Islamabad and Rawalpindi were. Islamabad's master plan was prepared in 1960 by integrating the city of Rawalpindi as a twin city by Greek Planner Doxiadis. It aimed to foster a codependency in terms of urban growth of these two cities, and proposed a 'two nuclei metropolis' (Constantios, 1965). However, the original master plan encompassing the city of Rawalpindi was not put into practice while Islamabad was being built. The two resilient cities that grew independently of the vision and each other continue to do so; in a rapidly shifting socio-geographical, economic and political scenario. These physically integrated and institutionally disparate cities have not been able to keep up with the pace of rapid development. This research aims to explore this phenomenon by analysing and studying the two twin cities with reference to the urban form and its growth. The research will also seek to analyse the factors responsible for the change.

Key Words: urban growth, nucleus, metropolis, urban mapping.

References:

- Glenn V. S. (1970) 'Two Newly-Created Capitals: Islamabad and Brasilia', *The Town Planning Review* 41, 317-332.
- Constantios A. D. (1965) 'Islamabad. The creation of a New Capital', *The Town Planning Review*.36, 1-28.

A spatiotemporal model of growth and change in the network structure of Manhattan and Barcelona

Kinda Al_Sayed

Bartlett School of Graduate Studies, University College London (UCL)

E-mail: k.sayed@ucl.ac.uk

In this paper, we argue that the abstract values of space-time as a dual dimension play a key role as generators of city systems. Hence, we explore the driving forces that help reproduce growing spatial networks and yet preserve their structural properties. In two case studies; Manhattan and Barcelona, fifteen and eleven synchronic states of historical growth are analysed to cover a period of five and eight centuries respectively. The states are separated by a certain radius of time. The analysis leads to regularities that may outline a generative model embedded in the pattern of growth and marked by alternating periods of expansion and pruning. In periods of expansion, a positive feedback process operates and takes the form of exponential increase in street elements. The emergence of patches on the edges follows high values of accessibility and is subject to the temporal configurations of the grid. Once we observe the long-term time dimensionality, we note a change in the trend of the system as it reaches its maximum boundary. Following this change, another process of reinforcing feedback is introduced to the spatial network. This process involves intensifying sparse grid structures that have witnessed high gains in centrality in prior states and a process of pruning of poorly integrated elements. Both processes aim to differentiate the spatial structure of a city hence matching that of an organic grid. We introduce these feedback processes under a framework of a plausible generative model to simulate city growth. The model is expected to both provide a better understanding of city growth and to aid design decision making on urban and regional scales.

Key Words: urban morphogenesis, street networks, generative centrality, preferential attachment, pruning, space syntax.

The making of the ‘Happiest City’ in the USA: managing urban form in San Luis Obispo, CA

Hemalata Dandekar

City and Regional Planning, San Luis Obispo, CA 93405

E-mail: hdandeka@calpoly.edu

San Luis Obispo (SLO), located mid way on the scenic belt of California’s central coast was cited as the *happiest city* in America (Buettner, 2010), Oprah Winfrey in her television show examined what makes people in SLO happy (youtube, 2011), and the city was named one of the *friendliest towns* in America by USA Today and Rand McNally (2012) ‘Best of the Road’ competition. These accolades are a testament to the fact that SLO has benefitted from proactive planning to protect its urban form, preserve its historic fabric, protect its natural scenic attributes and view-sheds to the surrounding picturesque mountain ranges, and thus diversify its economy. This paper describes the evolution of SLO’s urban form and how the impacts of transportation changes – railroads, highways, current emphasis on pedestrian and bicycle friendly ‘smart streets’- have been managed through good planning so as to enhance the sense of place and quality of life in the city. The paper will address the arrival of the railroad (Dandekar and Jordan, 2010), the creation of Mission Plaza (Schwartz, 2008), the creation of a downtown zone that protects the urban core and its morphological patterns, to the recent (LUCE, 2013) update of the land use and circulation elements of the SLO general plan. The case study of SLO confirms that cities that adhere over the long-term to the principles derived from theories of good city form (for instance Bentley et al 1985; Lynch, 1960) can succeed in creating compelling cities with legible and attractive historic urban forms.

Key Words: urban form, strategic planning, historic preservation, economic development, good city.

References

- Bentley, I. et al (1985) *Responsive environments* (Architectural Press, London).
- Buettner, D (2010) ‘Thrive: finding happiness the Blue Zones Way,’ *The National Geographic Society*
- Dandekar, H. and Jordan, A. (2011) ‘The railroads and San Luis Obispo’s Urban Form’, *Focus* VIII, 67-72.
- LUCE (2013) ‘Land use and circulation elements update’ *Task Force Minutes, City of San Luis Obispo*.
- Lynch, K. (1960) *The image of the city* (MIT Press, Cambridge MA)
- Rand McNally (2012) see <http://www.bestoftheroad.com/page/recap#2012friendly>
- Schwartz, K, (2008) ‘The Making of Mission Plaza’ *City Administrative Officer Minutes, San Luis Obispo*.
- Youtube (2011) see <http://www.youtube.com/watch?v=TgeB7NtZnyc>

Power strategies and everyday drawing a city of colonial Brazil: the Filipéia de Nossa Senhora das Neves in the XVI century

Maria Berthilde Filha, Ivan Cavalcanti Filho

Departamento de Arquitetura, Universidade Federal da Paraíba

E-mail: berthilde_ufpb@yahoo.com.br

Among many authors who studied the Brazilian cities in the first centuries of colonization, as Holanda (1994) and Delson (1997), is recurrent the assertion that exceptionally the orthogonal urban grid was adopted by the colonizer. One of these exceptions is the Filipéia de Nossa Senhora das Neves (today João Pessoa) founded to be the seat city of the Captaincy of Paraíba, in 1585. Considering the relevance of its layout to study the production of space in the Luso-Brazilian universe, as well as knowledge its morphology to proposed interventions in this ancient city core, the aim of this paper is to analyze, from a historical perspective, the urban form of this city. Built by the Portuguese Crown to meet the strategies of occupation and domination of territory, had the drawing, in part, considered from the goals that would meet and the action of agents producing its space: the royal power and the Catholic Church, represented by the monastic orders and the lay brotherhoods. When founded, the city was defined by two parallel main streets and crossed by other perpendicular, with a clear relationship with the religious buildings (Moura Filha, 2010). So having support in the methods of morphological analysis of Capel (2002) and Lamas (2004), we want to explore the assertion of Carlos (2007), as being urban space the result of movements of domination and appropriation, which derives both from the political and economic strategies as social practices that take shape in it.

Key Words: Brazil, colonization, urban form, religious buildings.

References

- Capel, H. (2002) *La morfologia de las ciudades* (Ediciones del Serbal, Barcelona).
- Carlos, A.F. (2007) *O espaço urbano: novos escritos sobre a cidade* (FFLCH, São Paulo).
- Delson, R.M. (1997) *Novas vilas para o Brasil-Colônia: planejamento espacial e social no século XVIII* (Editora Alva-Ciord, Brasília).
- Holanda, S. B. (1994) *Raízes do Brasil* (José Olympio Editora, São Paulo).
- Lamas, J.M.R.G. (2004) *Morfologia urbana e desenho da cidade* (Fundação Caloust Gulbenkian, Junta Nacional de Investigação Científica e Tecnológica, Lisboa).
- Moura Filha, M.B. (2010) *De Filipéia à Paraíba: uma cidade na estratégia de colonização do Brasil. Séculos XVI – XVIII* (Superintendência do Iphan na Paraíba, João Pessoa).

Morphology and structure of road crossings of the modernist urban ring of Viana do Castelo in the City's General Plan

José Lopes, Manuel Gulias, Rui Cavaleiro

Design de Ambientes, Instituto Politécnico de Viana do Castelo

E-mail: clopes@estg.ipv.pt , mrivas@estg.ipv.pt , brancocavaleiro.arq@sapo.pt

The consolidation of both the medieval walled perimeter of the village of Viana (1258 to 1374-75) and consequent urban sprawl, resulting in its five suburbs (Moreira 2005: 22-23), in the following centuries, led to a new ovoid shape. This happened due to either contagion or 'technical culture' when designing the XVI to XVIII centuries streets and buildings centered on constructive sets of convents / monasteries and their Renaissance churches - the urban convent ring (Moreira 2005). In addition to this, the family mansions built on open ground and the lack of major geographical obstacles reinforced their growth and progressive urban spread along both ends of a main east-west axes (from São Vicente, along Rua da Bandeira, to Campo d'Agonia, through the former São Sebastião street), allowing the circulation of people and the establishment of trade, and thus, resulting in a wider relationship with the countryside and the outside world (Lopes *et al* 2013; Veloso *et al* 2012). It is this space made up of streets and urban buildings alongside the crossing of Minho's railway line (1877-78) that makes sense not only to the city planning (1848) but also to its map. Even before the railway line was built there was already an 'urbanist sense' which led to a morpho- functional pattern expressed through the urban quarters which are defined by the street crossings, where access to drinking water has enabled the settling of people, houses, events and above all a better local circulation and contact with the surrounding areas. Our proposal is an analysis of the study and interpretation of the modernistic urban network, *ex ante* and *ex post*, of Viana do Castelo city.

Key Words: modernist city, streets and blocks, road standard, urban plant.

References

- Lopes, J.C., Gulias, M.R. and Cavaleiro, R.J.B. (2013) 'Modernismo Urbano Revisitado. O caso de Viana do Castelo', *Cadernos Vianenses* 47, Viana do Castelo: 157-188.
- Moreira, M.A.F. (2005) *A História de Viana do Castelo*, in *Dispersos-I* (Câmara Municipal, Viana do Castelo).
- Veloso, C., Lopes, J.C. and Cavaleiro, R.J.B. (2012) 'O desenvolvimento polinucleado da estrutura urbana da cidade de Viana do Castelo' in Carbalada, A.M., Royé, D. and Jose I.V. Vázquez, J. I. V. (eds.) *Las Ciudades y el Sistema Urbano. Reflexiones en tempos de crisis: Galicia – Norte de Portugal* (Meubook, Santiago de Compostela) 97-110

Urbanization in the Brazilian hinterland's 'forgotten century': growth patterns in Planaltina

Pedro Paulo Palazzo

Faculdade de Arquitetura e Urbanismo, Universidade de Brasília.

E-mail: pedro.palazzo@gmail.com

This paper examines the patterns of urbanization in a town founded during the period of economic slump in Goiás state comprised between the decline of gold mining in the late eighteenth century and the construction of the new state capital, Goiânia, in the 1930s. While most gold towns thrived during this period, a handful of new settlements, still poorly studied in current scholarship, appeared in cattle ranching areas, among them Planaltina. Laid out on a rough grid sometime after 1811, this town belies several key concepts of the “canonical” Portuguese-Brazilian city, such as site selection, lot proportion, and density: it was built by a valley, with wide and shallow lots having ample side yards, and its houses are often misaligned. These features are compared with preceding and contemporary towns in central Brazil, highlighting general changes in urban patterns during the preindustrial nineteenth century throughout the region, as well as aspects unique to the case of Planaltina. Changes in regional highway networks, the introduction of the automobile and of the airplane predictably influenced the growth of the town. Starting in the early twentieth century, infill begins to occur, with lots being subdivided either lengthwise or breadthwise, as well as changes in the historic center brought about more recently by the demographic and economic effects of planned extensions to the city.

Keywords: small towns, urban growth, preindustrial cities, Brazilian highlands, Planaltina.

From Oppidum to Suburbia: urban transformations in the medieval town of Monção

Virgílio Lopes Torres, João Paulo Delgado

FAAULF, FAAULP and Dinâmia-CET. E-mail: jpdelgadoarq@gmail.com

The aim of this paper is to present the outcome of a research regarding the morphological mutations in the urban features of Monção, Portugal. The paper tries to demonstrate that Monção may be seen as a remarkable case, both for the urban study of small towns in northern Portugal and for the understanding of their role in the interweaving of the surrounding territories. As part of the defense of the North-western border of Portugal by the river Minho (Andrade, 1998), the morphological lay-out of Monção gathers and exposes almost every stage of its development: from its probable origins as a Celtic Oppidum, or Castro (Marques, 1987), to its medieval foundation as a Portuguese counterpart of a French bastide (Barroca, 2004), to its 17th century Vauban-styled fortress (Antunes, 1996). This was partly demolished in 1915 to make room for the new railway facilities, thus enabling the development of new activities such as tourism and the trade of Alvarinho wine (Cruz and Pregitzer, 2008). The paper follows this process using purpose-made sequences of diagrams and drawings, based not only in previous sources (Teixeira and Valla, 1999) but also in original research (Torres, 2012). The sequences culminate with the questioning of the void resulting from the transformation of the railway facilities in a new avenue, occurred in the 1990's. Lacking of any urban intention or any capacity of connecting the fragile urban fabric with the newly built quarters and with the international road grid (Delgado and Sá Machado, 2012), this non-place is the mark of a diminished way of understanding the urban form: Suburbia.

Key Words: Monção, urban evolution, development of medieval towns.

References

- Andrade, A.A. (1998) 'A estratégia dionisiana na fronteira noroeste', *Revista da Faculdade de Letras: História* Série II, vol. XV, Tomo I (Faculdade de Letras da Universidade do Porto) 163-176.
- Antunes, J.M.V. (1996) 'Obras militares do Alto Minho: A Costa Atlântica e a raia ao serviço da restauração', Unpublished Dissertation, Faculdade de Letras da Universidade do Porto, Porto.
- Barroca, M.J. (2004) 'Fortificação e povoamento no Norte de Portugal (Século IX a XI)', *Portugália. Nova Série*, Vol. XXV, 181-203.
- Cruz, J. and Pregitzer, A. (2008) *Monção: Vila termal, berço do alvarinho* (Câmara Municipal, Monção).
- Delgado, J.P. and Sá Machado, A. (2012) 'Regeneration of part of the historic fortified town of Monção, Portugal' in C. Clark and C. Brebia (ed.) *Defense Sites: Heritage and Future* (WIT Press) 149-160.
- Marques, J.A.M. (1987) 'Assentamentos castrejos do Concelho de Monção', *Revista de Ciências Históricas da Universidade Portucalense*, Vol. II, 77-120.
- Teixeira, M.C. and Valla, M. (1999) *O urbanismo português: Séculos XIII-XVIII: Portugal-Brasil*, Livros Horizonte.
- Torres, V.L. (2012) 'Evolução urbana de uma vila raiana: o caso de Monção', Unpublished Dissertation, Faculdade de Arquitectura e Artes da Universidade Lusíada, V. N. de Famalicão.

Urbanization life cycle of Nablus City (1946-2015)

Huthaifa Ashqar, Lujain Hadba, Nasser Tuqan

Urban Engineering, University of Minho. E-mail: h.i.ashqar@gmail.com

Nablus is a Palestinian city (178,249 population in 2013) located in the northern part of West Bank. This commercial, historical, cultural, and educational city, has a deeply-rooted municipality established in 1869. During the period from 1940s till 1990s, four different administrative powers (governorates) ruled Nablus city: British Mandate, Jordanian Administration, Israeli Administration and finally, the Palestinian Authority. In fact, the establishment of the Palestinian Authority in 1995 had a noticeable organizational effect on the urbanization. This study aims to analyze the urbanization in Nablus Municipality as an urban growth area during 1946 - 2015. This is done through applying the Lourenço meta-analysis for urban growth areas, which allows a better understanding of the sequence of interdependencies that exist. The analysis can be addressed expanding the concepts of urbanization and redevelopment of urban areas within a continuum process associated to planning and investment cycles (Lourenço & Astuti, 2011). The applicability of the proposed model is tested by studying the evolution and development of strategic urban planning, implementation and the resulted effects on living for Nablus city in the stated period. The organization reached its peak in 2006, when the Municipality engaged the public in the discussion of the plan; therefore, the planning process is enriched by the representation of most civil society bodies. Nablus Plan-Process showed a complete cycle (planning, action, and living). Innovative adaptation to the faced conditions by engaging the society is one of the most important reasons of Nablus's complete cycle.

Key Words: urbanization, urban strategy, meta-analysis, plan-process, public participation.

References

- Lourenço, J. M. and Astuti, Z. B. (2011) 'Success Key Factors of a Local Urban Strategy: the case of Solo, Central Java, Indonesia', *CITTA 4th Annual Conference on Planning Research Innovation in Governance and Decision Making in Planning*, Porto.

Hermann Jansen's *Grünstreifen* in Ankara and their transformation

Sinan Burat

City and Regional Planning Department, Mersin University

E-mail: burat@mersin.edu.tr

Urban open spaces have been considered as an integral part of urban space in modern urban planning theory and practice. A comprehensive urban development plan considering the green spaces as such were prepared by Prof. Hermann Jansen for Ankara, capital of Turkey, in 1932, after he won the development plan competition in 1928. Jansen proposed an extensive green space structure. In the 70 years following the approval of the plan, this green space structure has been modified in various ways and transformed to uses other than its original purposes. The purpose of this paper is to trace the modification of this green space structure in general and to analyse the transformations of one component of this green space structure, here called Güven Park-Tandoğan green strip, some parts of which still remain. The initial decisions for these plan modifications were made between 1950 and 1957 by the Development Executive Committee. The modifications induced on the plan are analysed and some modifications are found to be more important than others since they initiated further modifications to the green strip. Also the effect of changes in the floor order zoning to increase the density, increased use of automobiles and the role of actors in the transformation process will be evaluated.

Key Words: Hermann Jansen, Ankara, green space structure.

Morphological process as an instrument for knowing chronological character: a case study in Tainan

Chih-Hung Chen, Woan-Shiuan Lin

Department of Urban Planning, National Cheng Kung University

Email: chihhungchen@mail.ncku.edu.tw

The evolution of the historical process also produced the morphological character of the place, which can obviously observe in previous European studies. However, in Asian cities, urban morphology rapidly altered by industrialization and the population explosion in only half century, lease the morphological structure not really apparently as European city. So, is the morphological process (Conzen, 1988) still can be perceive in nowadays city form? If that, what is the character of Asia morphological process? To realize the evolution particularity, find out different type of fringe-belt (Whitehand, 1987) and built-up area (Ünlü, 2012) as the morphological region which base on the form complex and the morphogenetic priority (Conzen, 1985). Then, define the Asia specific period by its geographic specificity and multiple socio-economic forces. Lastly, let the region and period as the horizontal and vertical axis making matrix which summarized the evolution of morphological process. For knowing the chronological character of Asian cities, Tainan, an old port city which lays on the East Asia marine trade routes, experienced the Age of Exploration, industrialization, post-war population explosion. The process recorded into the urban fabric and the morphological region can be alienated to three times of accretion attaching with fringe-belt. In conclusion : i) each region has divergent morphological process to adapt new period, and the margins of change are also diverse; ii) city centre and inner fringe-belt have transform process type but outer parts have more rapidly accretion and replace process; iii) the velocity of accretion process can represent the era character.

Key Words: morphological period, morphological process, morphological region, East Asian port city, Tainan.

References

- Conzen, M.R.G. (1985) 'Morphogenesis and structure of the historic townscape in Britain', in *Thinking about urban form: Papers on urban morphology*, (European Academic Pulishers, London) 1932-1988.
- Conzen, M.R.G. (1988) 'Morphogenesis, morphological regions, and secular human agency in the historic townscape, as exemplified by Ludlow', in *Urban Historical Geography. Recent progress in Britain and Germany*, 253-272.
- Ünlü, T. (2012) 'Thinking about urban fringe belts: a Mediterranean perspective', *Urban Morphology* 17, 5-20.
- Whitehand, J.W.R. (1987) *The changing face of cities. A study of development cycles and urban form* (IBG special publications, Oxford).

The evolution of urban form since post-war period in Taiwan: a case study of Yonghe city

Chih-Hung Chen, Chia-Hua Tsai

Department of Urban Planning, National Cheng Kung University

E-mail: chihhungchen@mail.ncku.edu.tw

To reorganize the living environment ruined by WWII, post-war modernism arose with emphasis on quantity and function of residential buildings, which became the mainstream of urban reconstruction. Moreover, the concept ‘Automobile dependency’ (Reichow, 1959) was comprehensively applied in 1950s. Both essential causes led to period specificity of forms: an observable morphological period (Conzen, 1960, 1985). In contrast to Europe, two different factors, namely industrialization and promptly increased immigration happened in East Asian metropolises, which resulted in the short supply for residential demand. For the causes above, the process of morphological change transformed rapidly that the form changing can be observed evidently. A city is composed of the complexity of ‘fatti urbani’ (Rossi, 1966) and plots (Tarbatt, 2012). These visible and invisible parts are basic units of urban development (Alexander, 1979). By comparing the correlation between streets, buildings and plots, the result of the evolution of urban form since post-war period can be found in Yonghe, locating in the surrounding area of Taipei, the capital of Taiwan. They’re concluded as follows: i) Period specificity of forms - Most are detached, duplex and attached apartments on small plots. However, only some retail stores located along the main street. ii) Adaption forms - For more residential needs, high-rise buildings appear on big plots not only apartments but also commercial buildings near the MRT station or along the main street. iii) Replacement forms – The city government claimed urban regeneration as high priority of urban planning. A different urban form is expected in the future.

Key Words: morphological period, post-war modernism, urban form evolution, period specificity in Taiwan, morphological process.

References

- Alexander C. (1979) *Timeless Way of Building* (Oxford University Press, Oxford).
- Conzen, M.R.G. (1960) *Alnwick Northumberland: a study in town-plan analysis* (Institute of British Geographers, London).
- Conzen, M.R.G. (1985) Morphogenesis and structure of the historic townscape in Britain, in *Thinking about urban form: Papers on Urban Morphology* (European Academic Publishers, Bern) 1932-1998.
- Reichow H.B. (1959) *Die autogerechte Stadt. Ein Weg aus dem Verkehrs-Chaos*, (Ravensburg: Otto Maier, Verlag).
- Rossi, A. (1966) *L’ Architettura della città* (Quodlibet Abitare).
- Tarbatt, J. (2012) *The plot: Designing diversity in the built environment: a Manual for architects and urban designers* (RIBA).

The evolution of the Anatolian townscape in the early republican period of Turkey in the Case of Mugla

Feray Koca

Department of City and Regional Planning, Mugla Sitki Koçman University
E-mail: feraykoca@hotmail.com , feraykoca@mu.edu.tr

The establishment of the Turkish Republic in 1923 was a beginning in terms of modernization of Ottoman Anatolia. During the Ottoman Period, the urban space was formed simultaneously without any plan and neighborhoods clustered around some religious buildings such as mosque, madrasah or masjid. In the early Republican Period, the ideal of ‘National Architectural Movement’ was prevalent in town planning as a modernization project. The Anatolian towns were planned according to geometrical development plans that aimed to create the urban space of nation-state. In many Anatolian towns, the organic traditional pattern was transformed into geometrical formal pattern. Mugla is a town in the southwestern Turkey. As other historical Anatolian towns, its townscape has been subjected to an evolution. The first planned city development started with the establishment of the Republic in the 20th century. In 1936, a geometrical development plan was prepared for Mugla. This plan defined the new town center and the orientation of the residential development independently from the traditional pattern. The project of ‘Republican Square in every Anatolian town’ was implemented in Mugla and this square became the new administrative center of the town. This paper aims to present the evolution of the townscape of Mugla in the period of transition from the Ottoman State to the Republic of Turkey. In order to assert the evolution, the paper explains the urban space of the town in the Ottoman Period and puts forth the transformation of the townscape with national modernization project of the Republic.

Key Words: Anatolian town, townscape, pattern, development plan.

Analysis of the correlated relations between ancient Chinese urban morphology and social culture

Jinghua Dai, Zhu Wang

College of civil engineering and architecture, Zhejiang University

E-mail: jinghuadq@gmail.com

Cities gestate culture. Different cultural backgrounds and ideological concept promote diverse city planning thoughts, as well as various forms of cities. Nowadays, the development status of Chinese city, such as the high speed of construction along with the resulting ‘one side thousand cities’ pattern, urges the designers to turn over to think the guiding ideology and practice way of future city construction. However, when looking back upon ancient Chinese urban morphology, its distinct features of the age and spatial attributes are worthy of deep consideration. Based on spatial distribution of ancient cities, this paper takes ancient Chinese culture as an entry point from three cultural levels including the system, material and spirit. Furthermore, the effect and influence of culture on constructing urban form are explored and analysed, and then cultural connotation of ancient Chinese urban morphology is summarized aimed at leading the future urban to be constructed with distinctive character and sense of belonging.

Key Words: Ancient Chinese, urban morphology, system, ancient culture.

The impact of culture and social relations on urban form in Iran in the historical evolution, with emphasis on Islamic culture

Abdolhadi Daneshpour, Hoorieh Taghidokht, Maryam Sabokkhiz, Samaneh Jalili

Iran University of Science & Technology (IUST), School of Architecture and
Environmental Design

E-mail: Daneshpour@iust.ac.ir , h_taghidokht@iust.ac.ir , Sabokkhiz@iust.ac.ir
Jalili@iust.ac.ir

Urban space is a social product. Human behaviors impact cities' physical form. Conversely, social relations and each area's culture have deep effect on urban structure. This paper initially focuses on the impact of culture and social relations on the urban form and physical structures of cities in Iran in the historical evolutions by the emphasis on Islamic culture. To that end, a survey method was employed. Documentary and Library data elicitation techniques were also applied to study the existing theoretical principles and approaches in the field. The evidences show that before Islam in Iran, on the influence of society ascendancy with 'Persian', 'Hellenistic' and 'Party' patterns produced specific urban form with Citadel, beyond town with Bazaar skeleton and its rural hinterland. After Islam ingression with the influence of Islamic doctrine, cities encounter physical changes based on Islamic culture. Islamic culture created some physical elements such as Mosques, School and specific neighbourhoods which were not existed before. These elements impact the urban form and urban fabric. So, this article seeks to find the impacts and changes caused by Islamic culture.

Key Words: culture and social relation, urban form, Islamic culture, Iran.

Morphological evolution of urban form components in the historical peninsula of Istanbul

Ayşe Sema Kubat, Eren Kürkçüoğlu

Urban and Regional Planning Department, Istanbul Technical University

E-mail: kubat@itu.edu.tr , ekurkcuoglu@itu.edu.tr

Communities transform urban spaces according to their socio-cultural structures, needs, principles and policies. This process occurs either as entirely rebuilding of the space, or as constructing the remaining with the trails left by previous societies. Thus, several cultures generate a physical and social mosaic within the same urban space over time. Certainly, the most apparent reflection of this mosaic can be observed on the morphological structure of the space. City blocks, transportation networks, open spaces, landmarks, monumental buildings and urban facilities come forward as the most prominent components through the transformation process of urban morphology. From this perspective, the Historical Peninsula of Istanbul can be defined as a unique mosaic: The reflection of the cultural features on the urban space can be seen by the variation of urban form components from Pre-Historic period to the present. The aim of this study is to evaluate how different cultures have transformed the morphology of the Historical Peninsula of Istanbul through history. Morphological structures and urban form components were analyzed through old maps in four periods: Greek, Roman, Ottoman and Republican. With the determinations obtained by mapping techniques, the transformation ratio in morphological structure has been examined comparatively via urban form components. In this context, the impact of cultures on urban morphology has also been discussed. According to the findings of the study, 16% of the components has been existed throughout all periods, 68% destroyed in the process, and the rest survived by being transformed or appeared in a certain period.

Key Words: Istanbul, historical peninsula, urban history, urban morphology, urban form components.

Grasping the meaning of the modern urban form in the Philippines: political, social, and spatial perspectives

Ian Morley

Department of History, Chinese University of Hong Kong

E-mail: ianmorley@arts.cuhk.edu.hk

This paper explores the form and meaning of American colonial urban plans in the Philippines during the period 1898 to 1916, i.e. the period between the onset of American rule and the passing of the Philippine Autonomy Act, the decree that promoted the 'Filipinisation' of the colonial civil service. It evaluates how the importation of City Beautiful inspired urban layouts was fundamental to the colonial bureaucratic process of enabling, firstly, the Philippines to become 'civilised' and, secondly, to 'educating' Filipino elites in the art of self-government. Accordingly the paper shall investigate the redesign of settlements such as Manila, Cebu and Zamboanga, and the creation of new provincial civic centres – of which 31 were either instigated or proposed – as part of America's process of reforming a society viewed by the colonisers as 'backward'. Aligning political, cultural and environmental transition in the Philippines with the execution of 'progress' the paper shall seek to determine the alliance between urban morphology, governance, and Philippine society's 'advancement' after 1898 so that comprehension may be deepened as to how cultural, political, artistic and environmental forces affected each other during a time when modern urban planning became applied in the country for the first time. How modern urban design was utilised within the public domain to enable a new society to take root will be explained so that, in broad terms, knowledge can be imparted as to why America sought to disassociate their newly acquired colony from its allegedly 'uncivilised' and 'savage' past.

Key Words: The Philippines, American imperialism, City Beautiful, societal reform, modernity.

A code for the Islamic cities of the Gulf

Attilio Petruccioli

Department of Architecture and Urban Planning
Qatar University, Doha. E-mail: petruccioli@yahoo.com

The paper demonstrates that the urban fabric of the traditional cities of the Islamic countries, beyond an apparently chaotic image, possess a logical structure, that contains all the information needed for the formulation of a contemporary urban planning code.

Key Words: history, fast growing Islamic cities, typology, urban fabric.

Evolution, the current state and future of physical urban form of Gaborone City, Botswana

Branko Cavrić, Botlhe Phuthologo

Department of Architecture and Planning, Faculty of Engineering and Technology,
University of Botswana. E-mail: cavra@botsnet.bw

For nearly five decades the built environment of Gaborone the capital city of Botswana has been altering its 'green complexion' by cumulative impacts of numerous actors involved in creation of a contemporary urban milieu. Similar to other African new-towns, Gaborone's semi-urban scenery was not immune to planning concepts invented and used in the developed world. In most of the cases such approaches neglected local philosophy of settlement location and its physical and social structuring. The dominance of western and other borrowed planning doctrines is shaping its horizontal and vertical urban skylines today. Building on the legacy of 'Garden City', it was assumed that it will continue to shape and gain recognition as an urban oasis. However, this was not the case and Gaborone became the fastest growing urban laboratory in Africa. The spectacular population increase from 7,000 people in 1966 to almost 250,000 in 2013, and urban sprawling were inevitable. The dominant planning and design tools in evolution of Gaborone physical form expanded on conventional zoning, cluster sub-divisions, super blocks, and transit oriented developments, need rethinking and replacement with more environmentally, socially and economically sound solutions. Experimenting and applications with traditional 'horse shoe subdivisions' and 'kgotla pattern' on one side, in combination with smart conservation development, smart growth, new urbanism and traditional neighbourhood concept on the other hand, might be an excellent sustainable opportunity in merging local and global ideas when creating the physical structure, plan layout, the townscape and functional areas of Gaborone.

Key Words: new town, physical form, kgotla, townscape.

Beira, a modernist landscape in tropical Africa

Mário Gonçalves Fernandes¹, Rui Mealha², Rui Paes Mendes³

^{1,3} Centro de Estudos de Geografia e Ordenamento do Território (CEGOT)

^{1,3} Faculdade de Letras da Universidade do Porto (FLUP)

² Faculdade de Arquitetura da Universidade do Porto (FAUP)

E-mail: mgfernand@letras.up.pt , rmealha@gmail.com , ruipaesmendes@gmail.com

The city of Beira – founded in 1887, in a river flood area – survived against all natural odds in an unsuitable place, became from (19)40's onward a unique and complex study case about the modernist ideas in tropical countries, namely in African continent. Today's city is an open museum of modernist architecture and urbanism, forged by young and experimentalist architects and civil engineers that, from Portugal (and in some cases from South Africa), searched the Portuguese colony of Mozambique to build a career. The city of Beira became a prosperous city due to high income provided by its harbour and railroad interface that served Rhodesia/Zimbabwe and was the base of cities health, allied to a large political and civic autonomy from central powers of Lisbon and Lourenço Marques (Maputo) that, both, gave to the city the ability to attract young, ambitious and talented architects and civil engineers that built a paradoxal city, full of emblematic modernist buildings – both private and public -, complex and unorthodox engineering solutions that filled an urbanistic plan unique in Portuguese colonial Africa. City authorities and even public opinion were eager of architectural landmarks and proud of what they considered “a beautiful city”. Today, that confluence of willingness, talent, ambition and aesthetic sense produced a city that is recovering from the eclipse produced by years of civil war and where we can find in its landscape emblematic buildings as the Central Station, the Grand Hotel of Beira, the airport, the swimming pool complex, among many other buildings

Key Words: modernism, urbanism, urban morphology, colonial urbanism,

From ‘a miserable town of 150 mud huts’ to ‘the city that never sleeps’: the transformation of Limassol’s urban form over the past 200 years

Ilaria Geddes

Department of Architecture, University of Cyprus. E-mail: ilaria.geddes@gmail.com

This paper describes PhD research, which uses spatial analysis to trace the development of the urban form of Limassol between 1883 and the present day. The research is specifically concerned with the street network and how this relates to different social variables such as ethnicity, educational level, and occupational status. It focuses on how these factors have changed spatially and overtime, on analysing such changes diachronically using historical and contemporary maps (from 1883, 1933, 1960, 1987, 2003 and 2011), historical records and census data. This paper presents the findings of the first phase of the research, which analyses the urban morphology using space syntax methodology and block size analysis. Firstly, the syntactical characteristics of the contemporary city are examined, assessing its spatial properties, problems and the way its urban form functions. Secondly, the space syntax model of the contemporary city is used to constructs models of the city in the past based on historical maps, while the elements added and changed between two periods are assessed quantitatively and qualitatively. The analysis shows that as Limassol grew, fringe belts developed around its historical core, firstly along radial routes - former rural paths leading to surrounding villages – and then through the development of ring roads. Although the central core of Limassol has shifted overtime towards the inner ring road and further out into the contemporary city, the historical core still retains functions and properties typical of its former spatial characteristics. The results suggest that the diachronic analysis provides valuable evidence and facilitates an understanding of the ways in which historical formations of urban configuration influence the present life and form of the city.

Key Words: space syntax, diachronic analysis, Limassol.

The role of the PDAU in the urban morphology of Saida city in Algeria

Sara Zatir, Benkoula Sidi Mohamed el Habib, Amira Zatir
University of Bechar, Bechar, Algeria. E-mail: zatirsara@yahoo.fr

Saida city is a good place to development and to implement new schemes relating to sociospatial mutations. To complete this, an analysis of urban expansion of the city is necessary to understand the growth of the built area passed from 5.421.904 ha to 18.419.150 ha and the intramuros population passing from 30,000 to 130,000 in four decades. The urban morphology of Saida city had extended because of several factors such as laws and demographic growth that have a negative effect to the proprieties on landscape and environment.

Key Words: Saida, urban morphology, PDAU, urban planning.

Analyzing the effects of hot and arid climate on the form of historic cities of Iran

Seyed Abdolhadi Daneshpour, Mohammad Rezai Nedoushan

Department of urban planning and design in IUST, School of Architecture &
Environmental Design

E-mail: daneshpour@iust.ac.ir , rezainedoushan@iust.ac.ir

A significant portion of the current territory of Iran is situated in hot and arid climate. While the strenuous climatic conditions have made living very trying, the greatest and biggest cities of Iran in the last millennium have emerged in these areas. It seems that one of the reasons contributing to the formation, growth and sustainability of these cities, is the specific methods used in their architecture and urban planning. Since one of the methods has manifested itself in the form of historic cities in hot and arid climate, in this paper urban form is analysed. The main focus in analysis of urban form is urban structure (shape, figure, direction of passages), neighborhood context (shape, size, direction, sort of buildings and yards) and mass and space patterns. The aim of this paper is to assess the urban form in order to discern the characteristics whose make the harmony between urban settlement and harsh climatic conditions. Results of this survey are shown that special form of historic cities (Esfahan, Yazd, Kerman, Kashan, Meybod and Ardakan) was affected by Climate property. Moreover the special climatic characteristics of each of these cities make a difference in their form characteristics to achieve appropriate compatibility with environment.

Key Words: form characteristics, hot and arid climate, historic cities of Iran.

Island-City/City-Island: Island precincts and evolving urban morphology of Abu Dhabi, UAE

Anamika Mishra

Department of Architecture and Design, College of Engineering, Abu Dhabi University,
Abu Dhabi. E-mail: Anamika.Mishra@adu.ac.ae

Islands hold a strong association with concepts of exclusivity and nature, due to their isolated configuration and the strong presence of the Sea, respectively. However, examples abound of cities that have emerged as island cities and as urban archipelagos. Consumerist and tourism-driven economies have helped further appreciate the value of the islands' waterfronts and their adaptation as landscapes of leisure and recreation. Advances in technology and availability of capital have allowed articulation of grand visions for islands, both natural and man-made. Hence the development of islands has played a significant role in the emerging urban form of several coastal cities. Cities in the Middle East, in particular, have displayed this pattern in a more pronounced manner as a recurring theme, evident in projects like The Pearl-Qatar and The Palm Islands (Elsheshtawy, 2010), which have also contributed to the city-image of Doha and Dubai respectively. Abu Dhabi, an island city itself, has joined this trend by recognizing the development potential of its peripheral islands. While historically development was concentrated on the main island, which characterised the city form, it has now extended to the various peripheral islands that are being developed as key projects. This paper studies the emergent morphology of Abu Dhabi, as influenced by the creation, development and redevelopment of its various islands. Common morphological patterns at the scale of the island shall be identified and relations drawn to the overall city morphology. The paper also discusses issues pertaining to the evolving city morphology such as the environment, connectivity, edges, seams and gateways.

Key Words: Abu Dhabi, islands, morphology, urban form, urban design.

References

- Abu Dhabi Urban Planning Vision 2030. (www.upc.gov.ae/template/upc/pdf/abu-dhabi-vision-2030-revised.pdf). Accessed on 20th Jan 2014.
- Elsheshtawy, Y. (2010) *Dubai: Behind an Urban Spectacle* (Routledge, Oxfordshire) 142-144.

Mapping the urban form. Coastal fishing villages in Algarve

Mafalda Pacheco, Teresa Heitor

DECivil Departamento de Engenharia Civil, Arquitectura e Georrecursos, Instituto
Superior Técnico, UTL

E-mail: mafaldapacheco@tecnico.ulisboa.pt , teresa.heitor@tecnico.ulisboa.pt

The paper examines the historical growth patterns of coastal fishing villages in eastern Algarve, Portugal. The goal is to investigate the relationship between the configurational and shape properties of their urban forms in order to identify generative or emergent patterns, understanding the historical reasons for the emergence of a particular morphology. Syntactical modelling of historical cartography combined with conventional morphological techniques, i.e. micro-scale urban form analysis, namely street system, plot and building patterns analysis are applied to understand more about the urban growth processes. Syntactic variables of connectivity, line length and integration to model the evolutionary trends are used both to identify generic ‘rules’ of urban growth and the specific historical factors. This is an attempt to define potential ‘bridges’ between the more quantitative approaches and more traditional urban history analytical procedures and develop an operational urban morphology method.

Key Words: urban morphology, space syntax, coastal fishing villages, Algarve.

Spatial and economic integration of mill towns with their surrounding urban environment

Ipek Kaynar Rohloff

Mount Holyoke College, South Hadley, MA, USA. E-mail: irohloff@mtholyoke.edu

Once served to industrial land uses, street and canal network in historic mill towns may be the most striking elements of a declined urban environment. In revitalization efforts, canals are often considered central to place-making efforts due to the scenic capacity that can engage pedestrians. However, a research approach examining urban form performance in terms of street network relations (Hillier, 1996; Hillier and Hanson, 1984) may reveal that canals within the urban form can be segregating and thus detrimental revitalization of downtown with its vibrant unity. This paper investigates to what extent current form of mill towns can support downtown revitalization with maintained centrality, or else if declined mill towns inevitably evolve into separated urban zones due to their more direct connection with surrounding towns. The discussion is built upon the insights from our analysis of Holyoke, MA (USA) prior to this study. Holyoke is a declined historic mill town currently going through revitalization with mixed-use development driven by information technology and retail market. Our analysis of downtown Holyoke urban form in comparison with revitalization plans suggest that downtown Holyoke will evolve into two differentiated urban zones due to the divisive role of the central canals as well as block size differences at two sides of the canals (Rohloff, 2013). This paper will investigate further the predicted evolution of urban form towards fragmentation by extending the analysis to the surrounding urban region and by examining other mill town clusters. Results will help explore new capacities of urban form for future renewal efforts.

Key Words: urban form evolution, fragmentation, street network, industrial town morphology.

References

- Hillier, B. (1996) *Space is the machine: a configurational theory of architecture* (Cambridge University Press, New York).
- Hillier, B. and Hanson, J. (1984) *The social logic of space* (Cambridge University Press, New York).
- Rohloff, I. K. (2013) 'Urban morphologies of mill towns and positive transformation. analyzing regenerative capacity of the morphology of Holyoke', *Proceedings of Ninth International Space Syntax Symposium* (Sejong University Press, Seoul).

Evolved urban form to respond to extreme sea level events in coastal cities

Wang Liangliang, Han Jie

Department of Architecture, National University of Singapore

E-mail: wangliangliang@nus.edu.sg

Along with climate change and global warming, extreme sea level events (ESLEs) are seriously threatening coastal cities' development. In order to respond to such events, transformational adaptation strategy in urban planning might play an important role. For the purpose of urban planning practices, the main objective of this research is to develop a method which could formulate the proper urban form in vulnerable coastal areas. In this research, several typical urban forms in waterfronts will be selected and simplified in digital models. Then, a severe storm surge will be simulated by CFD software. The storm surge is designed to break the protection of the seawall and run into the coastal area. The pressures endured by the buildings will be recorded during the simulations. At last, the collected data will be analyzed and compared in order to understand the diverse wave activities in different urban forms. This research might prove that in dense coastal areas, ESLEs will cause serious damage to the built environment if their protective structures fail. It will also show that, with different urban forms, the impact caused by ESLEs might be various. Through comparisons, it may be possible for urban planner choice the right urban forms for waterfront development in coastal cities. This study might contributes some knowledge for waterfront development in vulnerable locations, and it also provides scientific and useful proof for sustainable strategies in coastal cities and reveals that particular urban forms could play an essential role in responding to ESLEs.

Key Words: extreme sea level events (ESLEs), CFD simulation, urban forms, waterfront development.

Restelo neighbourhood: a paradigmatic example of urban form overlapping

Patrícia Bento d'Almeida

DINÂMIA'CET-IUL, Instituto Universitário de Lisboa ISCTE-IUL

E-mail: pbdao@iscte.pt

Restelo neighbourhood located in Lisbon reflects the paradigmatic result of an amalgam of urban interventions in the same territory that is important to explore. Through the twentieth century the growth of the capital of Portugal was directly related to political decisions from the election of the municipality president and to the Public Works Ministry. The urban forms that resulted from such decisions, reproduced in this neighbourhood, do represent a specific case study that testifies different urban design solutions, which need to be revealed. The intention to develop a housing neighbourhood in the south-west limit of Lisbon's city emerge from the dictatorship minister, that saw in this territory a perfect scenario to Faria da Costa, the first Portuguese urban planner, to put into practice the urban knowledge acquired with Agache, De Gröer and Henri Prost. But, if with Duarte Pacheco has been called one urban planner, with the subsequent politicians, architect teams were called to redraw what had not been built therefore. Restelo is a cluster of different neighbourhood parts that all together does not make one single neighbourhood, but previously reveals the overall evolution of Portuguese Urban History. Today, with parcels of land yet to urbanize, it is still a territory open to future urban design solutions and interventions. This article presents the survey of diverse urban plans for Restelo and reveals the evolution of the urban form of a paradigmatic example of Portuguese urban planning. Moreover, it contributes to debate the importance of respect from previous urban design solutions.

Key Words: Restelo-Portugal, urban history, urban form; municipality.

When the actions of the Office of PDRL transform planning a bureaucratic and operational discipline

Bruno Macedo Ferreira

Instituto Universitário de Lisboa (ISCTE-IUL), DINÂMIA'CET-IUL

E-mail: bruno.macedo.ferreira@gmail.com

There is no denying the growing importance of that metropolitan areas going to take over these days, hence the need to go back to the exact moment of its origin - when the phenomenon is especially "director". This communication aims to present part of an investigation that, by surveying 30 cases study unpublished sought to understand the phenomenon of residential occupation of the northern suburb of Lisbon. Questions whether the evolution of the territory built in the suburbs (architectural and urban planning) when, in the late 1960s, the ideals of neoliberalism, the emergence of large property developers and a large demographic pressure reshape the process of urban growth and the logic of metropolitan relations (the traditional building lot to lot by the production of large urban packages) and urban area in the suburbs of Lisbon acquires its contemporary shape. Specifically, we shall show the Masterplan for the Lisbon Region (*Plano Director da Região de Lisboa – PDRL*) presented in 1964 in its preliminary version. The plan that has been ignored by historiography of town planning, urban morphology and territorial management in Portugal is the first plan for the Lisbon region. The process of expansion of the urban area of Lisbon had as starting point the *PDRL*. In this plan then it proposed the reorganization of the whole process of urban growth aimed at decongesting the central urban fabric of the city of Lisbon. This goal was to take the form of the establishment of judicious for population expansion of the city and suburban cores limitations. Supported by a network of roads and highways in the development of rail links suggested the development of 5 independent clusters organized around Lisbon. Also it was suggested the expansion of existing roads along the convergent communication in Lisbon and around the Tagus estuary clusters. Each of these clusters was assigned as much as possible its own "local life" and not totally dependent on the central city. Although never approved, nor had effective implementation, this plan symbolizes the "new spirit" of this new era and is launching the "first stone" of large-scale urbanization that from that moment appeared embedded in a incomplete road infrastructural network. More important than the plan itself drawn was the action of the *Gabinete do PDRL*. This office was responsible for approving all urban operations in Lisbon region and its action planning become a flexible determination bureaucratically controlled, where the exclusively technical disciplines assume supremacy at the expense of spatial and architectural.

Key Words: Lisbon Metropolitan Area, Plano Director da Região de Lisboa, suburb, urban agents, urban planning.

Utopia and reality: from Étienne de Gröer to the late 20th century. Évora, Portugal

Maria Filomena Monteiro, Maria do Céu Tereno, Manuela Maria Tomé
Câmara Municipal de Évora, Universidade de Évora, Câmara Municipal de Setúbal
E-mail: fmonteiro@cm-evora.pt , mcst@uevora.pt , mjtome@sapo.pt

The origin of the city of Évora dates back a few millennia, a fact that determined successive urban morphologies, which adapted diachronically to the needs of a sum of significantly diversified generations. The curtain wall was consolidated since the late fifteen century and during the 1940s it was integrated in the first Urbanization Plan of this city, designed by Étienne de Gröer. This plan and the following integrated a spatial structure based on urban axes that date the *Cardo* and *Decumamum* of the Roman era. The reformulation of these urban axes determined the insertion of new dynamic functions, in the case of preexisting axes. The constitution of new urban fabric was achieved with the creation of new axes, obtained at the cost of drastic demolitions in the dense and consolidated hull. New urban centers were created extramural, contradicting the proposed by de Gröer, who advocated the establishment of a garden city surrounding the walled nucleus.

Key Words: urban planning, urban evolution, axes.

Campo Alegre, 1940-1994. The evolution and persistence of a territorial intend

Sílvia Ramos

Centro de Estudos de Arquitectura e Urbanismo, Faculdade de Arquitectura,
Universidade do Porto. E-mail: silviactramos@gmail.com

The work we propose to present is about Campo Alegre¹, in the city of Oporto. It focuses a set of urban plans designed between the 40's and the 90's for the area. Our objective is to review each of these plans by considering the overlapping layers that have built Campo Alegre throughout time. Although these plans propose a complete change of Campo Alegre's form, we believe that they always interpret the character of the existing area - certain features of Campo Alegre persist through time, even if its form changes. Campo Alegre is a large area of high, flat land, on Douro's riverbank. In the first half of the 20th century, Campo Alegre was chosen as the site for a new bridge over Douro, which was part of the major national motorway network. The plans we plan to study aimed to design the bridge, its links to the local road network and the access to the motorway. They also planned to transform Campo Alegre from rural into urban: design a new city center, a fresh image of Oporto. Renowned architects participate in these plans, namely Giovanni Muzio, Fernando Távora and Januário Godinho, which represent different views on the construction of urban fabric. Our work is informed by contemporary published documentation and archival documents. For the interpretation of each of these documents, we resort to graphic representation. By redesigning each of the Campo Alegre's plans over its predated situation, we analyze the evolution of its urban form throughout the last century.

Key Words: Porto, contemporary architecture, urban morphology, design.

Is there a transversal organic pattern? *Favela* and its diachronic relations

Vânia Loureiro, Valério Medeiros

University of Brasília. E-mail: vania.teles.loureiro@gmail.com , vaugusto@unb.br

This paper aims to explore *Favela*'s spatial configuration within contemporary city searching for a diachronic relation in its complex process. Recognized as an actual phenomenon in urban space it seems important to infer its genesis in order to understand its evolvement. And as an informal and organic type of space, *favela* must be observed by its collective emergent and spontaneous actions. It is important to understand its specific organic behavior as responsible for the fractal (and natural) complexity inherent to it and enormously meaningful for urban quality (Salingaros, 1998). To explore these similarities in organic form, a comparison is made between medieval Portuguese towns, Brazilian colonial cities, *favelas* and contemporary cities in order to read diachronically the common configurational type. Space Syntax (Hillier and Hanson, 1984) is the theoretical and methodological approach adopted. So, axial maps and segment analysis were used to recognize the patterns in the study cases, as well as to recognize the differences implicit. Were used the following variables: Connectivity, Integration, Line Length, Segment Length, Mean Depth, Number of Axes, Synergy, Intelligibility, Connections Type, and Angular Choice. Findings show that *favela* as definition of a city space is much closely related to its configuration than with its socioeconomic status. Its organic genesis and spontaneous development are responsible for space qualities, and so, any settlement without it can't be consider similar. There is also, a transversal organicity which forbids *favela* to be considered an innovative (in)formal phenomenon – it takes part in the organic form genotype. The space being defined as Fractal and Synergic – internal scales relating in harmony, being complex and spontaneous – justifies its less immediate seizing but allows more intuitive use of space and more natural paths.

Key Words: favela, organic form, spontaneity, configuration.

References

- Hillier, B.; Hanson, J. (1984) *The social logic of space* (Cambridge University Press, London).
Salingaros, N. A. (1998) 'A Teoria da Teia Urbana', *Journal of Urban Design* 3, 53-71.

Urban planning failure and the tale of two informal neighbourhoods of Accra, Nima and Old Fadama: same outcome separated by time and space?

George Owusu, Mariama Awumbila, Joseph Teye

Department of Geography & Resource Development, University of Ghana

E-mail: geowusu@yahoo.com , gowusu@ug.edu.gh

Like many countries in Sub-Saharan Africa, Ghana is undergoing a rapid pace of urbanization. The last four decades have witnessed a significant rise in the level of urbanization from about 29% in 1970 to almost 44% in 2000 and about 51% in 2010. A key feature of Ghana's urbanization process is the skewed distribution of the urbanized population. The urban population of Ghana is heavily concentrated in the Greater Accra Metropolitan Area (GAMA), which hosts the national capital, Accra, and the hub of the country's economic and industrial establishments. As consequent of the heavy population pressure on land, housing and basic services in GAMA, and exacerbated by weak municipal capacities in services and infrastructure provision, slums and poorly serviced neighbourhoods are becoming a common feature of the metropolitan landscape. This paper examines the history and development of two informal neighbourhoods of Accra: Nima, an 'old' informal neighbourhood and Old Fadama, a 'new' informal neighbourhood. While Nima has been accepted as an integral part and parcel of the city of Accra, Old Fadama is largely regarded by city authorities as a community requiring clearance. The paper contrasts the over 70 year history and development of Nima with that of Old Fadama, and questioned whether history is not repeating itself. More importantly, it argues that long-term solution to informal neighbourhoods in Ghana and elsewhere does not lay in slum clearance, but lessons and best practices that can be distilled from the development experiences of places such as Nima.

Key Words: urban planning, slum, Nima, Old Fadama, Accra.

The ‘Ilhas’ of Porto and the ‘self-improvement’ urbanism: the inhabitants as engine of urban transformation

Natasha de Sena, Kees Doevendans, Sophie Rousseau

Alterra Research Institute, Wageningen University. Eindhoven University of Technology. The Netherlands. E-mail: natasha.desena@wur.nl

The subject of the presentation is the analysis of the morphology of the ‘Ilhas’ of Porto, Portugal. The objective is to illustrate what the typology currently means for its inhabitants and for the urban space and propose methods of improving their living standards. An ‘Ilha’ in Porto is a typology of low cost housing which spread within the city in the 19th Century as a result of the industrial development. The extremely small dwellings (around 4x4m) were established within backyards of middle class houses, connected to the street through a narrow corridor (Teixeira, 1996, p. 1-2). Despite all public trials of destruction, more than 1.000 ‘Ilhas’ still shelter more than 13.000 people within the city of Porto (Pereira, 2003, p. 145). The social and spatial dimension of the ‘Ilhas’ as an ‘assemblage’ of the city determines the research method, focusing on: i) an analysis of the morphology and typology of a selected cluster of ‘Ilhas’ in different scales; ii) participatory research involving the inhabitants, including interviews and observation of daily practices and community values. Despite the low quality living conditions, the inhabitants of the ‘Ilhas’ show an impressive attachment to their living space, forming a strong community. This quality is used as a foundation for the ‘self-improvement’ urbanism, where the community operates as the main engine of the urban transformation. The main finding of the research is that the ‘Ilhas’ could be an inexpensive solution for the current housing crisis through the further development of the ‘self-improvement’ urbanism. This innovative approach includes strong public participation and an innovative position of the planner within the process.

Key Words: Ilhas, social history, morphology and typology, urban anthropology, self-improvement urbanism.

References

- Pereira, V. B. (2003) ‘Uma imensa espera de concretizações... Ilhas, bairros e classes laboriosas brevemente perspectivados a partir da cidade do Porto’, *Sociologia* 13, 139-148.
- Teixeira, M. C. (1996) *Habitação popular na cidade oitocentista - As Ilhas do Porto* (Fundação Calouste Gulbekian, Junta Nacional de Investigação Científica e Tecnológica, Portugal).

From housing to city. Lisbon's public housing promotions – 1910/2012

Filipa Serpa

Faculty of Architecture, Lisbon University. E-mail: filipa.serpa@gmail.com

City's urban tissue is organised in two essential parts: public and private spaces (Coelho, 2003). If public spaces assign the task of structuring the city, private spaces assume the role of giving body to the urban ensemble. This last one is essentially composed of residential buildings, the function that being the most "silent" over public space's role is what constitutes city's connective tissue. The fact that residential tissue is an essential part of the city linked with the crisis of housing that crossed the twentieth century and with the recognized importance of residential tissue in the city form, defined the object of analyses – public housing projects. Lisbon's up-and-down topography, Portuguese legislative evolution and international urban design tendencies led to a wide and diverse constructed range of examples in the past 100 years. Considering a global analysis on public housing projects in Lisbon and its patterns, this paper proposes to identify typomorphological (Moudon, 1989) patterns in Lisbon's public housing projects in the period between 1910 and 2012. Contributing for this categorization is a diachronic reading and a thematic analysis, based on the drawing as the elected tool for the reflexion. It is established through the assemblage of case studies and its analyses by the redesign of the urban phenomena, looking for its permanencies and patterns, which are deducted or implied from urban tissue's 'abstract rules' (Busquets and Correa, 2006). In result, the research proposes a typomorphological classification that allows a reflection on the ability of these projects to 'make city'.

Key Words: Lisbon, housing, urban morphology.

References

- Busquets, J. and Correa, F. (2006) *Ciudades x Formas: una nueva mirada hacia el proyecto urbanístico* (Harvard University, Graduate School of Design: Nicolodi editore, Harvard).
- Coelho, C. et al. (2013) 'Os Elementos Urbanos', *Cadernos de Morfologia Urbana, Estudos da cidade portuguesa* 1; (Argumentum, Lisboa).
- Moudon, A. V. (1989) 'The role of typomorphological studies in environmental design research', *Changing Paradigms* (University of Washington), 41-48.

The ‘ilhas’ of Oporto, a fundamental component of the city’s nineteenth century urban morphology

Manuel C. Teixeira

Faculdade de Arquitectura Universidade de Lisboa, CIAUD

E-mail: manuelcteixeira@gmail.com

The ‘ilhas’ are nuclei of working-class housing that were built on Oporto in the second half of the nineteenth century, in the period of greater industrial development of the city. The ‘ilhas’ were made up of groups of small houses, with an area of about 16 square metres, built along the back-gardens of middle-class houses (or which had been originally built as middle-class houses) in areas of the city that, given their proximity to industries located nearby, had begun a process of physical and social decay that would be further accentuated by the construction of these working-class houses. These houses were built either in a row, along the 5.5 or 6 metres wide urban lots, or in two rows, back-to-back or facing each other, when they occupied two of these plots. They were not unlike similar forms of working-class housing built elsewhere in Europe in the same period, and they would be replicated, by Portuguese emigrants, later on, in Brazil. Small areas, bad construction and a lack of the most basic infrastructures were translated into deplorable housing and sanitary conditions, endemic illnesses and high rates of mortality. Towards the end of the nineteenth century, it is estimated that between one-third and one-half of the population of Porto lived in these conditions. Despite these numbers, and the sheer presence of their inhabitants in urban life, most ‘ilhas’ were invisible from the formal city: built in the back-gardens, in the interior of urban blocks, their sole relationship with the street was by means of a door – no different from any door – on the façade of the middle-class building facing the street, that led to a corridor under this house and next to an open corridor along the back garden where the rows of small houses were built. In the existing city’s cartography they were also absent. Their presence would only be acknowledged towards the end of the century, when a number of epidemics, and a new cartographic survey of the city, led to their formal recognition on the part of the bourgeoisie and the municipal authorities.

Key words: ‘ilhas’, working-class housing, Oporto, nineteenth-century, industrial city.



4.

Agents of Change

For much of the period of its existence as an identifiable field of academic study, urban morphology has been criticised as being largely descriptive in its approach. This was particularly the case in the formative phase of the 1960s and 1970s when urban geography and social science generally were dominated by quantitative spatial analysis and political economic (mainly Marxian) approaches respectively. Although there may have been some substance to such criticisms they considerably underplay the necessary groundwork in urban morphology that was being established at this time and reflect an assumption that ‘process’ could only be uncovered through the measurement of specific social and economic mechanisms. The priorities in urban morphology were different, reflecting the need to establish a common framework for study including identifying a taxonomy for the analysis of morphological change, the recognition of the key components of urban morphology and methodologies for their examination. Building on this underpinning, urban morphology has subsequently developed strongly in several academic directions but, given the continuing societal, academic and practical interest in change in the physical form of urban areas, much emphasis has been placed on the agents of change. Initially, work focused on the roles played by the principal actors in urban change, particularly land and property owners, politicians, architects, planners and developers. In some ways, this has paralleled the interests of other urban scholars, less concerned with physical form and more with the power relations and economic influences of specific groups in determining outcomes. The ‘Agents of Change’ sessions at the Porto ISUF 2014 Conference will undoubtedly continue to explore some of these relationships, including the examination of the conflicts that inevitably arise between such actors. However, a brief survey of recent literature indicates that the term ‘agents of change’ has moved beyond the consideration of key actors, functioning as individuals and/or groups, and also encompasses the role of institutions, transport infrastructure and connectivity, demographic trends, religion, and street systems. Critics may consider the inclusion of such phenomena to constitute too wide a definition, but their role as factors and processes of urban transformation cannot be denied. The papers to be delivered in the ‘Agents of Change’ sessions promise to explore the role of many of the above in specific situations and stimulate debate on diverse aspects of their operation. Whilst listening to the detailed content of presentations however, it may be useful to reflect on the applicability of specific studies to broader themes and conceptual frameworks. Three such themes will be briefly mentioned here – scale, comparability and the morphological components being studied. The scale of study is vital in its interpretation if only because conclusions drawn at one scale may be considerably less (or possibly more) applicable at a different scale. In any search for concepts of universal applicability it is important to remember the difference that scale makes to empirical reality and theoretical interpretation. Second, comparability of experience, cultures, political systems and many other dimensions remains an important dimension of morphological study and can stimulate some of the most intriguing work. Despite the pressure of globalisation, the question of what sort of processes operate in different cultural milieu remains an extremely important one. Finally, we need to be very clear which specific morphological components we are discussing and debating, not least

because different components change at a very different rate and are themselves subject to rather different processes.

Michael Barke

Influences of housing municipal policy in slum urban form: the case of Heliopolis (Sao Paulo, Brazil)

Denise Antonucci¹, Guilherme Filocomo²

¹Faculdade de Arquitetura e Urbanismo – Universidade Presbiteriana Mackenzie, São Paulo, Brasil.

²Architect, São Paulo, Brasil.

E-mail: antonucci.denise@gmail.com , gfilocomo@gmail.com

This paper seeks to understand the influences of the different municipal administrations of São Paulo on the architectural and urban designs produced for the slums of the city. Seeking temporal and physical boundaries, we decided to study the influence of different housing policies post-military dictatorship over the architectural plans developed to Heliopolis, the largest slum in the city. First of all, by basic bibliography, we seek to understand the evolution of housing policy in São Paulo. Considering the temporal delimitation already explained the work will address the following local governments: Erundina (1989-92), Maluf (1993-96), Pitta (1997-00), Suplicy (2001-04), Serra (2005-06) and Kassab (2007-12). The main housing guidelines of each government will be delivered (Antonucci and Filocomo, 2012), (Barda and França, 2011), (Bonduki, 2000), (Bonduki, 2010), (França, 2012), (Krähenbühl, 1996). Then, the history of Heliopolis will be raised through documents provided by the São Paulo mayor and bibliographical study. At this stage, it will be understood as the urban fabric of the slum was formed and changed since its foundation in 1971 (Collet and Fontes, 2014). Finally, the housing projects that were built in Heliopolis since Erundina's municipal administration will be searched in the SEHAB archives. Based on this survey, an analysis that seeks to identify the differences and similarities between the activities of each municipal management will be presented. This article aims to expose how different policy guidelines, which were clear and well defined guidelines, might interfere in different ways in the urban form of the same slum: Heliopolis.

Key Words: urban form, housing policies, slum, architectural and urban projects.

References

- Antonucci, D. and Filocomo, G. (2012) 'Design and occupancy of public spaces in social housing (São Paulo, Brazil) - As the guidelines of housing policy of the mayor Luiza Erundina influenced the design of public spaces in the social interest housing (1989-92) and its appropriation', *19st International Seminar of Urban Form*, Delft.
- Barda, M. and França, E. (eds.) (2011) *Renova SP - Concurso de projetos de arquitetura e urbanismo* (HABI - Superintendência de Habitação Popular, São Paulo).
- Bonduki, N. (2000) *Habitar São Paulo: reflexões sobre a gestão urbana* (Estação Liberdade. São Paulo).
- Bonduki, N. (2010) *Política habitacional e possibilidades de atuação do arquiteto* (Escola da Cidade. São Paulo).
- Collet, G. and Fontes, M. C. L. P. (2014) *A intervenção do poder público nos projetos de habitação de interesse social* (www.redalyc.org/articulo.oa?id=81015222012) Accessed January 2014.
- França, E. (2012) 'Plano Municipal de Habitação, uma construção coletiva' in *Política Municipal de Habitação. Uma construção coletiva* (HABI - Superintendência de Habitação Popular, São Paulo).
- Krähenbühl, L. A. S. (1996) *Cingapura, o encontro de São Paulo com a cidadania* (Bix Design Corporativo Editora. São Paulo).

From informal neighborhoods to space regularization – the case of morphological transformations from ‘Musgueira’ neighborhood to ‘Alta de Lisboa’ plan

Gonçalo Antunes, José Lúcio, Nuno Soares, Rui Julião

e-GEO, Research Centre for Geography and Regional Planning, Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa, Avenida de Berna, 26-C, 1069-061, Lisboa, Portugal.

E-mail: goncalo.ant@fcsh.unl.pt , jmlr@fcsh.unl.pt , nhpsoares@fcsh.unl.pt , rpj@fcsh.unl.pt

This study area located at the northern limit of the municipality of Lisbon reports to a landscape, that till the first half of the 20th century was mainly composed by old farms, spontaneous vegetation and dumping sites. In the 60 this space was separated from the city by the Lisbon International Airport and the Segunda-Circular motorway. During the last half of the 20th century, the rural landscape became various slums (informal settlements), commonly referred as: Calvanas, Musgueira Sul, Musgueira Norte, Quinta Grande, Cruz Vermelha and Quinta Grande. All these informal settlements were popularly known only as Musgueira, where inhabitants lived in an environment of urban poverty, exclusion, segregation and stigmatization. In 1998, the City Council began the regularization of Musgueira area. The City Council launched an ambitious 300ha urban project for the inhabitants rehousing called Alto do Lumiar City PlanEN - Plano de Urbanização do Alto do LumiarPT, designed for 60,000 miscegenated inhabitants (slum dwellers and new residents). The main objective of the communication is to describe and analyse the urban morphological changes since the rural landscape (till first half of last century), to the slums period (where more than 10,000 persons dwelt), and finally the last morphological changes providing by the City Council with the Alto do Lumiar City Plan. We also intent to realize how the urban morphology can influence the life of citizens and provides socio-spatial changes.

Key Words: urban regeneration, urban morphology, Lisbon, Musgueira, Alta de Lisboa.

The auto representative image as an agent of legitimation and incorporation of urban settlements in the city of Rio de Janeiro

Carolina de Hollanda

Bauhaus Universität-Weimar/IPP-EU, Federal University of Rio de Janeiro
state/PROURB

E-mail: carolina.hollanda@uni-weimar.de

Social Housing is a highly sensitive social issue in Brazil, where there is an urgent need to develop strong building policies for large conurbations. As consequence and with the objective of guaranteeing more security and access to dignified housing, was established as vital attitude the society's engagement and the practice of new strategies that enable a bigger commitment with the elaborated proposals. In this sense, Independent initiatives that intend to form photographers in slums are accomplishing a bigger visibility in Rio de Janeiro and this pedagogical work represents today a new dialogue possibility with the inhabitants of informal areas of the city. By means of the record realized about their own reality, the inhabitants start to contribute in an effective way to a housing and urban proposal more suitable to their actual aspirations and to spread a view that agrees with their space reality. The image decharacterization language here assumes, in a concrete way, the guiding role of the research in the inclusionary housing investigative analysis of the city and its urban context, contributing to help to solve housing issues, pointed with the assistance of the documentary look. The research attempts to investigate how such images can contribute to the development and evaluation of inclusive practices of public policies in Social Housing and, importantly, how they may benefit from the community's perception of their own environment. In the interaction between dwellers and local photographers, the community can convey their aspirations more effectively and more closely related to their local realities.

Key words: inclusionary housing; urban planning; housing planning; auto representative image; urban settlements.

Urbanization in large slums - the challenge of urban transformation

Jozé Candido Lacerda, Priscilla Chiesse

JC&S Arquitetos Associados and Architecture and Urbanism Department of Santa Ursula University. E-mail: jc@zk.arq.br

The objective of this article is to describe the processes that cause urban transformation in low-income communities (slums) of the city of Rio de Janeiro after the changes of urban developments planned by the Government, and analyze the effects that these changes may have on the morphology of the city. The article is divided into three parts: its formation, development and current situation and proposal for urban transformation. We will use as an example the “Complexo do Lins”, a conglomerate of fifteen communities in the north zone of the city with 20.000 inhabitants. In the first part we discuss their historical and geographical aspects, its origin and its formation. The complex is inserted in the Tijuca National Park, a fragment of the Atlantic Forest biome, which was been declared a Biosphere Reserve by UNESCO in 1992. In the second part, we comment on the development and consolidation of this huge urban space - the topography plays a fundamental role in the formal arrangement of the occupation. The urban morphology of the complex is irregular due to the adaptation of buildings to the structure contours, drawing an “organic” road layout without order of lots and blocks, with interstices resulting constructions often used for pedestrian access. Green and sustainable urbanism - theme of the third party – the main challenge of the proposal is the reversal of the negative physical and social space existing degradation: Improve the self-esteem of the community complex, developing a local environmental culture; neutralize the conflict zones and risks environmental; prevent illegal advancement of urban territory within the natural areas; connecting the complex to the tourist attraction of the city.

Key Words: transformation, urbanism; slum; sustainability, connection.

Favela: informality leading spontaneity into contemporary city

Vânia Loureiro

University of Brasília. E-mail: vania.teles.loureiro@gmail.com

Contemporary city is facing new forms and features, such as complex informality: the scale of informal settlements – *favelas* – has stated its presence as part of the city. It is necessary to understand this frequent phenomenon in some cities and its effects on urban life there. It is also urgent to see informality or organicity as a specific type of order and no more as a chaotic type of space. Frederico de Holanda values informality in contemporary city by recognizing that diverse volumetric and spatial configurations lead to exceptional urbanity levels (2010). He also states the need for interaction between both sides – public organized space frequently benefits from informal activities. So this paper aims to look at informal urban shape and discuss its place in contemporary city, why is it considered illegal and why is it so important. This work is methodologically divided in two phases, first of all a theoretical discussion about contemporary city, formal/informal, planned and spontaneous, as well as all the concepts related to the acknowledgement of '*favelas*' effect on city and of informality on space. Second, to ensure the empirical achievements, a configurational study comparing Brasília to Rio de Janeiro based on Space Syntax methods (Social Logic of Space) to analyze urban morphology. Findings prove, so far, the importance of an organized complexity in urban space. '*Favela*', as a bottom up (and complex) structure doesn't interact correctly with the legal and formal city around and once it is possible to look up for qualities in informality, it is also possible to discuss the errors of modernistic approaches in urban space.

Key Words: informality, contemporary city, favela.

The origins and pathways of urban (in)formality: towards an understanding of local dynamics and agents of change within a favela in Rio de Janeiro

Mónica Guerra da Rocha

Royal Institute of Art, Stockholm. E-mail: mfmguerra@gmail.com

Subnormal settlements, informal settlements, favelas, slums - the words remind us of places of non-planning, the opposite of the formal city, lack of infrastructure and services, poverty and segregation. In Rio de Janeiro around 22% of the population lives in informal settlements. These territories have structural characteristics that diverse them from the rest of the city, but that also diverse them from each other. Although they have been historically understood as the informal place, segregated and separated from the rest of the city, they are in fact territories that result from the formal city, dialogue with it and build its own dynamics as an autonomous and specific urban place. This research looks for the historical background that built up the favela of Maré, in the North region of Rio de Janeiro, with approximately 130.000 dwellers. This territory may be considered as a paradigmatic example on how different agents of change build the morphology of our territories. It is a complex of 16 favelas, each with its own background and particular form, built upon a landfill ('maré' is the Portuguese word for 'tide'), delimited by 3 of the most important traffic ways of the city. The aim of this research is to understand the construction of informality and its inner variations by questioning the dialogues and dichotomies between the formal / informal city and how it determines the urban morphology of the informality. It states that informality has its own "form" and its own place within the city, and asks for an open-minded planning perspective while considering the understanding of the local needs and potentials, strengths and weaknesses. It tries to look at the urban form as a complex result of human, social, political, geographical and infrastructural dialogues, and suggests a shift in the paradigmatic planning conceptualization in order to act with the dynamics of (in)formality, instead of planning against it.

Key words: informality, favela, urban dynamics, urban structure.

The New Coach Museum – a Brazilian urban narrative in Lisbon

Susana Brito, Diogo Mateus

e-Geo Centro de Estudos de Geografia e Planeamento Regional, FCSH Universidade Nova de Lisboa, Portugal | ULHT, Universidade Lusófona, Portugal

ULHT, Universidade Lusófona, Portugal

E-mail: susanasbrito@fsh.unl.pt , dmateus@ulusofona.pt

A proposal for a public building as is the New Coach Museum, in Lisbon, from Paulo Mendes da Rocha suggests the understanding, diversification and improvement of its implantation and surrounding's. That being acknowledged we intend to elucidate about its urban technological methods and techniques. Heir of the modern Brazilian generation of architects-planners, Paulo Mendes da Rocha as being able to demonstrate with his recent and unique proposal in the Iberian Peninsula territory, the New Coach Museum, the contemporaneity of his artwork without neglecting the modern guidelines that determine his thinking and unquestionable technical expertise, as is our intention to evidence. The main aim of this communication is to define and demonstrate the elements which compose the method of integrated urban renewal used in the New Coach Museum project, by sharing its urban improvements contributions, for Lisbon city intelligible in the urban narrative of the urban-architectural proposal of 13.500m², designed by principles of modification and restructuring. Appointed by Lisbon City Council - a New Coach Museum was in need for Belém's monumental area, therefore this project is a simple response to a simple city-planning claim. Taking this action forces the re-localization of some services presenting itself as an urban renovation response for the area. Through a theoretical/conceptual reflection about the New Coach Museum urban-architectural proposal, for Belém, as well as the study of the work and life of its architect we intend to share a systematized methodology used by this urban agent on this specific public space approach.

Key Words: New Coach Museum, Lisbon, integrated urban renewal.

Modular design in social housing: the work of Justino Morais 1960-1990

João Cardim

DINÂMIA'CET, ISCTE – Instituto Universitário de Lisboa.

E-mail: caardim@gmail.com

Although Portuguese architect Justino Morais (1928-2011) had a diversified work in a career spanning more than fifty decades, the majority of his designs consisted of social housing complexes. Commissioned by several public institutions, he designed over 7000 homes using a gradually perfected Modular System, abbreviation of 'system of typological and morphological units modularly organized'. This design method uses the combination of multipurpose standard elements, enabling a total adaptation of the typologies to the users – to their habits as well as to their economical profile – as well as a large flexibility and variation in plan and elevation, which purpose was to counter the usual uniformity of the social housing complexes. These are located in numerous towns throughout the country, including Almada, Barreiro, Setúbal, Beja, Évora and Portalegre. The housing complexes were organized in urban plans also designed by Morais, which sometimes included civic and commercial centres, primary schools and kindergartens. This paper intends to identify some of the more than twenty complexes that Justino Morais designed with this system, and to analyse its several dimensions – from the housing unit to the neighbourhood. The aim of the architect was to design, through the spatial manipulation of the apartments and through the urban composition, an architecture which served in the best way its users in everyday life. Summarily, what was intended was the almost instantaneous creation of city – due to the pressing housing needs of the pre and post-revolution period – where it didn't existed or in continuity with the existing urban fabric.

Key Words: social housing, modular design, urban planning, Justino Morais, 1960-1990.

Fernando Távora and the Portuguese urban space design

Carolina Ferreira

Department of architecture, Faculty of Sciences and Technology, University of Coimbra
E-mail: carolina.darq@gmail.com

As our urban context is considered in new and complex ways, in which territory is no longer a mere network or mesh, but an interaction of different plans and systems of urban life relationships, a territory constituted by several layers that either continue or split from urban collective memory, we are challenged to grasp the urban question by studying the processes that occur while a project is created. This paper aims to reflect on idea-based construction processes seeking to intervene in the urban space by looking at the theoretical and practical career of Fernando Távora (1923-2005) - a Portuguese architect that has influenced the teaching and practice of this subject in Portugal from the 1960s to the present time - starting from the General Plans and Urban Arrangements carried out by him and his team, during the second half of the 20th century in several Portuguese cities, namely Montemor-o-Velho (1951-59), Aveiro (1962-63), Barredo in Oporto (1969-76), Guimarães (1979-86) and Coimbra (1989-1992). Fernando Távora's work supports a methodological position of the utmost importance to our time: to intervene locally, according to global strategies, establishing as many relations and continuities as possible; in other words, to act surgically, promoting an effect of surrounding contamination. As a result, this approach partakes in the current debate on contemporary cities and the standing, as a subject, of architectural practice regarding urban (re)design, identifying instruments and tools capable of facilitating one's research, reflection, and reality questioning (analysis) so as to achieve a formal realization of ideas (synthesis).

Key Words: methodology, urban intervention, urban design, Fernando Távora, Portuguese space design.

Reinventing Luanda. The Urbanization Plans of the Luanda's City Council Urbanization Office

Filipa Fiúza, Henrique Gama

DINÂMIA'CET, ISCTE-IUL. E-mail: filipa.fiuza.arq@gmail.com

From the 1960s on, the Estado Novo intensifies the occupation politics of the African territories in order to establish white population, mostly from the middle-class. Luanda's case is paradigmatic in the Angolan context. The growth of inhabitants resulted largely from the rural exodus from the Angolan outback due to the Colonial War (1961-1974). Also, the revocation of the *Estatuto do Indigenato* (Native's Statute) and the corresponding attribution of Portuguese citizenship to all the overseas provinces inhabitants by the Overseas Minister Adriano Moreira, as the deriving mobility between the territories, were key factors that helped this demographic outbreak. In 1961, the Luanda's City Council Urbanization Office is fully functioning. Headed by architect and urbanist Fernão Lopes Simões de Carvalho, it is composed by a multidisciplinary team. The beginning of the Colonial War and the will to mitigate the existing segregation in the capital forced the architect to a very pragmatic approach, in which he applies the knowledge acquired at the Sorbonne, refusing the most diagrammatic aspect of the Athens Charter. At this time, he starts the design of a hundred detail plans to all the city, before finishing the city's Master Plan, which was never approved. It was through the plans that he designed in the City Council Office, which we propose to analyze, that the architect was able to approach the vision he had of the discipline of Urbanism, as a motor for the development and improvement of the populations' living conditions. He himself considers that "the history of urbanism shows us that where there is any economic, social or racial segregation, there are always imbalances, there are always riots, there are always crimes. And I, as a native of Luanda, every time I went there, I felt bad about this separation" (Carvalho *in* Prado, 2011: 230).

Key Words: Architecture e urbanism, urban planning, Angola – Luanda, Simões de Carvalho, Luanda's City Council Urbanization Office.

References

Prado, G.R. and Martí, P.N. (2011) *La modernidad ignorada - arquitectura moderna de Luanda* (Universidad de Alcalá, Alcalá de Henares)

Fourth dimensions urban morphologies

Daniel Screpanti, Piernicola Carlesi, Gloria Mancini

Centro de Estudos de Arquitectura e Urbanismo, Faculty of Architecture, University of Porto. Department of Civil, Construction-Architectural and Environmental Engineering, University of L'Aquila.

Department of Urban Design and Territorial Planning, University of Florence
Specialisation School in Anaesthesia and intensive care, University of Perugia

E-mail: dscrepanti@arq.up.pt , piernicolacarlesi@yahoo.it ,
gloriamancini85@gmail.com

The reality is not static but dynamic! Any context we choose, it has four dimensions. There are also common grounds, as urban or metropolitan spaces (Fantin et al, 2012 and Barbieri, 2003), with very slow temporal motions, compared them to other space-time elements. Therefore, urban morphologies representations can be considered as space-time environments devoid of tensor fields. Yet these representations are not satisfactory because a dynamic system is considered inertial, so our analysis of problems will always consider their movements in neutral space-time environments (Tafari, 1988). But cities are excitations of conflicts! Sequences and overlapping analysis at different levels could be attempts to solve shortcomings of this approximation, but they do not solve the absence of space-time tensor fields in our morphological representations. Consequently, the problem is identify the distortions of urban space-time in order to produce proper studies of social and health questions within urban realities. In order to do this, it is essential to represent the quality of tensor fields: their localization and intensity. Job geographies (Malanima, 2003), and their evolutions (Moretti, 2012 and Sassen, 2010), are very useful and synthetic indicators of where tensor fields are located and how do they move, but them don't provide the intensity of each tensor fields and consequently we are not able to represent the curvature of urban space-time. Only with an hybrid approach to urban morphology, deductive-inductive or inductive-deductive, able to overcome the dispersion of contents of inductive methods and the approximation of information of deductive ones, we can address this problem, and operationalize a correct representation of urban realities. The future Urban Morphology should represent the fourth dimension of urban spaces.

Key Words: dynamic system, urban space-time, fourth dimension, tensor field, job geography.

References

- Malanima, P. (2003) *Uomini, risorse, tecniche nell'economia europea dal X al XIX secolo* (Mondadori, Milano).
- Fantin, M., Morandi, M., Piazzini, M., Ranzato, L. (eds) (2012) *La città fuori dalla città* (INU Edizioni, Roma).
- Barbieri, P. (2003) *Metropoli piccole* (Meltemi, Roma).
- Sassen, S. (2010) *Le città nell'economia globale* (Il Mulino, Bologna).
- Tafari, M. (1988) 'L'avvocato del diavolo', in *Rivista di Architettura Utopica 1* (EASA, Venezia).
- Moretti, E. (2012) *La nuova geografia del lavoro* (Mondadori, Milano).

Open-minded ‘public’. Shaping urbanity on a wave of change

Luisa Bravo

Department of Architecture, University of Florence (Italy). E-mail: luisa.bravo@unifi.it

The concept of ‘public’ has been defined by sociology and political sciences. Even if sometimes ambiguous, it refers mainly to populations of individuals, sharing a common interest, involved in civic affairs. In architecture and urban design, the idea of ‘public’, often used in the plural/multiple form, ‘publics’, is related to new forms of human engagement in the public realm, linked to ‘commons’, intended as public goods and urban resources. The relation between actors and places, namely between “publics” and ‘commons’, has become particularly intriguing in the last decades, when it started to shape a new kind of urbanity, based on aspirations of equity and citizenship through participation, made with creative contents, shared on a ‘media-space’ network. Design activists are private groups and organizations determined to advocate a better city and society, connecting innermost emotions of collective expectations to the outward manifestation in the public domain: they play as powerful performers in the urban game and are often able to establish a fruitful collaboration with property owners, developers, planners and politicians. Thus, the consolidated design process has been enriched with a multifaceted and comprehensive approach: urban transformations are more and more related to aspirations of open-minded citizens and based on negotiation practices and sensory experiences. Public spaces behave as places of multi-layered connections, sharing ideals and cultural awareness: they can grant and gather all wishes becoming engine of a social rebirth for people and neighborhoods, standing as attractive images of successful communities. The management of the city appears today as a complex task, between physical space and public life, looking forward on a wave of change.

Key Words: publics, private action, commons, design process, urbanity.

Change, utopia and ‘the public’: urban transformations and agents of survival in Brasilia and Rio de Janeiro

Thereza Carvalho

Universidade Federal Fluminense, UFF. E-mail: thereza.urbanismouff@gmail.com

This paper addresses changes to the urban form in two different contexts: planned areas and “organically made” urban fabrics. Two different processes of urban transformations are examined. Large scale urban transformations, designed by a few in response to specific purposes, and small scale urban transformation processes made of cumulative individual changes and perspectives. Brasilia and Rio illustrate the argument. This paper argues that vitality, and other interesting good-to-live-in qualities that distinguish a good city, requires a dynamic balance between ruling and allowing changes of different scales, purposes and agents. It comparatively examines processes of change in “organically made” urban areas - shaped by multiple individual socio-economic-cultural-spatial practices - and in large scale planned areas. It examines the ways and means that some agents of change, with different purposes, and resources, have helped to make vital urban tissues *survive* for the collective benefit of the city and ‘the public’, while others killed it. Survival strategies were associated with specific agents and spatial patterns of change, driven by forces of attraction, expansion and consolidation. They were found to intertwine with place and time related inherited attributes. Utopian space models have both inspired and justified *significant large-scale changes* in city shape, associated to a vision of the future with or without collective purposes. The question of how those utopian modeled spaces respond to different forms, dynamics and scales of space appropriation is here discussed. This paper finalizes highlighting ripple effects that different agents have triggered through changes made to the urban fabric.

Key Words: urban transformations, agents of change, utopia, Brasilia satellite-towns, Rio de Janeiro.

A tale of two London Squares: the place of morphology in contemporary urban life

Howard Davis

Department of Architecture, Collaborative for Inclusive Urbanism, University of Oregon. E-mail: hdavis@uoregon.edu

The paradigmatic London square provided a spatial framework for urban class distinctions by separating middle- and upper-class dwellings from the noise and bustle of mixed-class commercial streets. One example, Lonsdale Square, in Islington, built around 1850, is morphologically removed from its surrounding neighborhood, has little traffic and a quiet green space in its center. In an area that has recently been gentrified, and supported by the same urban pattern that characterized it at its construction, the square again represents the division of the 'gentry' from commercial and public life. Over the last few decades, various local initiatives have recognized London's increasing diversity. An example is the new Gillett Square, in Dalston, one of London's most ethnically diverse neighborhoods. Developed on a former car park by a collaboration led by a local NGO, Gillett Square includes shops for micro-entrepreneurs, a café, jazz club, offices for local social and arts organizations, and a paved central area with outdoor performances and occasional markets of all kinds. Located immediately off a major commercial street, with several entrances, it is morphologically connected to its community and provides a vibrant new locus for social and cultural life. Lonsdale Square and Gillett Square represent different ideas of what urban squares can be. By inverting the use and modifying the morphology of the Georgian and Victorian London square, Gillett Square shows how traditional urban form may play a role in supporting ethnically diverse and economically mixed urban life—uniting rather than separating people of the contemporary city.

Key Words: urban square, urban inclusion, London, social life, morphological depth.

Public involvement transformation for best future of cities in Russia

Tatiana Gudz, Ekaterina Meltsova, Maria Zaharova

Perm National Research Polytechnic University, Russia

E-mail: zaharovami@gmail.com

At recent years, the distrust of the government has intensified in Russia. It showed up in the criticism and denial decisions of the federal and local level authorities, including municipality development issues. This fact makes strategic urban planning a complicated and unenforceable challenge. Public discussion of the city strategic development is a mandatory part of the document approval. This measure is set forth in federal and local legislation. However, despite the enshrined laws, the quality of public debate still stays extremely low, and the results are not credible. Partly due to the Russian mentality, partly to the procedure of public hearings the event itself aims just to inform about upcoming urban life changes, but not to affect the decision. World experience of public participation illustrates that this approach to decision-making practice is beneficial for all urban participants: increases the trust level for local government and prevents future disputes, identify the real city resident interests for potential investors and land owners. Using the results of public hearings on General Plan Amendments, we propose to amend the public hearings procedure for the urban development projects in Russia. General Plan of the city of Perm is the main strategic document that regulates the urban development for more than 20 years. These public hearings focused on land use of significant city areas, such as the relocation of the Zoo into the urban forest, new outland district development for 75 thousand people (10% of the city's population), shopping centre development on the central city square - the Esplanade. Perm is an industrial city with a one million inhabitants, one of the first cities in Russia conducting urban policies based on the new urbanism ideology. Using the experience of public hearings in Perm, we identified the problems and "bottlenecks" of public participation. This experience gives us the opportunity to make recommendations for improvement of the decision-making procedure in urban development.

Key Words: public hearings, public participation, strategic documents, decision-making, surveys, new urbanism.

Changing features of the urban structure in a transitional city

Julian Wékel, Polina Koriakina

Department of Urban design- and planning, Technical University of Darmstadt

E-mail: wekel@stadtplanung.tu-darmstadt.de , urbarea@gmail.com

Cities in transition go through the stages of depression, improvement, prosperity and recession. Whenever the policies and external environment are changing fast and visibly, social processes take much time to adapt to these changes. Public space acts as a catalyst of the social conversions. This paper examines a unique situation of Berlin post-socialist transition. Before the reunification of Germany the state acted as the main agent of changes on public spaces, being responsible for the design and maintenance. After the reunification all these responsibilities became the liability of the municipality, private owners and public initiatives. When democratic values gained priority, a public space became an embodiment of collective thinking and dreaming. Not built up open areas turned to be profitable place that connected numerous interests of a new network of the stakeholders. To research these transformations of public space in socio-economic, political and physical dimensions in the transitional city and subsequent changes of urban structure five different neighbourhood squares were chosen in the district of Eastern Berlin. To define the indicators and the mechanisms of the transformations the research developed a public space examination model on the basis of the term ‘publicness’ (Carmona et al, 2010). The findings based on quantitative and qualitative data demonstrate how a neighbourhood square turned to a place of belonging and a symbol of identification; how the new demands of the citizens and their spatial expression have shaped urban environment.

Key Words: public spaces, a square, transitional city.

References

Carmona, M., Tiesdell, S. and Oc, T. (2010) *Public places. Urban spaces. The dimensions of urban design* (Elsevier, Oxford).

Hongta Group and its city: Danwei and its evolved Group as an agent of change in China

Dai Ying, Song Feng

College of Urban and Environmental Sciences, Peking University

E-mail: daiying77@pku.edu.cn

Danwei, the most important organization and construction unit in early periods of modern urban China, is under rash change. Much of its landscape, especially that of industry, is rapidly erased, however, some remains, expands and thus continues influencing the local or even wider scale urban or rural landscape with the successful reform of the former danwei, as is exemplified by Hongta Group, Yuxi City, Yunnan Province. Firstly established as Yuxi cigarette factory in 1950s, Hongta Group gradually expands its scale and became the most important enterprise in Yuxi city, while the landscape of Yuxi city was continuously formed by it in ways of production construction, welfare construction and real estate or other investment in different periods. In danwei period, besides production it provides hospitals, schools and other welfare facilities, which was transferred to specific local departments in the transformation process of danwei system, while with the economic boom and the capital accumulation of Hongta Group, semi-welfare residence was still provided and real estate and other investments were made. The formation and transformation of Hongta Group and its relationship with the city is typical for the process of urban transformation since the establishment of People's Republic of China with the ups and downs of danwei system and its transformation, so as the relevant landscape changes.

Key Words: agent, Hongta Group of China, danwei.

Unidade Residencial da Reboleira Sul. Critical reading of the ‘optimist suburbia’ that Sa Rico designed and J.Pimenta built in the Lisbon suburb

Bruno Macedo Ferreira

Instituto Universitário de Lisboa (ISCTE-IUL), DINÂMIA’CET-IUL

E-mail: bruno.macedo.ferreira@gmail.com

There is no denying the growing importance of that metropolitan areas going to take over these days, hence the need to go back to the exact moment of its origin - when the phenomenon is especially "director". This communication aims to present part of an investigation that, by surveying 30 cases study unpublished sought to understand the phenomenon of residential occupation of the northern suburb of Lisbon. Questions whether the evolution of the territory built in the suburbs (architectural and urban planning) when, in the late 1960s, the ideals of neoliberalism, the emergence of large property developers and a large demographic pressure reshape the process of urban growth and the logic of metropolitan relations (the traditional building lot to lot by the production of large urban packages) and urban area in the suburbs of Lisbon acquires its contemporary shape. The suburban growth recorded in Amadora is the most emblematic expression of the suburbanization process from 1950s reconfigured the territory of the Lisbon Metropolitan Area. Specifically we intend to present the *Urbanização da Reboleira* for being a "pioneer" and paradigmatic case. This case identifies the ideals and logic that led to the transformation of the rural village of Amadora (up to 1950s) in the most densely populated municipality in the country. These large residential construction packages *ex-novo* found in Modern tabula rasa and its social optimism a model of easy operability. Designed by architects trained in the values of Modernity, this also enables us to identify the time when the Portuguese architects were losing capacity to intervene, from primary responsibility for the design of the territory (up to 50s) to figure technicians ensured that only approval of real estate projects. The *Urbanização da Reboleira Sul* is an initiative of a group of small landowners and their masterplan is the responsibility of the architect Sa Rico. Once approved the masterplan, the construction process proceeds to the liability of *J.Pimenta* (then the largest real estate developer and builder in the country) who, with the connivance of local government, adulterous urban principles originally defined. This was a usual strategy of this promoter - clearly speculative process that obeyed only to the logic of the market.

Key Words: J.Pimenta, Lisbon Metropolitan Area, real estate developers, suburb, *Urbanização da Reboleira Sul*.

Tenure of urban land: structure, form and transformation of the original urban space of the city of Ribeirão Preto - SP, Brazil

Dirceu Piccinato Junior, Ivone Salgado

Center for Science, Technology and Environmental, Pontifical Catholic University of
Campinas - Brazil

E-mail: piccinato.jr@gmail.com , salgadoivone@uol.com.br

The purpose of this paper is to discuss the urban morphological aspects of cities governed by the juridical regime of the emphyteusis, recurrent situation in northeastern São Paulo state - Brazil, with special attention to the city of Ribeirão Preto. The land concession to the Catholic Church was recurrent in Brazil during the colonial and imperial periods for the foundation of cities. As these lands were destined to the formation of patrimonial goods of a devotion saint of the residents, they couldn't be commercialized. As an economic alternative, the Catholic Church used up the tenure to profit through the allotments of these soils. The terms tenure and emphyteusis define as objects of this right uncultivated lands or lands for building. The tenure reveals a relation in which there is an owner - landlord - who has the direct control of the urban land, granting another - leaseholder - the useful domain of the land, giving the latter the right to use the land, the obligation of an annual tax payment and a compromise of giving a percentage of the property sale. In 1845 some farmers donated a tract of land for the formation of the land assets of the saint São Sebastião, where is now the city of Ribeirão Preto. It was up the local church to care about the allotments and management of the urban soil under the emphyteusis regime. This conjuncture defined the structure, the form and the transformations of the original urban space of the city.

Key Words: tenure or emphyteusis, urban land, catholic church, Ribeirão Preto-SP, morphological urban aspects.

Agent and morphological process: the urban morphology study of South Gong and Drum Lane District in Beijing after 1949

Chunhui Shi, Menghe WU, Feng Song

College of Urban and Environmental Sciences, Peking University, China

E-mail: shich1991@163.com

This paper investigates the property owners and the morphological process of South Gong and Drum Lane District, a historic area in old Peking city with the preserved town plan of the Capital City of Yuan Dynasty. First, the research focuses on its transformation process after 1949 and the morphological regions are demarcated into two hierarchies. Then, with property owners of the houses classified and the information of property attributes collected, both quantitative and qualitative approaches are adopted to analyze the correlation between property attributes and morphological characters. The correlation test indicates the important but various roles property owners are playing in the conservation and development process in this district under high pressure of redevelopment. Finally, in a micro level, typical regions and units are chosen for detailed morphological analysis to study the activities of property owners in the change of urban landscape.

Key Words: agent, morphological process, morphological region, South Gong and Drum Lane District.

An introduction to the research on use pattern of Lushan National Park based on its cultural landscape process: case study of Kuling Town

Xiao Xiong¹, Min Liu¹, Feng Song^{1,2}

¹College of Urban and Environmental Sciences, Peking University,

¹World Heritage Research Center of Peking University

²Urban Morphology Research Group, Birmingham University

Beijing 100871, China.

E-mail: xxiong@pku.edu.cn , 1185780057@qq.com , songfeng@urban.pku.edu.cn

‘Cultural Landscape’ originally appeared in the 19th century in Germany as an academic concept. As time went on, the comprehension of this concept had changed. When ‘Cultural Landscape’ was introduced into the field of World Heritage. Because of the neglect of its academic tradition, it was defined as a sub-type of Cultural Heritage, adding confusion to identifying the heritage value and conservative management of cultural landscape. In 2013, UNESCO Beijing Office, Lushan Administration Bureau and World Heritage Research Centre of PKU established a project to improve the understanding and management of WHCL in China, presenting effective and promotable conservative utilization strategy in the case of Lushan, especially in Kuling town. The research group of PKU adopted Conzenian approach of urban morphology into Chinese practice. Research findings improved the understanding and management of Cultrual Lanscspe in China and indicated new issues of Conzenian approach to be discussed.

Key Words: World Heritage Cultural Landscape, Conzenian approach of urban morphology, Lushan, Kuling.

From urban sprawl to a compact city policy: the primacy of process over form

Cristina Soares Cavaco

CIAUD, Faculty of Architecture, University of Lisbon.

E-mail: ccavaco@fa.ulisboa.pt

It is of general consensus that last decades have brought deep transformations into the spatial organization of cities. Beyond the changes in demographics and population density, critical changes have happened in the form of cities, namely throughout phenomena such as the urban sprawl - low density settlement patterns, leapfrog unplanned developments, spatial segregated land uses, large outward incremental expansion, widespread commercial strips, disseminate land ownership and land uses governance. Urban sprawl is therefore considered a challenging demand for national urban policies and territorial development agents due to its high impacts on energy, land and soil consumption. This is especially critical in Europe where cities have traditionally been much more compact. Envisaging progress towards a sustainable urban development, doctrinal thinking and literature on the benefits of a compact urban development for the achievement of a sustainable urban form became a dominant doctrine on urban planning theory, especially after the emergence of the agenda of sustainability, in 1987, with the Brundtland Report. The compact city has become one of the most discussed concepts in contemporary urban policies and much attention has been put into the relationship between urban form and sustainability. Nonetheless, several criticisms came forward arguing against the abusive position that considers the compact city as a sort of panacea for the ills and problems of extensive urban developments. The paper aims at discussing the accuracy and timeliness of compact city policies, reviewing the rationale behind the compact city and exploring the relationship between urban form, urban processes and urban governance.

Key Words: compact city, urban sprawl, urbanization, urban policy, sustainability.

Interpret planning gap caused from accomplished roads by identifying building forms

Chih-Hung Chen, Chiung-Wen Liang

Department of Urban Planning, National Cheng Kung University

E-mail: chihhungchen@mail.ncku.edu.tw

In the cities, street system offers the framework of building forms. In macroscopic, streets define the pattern of blocks, and are the beginning of building behaviour (building line) in microcosmic. Since lands had been restrained by planning, planned roads are laid and patterns of original settlements had been covered (Conzen, 1960). Therefore, this brings out two layers of urban fabric, the planned and non-planned roads, which are so called "accomplished roads". Because of cities rapidly develop post WWII, The accomplished roads' conflict to the plan pattern makes them restrict the renovation and development of building forms (Rossi, 1966). The basic units of plans, blocks, are then present different appearance inner and outer (Litman, 2009). Due to both road layers are standards of building behaviours, can we interpret planning gap (Pissourios, 2013) via identifying building forms caused from variant layers? According to Acts, thousands of accomplished roads are identified in Taiwan. Yonghe, a city little settled before WWII, has population explosion from politic, industrialization and proximity to Capital city. The original patterns are ignored and building demand is unreached sustained, makes the city owns large number of accomplished roads and intensive building forms to observe. Therefore, according to the evolution of time, the influence of road layers to building forms can be concluded below: i) building forms along disparate road layers are differ from change-period and diversity; ii) social progress and urban plan vision reflect in different speed and obstruction from assorted stratum of blocks. Consequently, the planning gap has different degrees in diverse blocks with distinct road layers.

Key Words: planning gap, accomplished road, building form, urban fabric, Yonghe City.

References

- Conzen, M.R.G (1960) *Alnwick Northumberland: a study in town-plan analysis* (Institute of British Geographers, London).
- Litman, T. (2009) *Evaluating transportation land use impacts* (Transport Policy Institute, Victoria-Canada).
- Pissourios, I. A. (2013) 'Whither the planning theory–practice gap? A case study on the relationship between urban indicators and planning theories', *Theoretical & Empirical Researches in Urban Management* 8, 80-92.
- Rossi, A. (1966) *L'architettura della città* (Institute of British Geographers, Padova: Marsilio).

The influence of the sacred on the urban form of Brazilian cities

Luciana Resende

Urban Department, Architect School – UFMG. E-mail: lulelis.arq@gmail.com

It is widely recognized that man has the need to organize space, and the sacred ones are probably the oldest ones subject to planning (Eliade, 2010). Man reserve the space dedicated and hallowed to gods as a holy place, which ought to be respected and treated in a special way. Besides being a place that holds particularities regarding the land use and occupation, at the same time it attracts people who want to stay close of it. Colonial Brazilian churches were regulated by norms to control the occupation around the sacred place. It is thus important to highlight the precepts regarding the formalization of sacred places and of the constructive forms ruled by *Constituições Primeiras do Arcebispado da Bahia* (2010). Strict norms dictate the necessary characteristics for the selection of a place in which a church would be erected. They ought to be erected in highest spots of the place, be moisture free and large enough to hold a procession. The houses, although built around the church should be in such way to keep distance from the temple. In Brazil several cities present areas which result from the appliance of these politics and the places around a catholic temple are still valorised. Belo Horizonte, the capital of Minas Gerais state, is one of such cities. This city was designed and built in a former village named Curral Del Rey, who developed around the church of Nossa Senhora da Boa Viagem. The urban form was transformed; however the church location was preserved as an important and representative place of history and faith of the citizens and of this city. A new church was built in there and it is still a valorised place which receives public policies regarding urban infrastructure, urban planning and traffic.

Key Words: Space sacralization, colonial Brazilian villages, evolution of urban form.

References

Eliade, Mircea (2010) *O sagrado e o profano: a essência das religiões* Martins Fontes, São Paulo) 191.

Events-driven morphological process: a case study of Auckland's Waterfront

Toby Shephard, Luke Gibson

E-mail: Tobyshephard@windowslive.com , lgib022@aucklanduni.ac.nz

In order to contribute to international literature concerning the process of morphological change, this paper focuses on a study of the city centre waterfront in Auckland, New Zealand. A Conzenian analysis of the space, with reference to historical economic and cultural contexts, is used to derive a narrative explaining of urban modifications of the waterfront fringe belt. Auckland waterfront has undergone redevelopment across a 200 year period. Beginning with the morphologically invisible culture of aboriginal Māori occupation to the maritime industry of the 20th century and to recent modern regeneration, the waterfront has changed from a low-density fringe belt to one pocketed with commercial and residential intensification. This is particularly true of the western side of the city's waterfront. Our research finds that much of the recent urban regeneration of the last 15-20 years is the result of preparation for the hosting of major international events. These include the America's Cup 2000 and 2003 and the Rugby World Cup 2011. We find that major events have accelerated urban form change on Auckland's waterfront and thus might provide noticeable contrasts between planning units. Such building form and layout might then be seen as a physical expression of a sporting culture and tourism based economic necessity. A discussion of the impact of international events upon urban place-making and planning is included with a view to establishing broad morphological periods of development along the Auckland waterfront as well as informing the manner and typology of urban reconfiguration that major international events require.

How big is my garden? The morphological impact of density regulations upon garden size for speculative housing estates

Dominic Wilkinson

School of Art and Design, Liverpool John Moores University

E-mail: d.e.wilkinson@ljmu.ac.uk

In 1999 the United Kingdom government published *Towards an Urban Renaissance* (Rogers, 1999), this document set out how an estimated 4 million new homes could be accommodated without substantial destruction of the Green Belt. This was part of a wider drive to achieve more sustainable urban development, a drive which was backed up by legislation which included amendments to Planning Policy Guidance 3: Housing. For the first time PPG3 established minimum density standards for new build housing. This paper examines the spatial consequences of these minimum density standards upon the morphology of speculative housing estate layouts. The data is based upon map and field studies of 50 private sector housing estates constructed between 2000 and 2006 (when PPG3 was replaced), and contrasts these with similar estates built pre-2000. Did the changes in legislation increase development density? The physical characteristic focussed upon in this paper is garden size, did this decrease as developers were required to increase housing densities? If so then by how much? This paper will demonstrate that average garden size, for lower priced new build housing in the sample area decreased by a typical magnitude of 15% across all typologies during this period. This reduction is consistent for a range of suburban and brownfield sites and would appear to be a manifestation of the requirement to achieve higher housing density as part of the planning process.

Key Words: housing, density, morphology, planning, gardens.

References:

Rogers, R. (1999) *Towards an Urban Renaissance* (Department of Environment Transport and the Regions, London).

Assessing the effects of governing thoughts on the form of cities. A comparison of Damascus, Cairo and Tehran from the emergence of Islam to the contemporary period

Abdolhadi Daneshpour, Atefeh Soleimani, Nasibeh Charbgoo, Toktam Ashnaee

Department of Urban and Regional Planning, Iran University of Science and Technology. E-mail: Daneshpour@iust.ac.ir , atefeh.soleimani.@gmail.com , charbgoo.n@gmail.com , Toktam.ashnaee@alumni.ut.ac.ir

The evolution of the urban form has always been affected by numerous factors. This article aims to discern to what extent the governing schools of thought have determined the form of the cities. From the emergence of Islam to the contemporary period and before the start of information age, we have categorized three distinctive systems of thought: Islamic approach, the colonial period often with a modernist essence and the contemporary period (mainly after the independence of the country and bearing upon modernist and post-modernist views). Each of these systems has affected the form of the city in general and also its components. Studies in Tehran, Damascus and Cairo indicate that in the Islamic period the changes made to the form are mostly limited to single buildings contributing to emphasizing the presence of Islam in the city or as a manifest to the power of the caliph, however the general form of the city has mainly stayed untouched in compliance with the local social and environmental requirements. In contrast, the colonial period is coupled with vast changes and modification to both the general form and its components due to the technological advances and the mass production trends. The changes in the contemporary period are however built upon the challenges that the modernist approach brought about and therefore take a more moderate route.

Key Words: urban form, governing schools of thought, Islam, modernism, post-modernism.

The evolution of neighborhood model as a manifestation of political regime shift: the case of Cairo - Egypt

Islam Ghonimi Ibrahim

Lecturer at shoubra Faculty of Engineering - Benha University, PhD,

E-mail: islam.ghonimi@feng.bu.edu.eg

Through history, Cairo witnessed different political regimes that caused consequential different neighborhoods models with varying socio-spatial characteristics. The research is to tackle the effect of Political regime on cities first in terms of their impacts on development manifesto, the role of development actors, and planning theory, then their impacts on the urban form of Evolving and declining neighborhood models. The paper will track Cairo development through history by Linking between the adopted political regime with development policy and their analogous impacts on Evolving and Declining patterns of urban development. This will pave the way to predict the future of neighborhood model form as manifestation of current and future political regime paradigm shift, especially after 25 Jan. revolution. In order to achieve this goal, the paper based on a case study of 6 different neighborhood models in different chronological ages, an empirical analysis based on three steps: First, to document aspects of political regime and their impacts on development actors and planning method. Secondly, to measure the common socio-spatial patterns of evolving neighborhood model represented in land use patterns, housing type patterns, street network patterns. Thirdly, to examine the correlation between socio-spatial patterns of neighborhood models and Political regime aspects.

Key Words: political regime, neighborhood model.

Land use regulations in São Paulo: possible new paths

Joyce Reis da Silva

Faculty of Architecture and Urbanism, University of Sao Paulo. Secretary for Urban Development, São Paulo City Hall

E-mail: joycerfs@gmail.com , jrfsilva@spurbanismo.sp.gov.br

In Brazil is still common use conventional urban ordinances, as zoning, with its occupancy control mechanisms, as floor-area-ratio, codes and indexes, which are known not to control urban form (Marshall, 2009). With the increase on real estate activity in the last decade (Fix, 2011), it seems crucial to rethink this urban regulation model, to provide new city-making approach for contemporary urban environments. This paper intends to describe the review process (has already been started) of the urban regulations of Sao Paulo – containing the City's Master Plan, Land Use Laws and Building Code. It is the moment to deal with the challenges regarding the urban form regulation in a participatory way (as Estatuto da Cidade requires). The New Master Plan, to be approved in the City Council, was conceived as part of this process, aiming to face some limitations of the land use regulation that this paper aims to address. This paper intends to present some innovations were introduced about the urban form regulation in the Sao Paulo New Master Plan, and focus on the main territorial strategy called *Eixos de Estruturação da Transformação Urbana*. Basically, it is a strategy to guide the real estate development along public transport line, with new kinds of projects which promote better relations between public and private spaces and mixed uses typologies. It intends to contribute to change the conventional kinds of land use regulation as a strategy of fulfilling the social function of property, as well as, help with the next step to review the Sao Paulo zoning law.

Key Words: urban policy, zoning; urban form, contemporary urban environments, real state.

References

- Fix, M. (2011) 'Financeirização e transformações recentes no circuito imobiliário no Brasil', Doctoral thesis, Instituto de Economia, UNICAMP.
- Marshall, S. (2009) *Urban coding and planning* (Routledge, New York).

Long term urban transformations and tactical urbanism short-term actions

Paulo Silva

University of Aveiro – Department of Social, Political and Territorial Sciences
E-mail: paulosilva@ua.pt

Tactical Urbanism emerged from the convergence of a group of academics and practitioners called the Next Generation of New Urbanists. It was founded after the movement that gained expression and consolidated in the 1990's with the so-called New Urbanism Movement. Their work has been mainly concentrated in the United States but it has been getting inspiration from experiences from Latin American cities (São Paulo, Curitiba, and Bogota). Tactical Urbanism has been focused on local scale (street, building, block), low budget interventions, involving residents and mainly interested on promoting short-term and sometimes temporary action. This paper will discuss the role of tactical urbanism on urban form, how this kind of interventions can affect the pace of change in cities, can induce change on 'traditional' approaches of urban form elements (based on dichotomies like public / private, built / non-built) and how urban form can evolve in a long-term, based on these short-term actions. We intend for that to do it on two levels. On the first level we will look at urban form discourses, looking for the 'stable' elements that can promote continuity on urban form. On the second level we will look at tactical urbanism actions as dynamic elements which can promote long-term change on urban form.

Key Words: tactical urbanism, evolution, urban form elements, new urbanism, Next Generation of New Urbanists.

Power, ideology and space re-generation: Istanbul case

Pelin Pınar Özden

Istanbul University, Faculty of Political Science, Department of Public Polichuangy,
Urbanization and Environmental Problems Branch
E-mail: pinozden@istanbul.edu.tr

The role and desire of Power in shaping the urban space has always been existent throughout history. The urban space is a plane that is generated parallel to the ideology of Power. It is also a tool that transmits the existance and the ideology of Power to the society, and legitimizes the Governments. Power realizes this via reconstruction activities. Urban space is a kind of stage where these activities take place. Governments offer their ideology to the society in different ways so that the society is forced to live in an urban space that is shaped by Power's wishes and its rules. The situation in Turkey also is not different. During the urbanization process from the Ottoman Empire to the present, what shapes the urban space is largely the Power and its ideologies. Urban space has been regenerated with the symbols of Power, with the references to the past or with the rejecting spatial policies the past. In this study, the relationship between Power, ideology and space will be analyzed based on periods of Istanbul's urbanization process. Especially in the process after 2000's, the background of the increasing capability of Power and how it is constructed with through the European Court of Human Rights judgments, lawsuits, council decisions will discussed.

Tourism and mega-events: the birth of a conflict culture in Belo Horizonte, Brazil

Altamiro Sérgio Bessa, Lúcia Capanema Álvares, Thiago Pinto Barbosa

Department of Urbanism, Universidade Federal de Minas Gerais

Department of Urbanism, Universidade Federal Fluminense

Grupo de Estudos em Temáticas Ambientais, Universidade Federal de Minas Gerais

E-mail: altamirobessa@gmail.com , luciacapanema@gmail.com ,
thbarbosa@gmail.com

In the post-industrial era Capital claims the reconfiguration of more and more constructed spaces for its own expansion (Harvey, 1982), through the creation of surplus value in the land market and/or through structural and image changes related to the tourism industry. Cities around the globe have been adopting urban renewal policies aiming at selling themselves in the event, business and leisure global markets. Focus of this study, the attraction of mega-events is one of the strategies most employed by cities which intend to enter the select international touristic destinies circle. In Brazil, mega-events represent today the most adopted and powerful strategy to impose the entrepreneurial city. This paper explores urban conflicts and their relations to mega-events in the city of Belo Horizonte, Brazil, where, the possibility of raising land use values and of making immense profits through the attraction of the mega-event FIFA World Cup 2014 and of some training sites for the Olympic Games 2016 is now frantically followed, to the detriment of quality of life and population wishes. In the aftermath, conflicting communities and older, battered, social movements mutually reinforce themselves in a dialogical construction of diversity, especially within those sectors related to housing; together, the recently politicized groups and the oldies come to the public in order to expose the governmental insidious behavior and to demand for their rights as citizens, conforming new collectivities in their struggle.

Key Words: tourism and mega-events, urban conflicts, process of urban transformation, mega-events and urban form, Belo Horizonte.

Reference

Harvey, D. (1982) 'O trabalho, o capital e o conflito de classes em torno do ambiente construído nas sociedades capitalistas avançadas' *Espaço & Debates* 6, 6-35.

Within and outside virtual walls: spatial configuration, touristic and immigrant co presence and routes in Rome (IT) city core

Andrea Braga, Elio Trusiani, Décio Rigatti, Claudio Ugalde, Fábio Zampieri, Daniela Reckziegel

PROPUR, UFRGS - Universidade Federal do Rio Grande do Sul, Brazil

DATA- La Sapienza Università di Roma, Italy

UNIRITTER, Porto Alegre, Brazil

E-mail: andreabraga23@gmail.com , etrusiani@libero.it , driga2000@yahoo.com.br

Social and spatial complexity is the most outstanding feature of contemporary Rome /Italy metropolitan core. It is a powerful attractor for tourists, being one of the main touristic destinations in Europe. It is also an immigrant city, one of the main gateways to Western Europe. Space Syntax methods and tools were applied to describe and analyze Rome (IT) core spatial structure towards accessibility – connectivity, integration segregation and to measure movement, land use labels dispersion and co presence empirically within *Trastevere*, *Esquilino* and *Pigneto* neighborhoods (*riones*), providing a morphological explanation to immigrants and tourists locational choices. The target was to depict the morphological properties which enable immigrants and tourists to exercise spatial governance locally and its impacts on co presence diversification and ethnic commerce concentration. Evidence collected correlate different syntactic measures and morphological properties to these two foreigner's categories spatial choices. Our hypothesis is that urban grid morphological differences play a main role in fulfilling these users' expectations towards interaction with locals and can explain social appropriation of space transformations in the selected neighborhoods, triggering gentrification and spatial governance processes or the emergence of interethnic neighborhoods. Our purposes are: i) to describe and analyze *Rome core* spatial structure and street network, applying integration and segment analysis; ii) correlate route choice probability using different metric radius to depict immigrant and tourists wandering routes and gathering places; iii) to identify relations between spatial configuration and ethnic groups spatial agency; iv) to analyze users groups strategies in Rome city core, correlated to their impact on neighborhoods' spatial lives and different territorialities.

Key Words: spatial configuration, Rome (IT) city core, spatial governance, neighborhoods transformations, foreigner's routes and co presence.

Analysis of urban morphology on festival space decorated on urban space, focusing reviewing spaces and closed spaces in the case of Chichibu Night Festival in Japan

Kenjiro Matsuura

Department of Architecture, Faculty of Engineering, Mie University, Japan

E-mail: email.matsuura@arch.mie-u.ac.jp

Urban spaces transform into festival spaces when urban spaces are decorated with various ornaments and various events are held in urban spaces. In the case that audience over permissible amount crowd of festival spaces, it is theme to control audience for safety and to design good spaces to see at the same time. In Chichibu Night Festival in Chichibu city in Japan, which is one of the three big float festivals in Japan, there are three hundreds of thousands of audience in the last night of festival. Owners of the sites along the float route take two different ways as follows, to open outside spaces to put pay reviewing seats (reviewing spaces) or to close outside spaces by barricades (closed spaces). This paper aims to clarify characteristics of reviewing spaces and closed spaces in the case of the Chichibu Night Festival in behalf of float festival in Japan. Findings are three points as follows: i) reviewing spaces are set to crossings, slopes and Otabisyo (the place where the sacred palanquin is lodged during a festival) which are highlight scenes of float festival, and are able to be typed three patterns by relationship between reviewing spaces and the ground; ii) the whole area where crossings, slopes and Otabisyo are located changed closed space for safety because many audience crowd to; iii) in closed spaces, barricades are set up by plywoods and iron plates along boundary line of road so audience will not enter the sites.

Key Words: festival space, urban space, Chichibu Night Festival, reviewing spaces, closed spaces.

From planned decentralization to unplanned urban development: manipulation of 1990 Ankara Plan

Özgül Acar Özler

Department of city and Regional Planning, Gebze Institute of Technology

E-mail: ozgulacar@gyte.edu.tr

The formation of the periphery of Ankara has started with ‘1990 Ankara Plan’. It was remained in force for 24 years between 1983 and 2007. This plan was based on the decision to control the urban development within a determined pattern (Günay, 2006). The main objective of the plan was the decentralization of the city towards the western corridor. While northern parts of the west corridor passed into hand of public bodies to be reserved for residential areas, development at south-west around was abandoned to market mechanism. However in the period after 1980s, urban development was not resulted as expected. The city underwent a fast change with rapid and unintended urban growth and the south-western periphery of the city became the most speculative part of the city. The fundamental transformations introduced in the legislative and administrative structures to cope with uncontrolled urbanization, ironically, weakened the restrictions and obligatory measures of planning and caused special public provision at the south-western periphery. Many of incremental and fragmented plans changed the decisions of ‘1990 Ankara Plan’. Where these plans were made land use decisions were changed, population increased drastically, some parts of the former green belt were transformed into high-income housing settlements. The aim of this paper is to seek how and to what extent these incremental plans manipulate the ‘1990 Ankara Plan’ and produce unintended urban development. The spatiotemporal analyses of the plans shed light on the (trans)formation process of the urban space in peripheral areas.

Key Words: Ankara, 1990, Ankara Plan, Unplanned Urban Development.

References

Günay, B. (2006) ‘Ankara Çekirdek Alanının Oluşumu ve 1990 Nazım Planı Hakkında Bir Değerlendirme’, in Şenyapılı T. (ed.), *Cumhuriyet’in Ankara’sı, Özcan Altaban’a Armağan* (ODTÜ Yayıncılık, Ankara) 60–118.

Mi casa es tu casa: the creation of the Rambla del Raval in Barcelona, between urban renewal and touristic branding

Alessandro Scarnato

Universitat Politècnica de Catalunya, Departament de Composició

E-mail: zeroalfa@gmail.com

In the last twenty years Barcelona has become a top touristic destination. An important part in this achievement is due to the extensive effort in urban reshaping started in the 80's of the last century. The interventions in the historic center have had a key role in the regeneration and the promotion of the city on the global stage. The operations in the Old City (Ciutat Vella), led by famous architects like Bohigas and Busquets, were based on Aldo Rossi's theories on urban shapes, and followed an unusual dialogue between existing and new architecture. The creation of the whole new Rambla del Raval (1996-2001) throughout the demolition of almost 3000 houses in the historic tissue, has been the most consistent operation. The physical impact of the Rambla had been vast and deep: the transformations have gone way beyond the expected effects and one of the first consequences has been the creation of an ideal *terrain vague* where the increasing communities of non-European immigrants filled both the physical and social voids created by the interventions. The 'new' Old City of Barcelona entered in a process of gentrification, becoming a incredibly popular touristic destination, a result that was out of any plan when the renovation started. Newcomers (tourists, visitors and immigrants) have, quite obviously, adapted faster and better to the new morphology of the center and, differently from the locals, they appreciate the original historic features of old urban tissue. The paper, based on my PhD research, aims to describe how the urban process triggered by the Rambla del Raval has generated both physical and social transformations which had a mutual influence, far beyond the original intentions of planners, administrators and inhabitants.

Key Words: Barcelona, historic centres, immigration, tourism, public space.

Assessing the impacts of musealisation on urban form: the Case of Sultanahmet Archaeological Park in Istanbul's Historic Peninsula

Pınar Aykaç

The Bartlett School of Architecture, UCL. E-mail: pinaraykac@gmail.com

Substantial structural changes in global economies and the demands of cultural tourism have resulted with the expansion of museum notion from the boundaries of buildings to historic urban areas leading extensive transformations. Identified as musealisation; the process ranges from systematic reuse of historic buildings as museums to urban conservation projects promoting culture based activities. By musealisation, some aspects of the urban areas are signified, conserved and presented intentionally making certain characteristics visible; while eliminating or even destructing others. In addition; the process frames everyday-life situations by either utilising existing buildings or by reconstructing authentic-like buildings and produce superficial historic settings. At present, almost every aspects of culture, both tangible and intangible, are presented in museums; most of the abandoned historic buildings are converted to museums and historic urban areas are transformed into museum quarters or open air museums. Due to this common trend of musealisation of historic urban environments, it is essential to discuss the impacts of transformation caused by musealisation on urban form and its cultural associations. Considering Turkey as a context, Sultanahmet neighbourhood on the tip of the peninsula has been the subject of various conservation projects mainly aiming musealisation after its declaration as an archaeological park in 1953. Through the spatio-temporal analysis of urban form, the paper outlines the effects of musealisation decisions on Sultanahmet neighbourhood and discusses musealisation as a two-folded process including both signification of certain characteristics, and negligence or intentional destruction of the others.

Key Words: regeneration, musealisation, urban form, impact assessment, Sultanahmet neighbourhood

A site that has been rearranged and then rehabilitated and then renewed: major urban interventions on Fener and Balat Districts

Mesut Dinler, Neriman Sahin Guchan

Middle East Technical University, Department of Architecture, Department of Conservation. E-mail: mesutdinler@gmail.com

Fener and Balat districts are two historic neighbouring districts in historic peninsula of Istanbul. These two districts reach from the Golden Horn shore upwards the slopes of Istanbul's hills. These sister districts share the same faith not only by contributing to definition of identity of Istanbul but also having struggled with continuous urban conservation projects. Starting from mid-1980s, each local authority has implemented a different project either launched particularly for Fener and Balat or included them in the project area. Golden Horn Coastal Rearrangement Project (1984-1992), Fener and Balat Districts Rehabilitation Programme (1998-2005) and Fener Balat Ayvansaray Urban Renewal Project (2004-2013) are three projects launched by local authorities, last two by the same body. Each project directed different –and mostly conflicting- methods for the same aim: conserving two significant historic urban sites, Fener and Balat districts. What is the reason that Fener and Balat have constantly been redefined and reshaped? This research seeks the answer by addressing the same four questions to each project that are: What was the process that necessitated the project? How did the urban pattern change before and after? How was authenticity defined and managed? How was social and physical integrity managed? These questions bring upfront discussions on management of change in Fener and Balat districts.

Key Words: urban conservation, cultural heritage, historic environments, Fener, Balat.

Public space and commons as the main resource for the rehabilitation of social housing settlements in Italy

Luca Gulli, Michele Zazzi

Department of civil engineering DICATeA, University of Parma

E-mail: luca.gulli3@unibo.it , michele.zazzi@unipr.it , luca.gull@gmail.com

Public housing settlements (Peep) in the Emilia-Romagna region represent a very significant moment public authorities actions in urban government in the last fifty years. In the context of the regional planning, these experiences have been assumed as the main instrument to drive an effective and wide urban policy, aimed at achieving a wide set of goals, dealing with different urban issues. This fact has produced a very considerable mixture of effects, directed not only to housing policies, but to produce wider results, better able to improve the entire quality of the suburban environment. As land-use regulatory tools, as vehicles for the achievement of new social equipments and as new settlement big enough to contain very large amounts of open and public space for the community, these public projects were intended to restore a balanced urban growth and, at the same time, to produce places with a clear and modern landscape identity. This very ambitious program produced very different rates of effectiveness and some of these settlements, especially those located in the extreme positions and distinguished by scattered and rough design solutions, have suffered from very marginal and isolated conditions. During the years, instead, the high amount of public spaces and social equipments (which is the main quality that distinguish the Peep districts in this region), has become the main resource to support the improvement of urban life quality and the rise of a mixture of social functions. So, these settlements have witnessed a consistent evolutionary process, which has much changed and tempered their isolation, developing and strengthening community and identity features. This fact has been in deep contrast with the opposite process of recent urban growth that took over in all the peripheral areas surrounding the Peep settlements, which has produced a low quality environment with lack of social and public spaces. This is the reason why these areas are now to be considered a precious resort and a starting point for any attempt to inaugurate a new urban regeneration policy: the peculiar setting aspects and the historical inheritance contained in these public areas, with their still whole amount of commons, can play a guidance role for any renewal strategies able to extend their influence to the wider suburban environment. This research is aimed at reporting this rich and various urban inheritance, gathered in the Peep settlements. Such resources are made of material goods and equipments, as well as cultural and behavioral shared commons and are supposed to be the reference for the set up of a multi-purpose set of renewal tools. First target and main example of this strategy is the San Donato borough in Bologna, a peculiar part of the city which has witnessed a complex urban and social history. With its extremely extensive and scattered configuration of open spaces, balanced by a dense and various cultural and social landscape, all of this in front of a great variety of different urban tissues (many layers of different planned public housing areas and some huge examples of dwelling complex), this environment represents the best case for testing any urban renewal strategy measured with a balanced mix of different strategies, better able to become a reference for careful and sensible public decision-making.

Key Words: urban rehabilitation, social housing settlements, peripheral environment, public space, regulatory instruments.

The role of municipality in urban regeneration: the case of Lisbon's Eastern waterfront

Ana Nevado

DINÂMIA'CET-IUL, ISCTE-Lisbon University Institute

E-mail: anacnevado@gmail.com

Urban regeneration is currently an essential component of public policies, which justifies its research (Ferreira, 2013). As an integrated process, the changing role played by municipalities is crucial through political, governance models and agents, where public participation is crucial (Fidalgo, 2012). The Eastern waterfront of Lisbon is peculiar since it is a complex, post-industrial and declined area (Custódio and Folgado, 1999) in the city, requiring a critical look on its urban management. We analyse it in order to understand the role of the municipality in urban regeneration processes and the actors involved in partnerships - especially inserted in *Polis XXI* – and also in strategic, collaborative planning (Alves, 2001; Ribeiro, 2012). Within this scope, we consider the transformation of public policies, urban plans and governance models until now; the urban planning/management led by Lisbon's municipality; the evolution of urban morphology of the case study, its relation with the city and the metropolitan area. Aware of the implied difficulties in urban regeneration, we intend to contribute to the debate on the evolution of spatial planning and management through the analysis of conceptualizing, monitoring and management practices of urban regeneration operations in the territory as well as the main agents. Considering the contemporary context of scarcity of resources, funds and the triggered challenges by globalisation (Ferreira, 2005), we conclude that new ways of planning are emergent and an opportunity (Tyler, et al, 2013) throughout the construction of networks of communication and cooperation among several social actors - government, private sector and community (Alves, 2001) – where Architects are elementary.

Key Words: urban regeneration, municipal planning/management, public participation, Lisbon, collaborative planning.

References

- Alves, S. (2001) 'Planeamento colaborativo em contextos de regeneração urbana', Master dissertation, Universidade do Porto, Porto.
- Custódio, J. and Folgado, D. (1999) *Caminho do Oriente: guia do património industrial* (Livros Horizonte, Lisboa).
- Ferreira, A. F. (2005) *Gestão Estratégica de Cidades e Regiões* (Fundação Calouste Gulbenkian, Lisboa).
- Ferreira, A. F. (2013) 'Uma nova geração de políticas urbanas', (www.fonsecaferreira.net/?p=474).
- Fidalgo, A. V. (2012) 'As parcerias para a regeneração urbana – Uma análise comparativa', Master dissertation, Instituto Superior Técnico, Lisboa.
- Ribeiro, P. (2012) 'A avaliação das políticas de regeneração urbana em contextos intraurbanos', Master Dissertation, Universidade do Porto, Porto.
- Tyler, P., Warnock, C., Provins, A. Lanz, B. (2013) 'Valuing the Benefits of Urban Regeneration', *Urban Studies* 50, 169-190.

The re-appropriation of industrial sites in the urban form of the post-communist city

Iulia Statica

Department of Architecture and Design - La Sapienza University of Rome

E-mail: iulia.statica@yahoo.com

The paper purposes to analyse the phenomenon of the re-appropriation of post-communist post-industrial urban sites in the city of Bucharest. The study aims to develop an interpretation of the various conditions, from the technological to the ideological, that has contributed or could contribute to determining the nature of the re-appropriation in terms of both urban memory and functional re-use. Initially, the study will examine specific urban, industrial sites built between the late 19th and early 20th centuries, as function of the industrialization of the Romanian economy, seen in their development in the urban topography. From the middle of the 20th century, these spaces were included in the communist project of growing Romanian industry. Examining the extent of the embodiment of the communist ideologies in projecting a new urban form, the second part of the paper will investigate which was the role of ideology in the process of appropriation and re-appropriation of these industrial sites. In today's Bucharest a big part of these spaces, lots of them already part of the industrial archaeological patrimony, constitute huge un-used areas blocking the fluidity of the urban tissue. The paper thus asks, can the contemporary re-appropriation of these sites result in an authentic rehabilitation of the urban tissue, generating forms of political praxes that negotiate the various historical layers or appropriation and re-appropriation which would mediate different understanding of urban memory and different experiences?

Key Words: industrial sites, ideology, re-appropriation, urban memory, re-use.

Urban mobility - Urban mutations. Means transport and morphological changes in the city of Belém

Fabiano Andrade, Inah Silveira

Faculdade de Arquitetura e Urbanismo – UFPA, Secretaria de Planejamento – Governo do Estado do Pará. E-mail: fabiano@ufpa.br ; inahsilveira@yahoo.com

Urban mobility is among the important agents that contribute to morphological changes of the city, and as such is through its and the means of transport required by it, that new routes are executed and or enlarged, large spaces transformed and resized, new technologies and techniques tried and updated by quantity and quality of vehicles necessities. In the end, they all linked the intensity of demand of the population involved. The history of the city of Belém do Pará brings with it, in the form and in the initial nucleus (1616), the direct influences of design mode of Portuguese Overseas Cities from the early 17th century: strategic location on margin of a river, articulation with the place where it was implanted, and the regular trace of the urban grid (Teixeira, 2012). In the 19th century, starting in 1869, with the significant increase of the urban population, two companies of trams pulled by pairs of donkeys, installed their lines in Belém, contributing with expansion of roads and the consequent increase in the existing grid. However was with the inauguration of Estrada de Ferro de Bragança - EFB in 1883 and with the survey-project (Duarte, 1997) of the 1st league of the City, started in the same year, by Nina Ribeiro, polytechnic engineer, that Belém starts major changes in its morphology. Was when the survey-project was transformed in reality, and two important lines extension of the EFB: the São Braz – public garden and ‘Entroncamento – Pinheiro’ were inaugurated. The study shows the transformations arising from urban mobility (Vasconcellos, 2012) in two spaces of great importance for the city of Belém: the ‘Complexo Viário de São Braz’ and the ‘Complexo Viário do Entroncamento’.

Key Words: urban mobility, history, morphology, means of transport, mutations.

References

- Duarte, C. F. (1997) *Belém do Pará, na virada do Século XIX: Modernidade no Plano urbanístico de expansão da cidade* (PROURB, UFRJ, Rio de Janeiro).
- Teixeira, M. C. (2012) *A forma da cidade de origem portuguesa* (Editora Unesp: Imprensa Oficial do Estado de São Paulo, São Paulo).

Urban road and street planning as part of urbanization: integration or separation?

Daniel Casas Valle

Centro de Estudos de Arquitectura e Urbanismo (CEAU), Faculdade de Arquitectura da
Universidade do Porto (FAUP). E-mail: dcv@cityeu.eu

The evolution of networks and urban areas are complex processes depending on many different factors. For urban networks, as well for street and road networks, adhesion is an important factor in the network development (Dupuy, 2008). For roads and streets, accessibility is an essential condition to make building and program adhesion possible. The availability to reach a place along a street or road is determined by transport possibilities (car, public transport, bike, pedestrians). In the Porto region, the mobility network is functional at a high and low level, but at an intermediary level it is far from being completed (Babo and Oliveira, 2009). However, this intermediary level, regional and inter-municipality roads, has a traffic functionality, it also organizes build programs. Nevertheless, the strict separation between traffic flows and direct accessible addresses (design regulation, sectional disciplines), in practise, many intermediary roads serve both functions. This creates a new urban form, that is neither a urban street not a regional road (Domingues, 2009), with a own spatial characteristic and urban morphology. To understanding this phenomena, and the mismatch between a model and reality, we need to understand how accessibility of build programs is organized. Key aspect, is the changing point from fast transport into a pedestrian level, or from *flow* into *staying* (Mensink, 2013). As, these kind of roads/streets are highly depending on individualized motorized transport, parking is a key aspect in this. This article unfold, based on several roads/streets in the Porto region, a characterisation of parking typologies as a condition for urban change and its form.

Key Words: streets, roads, urbanization, urban patterns, parking.

References

- Babo, A., Oliveira, M. (2009) *Plano de Acção 2008-2013 para a promoção da mobilidade, transportes e logística no Norte de Portugal* (CCDR-N)
- Domingues, Á. (2009) *A Rua da estrada* (Dafne Editora, Porto)
- Dupuy, G. (2008) *Urban networks – Network Urbanism, collection of key articles* (Techné Press, Amsterdam).
- Mensink, J. (2013) ‘Stromen en verblijven, Naar een integrale ontwerpvisie op verkeer en openbare ruimte, Rotterdam: nai010 uitgevers’, in Casas Valle, D. (ed.) *Urban road and street planning as part of urbanization: integration or separation?*

Accessibilities as an agent of change in urban form

Paulo Silva

University of Aveiro – Department of Social, Political and Territorial Sciences

E-mail: paulosilva@ua.pt

Metropolitan Lisbon has experienced important territorial transformations in the last decades, with a special impact on urban form. From compact to disperse and fragmented new expressions of urban territories challenge politicians, practitioners and academics on how to deal with urban form. One of the main 'responsible' for this change of urban patterns is the construction of accessibilities, following an agenda that is not always articulated with the one of spatial planning. In the proposed paper the role of accessibilities will be discussed in terms of: what have the different stake holders expected from them in terms of contribution to the urban form; how are spaces evolving in their vicinity with accessibilities; how can a model be developed to explain urban form in relations with them. In order to pursue these goals we will present: an analysis of spatial tools for the Metropolitan Lisbon in order to identify expectations those expectation; an analysis of the build occupation around four nodes of A2, the main southern access to Lisbon; and finally a model relating accessibilities with urban tissue and urban grid. The main conclusions from this paper will be related with the types of urban form generated by accessibilities in metropolitan contexts.

Key-Words: urban structures, urban infra-structures, consolidated urban space, Lisbon Metropolitan Area, accessibilities.

The dynamics of structures impacting *Transit Oriented Development* in ‘Noorderkwartier’ Area

Arnoud de Waaijer

Department of Architecture, Delft University of Technology

E-mail: D.A.deWaaijer@tudelft.nl

Post Second World War the ‘Noorderkwartier’ Area, North of Amsterdam, functioned as overflow for the city. Spatial policies in the Netherlands were aimed at reducing urban pressure on the bigger cities of the ‘Randstad’. (Cammen, 2013) Partly due to the use of low density, mostly car related, urban developments this has been accompanied by an enormous increase in build-up area. Most striking is the dispersion of important functions over the territory. Simultaneously mobility rose and the structures for the different forms of mobility were not well interlinked. A social need arose to pursue an accessible city. Currently for the area policies on *Transit Oriented Development (TOD)* are under construction. (Provincie, 2010) Central in the concept of *TOD* is the clustering of spatial developments around nodes of public transport and thus re-establishing proximity. (Priemus, 2007) The research methodology applied to develop these policies mostly does not involve structural and spatial dynamics of the urban formation processes (Aken, 2004) This research aims to identify structuring spatial elements impacting the territory’s performance for the assignment of *TOD* and considers it a spatial assignment. Which are the structuring, guiding elements and what are their dynamics in the developments processes? A closer look at the territory shows a patchwork of different typo morphological structures which do not connect. Are those joints permanent or changeable? This will be studied by mapping the territory historically and analysing the important structural changes in relation to the positioning of elements important to the performance on proximity and analysing the influence of structuring spatial elements on *TOD*.

Key Words: urban morphology, Transit Oriented Development, urban structures; Permanence, landscape

References

- Aken, J.E. van (2004) ‘Management research based on the paradigm of design sciences: the quest for field-tested and grounded technological rules’, *Journal of Management Studies* 41, 219-246.
- Cammen, H. van der et al (2013) ‘The Selfmade Land, culture and evolution of urban and regional planning in the Netherlands’, 236-245.
- Priemus, H. ‘Urban dynamics and transport infrastructure: Towards greater synergy’, *Railway development impacts on urban dynamics*, F. Bruinsma et al (eds), 15-33.
- Provincie Noord-Holland (2010) ‘Structuurvisie Noord-Holland 2040, Kwaliteit door veelzijdigheid’, 9-10, 55-62, 75-78.
- Provincie Noord-Holland (2009) ‘Werkboek Bouwstenen 3/3, Noord-Holland 2040, Analyses en Verkenningen, 9-59.

Tracing urban catalysts in ‘Noorderkwartier’ area

Arnoud de Waaijer

Department of Architecture, Delft University of Technology

E-mail: D.A.deWaaijer@tudelft.nl

After the Second World War the ‘Noorderkwartier’ Area, situated North of Amsterdam functioned as overflow for the city. Spatial policies in the Netherlands at that time were aimed at reducing urban pressure on the bigger cities of the ‘Randstad’. (Cammen, 2013) Costly policies of redistribution of urban development towards the peripheries were developed, mainly through direct intervention in housing production. (Healy, 2007) As a result in the area a dispersed territory arose often linked to car mobility. Nowadays the policies are severely scaled down (Healy, 2007) and the area is confronted with possible downfall in population, employment, facilities and building production. To counter this for the area currently policies on *Transit Oriented Development (TOD)* are under construction. (Provincie, 2010) Central in the concept of *TOD* is the clustering of spatial developments around nodes of public transport and thus re-establishing proximity. (Priemus, 2007) The research methodology applied to develop these policies mostly does not involve societal dynamics of these spatial formation processes (Aken, 2004) and still assumes a directing government. This research aims to identify the key factors in urban change in relation to proximity to transit for understanding the steering and decisive factors and processes involved in development processes to develop possible grip on the matter. By mapping the area historically since the commencement of transit in the territory and through spatial analyses the critical changes will be identified for *TOD*. The processes underlying these critical changes will be studied and placed in their societal and political context. With the documentation available the choices and decision making processes will be clarified.

Key Words: Urban morphology, transit oriented development, urban transformation processes, mapping, Amsterdam Metropolitan Area.

References

- Aken, J.E. van (2004) ‘Management research based on the paradigm of design sciences: the quest for field-tested and grounded technological rules’ *Journal of Management Studies* 41, 219-246.
- Cammen, H. van der et al (2013) ‘The selfmade land, culture and evolution of urban and regional planning in the Netherlands’, 236-245.
- Healy, P. (2007) ‘Urban Complexity and Spatial Strategies, towards a relational planning for our times’, 41-76.
- Priemus, H. (2010) ‘Urban dynamics and transport infrastructure: Towards greater synergy’, in F. Bruinsma et al (eds.) *Railway development impacts on urban dynamics* 15-33.
- Provincie Noord-Holland (2010) ‘Structuurvisie Noord-Holland 2040, Kwaliteit door veelzijdigheid’, 9-10, 55-62, 75-78.
- Provincie Noord-Holland (2009) ‘Werkboek Bouwstenen 3/3, Noord-Holland 2040, Analyses en Verkenningen’, 9-59.

Actors of formation in urban periphery: ayyolu case

Aybike Ceylan Kiziltař

Department of City and Regional Planning, Gazi University.

E-mail: aybike.ceylan@gmail.com

The form of cities are no longer product of a single total design. Urban formation process is a complex one that involves various actors with different motivations and with different levels of power over urban form. The actors involved in this process and the formation patterns are directly influenced by the contexts of urban formation; simply state-market relations. Post 1980's signify a particular period due to changes in these contexts, therefore both the actors and the formation patterns of cities changed dramatically after this period. This is also valid for Turkey. However peculiarities of Turkish cities coming from the social and property relations have also led to its own peculiar problems in urban space. ayyolu in Ankara -the capital city of Turkey- is a peripheral formation which displays the basic characteristics of urban formation in Turkey after 1980's. Formation of ayyolu began in the beginning of 70'ies, however this formation process is not uniform in itself; it reveals different characteristics with respect to the actors involved, planning approaches and the resulting urban form. The aim of this paper is to reveal these periods of formation for ayyolu area and discuss the problems related with the control of this formation process via planning.

Key Words: urban periphery, urban formation, contexts of urban formation, actors, ayyolu.

Development of a suburb, through series of unfortunate events

Sigríður Kristjánsdóttir

Director of the Master program in Planning, Agricultural University of Iceland.

E-mail: sigridur@lbhi.is

Through series of unfortunate events, the neighborhood Úlfarsfelssdalur in Reykjavík, Iceland, has developed from an idea in economic boom to reality in an economic crash. This paper discusses the development of the Úlfarsdalshverfi in Reykjavík, Iceland, from an idea to reality through series of unfortunate events. The changes are studied through the lens of Conzen's (1960) ideology, by looking at the evolution of the three distinct but integral town plan elements, i.e. the streets, the plots and the buildings, starting with a review of the planning competition. The winning solution was awarded for its novelty solutions in town planning, improving the livelihood of the neighbourhood. Afterwards the plan was adapted and changed, according to the legislation, as it went through the planning process. Important aspects of the resulting legal plan were different from the plan presented in the planning competition, particularly in light of its distinguishing attributes. For instance the emphasis on density and livelihood of the neighbourhood was sacrificed. The construction of the neighbourhood and the effects of the 2008 crisis on its development are also discussed. Finally the effects of the new master plan and the changes in emphasis by the planning authorities on this particular neighbourhood will be considered as the emphasis has shifted from building up new neighbourhoods to increasing the density of the older central regions of the city.

Key Words: Conzen, planning competition, town plan elements, planning process, Reykjavík.

References_

Conzen, M.R.G. (1960) *Alnwick Northumberland: a study in town-plan analysis* (Institute of British Geographers, London).

Metropolitan dialogues: Lisbon's external and place specific agents of change

Inês Moreira

CIAUD, Architecture Faculty, University of Lisbon, Rua Sá Nogueira, Pólo
Universitário, Alto da Ajuda, 1349-055 Lisboa, Portugal. E-mail:
ineslmoreira@fa.ulisboa.pt

The paper explores preliminary findings of the on-going PhD research, focusing specialized landscapes resulting from research, production, distribution and consumption activities in metropolitan Lisbon. The main objective is to explore to which extent the external and place specific determinant agents (biophysical and anthropic), the policies and the plans have contributed to shape the morphology of the urban areas related to the presence of these economic activities. The current metropolitan area is the result of rapid urban expansion processes and increasing functional complexity. From the 90s onwards, there was pressure to adapt to the new economic and social demands of the emergent knowledge society, including the supporting mobility network, the motorization of the population and changes in the way of inhabiting the city. This resulted in a distended urban system with axes of great concentration of economic activities related to the tertiary sector connected to the transport infrastructure. On the other hand, the global changes in the industrial production processes and the restructuring of the economic system had consequences for the vast peripheral industrial complexes which became obsolete, resulting in a wasteland landscape. More recently, the economic and financial crisis has further stimulated this trend, with medium and small enterprises in production clusters also being abandoned. By resorting to relevant case study examples, the paper identifies the changes over the last 50 years and discusses the challenges of the present scarcity context on Lisbon's metropolitan trends.

Key Words: metropolitan Lisbon, urban dynamics, specialized landscapes, external and place specific agents of change.

Managing the mark of the memory: a case study on the North Dublin Victorian fringe-belt

Mariana Moreira

MosArt Architects.

E-mail: mariana@mosart.ie

The urban fabric can be regarded as a repository of human life that records past culture and includes historic-geographic changes that have physical manifestations, but that are also underpinned by processes, whether social, economic or political (Whitehand, 1977). Notwithstanding the fact that much of the urban fabric is worthy of conservation, research indicates a general paucity in understanding among planning authorities of urban morphology and the morphological nature of the city that results in weak or inadequate conservation planning policy and systems more focused on buildings and plots than their integral role in terms of urban form in larger urban tissues (Whitehand and Morton, 2004). As a pretext for demonstrating the nature of urban form as an organic whole comprising parts that are interrelated in form and historical process and the failure by decision makers to recognise and appreciate this, the northern intermediate fringe belt in Dublin City is taken as a case study. The study involved a morphological analysis of both the preceding Georgian city and the Victorian fringe belt, examining both the historical processes over the two centuries concerned and the resulting and contrasting urban form. To date, however, in the planning system in Dublin City Council, there is no recognition or appreciation and, thus, management of the intermediate fringe belt. Hence, this clearly identifiable urban tissue that bears witness to a significant period in Irish history is open to insensitive development, especially with concerted urban policies concerned with compaction and densification (Rudlin and Falk, 2009). The likely ensuing loss of significant parts of the urban fabric surely poses a major threat to our future cultural heritage as constituted by the city.

Key Words: conservation, fringe-belt, Dublin, Georgian Era, Victorian Era, planning policy.

Rudlin, D. and Falk, N. (2009) *Sustainable urban neighbourhood building the 21st Century Home* (Architectural Press, Oxford).

Whitehand J. W. R. (1977) 'The basis for an historico-geographical theory of urban form' *Transactions, Institute of British Geographers* New Series, Vol. 2, No. 3 400-416.

Whitehand J. W. R. and Morton N. J. (2004) 'Urban morphology and planning: the case of fringe belts' *Elsevier* Vol 21, No. 4 275-289.

Heavier challenges – fewer resources: lens for a new urban reality in Lisbon

Sofia Morgado, Inês Moreira, José Vargas

CIAUD, Architecture Faculty, University of Lisbon Rua Sá Nogueira, Pólo

Universitário, Alto da Ajuda, 1349-055 Lisboa, Portugal.

E-mail: smorgado@fa.ulisboa.pt , ineslmoreira@fa.ulisboa.pt ,
josevargas@fa.ulisboa.pt

The paper addresses the impact of the dynamics associated with the economic and financial crisis originated in the U.S.A., afterwards extended to the Eurozone, on the urban functional and morphological structure and fabrics. It is a two-tiered exam on Lisbon Metropolitan Area: (1) current transformations on agglomerations with economic interest, which reflect international dependence and the impact of prior sectorial policies, especially when facing a sudden disruption, in the urban development with consequences to the metropolitan quality of life; (2) An opposing dynamic functional and population related – between centres that are been emptied and periurban areas, usually rural, that start to show a significant growth, driven by still recent road accessibilities and the emergence of business centres related to the tertiary sector and to industrial-logistical activities, which are often becoming besieged by the growing lack of infrastructures, access to goods and data. Still exploratory, the approach seeks to present preliminary results from an on-going research – Minimal Resources -, with contributes from PhD researches, at CIAUD/M^{urbs}, Faculty of Architecture of the University of Lisbon.

Key Words: Lisbon metropolitan area; scarcity; metropolitan dynamics; sectorial policy impact; housing mobility.

Similar processes, divergent outcomes: analyzing urban redevelopment processes in three rapidly growing Turkish cities

Tuna Kuyucu, Didem Danış

Sociology Department, Boğaziçi University

Sociology Department, Galatasaray University.

E-mail: tuna.kuyucu@boun.edu.tr , didemdanis@yahoo.com

Since the "neoliberal turn," most of the literature on urban redevelopment and regeneration follows a uniform structure whereby single cases are thoroughly analyzed to demonstrate how they have been shaped by processes of neoliberalization that are simultaneously at work throughout the globe. The few comparative studies mostly take two or more otherwise dissimilar cities and/or regions within cities and show how they also have followed similar paths of neoliberal transitions. In our view these studies conceal as much as they reveal by presenting a causally simplistic and methodologically flawed analysis that detects a homogenous process of social, economic, and spatial turn wherever they look. Such studies fail to account for the important variations among similar cases, mostly caused by the different constellation of local forces and different resource capacity and action orientation of local actors. To overcome this fallacy in the field, we compare three divergent redevelopment processes in formerly state-owned industrial zones in three rapidly-growing secondary cities in Turkey. Based on in-depth interviews with key stake-holders, analysis of descriptive statistics and close documentary analysis, our research shows that local actors (state, civil society, and bourgeoisie) and their relationship with central state decision makers have direct impact on how neoliberalism is instituted and how it actually works in particular geographies. As such our study challenges the dominant monolithic accounts of urban change within the literature and calls for further carefully constructed comparative analyses that strive for variation-finding among otherwise similar cases.

Key Words: urban redevelopment, neoliberal urbanization, urban growth coalitions, comparative analysis, urban theory.

The built form of technology campuses: an exploratory study

Flavia Curvelo Magdaniel

Real Estate & Housing Department, Delft University of Technology.

E-mail: f.t.j.curvelomagdaniel@tudelft.nl

The sites accommodating research activity -well known as science and technology parks, research parks and/or university campuses- are increasingly seen by several stakeholders as one of the investments' targets when developing the physical infrastructure that supports knowledge-based development. Therefore, these sites have been mainly investigated from scientific disciplines such as economic geography, developmental policy, and more recently spatial planning. Conversely, they have been little studied in the built environment sciences. This paper seeks to characterise the built form of technology campuses in their contexts as part of a wide research investigating the role of the built environment adding value to the goals of stakeholders. With the purpose to fill a knowledge gap, this study *explores* the reality of technology campuses by using an inductive approach. Due to its nature this exploration combines different types of sources and methods for data collection and analysis. First, it uses literature review to situate this topic in context with other contemporary issues. Second, it collects important concepts from theories of built environment to define and analyse the built form patterns of technology campuses. And third, it conducts a scan of thirty nine existing sites by analysing documents, maps and site plans aimed to identify built form patterns. Therefore, five main qualities of technology campuses in context are identified emphasizing the form components, configurations and relationships. Overall, it can be said the built form of technology campuses is a planned built form. Therefore their shape and structure are the result of explicit intentions, which in some cases have been influenced by urban planning concepts but not all of them can be attributed to planning principles. Thus, the explicit intentions that bring about the built form of technology campuses cannot be generalised.

Key Words: technology campuses, built form, knowledge based-development, research sites.

New university complexes as a force of shaping the urban form of the medium sized cities in contemporary Iran, a case study of Najaf Abad

Ario Nasserian¹, Valeriya Klets¹, Sara Kalbasi²

¹Dipartimento DIAP, DRACO ,Università di Roma "Sapienza", Italy.

²Islamic Azad University of Najaf Abad (IAUN), Iran.

E-mail: ario.nasserian@gmail.com , valeriya.kles@gmail.com ,
sara.kalbasi@gmail.com

Aim of this paper is to study the effect of the newly emerged factors in shaping a city in Iran. In recent years, with the huge increase in number of the students and the wave of building of new universities across the country, in many medium-sized cities, the main element forming the city changed drastically to the university complexes and other buildings related to them.

In this paper, initially, there would be a short comparative description of growth of the urban tissue in Iran, and the factors, influencing it, and the way these factors act. Then effect of the new university complexes is described using some examples. Then using some comparative statistics, the effect of these complexes would be proved, and in the final step the effect of these complexes on the city would be discussed in three levels, the whole city level, the Neighboring level and the building level. A short summary of the results will prove that by building the university a sudden increase in the rate of city's growth and area has been started, also due to the price change in some neighborhoods of the city, this growth is much more than the others. It would be shown that the general number of stories of the city buildings and the area of the housing has also changed to make the buildings more profitable to rent, as a huge renting population is added to the city. In general, the city's face has changed from a traditional working-class residential city, to a so-called dormitory-city.

Key Words: factors of growth, change of the urban tissue, medium towns, accelerated growth, dormitory city.

Urban black holes: the rural in the urban as liminal spaces from where to build a new city

Paula Santos, Daniela Pena-Corvillon

Departamento de Ciência Política e do Comportamento, Univ Fernando Pessoa & Centro
de Políticas Públicas Urbanas, Univ de Lisboa.

Department of Landscape Architecture and Regional Planning, Univ of California at
Berkeley. E-mail: pmsantos@ufp.edu.pt , d.corvillon@berkeley.edu

The traditional narrative on city's growth is one of the urban form expanding while agricultural practices are relegated to other spatial realms than not the city. The 'rural' is not expected to be an element of the 'urban' (Gottdiener, 2014:19). As such the material to present is related to what we could name 'urban black holes' or 'the rural in the urban'. We take an anthropologically informed approach to urban form, in particular to a very specific *terrain* (ie, a space and its social world): the so called *hortas* (vegetable patches) located in Porto, Northern Portugal. These *hortas* are small sections of land always located along a water corridor that are cultivated outside any legal frame by local neighbours thus producing informal working class growers communities. These are places that are invisible to most of the city. They are liminal places. Building a city depends on how people combine the traditional economic factors of land, labor, and capital with the look and feel of cities reflecting concepts of order and disorder (Zukin 1995:7). We bring into the morphology analysis the social agents related to these specific forms of living the city, and argue that these *hortas* are not mere 'survivals' of past stages of the city's evolution and growth. They are in fact essential element of change in today's city where the morphology of the place and the group of actors take power into the urban landscape, starting a new "paradigm" of urban public spaces and urban community life.

Key words: rural-in-the-city, liminal-places, informal communities, water-corridors, food-production.

References:

- Gottdiener, M. (2014) 'The New Form of Urban Space and its Architecture' in Santos, P. and Seixas, P. (eds.), *Globalization and Metopolization – perspectives from Europe's West Coast*, (Berkeley Public Policy Press – Institute of Governmental Studies, Berkeley) 15-26.
- Zukin, S. (1995) *The Cultures of Cities* (Blackwell Publishing, Oxford).

Exploring university morphology

Luísa Cannas da Silva, Teresa Heitor

ICIST, Instituto Superior Técnico.

E-mail: luisacanasdasilva@tecnico.ulisboa.pt , teresa.heitor@tecnico.ulisboa.pt

Universities have a preponderant role in today's societal models in the context of the knowledge economy. They have been in the core of development — economical, social, *inter alia* — and their role within urban context has changed in order to respond to the third strand of the university mission — that of civic engagement. Whether conceived as autonomous entities or diffused within the urban fabric, universities are a key element in urban dynamics and policies and they are progressively more included in strategic plans and development actions worldwide. Therefore, it has become significant to understand the extent of university integration within urban territories. This paper aims at exploring an analytical framework for university precincts within urban fabrics, understanding the different types of urban insertion and connections established with local and regional players. The differences between universities conceived as autonomous entities in isolated locations and universities embedded in the urban territory are emphasized. The focus is placed on the impact of the university precinct at the level of the adjacent urban fabrics, on an attempt to understand the ways universities can relate to their hosting cities, from a morphological point of view.

Key Words: university precinct, urban integration, campus, knowledge economy, university morphology.

Aging as an agent of change in the way how we occupy our territory

Ana Bordalo, Madalena Cunha Matos

Centro de Investigação em Arquitetura, Urbanismo e Design da Faculdade de
Arquitetura da Universidade de Lisboa CIAUD-FAUL.

E-mail: ana.bordalo@gmail.com , mcunhamatos@fa.utl.pt

The aging of population characterizes the contemporary societies and promotes changes in the way how we are occupying our territory. Today, Portugal stands as one of the most aged countries in Europe with an aging index of 127,8% (PORDATA, 2013) - which means that for every 100 young people (0 to 14 years old) there are 127.8 citizens with 65 or more years old. In parallel, there is a marked imbalance in the occupation of our territory: with a high concentration of population in coastal regions (especially in the metropolitan areas of Lisbon and Oporto) and depopulation in the inner - characterized by an elderly resident population.

In the inner regions, begins to be frequent to find a numerous unoccupied houses, or even entire abandoned towns. This fact can be seen as an opportunity and not just as a problem. We propose to analyze the potential that these territories may provide in the implementation of resident systems dedicated to the needs of the elderly people, like Home-Villages, and the way of these kind of structures can contribute to the revitalization of depopulation territories; concealed with other structures (a motor for local development) which can potentiated the fixation of young people and promote a intergeracional territory. Through a case study, that summarizes a proposal for intervention, structured in a review of the territory, which aims to revitalize the Pessegueiro town, in Alcoutim (Portugal) - unpopulated, with a significant unoccupied housing structure and with an aging resident population.

Key Words: Assisted Living, Territory revitalization, Home-Villages, Spatial equity, Living in old age

References:

PORDATA (2013) *Aging indicators according with 2011 Censos in Portugal*

(<http://www.pordata.pt/Portugal/Indicadores+de+envelhecimento+segundo+os+censos-525>).

Confederations Cup 2013 in Brazil and urban conflicts manifest in Belo Horizonte / MG

Raquel Garcia Gonçalves, Karina Machado Simão, Juliana Araújo, Ana Pedroso
Urbanism Department, Architecture School Federal University of Minas Gerais, Brazil.
E-mail: raquelgargon@hotmail.com , karinamdc@yahoo.com.br ,
julianagodoy91@gmail.com , anaacpedroso@gmail.com

June of 2013 will be remembered in Brazilian history. The Confederations Cup organized by FIFA and the Brazilian team victory in the games could be the main reason. However, between the period June 15th to 30 of that year, the spotlight turned to popular manifestations that occurred as protests to perverse segregation sociospatial processes that delimit the history of the country. For realization of the event was necessary a major transformation of the structure and image of the six host cities, including Belo Horizonte. Though these changes are part of a larger process that indicates a conception of the city that reinforces the capitalist basis of the property market and consolidates the historical process of social exclusion. In response to accumulated dissatisfactions over several decades, there have been several urban conflicts during FIFA Confederations Cup 2013 that glimpsed the city as object and arena, in order to expose government mistakes and claiming rights. We emphasize here that Urban conflict is considered any confrontation or dispute relating to infrastructure, services, or urban life conditions that involves at least two collective actors and / or institutions (including the state) and is manifested in public space. This topic is researched by Urban Conflicts Observatory. The main objective of this article is analyze urban conflicts manifest in Belo Horizonte during Confederations Cup in Brazil in 2013, according to data and studies of Urban Conflicts Observatory of Belo Horizonte.

Key Words: urban conflicts, confederations cup; Belo Horizonte.

Urban conflicts observatory of Belo Horizonte / MG: sociospatial processes reading from conflicts

Raquel Garcia Gonçalves, Karina Machado Simão, Juliana Araújo, Ana Pedroso
Urbanism Department , Architecture School Federal University of Minas Gerais,
Brazil. E-mail: raquelgargon@hotmail.com , karinamdc@yahoo.com.br ,
julianagodoy91@gmail.com , anaacpedroso@gmail.com

The Identification, survey and systematization of urban conflicts are an important key to understanding landscapes and sociospatial processes of contemporary cities. Based on this understanding and denial of typically neoliberal thinking which identifies citizenship as synonymous of no conflict and social peace, the discussion of urban conflicts recently acquire academic researches, particularly in Brazil, where it was configured a network called Urban Conflicts Observatory. One of this network element is the Urban Conflicts Observatory of Belo Horizonte, created in 2006, which aims to record, organize, classify and provide information on urban struggles, social movements and diverse manifestations of conflict in the city. One of the challenges currently is deal with society complexity, valuing multiple possibilities that open from the dissent, discussion and collective manifestations. Therefore, the present article aims to introduce this Observatory, its concept, objectives and methodology bases. Also conduct a critical evaluation of its academic production and analysis of data produced considering the landscapes of the city of Belo Horizonte (MG). Furthermore, it intends to accomplish a comparative analysis of urban conflicts between the studied years (2006-2013). This work whose relevance goes beyond the mere academic discussion of a research project in order to constitute an important benefit to the understanding of social relations in the urban area of the state capital.

Key Words: urban conflict, social relations, Belo Horizonte, urban area.

Towards sustainable transformation in urban historical quarters: a social capital integrated place management approach

Han Jie

Department of Architecture, National University of Singapore.

E-mail: aki.hanjie@gmail.com.

In many Chinese cities under rapid urbanization, decayed historic quarters have been frequently redeveloped to accommodate the scale and speed of development. Physical and economic revitalization have been widely used to attract investment, boost economic growth, and intensify the land use of the historic areas. In China, mainstream practices favour the top-down approach, which implements large scale demolition and high-rise redevelopment with small scale preservation of a few selected buildings. In this transformation process, this growth-driven redevelopment of historic quarters has caused conflicts to society. Social replacements and gentrification diminish the social values attached to the physical fabric and damage the openness and inclusion of a society. Sustainable development challenges this transformation process: a decayed historic place should be revitalized and sustainably transformed not only in terms of economic gains, but also in terms of cultural ecology and social well-being. This paper argues that sustainable transformation should highlight a value- centered place management process. Through managing the process of change and mitigating conflicts by negotiation and cooperation in local-global levels, historic places as “legacy of past” could stimulate creative use of historical place and trigger development path towards sustainable transitions, in which heritage value will be rediscovered and reproduced collectively, especially the value on public realm and social cohesion. Based on the study of social capital theory and its adaptations, this paper proposes an alternative approach to transformation process, namely social capital integrated place management approach. It highlights the functions of different forms of social capital, their cooperation patterns as well as social interactions in the decision making network and transformation process. A comparative study will be conducted between two cases in China.

Key Words: urban historical quarters, manage change, sustainable transformation, social capital.

Urban Morphologies of Alternative Spaces: A Case Study of Tehran

Babak Soleimani, Alexandra Staub

Stuckeman School of Architecture and Landscape Architecture, Penn State University.

E-mail: bxs386@psu.edu , acs11@psu.edu

For the past century, Iran has been characterized by an intense social polarization: on the one hand, those who claim a traditional, “Islamic” lifestyle, on the other those who champion a modernization akin to westernization. This paper examines how the two forces have played out in shaping the physical spaces of the capital city, Tehran. The urban transformation of Tehran initiated in 1934 aimed, among other things, to restrict the cultural activities and public life of a traditional urban class in favor of a western-oriented elite. The Iranian revolution of 1979 attempted the reverse: with similar procedures but with different outlooks, the revolution reinserted traditional culture into the public sphere and marginalized non-traditional subcultures. Today, a wide gap can be observed in Iran between government-sponsored socio-cultural values and those of more liberal social groups. Both after 1934 and again after 1979, particular urban settings have played a key role in the form of “alternative spaces” that enabled the marginalized social group to preserve the vitality of their lifestyle. Using a case-study approach, this paper examines the ways specific aspects of urban morphology have contributed to the formation of these alternative urban spaces. Through a parallel analysis of Tehran’s morphological and social transformations, this study posits that urban boundaries shaped by physical structures have been a significant factor in the formation of these alternative social spaces. The paper focuses on the Grand Bazaar of Tehran as the most significant alternative space for the traditional class in pre-revolutionary Iran, and Ekbatan housing estate as a major example of alternative space in the post-revolutionary era. The outcomes of this research shed light on the interrelationship of physical and socio-cultural landscapes in socially contested cities.

Key Words: Iran, public spaces, social transformations, bazaar, Ekbatan.



5.

Revisiting urban morphological classics

‘The future has an ancient heart’ is the title of a book written in 1956 by the Italian writer Carlo Levi. I mention it as inaugural metaphor of our session: the classics of Urban Morphology can be considered as the foundations of a building under construction, which will be much firmer and more cohesive than us (who are the builders) we will be able to recognize and focus our cultural debts with the masters who anticipated, with their studies, the complex problems of the urban form. In this respect the language barriers are a severe limitation to the international circulation of the texts of the pioneers of Urban Morphology, who as ‘classics’ should be read, summarized, commented and compared in a systematic way in their chronological sequence, regardless of the language in which were written. It could think out to put in them in a critical anthology, to be published in the future as a further step for the growth of our discipline. Moreover Urban Morphology in his collection has already hosted a series of articles aimed just to document the different national traditions of urban studies that preceded the ISUF establishment. Vitor Oliveira in his summary article (Oliveira, 2013) there has provided the references, which I here enclose as useful starting point for this project (which could be called ‘Critical Anthology of Urban Morphology’) to bring to completion in next few years.

Giancarlo Cataldi

References

Oliveira, V. (2013) ‘The study of urban form: reflections on national reviews’, *Urban Morphology* 17, 85-92.

Morphology vs typology: notes on Saverio Muratori and Ludovico Quaroni's urban projects

Anna Irene Del Monaco

Dipartimento di Architettura e Progetto, Sapienza Università di Roma.

E-mail: anna.delmonaco@uniroma1.it

This paper aims to investigate Saverio Muratori's and Ludovico Quaroni's different approaches to urban design, with special reference to the ways the two peer architects, both somehow moving from the teachings of Marcello Piacentini School (Barbera, 2013), have been interpreting the relationship between the ideas of “morphology” and “typology”. Ludovico Quaroni's idea of “typology” has not to be confused with the idea of “type” conceived during Enlightenment “whose scientific investigations – as claimed by Ludovico Quaroni – are mainly valid for the monuments”, even if, typology, as Quaroni affirmed, was “assumed to replace the ambiguous term ‘type’ (methonymy) perhaps for the scientific fascination that the word emanates” (Quaroni, 1996). On the other hand Saverio Muratori used to consider the concept of “type” as *a priori* synthesis (Manghini and Palmieri, 2009). According to Quaroni the word “type” has to be referred to the concept of “building types”(Quaroni, 1996) and it is not conceivable within the framework of a generative process, a “forming form” conceived *a priori* as it is stated Saverio Muratori's thought (Muratori, 1963). Ludovico Quaroni generally speaks in his writings of building type as “the result of a spontaneous process in a given urban civilization” (Quaroni, 1996, p. 185). In Saverio Muratori's and Gianfranco Caniggia's Schools the joint concept “type-morphology” is mentioned as a problem to be investigated “for a correct formulation of a design process” (Petrucchioli, 1998). The paper will comparatively analyse two Saverio Muratori's projects, INA-Casa “Loggetta” in Naples and “Magliana II” in Rome and Ludovico Quaroni's project at “Casilino” neighbourhood in Rome.

Key Words: Saverio Muratori, Ludovico Quaroni, morphology, typology, Rome School of Architecture.

References:

- Barbera L.V. (2013) *The radical city of Ludovico Quaroni* (Gangemi, Roma) 217.
Quaroni L. (1996) *Il progetto per la città*, Edizioni (Kappa, Roma), 200.
Manghini A. B., Palmieri V. (2009) *Saverio Muratori Didattica della Composizione architettonica nella Facoltà di Architettura di Roma 1954 – 1973* (Poliba Press, Bari) 364.
Muratori S. (1963) *Architettura e civiltà in crisi* (Centro Studi di Storia Urbanistica, Roma) 124.
Petrucchioli A. (1998) 'Exoteric, Polytheistic, Fundamentalist Typology', In *Typological Process and Design Theory* (Akpa, Boston).

The critical doubt in typological and morphological studies of Italian school as an update to the general concept of urban space

Matteo Ieva

Department dICAR - Course of degree in Architecture – Polytechnic of Bari, 4 via Orabona, 70125 Bari, Italy. E-mail: matteoieva@yahoo.it , mieva@poliba.it

The Italian school that attempted to build a structure of method based on interpretation of reality through the use of analytical and practical parameters, find its leading theoretical exponents in Saverio Muratori and Aldo Rossi. Already active for decades, both schools of thought are showing interest in a hypothesis about the interpretation of the urban space, although the instruments used are very different. The one theorized by A. Rossi offers the idea of ‘split town’ which examines the existing as a collection of witnesses located in time and space, expressing a view opposite to the postulate of Muratori about the idea of process and continuous transformation. The concept of unity of human events, enunciated by Muratori through the idea of city-organism, appears revolutionary not only in relation to the many theories proposed in those years, but especially to the thought of Rossi who reads the built based on the concept of "form" where he tries to explain the morphological differences. On the contrary, the idea of ‘form structure’ will help lay the foundation, for the first time, for an assumptions projected towards the interpretation of reality and of urban morphology, with a not only synchronic but also diachronic meaning, as proposed by g. Caniggia and by the Muratori's school. About fifty years of research, during which different methods have been developed, and the constant updating of the theory in response to the evolving cultural and architectural dynamics, brought to a deep divide between the two schools, especially in the design field. Although both schools show, inside the structure of own thought, a vocation not to consider, ever, what has been demonstrated as true, thereby showing interest towards the heuristics one of the doubt which makes methods as far as possible scientific, a profound distinction substantiates the theoretical view. According to Rossi the concept of architecture as an analogy appears irreconcilable in relation to the one from Muratori based on the idea of continuity and consistency with the linguistic nature of the built that varies in space and time.

Key Words: typological method, form structure, heuristics doubt.

Saverio Muratori. A legacy in urban design

Marco Maretto

Dipartimento di Ingegneria Civile, dell'Ambiente, del Territorio e Architettura.
Università degli Studi di Parma, Parco Area delle Scienze, 181/A, 43124 Parma, Italy.
E-mail: marco.maretto@unipr.it

This paper is part of a wider research on Saverio Muratori and his legacy in Urban Design. During the 1930s and 1940s Muratori laid the theoretical and practical foundations for a morphological approach to urban design. The fundamentals of his contribution during these years are considered in the first part of this paper, notably the concept of 'crisis', the key role of 'operative history', the integration of theory and practice, and the use of morphology to translate analysis into synthesis and interpretation into design. But Muratori's urban projects represent an essential 'process of knowledge' of the city and its formative logic. Beyond the normal episodic nature of the various planning experiences, a growth and maturation are clearly noticeable – from the Piano Regolatore di Aprilia in 1936 to the Venetian projects for the Barene di San Giuliano in 1959 – which point to a cultural project, a 'project for life', which becomes a cultural programme, and vice versa. From an awareness of crisis to the "discovery" of morphology, from the convergence between theory and architecture (in which architecture is the 'science of design') in the common quest for knowledge, to the 'invention' of morphology as a 'planning discipline', the boundaries of a pursuit, in which we can clearly see the basis for a morphological school of urban design, are clearly delineated.

Key Words: urban design, urban morphology, architecture, Italy.

Re-thinking city. An exemple of Ilses multidisciplinary approach to urban morphology questions

Corinna Nicosia

DASStU – Dipartimento Architettura e Studi Urbani, Politecnico di Milano.

E-mail: corinnanicosia@gmail.com

As everyone knows, *Architettura della città* written by Aldo Rossi is a classic in urban morphology because it is a first attempt to formulate a theory on the shape of the city, bringing together knowledge from different disciplines. It is a classic still relevant for anyone involved in city planning because the book proposes the study of urban morphology as an important part of the design process, starting from the assumption that there is a close relationship between planning goals and urban form. But the aspect that makes it extremely relevant also for who wants to talk again with who managing the transformations of the city and its territory – who imposes the issues on the public agenda – should be the fact that for the first time who studies urban morphology claims a specific skill, a knowledge able to communicate with other disciplines about strategic issues for the management and planning of the territory.

This is clear if you look at the book in its original form: a field research carried out within the broader research program planned by the Institute for Economics and Social Studies of Lombardy (Ilses). Ilses was a research center created by the will of politicians, administrators, technicians and academicians who shared the belief that the reflection on territorial management could not regardless reasoning about the city, its form and its content. Through those research they tried to take an overall view of the complexity of the territory. Today these issues objected to entering in the public agenda and looking at that rich experience can help us to understand how who studies urban morphology can go back to being an authoritative conversation partner.

Key Words: Ilses, Aldo Rossi, urban questions, urban planning.

Early ideas of urban morphology: a re-examination of Leighly's *The towns of Mälardalen in Sweden* (1928)

Peter J. Larkham

Birmingham School of the Built Environment, Birmingham City University, UK.

E-mail: peter.larkham@bcu.ac.uk

The *Oxford English Dictionary* does not specifically discuss *urban* morphology: its nearest approach is *village* morphology in a reference by Maurice Beresford (1954). But not only was the idea of systematically studying urban form commonplace rather earlier, especially in German-speaking geography (as Whitehand, 1981, shows), but perhaps the earliest publication of the term in English is J.B. Leighly's *The towns of Mälardalen in Sweden* (1928). This paper re-examines Leighly's paper in terms of its background in the Berkeley school of cultural geography, heavily influenced by Carl Sauer; the ideas developed within the paper itself; and suggests why this early publication has virtually vanished from the consciousness of academic urban morphology today. The commonly-held generic move in academic research and writing from descriptive to critical; the conceptual richness and dissemination of later works by Conzen, Muratori, Caniggia and others; and the geographical focus on small Swedish settlements are all significant factors; but reviewing the content of Leighly's work in detail shows a surprising alignment to many ideas common in contemporary urban morphological writing. Leighly's contribution should be more widely appreciated.

References:

- Leighly, J.B. (1928) *The towns of Mälardalen in Sweden* (University of California Press, Berkeley).
- Oxford English Dictionary (2014) *Morphology* (online) accessed 30 January 2014.
- Whitehand, J.W.R. (1981) 'Background to the urban morphogenetic tradition', in Whitehand, J.W.R. (ed.) *The urban landscape: historical development and management: papers by M.R.G. Conzen* (Academic Press, London).

Urban form of contemporary compact city- case of Oslo

Gordana Marjanovic, Anne-Karine Halvorsen Thorén

Department of Landscape Architecture and Spatial Planning,

Norwegian University of Life Sciences.

E-mails: gordana.marjanovic@nmbu.no , kine.thoren@nmbu.no

‘Compact city’ is a widely recognized concept for sustainable urban development. This paper presents research on typological implications of this policy on urban form. The built form of compact city has been discussed insofar primarily from the aspect of future development, such as strategies (e.g. Jabareen, 2006), modelling (e.g. Hee et al., 2010) or measurement tools (e.g. Pont & Haupt, 2004). However, there are few studies of the newly built forms of compact cities regarding the ideas that shaped them, which gives grounds to an attempt to define the position of architectural types and programme in the “compact city” concept. The questions this study addresses concern the formal analysis of the new types, the influence of previously known types on the new forms, and the outdoor spaces they provide for. Theoretical approach lies within Urban Morphology. The questions are discussed in the line of thought of classic typomorphological studies (e.g. Panerai, 2004) and architectural theory. The method is an embedded case study. The main case is the city of Oslo, which adopted “compact city” policy in late 1980’s, and is today one of the fastest growing cities in Europe. The sub-cases are newly built residential areas within it, raised between 2003 and 2013, and planned for finalization in 2014. Residential types have been selected as this is the most frequently constructed architectural programme, which thus provides ample data sources. Preliminary results indicate that there is a considerable variety in the plans of the new types, partly based on precedents.

Key words: urban form; compact city; contemporary types; typo-morphology

References:

- Hee, L., Boontharm, D. and Viray, E. (2010) ‘Urban Space Morphology for High Density Environments’, *ISUF Conference: Formation and persistence of townscape*, Hamburg.
- Jabareen, Y. R. (2006) ‘Sustainable Urban Forms Their Typologies, Models, and Concepts’, *Journal of Planning Education and Research* 26, 38-52.
- Panerai, P., Castex, J.P., Depaule, J. and Samuels, I. (2004) *Urban forms*, (Routledge, London).
- Pont, M. B. and Haupt, P. (2004) ‘*Spacemate*’, *the spatial logic of urban density* (Delft University Press: DUP Science, Delft).

Five elements revisited: a morphological approach of Solà-Morales

Evandro Ziggiatti Monteiro, Daniel Teixeira Turczyn

Faculty of Civil Engineering, Architecture and Urban Studies, UNICAMP,
Campinas, Brazil. E-mail: evandrozig@fec.unicamp.br

In the early 1960's, Kevin Lynch (1988) inaugurated a new way of investigating the urban landscape. Based on cognitive mapping and on the concept of public image, his five elements methodology became a milestone in the urban analysis of the growing 20th century cities. Nearly forty years later, Solà-Morales (2002) published an article in which he proposes also five "concepts", or "platforms", but focused on the explosive phenomenon of 21st century large urban areas. Underneath the numerical coincidence of both theories, what this paper aims to unveil is the universe of investigation possibilities triggered by Solà-Morales to the comprehension of contemporary urban form. An in-depth reading of his "mutations", "fluxes", "housing", "containers" and "terrain-vague" categories, reveals useful lenses to an accurate and updated morphological analysis of worldwide metropolises. Early investigations using those categories to analyse the new growth frontiers in São Paulo state cities have shown that local conditions tend to shape these areas in a very similar way and in tune with Solà-Morales categories' descriptions. The comparison between the two authors indicates that both theories are complementary, highlighted the fact that the later one seeks a more critical than instrumental approach, as does Lynch's. Solà-Morales addition is also an invaluable path to deal with the paradox of virtual environments or intangible dynamics that increasingly dominates tangible urban space, and the struggle between the old and new that let many urban areas unsolved. This paper concludes that Solà-Morales contribution leads to new methodologies of analysing urban form.

Key Words: urban morphology, built environment, urban theory, metropolis form.

References:

- Lynch, K. (1988) *A imagem da cidade* (Edições 70, Lisboa).
Solà-Morales, I. (2002) *Presente y futuros. arquitectura en la ciudad. in Territorios* (Editorial Gustavo Gili, SA, Barcelona).

The influence of classics on contemporary thinking Louis Kahn and Hestnes Ferreira

Alexandra Saraiva

Faculdade de Arquitectura e Artes. Universidade Lusíada _ Porto,
Rua Dr. Lopo de Carvalho 4369-006 Porto, Portugal. E-mail: benaiche
alexandra@gmail.com

Architecture and the consequent urban form can be analysed and interpreted without reference to classical influences? Or can we analyse the urban form dated to the time and devoid of any previous bonding or influence? The purpose of this article is to show that two contemporary architects, Louis Kahn and Hestnes Ferreira created their own language of interpretation and implementation of formal relations at the same time they developed their buildings, transposing the formal urban analysis for the formal development of each projected unit. The designation of morphology results from the analysis of configuration and the exterior structure of an object, in direct relation to the phenomena that arise. Despite all the classical thought, the architecture of both architects closes a dimension beyond the essential nature of architecture as Michel Freitag uttered (2004) in his book *Architecture and Society*. The architecture relies on a phenomenological and sociological interpretation related then with History of Architecture, aiming to understand the urban form. Louis Kahn and Hestnes Ferreira approach the process and the materialization of urban form by following these guidelines. The main conclusion of this article is to prevent that architecture, in contemporary thought, do not continue to be associated with the paradox of the beautiful and the ugly.

Key Words: Louis Kahn, Hestnes Ferreira, classic influence, contemporary thinking.

References:

Freitag, M. (2004) *Arquitectura e Sociedade* (Dom Quixote, Casal de Cambra.)

Relevance study: relationship of morphological characteristics between residential plot and building pattern in Nanjing, China

Qin Zhao

School of Architecture and Urban Planning, Nanjing University.

E-mail: zhaoqinwyx@126.com

Residential plots dramatically contribute to urban form of Chinese modern cities for large quantities. However, just a few studies following Conzenian tradition of urban morphology have been undertaken in China, especially few in micromorphology at the scale of plot. And previous researches about residential plot concentrate on living units or indicators of plot, lacking in thoroughly morphological exploration of relationships between plot and buildings within. Therefore, this paper pays attention to residential plots, which account for nearly 65 percent of all residential and commercial plots in Nanjing city, describes geometrical characteristics of these plots and building patterns and reveals their relationships. By investigating of all 3015 residential plots within urban area in Nanjing, this paper has categorized them in terms of residential building types within plots. According to different shapes and sizes of residential plots, how patterns of building arrangement change has been examined. It thus firmly proves that residential building pattern has a relationship with shape and size of plot. And through several typical building patterns, how they are affected by geometrical characteristics of plot is demonstrated with external conditions as well. These discoveries on the relevance of residential plot and building pattern lead to a complete summary of designing rules for residential plots, and are valuable for urban design reference and policy-making.

Key Words: residential plot, building pattern, morphological characteristics, relevance.



6.

Multidisciplinary in urban morphology

Multidisciplinarity in urban morphology constitutes one of the ten thematic sessions of ISUF 2014 that wishes to reflect on 'Our Common Future in Urban Morphology'.

The main goal of this session is to encourage new multidisciplinary teams to come together to strength and depth the study of urban form fresh perspectives. Urban Morphology as already recognized by some of ISUF founders and the editor of *Urban Morphology* journal is a field of knowledge that exists for over than a century ago and that was built up throughout the contributions of different disciplines, including, history, geography, architecture, among others. It is precisely on the possibility that urban morphology offers as a potential bridge to bring together knowledge provided by different disciplines that this thematic session has been proposed and encourage reflection and debate upon three specific topics: i) The benefits from the potential of cross-disciplinary knowledge, while bringing together separate disciplines to better contribute to the study of urban form; ii) The need to encourage the formation of new areas of knowledge, while encouraging new multidisciplinary teams to come together in a timely manner in response to identified opportunities as places by *Our Common Future*; and iii) Determine how can urban morphology better determine and evaluate the impacts of urban form on the natural environment and therefore contribute to our common future through sustainability at the ground. In order to reflect on the potential of these three main topics, a group of question was placed by this session to encourage further discussions: Which are the contributions that the different disciplines have imputed to the study of urban form? What advances can be identified from such cross-disciplinary knowledge and what lines of thought are emerging? How and why specific relationships between changes of lifestyle, population growth and urban form can be identified? How can these be measured and evaluated? Which are the impacts of these factors on the natural environment? How to evaluate the dynamics interactions between urban form, water and green spaces? How can urban form better respond to the call for Sustainability?

Teresa Marat-Mendes

Human dynamics in the waters territory - the interaction of urban spaces and natural spaces, in the region of Camburi

Janaína Schmidel Baptista, Milton Esteves Junior, Rafael de Melo Passos

Universidade Federal do Espírito Santo, Brasil.

E-mail: schmidelbaptista@yahoo.com.br , m.estevesg3@gmail.com ,
rafa_passos84@yahoo.com.br

Derived from the process of urbanization from 1950, the region of Camburi, to the north Vitória's island (ES), represents a privileged locus due to its physical characteristics conducive both to urbanization as the industrial and logistical facilities, important to the economy of the State. However, it highlights various negative impacts of the relationship society/nature, mainly due to the denial of its natural elements: mangrove, sandbanks vegetation and water bodies. Its landscape reflects the transformation processes influenced by a society that tended to show a dichotomy between building the city and the presence of open spaces: in this context, the nature has played a secondary role supporting role in determining urban form. This narrow and retrograde vision over construction/drawing the city led to a fragmented approach of urban environmental problems, particularly those related to the deterioration of life and natural spaces quality. The study's objectives are: to gather knowledge about the parameters that govern the processes of construction of the contemporary city, and process a multidisciplinary and critical reading of the influence of the natural elements in territorial configuration, applied to the specific case of the region of Camburi (Vitória/ Espírito Santo State's capital); analyze in an integrated manner the different units of natural and cultural landscapes; provide subsidies for future environmental planning strategies, as well as for the integrated management of the elements of the landscape and the urban requalification projects; promote interaction between areas of scientific knowledge concerning the urban morphology, landscape ecology and green infrastructure. This paper, developed in the Conexão Vix Research Group – UFES, discusses the relationship between city and natural space in a coastal region. It's articulated to other articles also subjected to this event.

Key Words: landscape ecology, urban morphology, urbanization, society, nature.

The connection between city, river, and sea: urban planning in coastal landfills

Guilherme Barea, Raquel Weiss, Erica Monteiro, Carlos Loch

Architecture and Urbanism Department, Federal University of Santa Catarina.

E-mail: arq_barea@hotmail.com , rwarqui@hotmail.com ,
ericapaulaarq@yahoo.com.br , carlos.loch@ufsc.br

Throughout the years, population growth and increasing interpersonal relationships have made cities find new ways of adapting themselves. In coastal cities, the growing practice of building landfills on the sea is an alternative to solve traffic issues, as well as lack of recreation and leisure spaces. However, the presence of urban voids, disconnected from the urban fabric, is common. Moreover, the lack of attention towards the integrity of urban rivers—important and conditioning elements of the conformation and structuring of urban spaces—aggravates this scenario. Thus, this article aims at characterizing and analyzing the urban morphology and structure of a spatial cutout in the city of São José/Santa Catarina/Brazil, focusing on the restructuring of an urban axis of integration between the city, the river and the sea. At the core of the proposed method lies the technique of photo interpretation, using temporal series of aerial images to characterize and analyze the spatial-temporal evolution and the anthropic activities that characterize the current urban structure and morphology. The method of photomontage of the urban section has also been used in order to understand the entirety of the urban axis through planes, rhythms, forms, identity, as well as verticality within the spatial cutout. From the analyses here conducted it is possible to establish the proposition of general guidelines for the restructuring of the urban axis in order to articulate and connect the city, the river, and the sea.

Key Words: planning, landfill, city, river, sea.

The lagoon line mutation in the urban evolution of Sant'Antioco. An history of productive-natural landscape

Adriano Dessì

DICAAR – University of Cagliari. E-mail: adrianodessi@unica.it

The ancient town of Solki, today's Sant'Antioco, is the only centre on the south-west coast of Sardinia that looks towards the east. Its ancient and, to some extent, mythological origins are intrinsically bound to the resources but, above all, to the historical forms of the lagoon. This lagoon, which originated from the closure of the stretch of sea between the mother island and the island of Sant'Antioco and is linked by a slender isthmus on the south-side, has changed its appearance throughout history several times. But it was especially in the twentieth century, with the start of production activities related to fishing, coal and salt, that the "lagoon line" and the town underwent the most drastic changes: the excavation of a waterway that flows around the urban coast, has created a dynamic water system of the lagoon that changes its topography every day. Similarly, the urban centre, originally perched on one of the hills of the immediate hinterland around the ancient late Roman period cathedral, was first extended radially towards the water line according to a first Piedmont expansion project at the end of 1700s, generating an initial lagoon waterfront, and then, unfolding towards the south, it gradually occupied the newly-deposited land strips brought by the lagoon currents until they joined with the industrial infrastructure. The paper proposes the processes of urban formation of Sant'Antioco, focusing on the interactions between the temporal variability of the lagoon-line, and changes in the urban forms and on the perspectives that they nowadays generate in terms of multifunctionality and urban mixité.

Key Words: waterfront, lagoon line, landscape, urban forms evolution.

The study of urban form versus water management: lessons to a sustainable urban future

Teresa Marat-Mendes, Joana Mourão, Patrícia Bento d’Almeida
DINÂMIA’CET-IUL, Instituto Universitário de Lisboa ISCTE-IUL.
E-mail: marat.mendes@gmail.com

The strategic importance of Urban Morphology to understand the interaction of the natural and humanized phenomena that occur on Earth, and create the environments within people live, have been already remembered by Whitehand (2012) and Marat-Mendes (2013). This presentation aims to expose the on-going results of a research project, financed by the Portuguese Science Foundation - MEMO - that aims to relate urban form to the analysis of the urban metabolism, and therefore exhibit a possible application of urban morphology to face *Our Common Future* (WCED, 1987). The investigation broads the definition of urban form, while including all the typological elements that do testify the man will to transform the territory and respond to water management. The methodology approaches a multidisciplinary vision that aims to understand the relationship between urban form and water management. Knowledge provided by disciplines such as architecture, environmental engineering, geography, history, and urbanism contributes to the development of the investigation. The presentation isolates, identifies and characterizes for the Metropolitan Area of Lisbon (MAL), in 1900, all the typological elements of urban and rural form. Finally, it assesses all these elements in terms of urban metabolism, while revealing the morphological arrangements that do testify the interaction between urban form and water management.

Key Words: urban morphology, typological elements, water management, methodology, Lisbon Metropolitan Area.

References:

- World Commission on Environment and Development (1987) *Our Common Future* (Oxford University Press, Oxford).
- Whitehand, J. W. R. (2012) ‘Issues in Urban Morphology’, *Urban Morphology* 16, 55-65.
- Marat-Mendes, T. (2013) ‘Sustainability and the study of urban form’, *Urban Morphology* 17, 123-124.

City waterfront territories: urban morphology as a key factor for sustainable development

Kseniia Mezenina

Architecture and Urban Planning Department, Perm National Research
Polytechnic University. E-mail: ks.mezenina@gmail.com

Historically the city of Perm has an important connection to the Kama River, as its waterfront formed the main axis of development in 19th century. The 20th century decline of riverside commerce, industry and transportation has made industrial riverfront land available for nonindustrial use. Today the strip of land along the Kama river is one of the most attractive areas of the city and has incredible development potential, but it is currently devalued and mostly abandoned because of the poor connection between the city and the river. This paper presents the research conducted on the over time interaction of urban tissue with recreational areas within the city structure: green space and water. Kama waterfront territories with surrounding green spaces combined with urban form were analyzed as a unique system with altering correlations between its elements undergoing an evolutionary process. Morphological analysis was carried out at the 2 points of territory development: 1) at the historic state with peak riverside industrial activities when industrial function was playing a key role on the territory and 2) at the present state with a number of disorganized functions and chaotic recreational load. The conceptual line of evident changes was formed and conclusions were drawn. As a result of performed morphological analysis, the characteristics of these territories were distinguished and compared to each other. Conducted research allowed to suggest a way for further city development with balanced eco-system and differentiated waterfront activities opened to citizens, with the focus on maintaining well-designed sustainable urban environment.

Key Words: morphological analysis, urban form, waterfront territories, sustainable development, Perm.

Interaction between rivers and morphology of cities in Sweden

Ehsan Abshirini

Division of Geodesy and Geoinformatics,
School of Architecture and Build Environment, KTH. E-mail: ehab@kth.se

Rivers as one of the most important topographic factor have played a strategic role not only on the appearance of cities but they also affect the structure and morphology of cities. In this paper I intend to find out the influence of rivers on the morphology of a cities and discuss that how a city in its physical network interacts with a river flowing inside. My study area is river-cities in Sweden in which they have not received much attention in this issue. To this purpose I use space syntax method integrating with geospatial analysis and extract the properties of physical form of cities in terms of global and local integration value, choice value and so on. Comparing the states of presence and absence of rivers in these cities as well as evaluating the effect of rivers on the morphology of areas located in different banks of rivers are also part of interest in this paper. The primary result shows that although a river is not comparable to a city based on size and the area occupied by, it has a significant effect on the form of a city in both global and local properties. In addition, tracking the pattern of river-cities and their interaction to rivers may lead us to interoperate the physical form of these cities in terms of *structured* and *distributed* cities.

Key words: river-cities, physical form, space syntax properties, structured and distributed cities.

Morphology and functioning of the metropolitan urban areas

Anissa Benaïche

Institute of geography and regional planning, University of Nantes, France.

E-mail: anissa.benaïche@etu.univ-nantes.fr

The principal aim of this paper is to construct a new spatial typology of the Metropolitan Urban Areas MUA centralization and decentralization. It is at the same time, a theoretical and multidisciplinary approach that rest on works of many Francophone and Anglo-Saxon researchers. In this context, it is necessary at the first step, to determinate for each spatial type, morphological localization/land use and functional mobility/transport networks characteristics of MUA and to specify at the second step, their evolution according to the centrifugal mode.

Key Words: spatial typology, metropolitan urban areas, metropolitan processes, morphological and functional characteristics.

Urban growth in Hanoi: a retrospective analysis based on Landsat images and field survey

Thi-Thu-Huong Luong¹, Yves Cornet², Jacques Teller¹

¹Local Environment Management and Analysis (LEMA), Département ArGEnCo –
Secteur A&U, Faculté des Sciences Appliquées, Université de Liège.

²Department of Geomatics, University of Liège.

E-mail: tthluong@doct.ulg.ac.be

Hanoi, the capital and the second biggest city of Vietnam, witnessed a dramatic change in its urbanization process since the economic reform of 1986. According to UNHABITAT, the population of the city passed from 2.8 million inhabitants in 1985 to 4.7 million inhabitants in 2010. This demographic growth is to be placed in parallel with an annual GDP of the city of some 10%. The population of the city is expected to keep growing at a fast pace over the next 20 years: at the province level, the population is expected to pass from 7.5 million inhabitants in 2014 to 8.4 million inhabitants in 2034 (GSO, 2011). Such a transformation of the city brings both opportunities and challenges. Despite achievements in economic growth and poverty reduction, city authorities are now faced with considerable demands for urban infrastructure, public service systems and land use. They should further consider likely impacts of such a fast increasing urban population, given the observed motorization of displacements and its associated environmental impacts. Local authorities are further aware of the considerable uncertainties related to future growth predictions, which partly depend upon external factors like global economic trends; the expected urban expansion is already faced with an unpredicted economic crisis since 2008. Besides environmental and economic factors, the livelihood of local inhabitants is also impacted by such intensive socio-spatial and urban transformations. This is especially the case since a large share of housing supply in the fast growing urban areas of Hanoi is explicitly targeting high-income groups. This trend is perfectly illustrated through two flagship urban projects: a new urban complex in the south-west and another one at the north of Hanoi (Douglass.M and Huang. L, 2007). It should still be considered that, while a series of new urban projects are developed in Hanoi periurban areas along this approach, a lack of housing development projects for less wealthy inhabitants can increasingly be observed. A number of researchers, using satellite images or topographic maps, focused on understanding the urban development and urban growth within the city boundary of 2008 (Thapa et al., 2006; Surborg, 2006; Pham and Yamaguchi, 2007; Pham, 2008; Ho.D.D, 2009, Mamor and Ho, 2009; Pham.M.H., et al., 2011; Pham. T.T.H., et al., 2013; Pham.V.C et al., 2014). Their results showed that the city grew along the Red River, following 3 main transportation directions connecting the city to southern, southwestern and western provinces. Still the significant changes occurred within the city over the last 7 years have not yet been intensively studied. Our contribution consists in measuring the structure and intensity of urban growth over the last 25 years. We used Landsat images, sampled on a 7-years period between 1990 and 2014. Our analysis highlights that the pace of change of Hanoi dramatically increased over the last 10 years when compared to the previous period. It further reveals the main corridors governing present urban extension of Hanoi. We then focus on understanding and analysing specific urban patterns at the local level, showing interaction of soil, water and vegetation in different urban forms through time. This was performed through a photo/socio survey conducted within periurban areas of Hanoi. Two different types of urban patterns have been distinguished so far: planned development operations, operated by large real estate developers, scattered in periurban areas on the one hand and spontaneous development, operated by local inhabitants, located around existing rural villages on the other hand.

Key Words: urban growth, peri-urban development, Hanoi, Landsat 8.

References:

- Douglass. M and Huang. L. (2007) 'Globalizing the city in southesast asia; utopia on the urban edge - the case of Phu My Hung, Saigon.' *UAPS* 3.
- GSO, (2011). *Annual Statistical, city of Hanoi 2010* (General Statistic Office Publisher, Hanoi).
- Ho. D. D, Mamor, S., (2009). 'Studies on Hanoi Urban Transition in the Late 20th Century Based on GIS/R'. *Southeast Asian Studies*.
- Mamor., S., (2009) 'Hanoi's Urban Transformation in the 19th and 20th Centuries: An Area Informatics Approach.' *Southeast Asian Studies* 4.
- Nguyen. Q., Kammeier. D.H., (2002). 'Changes in the political economy of Vietnam and their impacts on the built environment of Hanoi.' *Cities* 6, 373–388.
- Pham, M. H., Yamaguchi, Y., (2011) 'A case study on the relation between city planning and urban growth using remote sensing and spatial metrics.' *Landscape and urban planning* 100, 223-230.
- Pham, M. H., Yamaguchi, Y., (2007). 'Monitoring land cover change of the Hanoi city centre under impacts of urbanization by using remote sensing.' *Int. J. Geoinform* 3, 55–61.
- Pham, T. T. H., Tong, T. H. A., and Pham, V. C., (2013) 'Becoming Urban: How Urbanization Influences the Loss of Arable Land in Peri-urban Hanoi.', *Computational Science and Its Applications–ICCSA 2013*.
- Pham, V. C., Pham T. T. H., Tong T. H. A., Nguyen T. T. H., Pham N.H., (2014) 'The conversion of agricultural land in the peri-urban areas of Hanoi:(Vietnam): Patterns in space and time.' *Journal of Land Use Science just-accepted*.
- Pham. D. U., (2008). 'Application of land suitability analysis and landscape ecology to urban greenspace planning in Hanoi, Vietnam.', *Urban Forestry & Urban Growth*.
- Surborg., B, (2006) 'Advanced services, the New Economy and the built environment in Hanoi' *Cities* 4, 239–249.
- Thapa, B. R. and Murayama, Y. (2008) 'Land evaluation for peri-urban agriculture using analytical hierarchical process and geographic information system techniques: A case study of Hanoi.' *Land Use Policy* 25, 225-239.
- United Nations. (2009) *World Urbanization Prospects: The 2009 Revision*. New York: United Nations Population Division, Department of Economic and Social Affairs. (<http://esa.un.org/>)

The city, the river and mangroves: a case study in San José, Santa Catarina, Brazil

Érica Monteiro, Raquel Weiss, Guilherme Barea

Federal University of Santa Catarina.

E-mail: ericapaulaarq@yahoo.com.br , rwarqui@hotmail.com ,
arq_barea@hotmail.com

Brazil is among the countries with more mangrove areas, with approximately 25,000 km², representing approximately 12% of mangroves worldwide. For this article, is taken as the study mangrove located in San José in Santa Catarina, Brazil, whose influence growth and urban interventions for improvement in this area, without considering the importance and dynamics of mangrove witness significant environmental impacts and accelerated process of disappearing arising from these changes in recent decades. Thereby, the work seeks to diagnose and analyze the impacts of these dynamic processes, considering physical, environmental, economic and social aspects. Through employee photointerpretation techniques, creation of SIG (Geographic Information System), time series and geoprocessing techniques. Firstly, it takes advantage of a more global scale, which aims to highlight the potential that the area has with its surroundings, using principles of landscape ecology as a means of integrating the systems that make up the area. In a second step, it works in a larger and more detailed scale photographic surveys along with the implementation of municipal courts, in order to understand the dynamics and urban structure. Thus it'll be possible to diagnose and extract important information that underpin strategies to conserving or restoring this mangrove.

Key Words: city, river, mangrove, impacts, conservation.

Urban growth and hydrography: convergences on landscape morphology

**Otávio Peres, Mauricio Polidori, Marcus Saraiva, Alexandre Santos,
Fernanda Tomiello, Alisson Santos**

Laboratory of Urbanism, Faculty of Architecture and Urbanism
of the Federal University of Pelotas, Brazil. E-mail: otmperes@gmail.com

This work identifies the relationships between urban morphology and natural landscape as a result of urban growth articulated to the spatial scale of hydrography based on the assumption that in the long-term and in macro spatial scales city and environment could reduce spatial conflicts. The main focus is to outline an urban growth dynamic articulated to natural landscape in which water resources are understood as tipping point to phase transitions in urban growth morphologies. This theoretical statement is applied in the urban growth simulation framework CityCell through the potential-centrality model in a dynamic cellular automaton. The urban modeling mechanism captures the "edge effect" on water resources' buffers, parametrically distributing urban growth in axial and diffuse tensions. Associated with urban modeling, the theoretical statement was empirically tested in simulations, replicating the urban growth reality of the city of Pelotas, RS, Brasil for the period from 1815 to 1965. In the framework of systems theory empirical, theoretical and methodological approaches, the urban modelling results can be replicated in future urban growth simulations, especially to study the relations between urban form and natural landscape.

Key Words: urban growth, hydrography, cellular automata, city edges, urban systems.

The natural elements on urban form: a critical analysis on the landscape construction

Janaina Schmidel Baptista, Milton Esteves Junior, Rafael de Melo Passos

Universidade Federal do Espírito Santo – UFES, Brasil.

E-mail: schmidelbaptista@yahoo.com.br , m.estevesg3@gmail.com ,
rafa_passos84@yahoo.com.br

The consolidation of industrialization and consequent increased consumption of durable goods and raw materials, in conjunction with the rapid growth of cities and the exclusion and/or transformation of natural dynamics are factors, among others, that outlined the construction of the contemporary landscape. The consequences of interactions between these factors pervade the daily lives of cities showing a series of conflicts between the natural dynamics and urban form.

This article brings together contributions from authors who study the influences and relationships of the natural and cultural elements in the urban setting, involving geographic, urbanistic, architectural and landscape points of view, seeking to understand the complexity of the landscape by means of various authors, theoretical fields, methodologies and concepts. Vicens (2012) and Mateo and Silva (2007), for example, identify that the conceptions of landscape vary according to the specific field, and that sometimes they refer to the external aspect of an area and territory, or to the natural formation, or to the cultural background. They also present a multidisciplinary conception called “anthropo-natural”, where the landscape is understood as a system composed of natural elements and man-made socially conditioned ones. Thus, the dialectic methodology of systemic approach of landscape ecology is highlighted in this “anthropo-natural” conception because it has a broad gathering vision of contributions from other fields, giving a holistic analysis by the articulation of the natural and cultural processes in the physical space. This paper, developed in the Conexão Vix Research Group – UFES, synthesizes the theoretical/conceptual framework that articulates other works of empirical nature also subjected to this event.

Key Words: landscape ecology, urban form, contemporary landscape, natural dynamics, urbanization.

References:

- Vicens, R.S. (2012) ‘Geografia da Paisagem e ordenamento ambiental’ in Barbosa, J.L. and Limonad (eds.) *Ordenamento territorial e ambiental*, Editora da UFF, Niteroi/Brazil:193-214.
- Mateo, J. and Silva, E.V. (2007) ‘La geoecologia del paisaje, como fundamento para el analisis ambiental’, *REDE – Revista Eletrônica do Prodepa*, 1, 77-98.
- Guerra, A.J.T. and Marçal, M.S. (2012) *Geomorfologia ambiental* (Betrand Brasil, Rio de Janeiro).

Experiencing the nature of the city

Saneta deVuono-Powell

College of Environmental Design, University of California, Berkeley and Fulbright
Researcher, University of Granada. E-mail: sanetadp@gmail.com

This paper will argue that we are in a mutually constitutive relationship with our environment while deconstructing the idea that humans are separate from nature (Cronan, 2006). In public health, neuroscience and the social sciences, we are coming to recognize the important roles that the 'built' environment and explicitly human derived factors such as air pollution and stress, have on our bodies and minds (Massey et al, 2006; Morello-Frosch *et al.*, 2010). I think that the landscape of place has an equally powerful impact. One of the major elements in urban morphology and urban landscape is water. A history of major industrial cities is rarely written without noting the role of water in facilitating industrial growth and transportation. However, unless the role of the "natural" environment is clearly connected to the extraction or movement of resources, it is often overlooked. I want to explore the idea that a) this man/nature dichotomy is false, and b) that places and landscapes have specific characters and histories that humans both play a role in producing and responding to (Harvey, 1996; De Certeau, 1984). Part of our collective memory is place based (Halbwachs, 1992; Connerton 2009) and our failure to recognize this can partially explain failings in urban planning. Using research on urban waterways and infrastructure, I theorize that the nature of cities cannot be understood apart from the landscape. Landscape influences spatial practices and development of collective memory, which leaves marks we respond to even after the landscape has been altered or erased.

Key Words: urban-planning, cities, water, landscape, memory.

References:

- Connerton, Paul (2009) *How Modernity Forgets*, Cambridge (University Press, Cambridge).
- Cronan, William (1996) *Uncommon Ground: Rethinking the Human Place in Nature* (W.W. Norton and Co., New York).
- De Certeau, Michel (1984) *The Practice of Everyday Life*, (University of California Press, Berkeley)
- Halbwachs, Maurice. (1992) *On Collective Memory* (University of Chicago Press, Chicago).
- Harvey, David. (1996) *Justice, Nature & the Geography of Difference* (Wiley-Blackwell, Malden).
- Massey, D., Harris, Lasana T., and Fiske, S. (2006) 'Dehumanizing the Lowest of the Low: Neuroimaging Responses to Extreme Out-Groups', *Psychological Science* 17, 847-53.
- Morello-Frosch, R., Jesdale, B., Sadd J., and Pastor, M. (2010) 'Ambient Air Pollution Exposure and Risk of Low Birth Weight in California', *Environmental Health*. 9.

Jucutuquara Stream: understanding the dialogue between the city and its water bodies

Rafael de Melo Passos, Janaína Schmidel Baptista, Milton Esteves Junior

Universidade Federal do Espírito Santo – UFES, Brasil.

E-mail: rafa_passos84@yahoo.com.br , schmidelbaptista@yahoo.com.br ,
m.estevesg3@gmail.com

Although the city occupies and transforms a certain site, the natural elements of the landscape and the dynamics that are inherent to it remain dormant in the urban fabric. Thus, these features of the site maintain constant interaction with the city, contributing to its construction as much as its transformation. One of the striking presences of the site includes the water bodies, which largely pervade the urban fabric and that, in the process of accelerated growth of the Brazilian cities, many have not been incorporated into the urban design. This article aims to establish a critical reading of the relationship between city and the hydrographic network of the Jucutuquara Stream's basin, located in Vitória, State of Espírito Santo's capital, Brazil, highlighting the marks and its influence over the city setting and the factors that determine the interaction between the city and its water bodies. In this way, it is presented a brief history about the transformations of the local physical site (carried out by landfills and takedowns of hills), identifying the arising main problems such as environmental impacts; the urban setting opposing the countryside prerogatives; and landscape fragmentation. The critical reading is based on the analysis of the urban structure with a focus of urban morphology, associated with an analysis of landscape's water dynamics and elements by means of landscape ecology. This paper, developed in the Conexão Vix Research Group – UFES, discusses the relationship between city and site in a consolidated urban environment, where the watercourse has been completely modified. It's articulated to other articles also subjected to this event.

Key Words: landscape dynamics, landscape ecology, urban watershed, relationship between city and site, urban form.

Urban form, spatial planning and the European landscape convention

Paulo Silva, Carla Gonçalves

University of Aveiro – Department of Social, Political and Territorial Sciences.

E-mail: paulosilva@ua.pt , ap.carla.goncalves@gmail.com

The aim of the proposed paper is to address the role of landscape architecture and spatial planning to the definition of urban form. Since the publication in the early years of this century of the European Landscape Convention that European countries are invited to apply a new insight to landscape issues. Community participation on the definition of landscape units, the integration of these with the spatial planning process and the appliance of landscape values not only on rural or exceptional landscapes but to the diversity that characterizes a certain territory (municipality, region, country) are the main challenges proposed by this document. While in other countries landscape has been approached at national level or regional level, in Portugal the main scope has been the local scale in which land use plans play a crucial role on territorial management. Adding the fact that presently a significant number of land use are being revised. Based on a previous research which aimed to integrated European Landscape Convention into land use plan procedures, it will be discussed the role that urban morphology can play in the definition of landscape units. The core of the research is based on the confrontation of urban landscape units and urban form units in order to understand overlaps, borders and vacant spaces between the two concepts.

Key Words: urban form, landscape, spatial planning, European landscape convention.

A multidisciplinary approach to explore urban public spaces

Lucia Capanema Alvares

Department of Urbanism, School of Architecture and Urban Planning,
Universidade Federal Fluminense. E-mail: luciacapanema@gmail.com

Urban Planners in general still seem to miss a methodology for understanding urban landscapes as places of *vita activa* (Arendt, 1981) and as producers and products of our unequal society, as has been pointed by Milton Santos (2002) in his social-spatial contents approach. Under this perspective, this essay aims at analyzing how citizens conform urban public spaces (UPS) and how these latter conform spatial inequalities, possibilities and behaviors. The concept of urban public spaces is still open and is structured in between landscape studies, social sciences, environmental and land use practices, social practice and a wishful transdisciplinarity. In the intersection of these studies and practices the operating concept emerges: urban public spaces mean, at first, spaces accessible to the people that lie, most times, in open areas free of buildings, but are not restricted to them; they will be more environmentally relevant when forested (mainly or residually), more economically relevant when they superpose infrastructure lines or are situated at prime real estate plots, more culturally relevant when associated to citizens' identities, and more socially relevant when they help to create or to maintain a public sphere. This study proposes a new reading of representations, imaginaries, appropriations, and conflicts in UPS, adopting three non-exhausting dimensions for understanding urban landscapes and their relations with the political and external aspects: socio-environmental, socio-economic, and socio-cultural. It then applies these dimensions to a comparative case study, analyzing two neighborhoods in Rio de Janeiro: the Central business district and the nearby São Cristóvão neighborhood.

Key Words: urban public spaces, transdisciplinarity, popular appropriations, conflicts.

References:

- Arendt, H. (1981) *A condição humana*. (Vozes, Rio de Janeiro).
Santos, M. (2002) *A Natureza do Espaço* (Edusp, São Paulo).

Epistemology of public spaces - a cultural approach

Malgorzata Hanzl

Institute of Architecture and Town Planning, Lodz University of Technology.

E-mail: mhanzl@p.lodz.pl

Cultural aspects of urban settings require developing methods of description of public spaces. The current paper addresses the problem of a theoretical exploration of the analysis of public space from a dual perspective: morphological and anthropological. It claims that the void constituting a physical manifestation of the public realm is a common element which is in the scope of interest of both disciplines. For public life to occur in urban areas necessary conditions are required. Anthropologists endow forms of urban spaces with meaning, treating them as a form of communication. Inversely, claim may be made that a lack of formal definition of urban situations results in a decrease of meaningful communication itself, thus, as a consequence, public life withers in outdoor spaces. The quest for methodology for description of public spaces, including their physical form, becomes crucial in this perspective. The description of culture based differences of appearance of various outdoor spaces requires detailed analyses of cues pertaining to the notion of atmosphere perceived in distinguishable settings. Gauthier and Gilliland (2006, p.44 after Levy, 1999, p. 79) suggest that comprehension of the urban fabric in terms of 'urban form' should assume treating elements of urban structure as linked together and creating a whole, governed by an '*internal*' logic. This postulate recalls the structuralist position within anthropological research, namely the concept of 'the order of orders' discussed by Lévi-Strauss (p.332). The current paper conveys some entry points to a more systematic exploration of public spaces in the cultural approach.

Key Words: urban design, public spaces, urban morphology, enclosure, cultural distinctions.

References:

- Gauthier, P. and Gilliland, J. (2006) 'Mapping urban morphology : a classification scheme for interpreting contributions to the study of urban form', *Urban Morphology* 10, 41–50.
- Levi-Strauss, C. (2009) *Antropologia strukturalna* (Wydawnictwo Aletheia, Warsaw).
- Levy, A. (1999) 'Urban morphology and the problem of the modern urban fabric: some questions for research', *Urban Morphology* 3, 79-85.

Public spaces and behavioral patterns: the case of Liljeholmstorget in Stockholm

Elahe Karimnia

KTH—Royal Institute of Technology, School of Architecture and the Built Environment, Department of Urban Planning and Environment,
DKV 30, Plan 1, 114 28 Stockholm, Sweden. E-mail: elahe.karimnia@abe.kth.se

Life on public spaces in micro scale is facing threats of shrinking due to transformation of social values. Our future public spaces are shaped by trends such as privatization and communication revolution. The integration of urban form and social values are concerns for contemporary urban design in creating livable and safe places that promote further interactions. Meanwhile, for most of modern public spaces, the concern is environmental perception and sense of lost amenities as well as fear. Drawing from an empirical research in Stockholm, this paper explores one of the newly implemented squares, Liljeholmstorget, which has been rewarded for good public environment in 2011. In working to build a vibrant environment, the public space is celebrated for a good urban form through collaboration between traffic planning, urban development and land-use. On the other hand, looking close into behavioral patterns through users' perspective shows the signs of conflicts in the urban realm: rise of crime and continuing police presence. It highlights how the environment is responsive to its both local and regular users' need. Studying the square and existing behavioral patterns has been conducted through qualitative methods with analysis of the design goals and the ideas for the project. The findings address some unexpected responses from users on the square, and also not enough either interaction between people or integration with the context. The paper finally draws attention to complexity of scale and semi-public spaces when it comes to study the interrelationship of behavioral patterns and physical form and suggests seeing design in a wider process.

Key Words: public space, urban form, behavioral pattern, social value, Liljeholmstorget.

Public space and morphology of neighborhoods. Case study: Tehran

Narcisse M. Sohrabi

Université Paris Ouest - Nanterre - La Défense, Laboratoire LADYSS.

E-mail: sohabi58@yahoo.com

Over the past 460 years, Tehran has increased from 4 square kilometers to over 750, and the number of its neighborhoods has increased from 5 to 374 (In the comprehensive plan of 1992 the proposed number of neighborhoods was set at 524). With the explosive growth of Tehran especially in the last three decades after the Islamic revolution 1978-79, there are many degradation, changement in form of the neighborhoods which, due to their historical background, remind many of Tehran's older citizens of social and political events, and fond memories of leisure times in the past. Contemporary Tehran was formed by the fusion of three distinct cores- *Shemiranat*, old Tehran and ancient Rey. Geographically they form an inverted triangle on a North-South axis, with *Shemiranat* at the foothills of the Alborz mountain as its base in the North, and Rey as its apex in the South. Along with the three core areas, they have also become incorporated into the development of contemporary Tehran, thus creating a very high potential for the retention of geographical and historical identities for contemporary Tehran. This paper uses analysis of types of the neighborhood in Teheran, capital of Iran to examine how physical form produces or reproduces various social forms. This review presents an analysis of current sociology and human ecology dealing with neighborhood morphology. The review is organized in four major sections. The first deals with the concept of neighborhood. The second discusses the classic models of neighborhood change-invasion, succession and life cycle. The third deals with the current perspectives on neighborhood model: demographic/ecological, socio cultural /organizational, political economy, and social movements. The paper argues that the form of the public space in different types of neighborhood. Also, the settlements offer valuable insights into the interaction of human behavior and the built form.

Key Words: neighborhood, Tehran, public space,

The urban wasteland as a stage for biogeochemical afforestation processes

Rubens do Amaral, Staël Pereira Costa

Escola de Arquitetura – UFMG.

E-mail: amaral_arqbr@yahoo.com.br , staelalvarenga@gmail.com

This paper seeks to study wastelands - residual fractions of the unbuilt urban landscape - and their role in the proposition for a more sustainable urban environment. It is the objective of the study to highlight the importance of the adaptation of cities to the environment so that lost ecosystems can be restored and new and desired systems introduced. The quality of life of users can be improved and the proposal for an urban design which is more appropriate to the bioclimatic demands of the planet may be fulfilled. As such, the paper seeks to report on the existing literature and the necessary biogeochemical processes for a tree to function as close as possible to its maximum photosynthetic capacity, so as to enable the best performance in the sequestration and accumulation of carbon dioxide. In other words, processes that meet the guidelines established by the Intergovernmental Panel on Climate Change: mitigation of atmospheric CO₂ levels, by increasing the absorption of natural organic carbon stocks on the planet. Thus, through the study of such processes, a useful range of determinants, essential for performing an analysis of the urban fabric in the provision of ecosystem services, is observed, as well as the layout of new urban open spaces, the reconfiguration of the existing morphology and a better use of city wastelands, in order to, improve the urban environment. It should be emphasized that this study provided a brief analysis of a block within Funcionários neighborhood in the City of Belo Horizonte.

Key Words: urban morphology, carbon sequestration. urban afforestation. restoration ecology, biogeochemical processes.

Sustainable mobility: the morphological planning contribution

François Dufaux, Martial Labarthe

École d'architecture de l'Université Laval, Québec, Department or Centre, Institution
Direction de la planification et du développement. Société de transport de Lévis.
E-mail: francois.dufaux@arc.ulaval.ca , mlabarthe@stlevis.ca

Quebec City municipal administration published a sustainable transportation policy paper in 2010. Among the main objectives, the paper targeted a public transit share increase from 10% to 20% in the next 15 years. A key feature proposed the opening of a light rail transit service to improve the service and image of collective transportation. An article published in July 2013, using space syntax methods, underlined the impact of the current streets and road network which support car oriented trips. One key conclusion was that the current urban morphology makes pedestrians based movements – walk, cycling, transit – uncompetitive and poorly connected locally and globally beyond the 19th century urban fabric. This communication explores the morphological alteration of the current metropolitan area at three historical moments – the rural setting (1900), the pre suburban network (1948), and the present condition (2014). It explores the potential impact of the light rail system initially promoted. It compares the alternative network of railways right of ways for a regional transit oriented network. It tests a set of small interventions on the streets connectivity and integration in selected urban cores, within the urban fabric, the suburban sprawl and surrounding villages. The morphological analysis, including the more traditional representations, suggests how to change the urban form, but it also reveals why the evolution of the built environment raises political issues and interests undisclosed by conventional mapping or discourse.

Key words: transportation; space syntax; sustainable mobility; North America.

References:

- Dufaux, F., Labarthe, M., Laliberté, M. (July 2103) 'The deadlock of technocratic planning: Quebec City's urban form and transportation dilemmas' in 'Urban challenges: Space and society in the contemporary urban world', *Journal of Space Syntax* 1, 38-73.
- Morissette, J.-B. (2011) *La friche autoroutière; Une lecture morphologique et sensible d'un paysage intermédiaire*. Master Thesis. Ecole d'architecture, Université Laval

The interaction between urban form and public art. Two examples on Lisbon's waterfront

Rita Ochoa

CIES.UBI/Cr Polis.UB. E-mail: rita.ochoa@ubi.pt

In our contemporary cities, public art plays an important role, in urban regeneration processes and in the construction of social identities. Its placement on the public space raises several questions:

Which spaces are elected for the implementation of public art? In those spaces, what kind of relations are established between its morphologic characteristics and the new interventions? Is it possible to identify models of placement? Finally, is it possible to relate different historical moments with certain paradigms of monumentalization? Despite the lack of systematization of these themes, authors such as C. Sitte, Stübben, Jaussely, Hegemann & Peets and more recently Kostof, focuses on the interaction between urban form and the placement of monuments, in a framework that positions public art across different disciplines. In Lisbon, the criteria for the placement of public art are not always evident. In some cases, there are thematic correspondences between the works and the respective places, but most of the times there is not a true spatial integration. In this sense, this presentation proposes an analysis of two interventions on Lisbon's waterfront: The *Intervention in a Viaduct*, by Eduardo Nery (2003); The work *Lisbon (a tribute to the builders of the city)*, by José de Guimarães (1999). By the way as they dialogue with its context, both interventions are in the opposite attitude of an understanding of public art as decorative objects on the public space. In fact, both contribute not only to the physical, visual and symbolic enhancement of the place, but also to the monumentalization of the waterfront.

Key Words: public space, public art, urban form, Lisbon, waterfront.

Cities in the intersection of environment and public arts

Gül Şimşek

Atatürk University Faculty of Architecture and Design,
Department of Urban and Regional Planning, Erzurum, Turkey.
E-mail: gulsims@hotmail.com

Today's cities are on the intersection of many trends and improvements. This research is based on the experiences of linking the environment and arts in cities. The aim of this study is to show the ways of this linkage through some examples together with their visual references. This study is conducted by use of comparative studies from these various places in major cities around the world. Public spaces have an accessible and effective element to perceive deeply the environment they occupy and create active places which reflects to attractiveness of cities having those. Arts in public spaces, namely public arts, is among the most common different connection points between arts and the city. Public art makes valuable contributions to urban environments, and inspires citizens to beware about the city they live. Environment-sensitive approaches in many disciplines have been gaining importance while the population growth and its defects particularly in urban areas are increasing. One of the facets of this approach is fed by the intersection of environments and public arts. It is underlined with this research that environmentally aware public art celebrate nature in cities, and make people pay attention to their impacts on urban environment.

Key Words: city, environmentally sensitive public arts, public arts, public space.

Cities of aquifers and wind-catchers: eco-morphology of dwelling in the Persian plateau

Pegah Zamani

Department of Architecture, Southern Polytechnic State University, USA.

E-mail: pegah@morphostudio.net

This study addresses the ways in which the ecological characteristics of the Persian Plateau have influenced the morphology of urban habitats in the region. For centuries, the plateau's inhabitants have integrated the construction of their settlements and domestic space with natural forces and resources including wind catchers and underground irrigation waterways. The study inquires the dynamic impact of innovative ancient passive environmental systems of *Qanāt* (Aquifers) and *Bâdgir* (Wind-catchers) on the formulation of human inhabitation. The design of these environmentally responsible systems has had dynamic influence on the plateau urban morphology including the location and organic shape of settlements; the density, patterns and compactness of urban layouts; the infrastructure networks of the cities; and the structure of the street and alley networks. The study, thus, seeks to understand the complex and multidimensional impact of synchronizing with micro-climatic conditions of the Persian Plateau on minimizing environmentally destructive elements of urban built space.

Key Words: urban ecology, urban morphology, *qanāt* (aquifers); *bâdgir* (wind-catchers); persian plateau.

The urban cool islands project, a case study crossing research and practice

Frédéric Bonneaud, Marion Bonhomme, Luc Adolphe

Laboratoire de Recherche en Architecture (LRA),

Ecole Nationale Supérieure d'Architecture de Toulouse (ENSA).

E-mail: frederic.bonneaud@toulouse.archi.fr , marion.bonhomme@toulouse.archi.fr ,
luc.adolphe@insa-toulouse.fr

The scientific literature on the urban heat island (UHIs) effect is wide and the synthesis of this literature is a delicate and difficult challenge. However, the application of scientific knowledge in the architectural and urban decision is even more difficult (Colombert *et al.*, 2012; Musy, 2012; Potvin *et al.*, 2012). In this context, this paper presents a research project that attempts an explicit and demonstrative application to an urban project. The research project "urban cool island" was initiated by researchers and operational actors. That project is multidisciplinary since it involves architecture, urban planning, study of physical phenomenon such as the urban microclimate and energy consumptions but also some socio-economic concerns of the project owners and prime contractors. The case study is an iconic urban project: the new Montaudran Aerospace neighbourhood is a major urban project in the city of Toulouse (the fourth French city by number of inhabitants). It mixes homes, offices, businesses and university buildings. In this paper we will describe, step by step and based on the specific context of Montaudran Aerospace neighbourhood: i) the issue of urban heat island effect, ii) different architectural and urban features that can reduce feeling of warmth in the city during the hot season (Kounkou-Arnaud *et al.*, 2011; Masson *et al.*, 2013; Oke, 1988) and iii) the chosen strategy: a micro-wastewater treatment plant partly intended for the irrigation of the vegetation of the future neighbourhood, in order to avoid hydric stress (de Munck, 2013). Finally, the paper will present how operational actors and researchers will interact on the issue of urban microclimate during the design stage of the urban project. For instance, the main levers to reduce urban heat island will be summarized in the form of synthetic schemes in order to be understandable by non-experts of the urban microclimate.

Key Words: UHIs, urban cool islands (UCIs), urban cooling, micro-wastewater treatment plant, vegetation irrigation.

References:

- Colombert, M., Salagnac, J.-L., Morand, D., and Diab, Y. (2012) 'Le climat et la ville294: la nécessité d'une recherche croisant les disciplines' (Climate and the city: the need for research crossing the disciplines), *VertigO* 12.
- De Munck, C. (2013) *Modélisation de la végétation urbaine et des stratégies d'adaptation au changement climatique pour l'amélioration du confort climatique et de la demande énergétique en ville* (Modeling of urban vegetation and adaptation strategies to climate change for the improvement of climate comfort and energy demand in city).
- Kounkou-Arnaud, R., Lemonsu, A., and Desplat, J. (2011) 'Evolution du climat urbain de Paris dans la perspective du changement climatique' (Evolution of urban climate of Paris in the context of climate change), *Proceedings of 2R2CV*, Université Paul Verlaine - Metz, France.
- Masson, V., Marchadier, C., Bretagne, G., Moine, M.-P., Houet, T., and Bonhomme, M. (2013) *Rapport final du projet ACCLIMAT - Modélisation, Ville & Changement climatique* (Final Report of the project ACCLIMAT - Modeling, City & Climate Change).

- Musy, M. (2012). L'étude des microclimats urbains295: champ de recherche à l'interface entre climatologie, urbanisme et génie-civil (The study of urban microclimates: research at the interface between climate, urban planning and civil engineering). *VertigO*, 12.
- Oke, T. R. (1988) 'Street design and urban canopy layer climate', *Energy and buildings* 1, 103–113.
- Potvin, A., Demers, D., DuMontier, C., and Giguère-Duval, H. (2012) 'Assessing seasonal microclimatic performance of urban environments', *ICUC8 Dublin*, Dublin.

GENIUS, a tool to generate multi-scalar databases for urban energy studies

Marion Bonhomme

Laboratoire de Recherche en Architecture (LRA),
Ecole Nationale Supérieure d'Architecture de Toulouse (ENSA).
E-mail: marion.bonhomme@toulouse.archi.fr

Many research programs have assessed sustainable neighbourhoods and most agreed on the need for urban density: a compact urban form is more efficient in terms of heating consumption (Ratti et al, 2005) and transportation energy is lowered in dense agglomerations (Newman and Kenworthy, 1989). However, those conclusions are less obvious when one takes into account the multiple disciplines involved in urban energy: lighting and ventilation, renewable energies, urban heat island (Pigeon et al, 2008), sociocultural factors (Guerra Santin et al, 2009 and Holden and Norland, 2005), etc. To sum-up, sustainable cities require pluridisciplinarity. However, few studies deal with this complexity. This lack of integration is partly due to the different scales between disciplines (Martilli, 2007; Oliveira and Silva, 2013). For instance, the assessment of building energy balance and the study of urban microclimate require very different scales and data. Moreover, the temporal scale of urban development and climate change forces urban planners to reconsider the impact of their decisions in a far future. Urban databases must address these different spatial and temporal scales. In this paper, we will present some current research programs that aim to address this databases issue. There are three main approaches: precise inventory data (Dall'O' et al, 2012); existing urban databases (such as satellite images) (Kounkou-Arnaud et al., 2011) and simplified typologies (Christen et al, 2012; Marique and Reiter, 2012). Finally, we will present the development and applications of GENIUS, a new tool to build high definition and evolutionary maps from available databases (Bonhomme, 2013).

Key Words: urban modelling, energy, urban databases, prospective, pluridisciplinarity.

References:

- Bonhomme, M. (2013) *Contribution à la génération de bases de données multi-scalaires et évolutives pour une approche pluridisciplinaire de l'énergétique urbaine* (Contribution to the generation of multiscalar and evolutionary databases for a multidisciplinary approach to urban energy). Université de Toulouse.
- Christen, A., van der Laan, M., Kellett, R., and Tooke, T. R. (2012) 'Context sensitive scaling of energy use simulations', *ICUC8 Dublin*, Dublin.
- Dall'O', G., Galante, A., and Pasetti, G. (2012) 'A methodology for evaluating the potential energy savings of retrofitting residential building stocks.', *Sustainable Cities and Society*, 12-21.
- Guerra Santin, O., Itard, L., and Visscher, H. (2009) 'The effect of occupancy and building characteristics on energy use for space and water heating in Dutch residential stock.', *Energy and buildings* 11, 1223– 1232.
- Holden, E., and Norland, I. T. (2005). 'Three challenges for the compact city as a sustainable urban form: household consumption of energy and transport in eight residential areas in the greater Oslo region.', *Urban Studies* 12, 2145–2166.
- Kounkou-Arnaud, R., Lemonsu, A., and Desplat, J. (2011) 'E'volution du climat urbain de Paris dans la perspective du changement climatique' (Evolution of urban climate of Paris in the context of climate change), *Proceedings of 2R2CV. Université Paul Verlaine - Metz*, France.

- Long, N., and Kergomard, C. (2005) 'Classification morphologique du tissu urbain pour des applications climatologiques' (Morphological classification of the urban fabric for climate applications), *Revue Internationale de Géomatique* 15, 487–512.
- Marique, A. F., and Reiter, S. (2012) 'A method for evaluating transport energy consumption in suburban areas.', *Environmental Impact Assessment Review* 1, 1–6.
- Martilli, A. (2007) 'Current research and future challenges in urban mesoscale modelling.', *International journal of climatology* 14, 1909–1918.
- Newman, P. W. G., and Kenworthy, J. R. (1989) 'Gasoline consumption and cities.' *Journal of the American Planning Association* 1, 24–37.
- Oliveira, V. and Silva, M. (2013) 'Urban form and energy', *Urban Morphology*, 1.
- Pigeon, G., Lemonsu, A., Masson, V., and Hidalgo, J. (2008) 'De l'observation du microclimat urbain à la modélisation intégrée de la ville' (From the observation of urban microclimate to an integrated modeling of the city), *La Météorologie*, 62.
- Ratti, C., Baker, N., and Steemers, K. (2005) 'Energy consumption and urban texture.', *Energy and buildings* 7, 762–776.

Energy planning from the zero level

Rita Catarino

E-mail: ritacata@gmail.com

The development and well-being of contemporary societies indicates a growing energy consumption. The dependence of EU countries imported energy, the scarcity of energy resources and the need to limit climate change, has led the European council of 17 June 2010 to define energy efficiency as a major goal of the new strategy for sustainable growth (Directive 2012/27/EU, European Parliament and Council, 2012). Energy planning from the zero level studies the morphogenesis of the Lisbon Metropolitan Area by identifying typologies of urban tissues over time and different urban metabolisms, that are associated with these patterns of organization. In them circulates complex networks of flows of energy and matter, that over time, during urban development has increased the output of toxic waste, pollutants gas emissions and intensifies the climate change. The magnitude and nature of these flows represents the impact of urban development in the environment (Bettini, 1998). The morphogenesis of the Lisbon metropolis shows: In primary levels of evolution, it appears that the metabolism of the tissue types have lower energy consumption. This is due to the urban ecological processes which happens similarly much like in a natural way as the territory. Currently, urban scattered and isolated tissues arise from large changes in environmental pre-existing conditions. They appear as isolated and monofunctional pieces in a fragmented puzzle, where the main means of connection are the major road infrastructures that privilege the use of the private car. The urban metabolism of these forms has been associated with high consumption of polluting energies . This work studies the energy balance between urban growth and preservation of the natural infrastructure, seeking to respond how the morphology of lots, buildings, and roads can plan energy efficiency.

Key Words: urban fabrics, metabolism, Lisboa, Morphogenesis, energy.

References:

Bettini (1998) *Elementos da ecologia urbana* (Trota, Madrid).

European Parliament and Council of EU (2012) Directive 2012/27/EU.

The impact of urban form on wind energy potential

Biao Wang, Luc Adolphe, Lé A Cot

Laboratory LMDC, Institut National des Sciences Appliqué de Toulouse.

E-mail: bwang@insa-toulouse.fr

Developing wind energy in building environment is an old topic for sustainable city dwellers. With improvement of computer science, CFD simulation with complex building configuration or city models becomes accessible. This paper tries to analyse urban wind energy potential by urban form research. Six typical urban form types in community scale are chosen and a set of morphological indicators are defined. Later a cross comparison on wind energy efficiency and feasibility for each urban form types was taken. At last some constructive suggestions will be given for integration of wind energy development in future urban planning.

Key Words: urban morphology, CFD, urban wind energy.

Analysis of the correlated relations between ancient Chinese urban morphology and social culture

Jinghua Dai, Zhu Wang

College of civil engineering and architecture, Zhejiang University.

E-mail: jinghuadq@gmail.com

Cities gestate culture. Different cultural backgrounds and ideological concept promote diverse city planning thoughts, as well as various forms of cities. Nowadays, the development status of Chinese city, such as the high speed of construction along with the resulting "one side thousand cities" pattern, urges the designers to turn over to think the guiding ideology and practice way of future city construction. However, when looking back upon ancient Chinese urban morphology, its distinct features of the age and spatial attributes are worthy of deep consideration. Based on spatial distribution of ancient cities, this paper takes ancient Chinese culture as an entry point from three cultural levels including the system, material and spirit. Furthermore, the effect and influence of culture on constructing urban form are explored and analysed, and then cultural connotation of ancient Chinese urban morphology is summarized aimed at leading the future urban to be constructed with distinctive character and sense of belonging.

Key Words: ancient Chinese, urban morphology, system, ancient culture.

An associated study of urban form analysis and urban morphology: small cities in Zona da Mata Mineira, MG

Regina Lustoza

Departamento de Arquitetura e Urbanismo, Universidade Federal de Viçosa.

E-mail: relustoza@gmail.com

The study of urban form has presented an important reference for understanding the processes and phenomena connected with the transformations in the urban space. There are studies that take the analysis of the urban form as an investigation that leads us to the study of landscape, taking as focus cultural, social and political content, which manifest themselves in spatial forms, as well as representations from them built and based on historical elements, economic, social and cultural rights. In this paper we consider the study of form, relevant to understanding the dynamics of spatial transformations, with that we seek a reflection on the different theoretical approaches that include aspects that involve the production of urban space and the structuring of the city. The term urban morphology was associated with the analysis of the form, whereas its meaning was not limited to this dimension. We believe that the study of urban forms is complemented with elements of an analysis of the structure of a set of small cities, being they: São Miguel do Anta, Araponga and Canaã, located in the Zona da Mata Mineira, in the State of Minas Gerais. We have developed a set of methodological procedures that complemented the survey data, which enabled an analysis of forms and processes and contents that constitute the morphology. The analysis showed us the importance of addressing the different historical and spatial contexts within the urban morphology, reinforcing it as an important way to understand the transformations in the urban space, which combined the study of urban structure, we can observe the processes that act on the spatial and temporal dynamics.

Key Words: production of urban space, urban morphology, urban form, small towns, transformation of urban space.

Heritage, urban morphology and infrastructure. Challenges for Brazilian historic cities and/ or colonial matrix

Adriana Nascimento, Marcelo Silva

Departamento de Arquitetura Urbanismo e Artes Aplicadas, Universidade Federal de São João del-Rei. E-mail: adrianan@ufsj.edu.br , sil_marcelo@yahoo.com.br

In this paper we propose to glimpse potentialities and challenges to be faced as a process and acquiring meanings for the transformation and the construction of others and news practices related with what you can name as common. Taking considerations about the relationship between infrastructure and the presence of collective educational equipments in the urban form with heritage places, considering their preservation and transformation, we propose to inquire about the ways that the urban investments can and should happen to subsidize the sense of the common. How conceptual delimitations and/or definitions of the territory, as heritage area, can limit and/or expand the fields of action? As we understand the historic question don't restrict the shape of the city, but imbricates by practices that, appellants, can transform and rebuild the cities. If we think about distinctive and different parameters in which way can we understand for a common future? Which future and common in terms of urban morphology we can put as necessary and unpredictable? On the Brazilian case and the historic cities we understand that the challenges are related with the infra and the urban structure on the measure that it would be the elements which can allow cohesiveness as urban quality. It isn't about quantity, but about qualities, in a lathing between action, time and space. We are trying to indicate parameters that add action, time and space, that means to give an orientation to take decisions and, finally, of practices that can be in the direction for the common future.

Key Words: urban morphology, heritage, infrastructure, urban planning.

Urban morphology and social geography, in the mid-nineteenth century, in Porto

Jorge Pinto

CHIP-ISCET, CEGOT. E-mail: mirpinto@netcabo.pt

Porto experienced, in 1864, a period of intense change. Public works promoted the construction of symbolic buildings (Crystal Palace or the new Customs) and numerous streets were opened, thus expanding the city beyond its former boundaries. Transports were profoundly changed with the arrival of the Northern railway line, the multiplication of stagecoaches both with internal but also regional routes, the building of roads and the preparation of studies on a new sea port. Two new industrial structures were incorporated, the Companhia de Fiação Portuense (1864) in Campo 24 de Agosto and the Companhia Aurifícia (1865), at the Rua dos Bragas, true icons of the transformation of a Porto structured from artisanal factories scattered a little across the entire city into a Porto populated with several large production units, thus occupying vast areas of land outside the old city centre, however in well-irrigated areas and close to the railway line or with fine road accessibility, while dragging with themselves residential clusters for workers. In trade, much was also changing. After the creation of the hygienist and liberal markets, the central streets were embellished with clean and decorated pavements, glamorous store windows and gas nocturnal lighting, since 1855, while the separation between residence and commerce was taking its first steps. As the urban expansion of Porto progressed, in mid-nineteenth century, and created restrictive areas where people with common or approximate birth places would gather, the same also applies to the socio-spatial structure of the city, in which social and/or professional classes would come together, thus allowing the association between social areas and morphological areas.

Key Words: Porto, XIXth century, urban social geography, urban history, urban morphology.

Impact of sectoral urban development of Muritala Muhammed International Airport, Lagos on traffic flow

Oladipupo Fashina, F. Agamah

Department of Urban and Regional Planning, Yaba College of Technology, Yaba,
Lagos.

E-mail: fashlad@yahoo.com , unekwuagamah@yahoo.com

Relationship exists between land use and transport. This is important to effectively guide both transport and land use aspect of urban growth. Urban growth provides urban structures that create interface for land uses, transport systems and mobility pattern. Sectoral urban development encourage corridor development along transport route which is good when the developments span over wide kilometre distance coupled with high density development. The development of Muritala Mohammed International Airport, Lagos started in 1979 with the development of the International Airport thereafter the Domestic Airport and Muritala Mohammed 2 respectively; along the same road transport system corridor. The various airport related activities are served solely by road transport system due to non-implementation of the initially proposed light rail transport system. This has resulted to sprawl development with low density development and road traffic congestion. This paper examines land use and transport aspects of urban growth of the Airport Acquisition area; extent of leapfrog development and volume of traffic flow into the Airport acquisition area. The methodology adopts extensive land use survey along urban development corridors and 12 hours (7:00am-7:00pm) traffic survey during one day of the week and at weekend. The paper recommends compact and high density development, introduction of bus transport system and light rail transport system along the corridor.

Key Words: land use, mobility, road transport system, traffic flow & urban growth.

Morphological structure and system community facilities

Karine Lise Schäfer, Lisete Assen de Oliveira

Universidade do Vale de Itajaí, SC, Brasil.

E-mail: karine_lise@yahoo.com.br , lisete_ao@terra.com.br

This paper focuses on the relationship between the morphological structure with the system of community facilities at various scales of urban form, seeking the understanding of the possible links and interdependence between the two systems. Starting from the concepts of Urban Morphology and System of Community Facilities discusses the case of the city of Navegantes, the coast of Santa Catarina state, southern coast of Brasil. Considering the urban morphology as physical-spatial interrelationships between site, urban layout, macro and micro fragmentation of land and architectural typologies, the article relies on the concepts enunciated by Panerai and Mangin (2002), Munizaga Vigil (1993) and Argan (1963) which highlights the city as "well of material culture" and elaborates on the role of architectural typologies. The Community Facilities for Aymonino(1975) are buildings designed to meet human needs and population. Thus, the location in the city, may be responsible for the strategic and social affirmation of public space and, as stated by Secchi (2003) by promoting sociability. The methodology of morphological basis, - characteristics and relationships between place, full and empty, urban layout, scales, recognition of architectural typologies - allows trace the structure of the urban form of the city and correlate it to the Community Facilities at different scales. In the case of the city of Navegantes, one can identify that the understanding of its formal structure related to the system of community facilities leads to improved knowledge of its present urban form and future possibilities. Provides both the verification of their spatial patterns in various scales like to list situations and locations where new community facilities and spatial patterns would potentially be able to establish new and qualified relationships between different scales. On one side would be better able to care for the basic needs of the population, in which the equipment is essential providing possibly an increase in the quality and vitality of urban life. Another, would strengthen structure urban, able to enhance the permanence of meaning and identity of the city.

Key Words: community facilities, urban morphology, city of Navegantes.

References:

- Argan, G.C. (1963) 'On the Tipology of Architecture, Architectural Design' in Nesbitt, K. (ed.) 'Uma Nova Agenda para a Arquitetura' (Editora Cosacnaify) 33, 564-65.
- Aymonino, C. (1975) *El significado de las ciudades* (Presença, Lisboa).
- Munizaga Vigil, G. (1998) *Macroarquitectura: Tipologías y Estrategias de Desarrollo Urbano* (Ediciones Universidad Católica de Chile, Santiago de Chile).
- Panerai, P. e Mangin, D. (2002) *Proyectar la Ciuda* (Celeste Ediciones, Madrid).
- Secchi, B. (2003) 'Ciudad Contemporânea y su Proyecto', in Font. Antonio (ed.) *Planeamiento Urbanístico de la Controvérsia a la Renovación*. (Editora Diputació, Barcelona).

Housing development transformations: political directives and post-occupation life

Maria Cristina Villefort Teixeira, Marieta Cardoso Maciel, Paulo Alonso

Project Department, Architecture School, Federal University of Minas Gerais.

E-mail: mcrisvt@gmail.com

The housing policy adopted by the Belo Horizonte City Hall in the last 20 years has been producing housing parameters which result in standardized buildings grouped into housing developments. Although elaborated by architects, the implementation of these buildings are not following the premises of policy and project. The process does not take into consideration the differences in land characteristics of both shape and topography, often accentuated, resulting in large differences between the edified areas and the open spaces. Despite free spaces being large because of declivity, they are not primarily destined to collective use, but rather to adjust the buildings onto the land through slopes and green areas. As these housing developments are occupied, the open spaces are transformed: buildings are isolated by fences and walls, compromising permeability, circulation and internal landscape. In addition, a few spaces attached to the housings are used privately by ground floor residents who close them completely. These manifestations underline the lack of articulation between the parameters set by the policy and the desired use by residents. This article intends to investigate the coherence between the adopted housing policy and the project of the housing developments analyzed considering the transformations that have been taking place in the post-occupation process.

Key Words: housing policy, project, transformation, housing.

2014 World Cup in Brazil: what about urban mobility in Metro Porto Alegre?

**Claudio Mainieri de Ugalde¹, Andrea da Costa Braga¹,
Décio Rigatti¹, Fábio Lúcio Zampieri²**

¹PROPUR / Universidade Federal do Rio Grande do Sul

²UFFS / Universidade Federal da Fronteira Sul.

E-mail: ugaldeclaudio@yahoo.com.br

Porto Alegre, Brazil, is one of the cities where the World Soccer Championship will take place in 2014. Like in the other ones, authorities listed a number of decisions to be taken in order to better host thousands of tourists that will be in town not only to watch the games but also to enjoy the city and regional attractions. One of the main aspects to be improved is urban mobility. It is intended that all journeys, not only within the metropolitan area but also to and from other regions nearby, should be easy for residents and tourists. Solutions towards straighter paths linking hotspots and attractors, like the airport, bus stations, soccer stadium, restaurants and pubs, hotels, parks and historical areas shall be searched by urban planners. Not only cities in the mountains and beaches at the coast shall be attractive for the visitors, but also trips to Uruguay and Argentina might be interesting for them. Thus, the road system conditions are being evaluated regarding to quickness, safeness and comfort for drivers and passengers. A basic aspect on mobility in cities issue is the urban grid accessibility. The purpose of the present research was to discuss the Metro Porto Alegre present situation and the probable effects on movement caused by the modifications and increments on the grid prescribed by planners and authorities for the sports event. A group of places, which tend to concentrate tourists, was selected to have their accessibility syntactically analyzed embedded in two different spatial configurations of the metropolis: the present one and a simulated one to which proposed avenues, roads and bus terminals will be added. Space Syntax measures like global and local integration, choice, step depth and synergy were applied not only to evaluate the accessibility in different radius but also to identify the potential main routes chosen by tourists and citizens to move from one attractor to another. A comparison between them regarding to topological closeness and influential areas, specially among passenger terminals, was done as well. Results allowed the researchers to evaluate potential improvements on direct connections with the soccer stadium and with the southern neighborhoods where the landscape is a very known touristic attraction, and also on metropolitan infrastructures, to prevent traffic congestion and users' waste of time. Potential co-presence among local population and tourists could also be discussed in order to increase social opportunities and cultural exchange also expected at the event moment.

Key Words: urban planning, urban design, configurative analysis, space syntax.

The urban morphology around elevated station of urban rail transit in China

Minfeng Yao

Huaqiao University. E-mail: archi_yi@163.com

Rail construction has been developed in a previously unprecedented high speed in China in the past few years. But city development surround station delayed. The Government worried that the station had a greater influence on surrounding resulting in popular opposition, thus the extensive use of the underground line construction mode, resulting in a huge building investment and operating costs. State-owned land system, which is different from land ownership systems in most developed countries such as United States, Japan, etc. It caused that China cannot copy foreign models and experiences. This paper is talking about the research of the rational urban form surround elevated station under China's building legislation. It is also an exploration for probability of TOD Urban morphology in China's cities who are low density and high FAR(Floor Area Ratio)different from Hong Kong who is high density and low FAR .

Key Words: urban morphology, elevated station, rail transit, China.

Unsustainable empty for inadequate use of urban space

Monica de Carvalho

University Veiga de Almeida, Rio de Janeiro, Brasil. Email: mlcarvalho@br.inter.net

Studies of the Middle Ages tells of deforestation, since man saw the forest as barbarism, and reduced as a benefit to civilization for crops and rearing of herds. (Dorst, 1973). But, also, there is evidence of respect and admiration for nature the forms of buildings, urban landscape, vegetation and agricultural production in other cultures, as the Incas. (Bingham, 1911). Different paradigms, who built the various stages of human civilizations, explain the current situation that leads many urban centers in a significant deficit in environmental sustainability, a lack of resources for planning the shape of the urban landscape. Urbanism is to provide sustainable built man in his habitat, with comfort and environmental infrastructure to supply water, food, shelter, heat and light. This proves that man is capable of transforming the natural environment without destroying their livelihood condition, because the planned space is the best solution in the growing demand for food, housing, jobs and mobility of families, congregations, markets and armies. Governments around the world create managements to ensure sustainable human life on the planet, with the maintenance of corporations and lucrative markets in the global system. But the vulnerability is evident in various forms, such as natural phenomena and accidents in built space with large numbers of human casualties and loss of economic output. Experts say that the planet is finite, and does not support the artificial transformations, by an infinite lifetime warranty and urban production on Earth.

Key Words: urbanism, environment, landscaping, sustainability, urban mobility.

Interactions between agricultural-systems and urban forms in Sardinian villages

Adriano Dessì

DICAAR, University of Cagliari. E-mail: adrianodessi@unica.it

The rural landscape is historically based on mutual interaction between the *biḍda* and *sartu*, the village (villa) and the countryside (saltus). The forms of the Sardinian countryside, the *openfield* in the plains and hills with cereal crops, the *closures* in the inland basalt slopes and highlands used for sheep grazing, are deeply connected with the form and structure of minor towns. The contribution focuses on the historical reasons and the contemporary developments of three specific relationships between Sardinian villages and their agricultural systems: (i) Villages situated in the plains are placed in a central position in relation to the openfield and they are characterized by strictly closed blocks which have large interstitial inner spaces between them, that constitute the sites of accumulation and primary processing of cereal resources; (ii) “Margin” villages between environmental and agricultural specialized systems, or between different agricultural systems, show mixed structures and forms that are generally compact and adherent to the topography. The fringes of these centres are highly dependent on soil conditions, on crop specializations and different topographical forms. The porous space of the block gives greater precedence to the peri-urban hortus conclusus; (iii) The pastoral villages of the great *tancas* (enclosures) are composed of narrow elongated “spindle” blocks located on the terraces of the inland hills. The adjacent agricultural systems are a few kilometres away, in a pattern of total autonomy and division among the cultivated fields and urban forms. The contribution aims to focus on the effects that these historical relations have today on the creation of new forms of contemporary habitat.

Key Words: rural landscape, villages, urban forms, agricultural systems, enclosures.

Resilience thinking and urban form: a contribution to the spatial analysis of the territory

Ana Martins, Sara Santos Cruz, Paulo Pinho

CITTA – Research Centre for Territory, Transports and Environment, Faculty of Engineering, University of Oporto, Rua Roberto Frias 4200-465 Porto, Portugal.

E-mail: ana.jorge.martins@gmail.com , scruez@fe.up.pt , pcpinho@fe.up.pt

The issue of global economic crisis and its impacts on territories have been deserving the attention of the scientific community. Indeed, it is necessary to understand in an integrated manner the changes and disruptions that occur over time and leave traces over the territory. Analysing a territory through these traces can lead to the understanding of the built environment as a socio-ecological system. This paper proposes the introduction of the concept of resilience as defined from an ecological perspective, recognizing the mechanisms of the territory as a complex ecological system. The concept of resilience is then defined as an ability of a system to adjust to shocks and external changes, while keeping the interactions between its subsystems. It is intended to highlight the importance of this concept, considering it as a key instrument to operationalize the processes of adaptation and innovation in complex adaptive systems, taking an urban system as an example. The attributes of resilience in its spatial dimension - diversity, connectivity and redundancy – are presented in order to better understand the mechanisms of the urban system. The panarchy model and adaptive cycle are introduced to interpret the operation of the system in its different stages of adaptation and change, in different temporal and spatial scales, as well as in the maintenance of its structural and functional identity. It is recognized that changes and ‘unchanges’, continuities and discontinuities in urban form can be identified throughout an adaptive cycle and in the path to another one, enabling the understanding of the trajectory of the urban system. This way, it is possible to evaluate and measure the level of resilience of the urban system.

Key Words: built environment, resilience, urban systems, urban form.

Study on the sustainable development of urban fringe at the background of urban and rural co-ordination in China

Wu YingYing

Department of Architecture, Zhejiang University, 310013, Hangzhou, China.

E-mail: shelia33@126.com

Since last century of the 90's, with the continuously expanding scales of modernization and the high-speed development of urbanization, as well as a long-term practising on the structure of urban-rural binary economy, urban fringe, as a transitional area derives on the urban-rural region system, is facing great challenges of sustainable development, and a series of contradiction of expansion and protection is becoming more and more obvious. At the background of the urban and rural co-ordination, urban fringe has become a critical point of sustainable development realization in integrating urban and rural areas, on the basis of whole above, this paper selects three different urban fringe of Hangzhou in Zhejiang Province as case study areas, by analysing the non-single factors influencing on the mainly subject, and focusing on the development process of urban fringe and its evolution mechanism, attempting to find an effective approaches on optimizing the distribution of land resources in urban fringe, and establishing a development strategy evaluation system, to promote relevant measures and recommendations for the future development of urban fringe areas.

Key Words: urban and rural co-ordination, urban fringe, smart growth, spatial conformity, strategy guidance.

Contributions to the study of urban morphology: morphological, typological and landscape interrelationships in Brazilian Jesuit architecture

Fabiano Vieira Dias, Martha Machado Campos

Faculdades Integradas de Aracruz (FAACZ-ES)

Universidade Federal do Espírito Santo (UFES).

E-mail: fabiano@urbearquitetonica.com.br , marthamcampos@hotmail.com

The hypothesis put forward in this article is based on the possibility of Jesuit architecture, in particular, located in Brazilian territory (16th century), and brokering dialogue built on the same body, and interrelated manner, aspects of urban morphology, typology and landscape. Lamas explains that, as a discipline, urban morphology adds to itself not only the built environment, but the means by which this was built in its interaction with urban form, ie "social phenomena, economic and other engines of urbanization" (Lamas, 1992). Understanding the urban form is to understand its elements, "both in order to read or space analysis both in order to design or production" (Lamas, 1992). Studying urban form means understanding where it enters the city and its constituents, its spaces and the interrelation between them and their context in a comprehensive spectrum of what is called the city and urban. The architectural typology and urban morphology are connected at the heart of their analyzes, whereas both, according to Pereira, studying "two orders of homogeneous facts" (Pereira, 2012), studying the components of the city - architectural and spatial - that overlap or complement according to the scale of analysis used. The Jesuit colonial architecture models Brazil, in a decisive way, the construction of distinct urban cores originating in the Brazilian coast in the sixteenth century. This by deploying edilicia typology accompanying the Jesuit doctrine of location and site selection for its buildings, recommending security, visibility and ease of access around rivers or the sea. These constructions carried out on elevated areas marked in time and space the landscape of the first Brazilian urban core. The work explores Jesuit building located in Vitória (ES - Brazil) as a demonstration of his hypothesis.

Key Words: urban morphology, typology, landscape, Architecture Jesuit; Brazil.

References:

Lamas, J. M. R. G. (1992) *Morfologia Urbana e Desenho da Cidade* (Fundação Calouste Gulbenkian/Junta Nacional de Investigação Científica e Tecnológica, Lisboa).

Densification process of Copacabana neighbourhood over 1930, 1950 and 2010 decades: comfort indexes

Patricia Drach, Gisele Barbosa, Oscar Corbella

School of Engineering and Built Environment, Centre Glasgow Caledonian University

Escola Politecnica, Federal University of Rio de Janeiro

School of Architecture and Urbanism, Federal University of Rio de Janeiro.

E-mail: patricia.drach@gmail.com

Researchers in various fields related to environmental issues are looking for strategies to control or minimize the human interference in the dynamic of the environment. As consequence of this emergent task, new concepts are emerging, among them, the concept of compact cities. Developed in a European and North American context, this concept is based on the idea of planning cities with higher density per square meter and a more efficient connectivity of their structures. Taking into account that the climatic characteristics are one of the basic factors for locating a town, importing models from different climates demands an intense reflection and analysis about its adequacy and effectiveness. Previous studies had pointed out the inadequacy of the compact city model for tropical countries, such as Brazil. In this paper, an area of Copacabana neighbourhood, Rio de Janeiro city, currently compact, was assessed with the help of computational tools to observe the temperature dynamics and sky view factor (SVF) alterations during three moments of its occupation history: 1930, 1950 and 2010. For the computational simulations the software ENVI-met was used, developed for climate simulations in urban areas. To determine the interference of morphology changes in thermal sensation two outdoor comfort indexes were calculated: Physiological Equivalent Temperature (PET) and Universal Thermal Climate (UTCI). From the obtained results, relating urban morphology, air temperature and thermal comfort, are expected to enrich the debate about urban models and specifically on the concept of compact cities in the formation of new cities and neighbourhoods in the tropics.

Key Words: densification, compact cities, environmental comfort, comfort indexes, tropical climate.

Dynamics interactions between urban form, green spaces and environmental quality in two metropolitan areas in Brazil

Rita Montezuma, Cláudia Pezzuto, Camila Albuquerque

GGE/Universidade Federal Fluminense

CEATEC, Pontifícia Universidade Católica de Campinas

Departamento de Geografia, Pontifícia Universidade Católica do Rio de Janeiro.

E-mail: ritamontezuma@yahoo.com.br , claudiapezzuto@puc-campinas.edu.br ,
camila.thome10@hotmail.com

Considering the intra urban scale, this article aims to apply a set of procedures of microclimate analysis in order to investigate the interactions among urban form, green areas, bottom valley and water bodies and their environmental performance in a changing landscape. The article is the result of the research project 'Climate change and urban forms: comparative studies of occupation types and environmental indicators for adaptation to vulnerability and risk in the metropolitan areas of Rio de Janeiro and Campinas', involving multidisciplinary approaches in Urban Ecology, Geography, Architecture and Urbanism in the metropolis of Rio de Janeiro/RJ and Campinas/SP, Brazil. Both areas have undergone intensive urban transformation processes. Two watershed sub basin were selected and characterized in the cities, based on urban form, relief, topography and characteristics of cover soil surface. For climate data collection we used 4 temperature and relative humidity data loggers per area, fixed in between 2m and 3m above the ground, with a sampling frequency of 15 minutes (RJ) and 10minutes (SP) during the 2013 winter. Each sample unit was characterized and monitored after Oke. The results confirmed the importance of the geometry and morphology of the urban fabric and the soil permeability for the dynamic interactions between green areas, bottom valleys and environmental conditions. We concluded that the viability of green areas as a producer of amenities and urban health is closely influenced by the conditions of the environment and, therefore, their management is dependent on an integrated planning approach that considers the integrity and interrelation of the urban landscape elements.

Key Words: urban microclimate, green areas, hydrology, use and occupation of soil surface, urban infrastructure system.

A construction perspective of urban morphology study in Shanghai Alleyway House

Jiangtao Ni, Gang Liu

College of Architecture and Urban Planning Tongji University.

E-mail: njt719@hotmail.com

The Shanghai Alleyway House which was 57.4 percent of the gross residential area in the modern Shanghai based on the statistic in 1949 is the major object in this paper. And construction is the main research perspective. It is discussed in two ways: construction technology and construction organization, and is focused on the historical development and its characteristics from the 1840s to the 1940s of the Shanghai Alleyway house as a physical object. i) Construction Technology: 5 individual Shanghai alleyway houses are chosen as the case-study objects and typical types based on the existing research output and the differences in their location, completed time, the shape of their plans, etc. And the case-study is mainly by accurate construction mapping and is divided into three angles: structural system; tectonic style; material. Then by contrastive analysis from these drawings, the variation of construction technology from the traditional timber-frame style to the brick-wood hybrid style would be acquired. ii) Construction Organization: By summing up the information about the alley houses' construction organization among the archives, this paper finds out the features during the progress from the 'craftsman' system to the 'contractor-architect' system. Thus, the research significances come out. Firstly, the historical course of how the Shanghai alleyway house developed till traditional Chinese house to the Western-Chinese house could be unscrambled in a more microcosmic way. Secondly, it is also a sort of supplement of the urban morphology study on the modern Shanghai besides the spatial geographic form and the Social cultural form.

Key Words: urban morphology study on the modern Shanghai, the Shanghai alleyway house, construction technology, construction organization, historical development.

Assessment of the ‘local climate zones’ in area residential with low-rise buildings. The case of Campinas, Brazil

Cláudia Pezzuto, Verônica Monteiro

Exact, Environmental and Technological Sciences Center,
Civil Engineering Faculty, Pontifical Catholic University of Campinas.
E-mail: claudiapezzuto@puc-campinas.edu.br , veronica.sm@puccampinas.edu.br

This paper describes a research about urban thermal environment in the city of Campinas, southeast region of Brazil. The aim of this work is to identify temperature observations and their relation with residential areas with low-rise buildings. The territorial area studied is bounded by a sub-basin of Anhumas river. The area is characterized by its consolidation and infrastructure. The study area was defined through field research, compilation of maps and aerial photographs, so that the different urban occupation patterns could be identified. Data collection was carried out through temperature measurements in fixed points in a central area of the city with different configurations: residential area with low-rise building with little vegetation, without vegetation and near bottom valley. Data of air temperature and relative humidity were collected using data loggers installed in open spaces at 3.0 m height. The positioning of the points was established after detailed cartographic analyses of the area and field verification by the methodology of Oke (2006). By comparing those temperatures with the characteristics of land use pattern it was adopted the method proposed by Stewart and Oke (2012) which establishes classes by local climate zones. All classes emerge from logical division of the landscape universe. Results show a relation to site characteristics, morphology, presence of vegetation, water bodies. It is observed that the simultaneous application of concepts local climate zones and temperature observations can guide planning and management actions over the use and occupancy models that consider the landscape and climate.

Key Words: urban climate, use and occupation of soil surface, urban infrastructure system.

References:

- Oke, T. R., (2006) *Instruments and observing methods: World Meteorological Organization Report No. 81*.
Stewart, I. D., Oke, T. R. (2012) ‘Local Climate Zones for Urban Temperature Studies.’, *Bull. Amer. Meteor. Soc.* 93, 1879–1900.

Impact of spatial structure on women's travel in urban areas in Pakistan

Waheed Ahmed , Muhammad Imran, Regina Scheyvens

School of People, Environment and Planning, Massey University, New Zealand.

The present paper explains that women's travel is influenced by the spatial structure of urban form. The paper builds on the everyday experiences of women in Islamabad and Rawalpindi and highlights that their travel depends on a range of factors, such as availability and access to walkways, bus stops and public transport, quality and affordability of public transport, safety and security concerns, and their location in the city. The paper also finds out that the travel pattern of women is different from men. This is because women make shorter but more trips based on their overburdened responsibilities of productive and reproductive nature in Pakistan. Islamabad and Rawalpindi has been selected to see the differences in women's transport choices based on varied urban form and spatial structures of these cities. While Islamabad was built on modern town planning principles of low density urban population and mixed land use, Rawalpindi is a historical city, which was built along the lines of strong social networks and higher urban density. These differences make these cities good places for gender analysis with regards to urban form and spatial structures. The theoretical framework combines the right-based and empowerment approaches to identify constraints and opportunities for change to women's mobility. The design of the research is qualitative in nature and methods such as in-depth interviews, life stories, and mobility maps have been used. Besides interviewing women as the users of transport system, the viewpoints of males including the drivers and conductors of the public transport have been taken. The present research attempts to develop new insights into women, gender and transport literature with regards to developing countries.

Key Words: sustainable urban transport, urban form, women social exclusion, Pakistan.

Evolution of sociometric layout as a reflection of cultural changes: the case study of the former Jewish quarter in Góra Kalwaria, Poland

Malgorzata Hanzl

Institute of Architecture and Town Planning, Lodz University of Technology.

E-mail: mhanzl@p.lodz.pl

The paper identifies the evolution of the network of pathways and pedestrian passages through urban blocks that were historically characteristic of the districts inhabited by Jews in Góra Kalwaria, Poland. The distinctive character of these settings was greatly affected by the emergence in the town of a Hasidic dynasty founded by the *tsaddik* Rabbi Alter. His numerous followers settled near his court significantly fostering the town's development. Their presence resulted in the establishment of the associated physical infrastructure, such as: houses of prayers and synagogues, ritual baths, schools and other learning institutions (Bergman, 1991). The specific arrangement of the buildings associated with religion was, as is usual in Jewish towns, connected with the presence of a large internal square. The spatial layout of sociometric connections inside urban blocks is analysed on the background of religious practise within Judaism and specific spatial concepts thoroughly embedded in Jewish thinking, which was the one of marking the Sabbath private domain with chain of symbols, most notably the *eruv*s (Herz, 2008). As a result of this practice the traditional notion and meaning of the private and the public in the urban landscape shifted, resulting in the more intensive connectivity inside the urban blocks themselves. It is argued here that the correlation between the face-to-face character of this community (Dyner, 2006) and the spatial layout of internal connections existed. The paper concludes with an examination of the few remaining traces of the former pedestrian connections, and a discussion of the factors accounting for its gradual demise.

Key Words: Jewish districts, sociometric layout, historical development, cultural distinctions, religion.

References:

- Bergman, E. (1991) 'Góra Kalwaria: the Impact of Hasidic Cult on the Urban Landscape of a Small Polish Town', in Polonsky, A. (ed.) *Polin A Journal of Polish-Jewish Studies* (Wiley Blackwell, Oxford) 3-23.
- Dyner, G. (2006) *Men of Silk: The Hasidic Conquest of Polish Jewish Society* (Oxford University Press, Oxford and New York).
- Goldberg-Mulkiewicz, O. (2003) 'Stara i nowa ojczyzna. Ślady kultury Żydów polskich' *Łódzkie Studia Etnograficzne Tom XLII, Polskie Towarzystwo Ludoznawcze, Łódź*.
- Herz, M. (2008) '„Eruv” Urbanizm. Towards an Alternative „Jewish Architecture” in Germany', in Brauch, J. Lipphardt, A., Nocke, A. (eds.) *Jewish topographies: visions of space, traditions of place* (Ashgate Publishing Limited, Hampshire) 43-61.

The effects of urban form on levels of integration of housing schemes and social interaction among residents

Maria Cristina Lay, Márcia Lima

Faculty of Architecture/PROPUR, Universidade Federal do Rio Grande do Sul, Brazil.

E-mail: cristina.lay@ufrgs.br

The paper investigates how levels of integration of housing schemes can affect social interaction among residents within the scheme and with its urban context, further affecting resident social and emotional health. The study incorporates global configuration aspects and their cognitive dimensions within a single framework in investigating the relationships between man and built environment (Peponis and Wineman, 2002), more specifically those involving the analysis of relationships between the configuration characteristics of accessibility, legibility and perception of environmental performance (Lynch, 1960). Methodological procedures consisted of post-occupancy evaluation of four low income housing schemes comprised of different layout, size and location in the city of Montenegro, southern region of Brazil. Data were collected by complementary techniques, such as mental maps (Downs and Stea, 1973), interviews, observations of behaviour (Golledge and Stimson, 1997), physical measurements and questionnaires (Cooper, 1975; Gambim, 2007). Quantitative data were analyzed through non-parametric statistics and qualitative data by meaning and frequency. Following the perceptive approach adopted, user satisfaction and environmental behaviour were employed as indicators of environmental performance and social interaction. Space syntax measures (Hillier and Hanson, 1984) were used in order to analyze spatial configuration as measured by the axial map of local and global integration and analysis of street connections with the immediate surroundings and with different locations in relation to the consolidated urban area. Results indicate that successful integration of the housing scheme in its urban context helps residents integrate into the neighbourhood and the city, increase satisfaction with their place of residence and promote sense of belonging and citizenship, all of which support residents' well-being.

Keywords: social housing; spatial configuration; environmental performance; social interaction; resident well-being.

References:

- Cooper, C. (1975) *Easter Hill Village: some social implications of design* (Free Press, New York).
- Gambim, P. (2007) 'A influência de atributos espaciais na interação entre grupos heterogêneos em ambientes residenciais.' Master dissertation. Faculty of Architecture. Universidade Federal do Rio Grande do Sul, Porto Alegre.
- Downs, M. and Stea, D. (1973) 'Cognitive maps and spatial behavior', in *Image and Environment* (Aldine) 8-26.
- Golledge, R and Stimson, R., (1997) *Spatial Behavior* (The Guild Press).
- Hillier, B. and Hanson, J. (1984). *The Social Logic of Space* (Cambridge University, Cambridge).
- Lynch, K. (1960) *The Image of the City* (MIT Press).
- Peponis, J. and Wineman, J. (2002) 'Spatial Structure of Environment and Behavior' in Bechtel, R. and Churchman, A. (eds.). *Handbook of Environmental Psychology* (John Wiley & Sons Inc.) 271-291.

Residential *vilas* in Rio de Janeiro: sustainability of a historic housing type

Vicente del Rio¹, Denise de Alcantara², Rogério Cardeman²

¹Cal Poly San Luis Obispo

²Universidade Federal Rural do Rio de Janeiro.

E-mail: vdelrion@calpoly.edu , denisedealcantara@gmail.com ,
r.cardeman@gmail.com

This paper regards residential *vilas* in Rio de Janeiro, Brazil as a historic morphological type and examines its validity given today's ideals of sustainability and good urbanism. The *vila* as a type can be traced back to the early 1800s when proprietors of urban houses –generally sited at the front of long and narrow colonial lots– started to build rental residential units in their backyards. These houses were small, attached or semi-attached, practically devoid of private yards, and shared small collective spaces—usually limited to the access driveway. The *vilas* became one of the only viable housing alternatives for the poor in the central districts (Abreu 1987; Santos 1986). However by the 1970s they had become an unattractive development operation due to the intensity of land speculation and to the city's modernist land-use legislation that encouraged high buildings with set backs on larger reassembled lots and required a great amount of parking (Cardeman and Cardeman 2004). By then the *vila* had become a housing type cherished by the public at large due to the strong feeling of identity and community it entices, its defensible space, and its historical architecture (Fonseca 2002). We will examine three *vilas* in the district of Botafogo and compare them to the type of development encouraged by the city and to variables related to sustainable design and good urbanism (density, walkability, social contact, identity, control, ecological footprint and energy consumption). The research will include historical, morphological and social analyses, computer simulations, and interviews with residents and city officials experienced in dealing with Rio de Janeiro's development control process.

Key Words: high-density horizontal housing, infill development, sustainable design, good urbanism, Rio de Janeiro.

References:

- Abreu, M. (1987) *Evolução Urbana do Rio de Janeiro* (Maua/IPLAN-Rio, Rio de Janeiro).
Cardeman, D. and Cardeman R. (2004) *O Rio de Janeiro nas Alturas* (Mauad, Rio de Janeiro).
Fonseca, S. B. (2002) 'Vilas residenciais no município do Rio de Janeiro: propostas para o desenvolvimento de projetos.' Masters Thesis. Faculdade de Arquitetura e Urbanismo, Universidade Federal do Rio de Janeiro, Rio de Janeiro.
Santos, S. L. (1986) 'Expansão urbana e estruturação de bairros do Rio de Janeiro: O caso de Botafogo.' Masters Thesis. Departamento de Geografia, Universidade Federal do Rio de Janeiro, Rio de Janeiro.

A discussion on a qualitative method in understanding the built form through the female service workers' experience of urban space: the case of Istanbul

Ceyda Sungur, Ayse Sema Kubat, Elvan Guloksuz

Department of Urban and Regional Planning, Istanbul Technical University.

E-mail: sungur@itu.edu.tr , kubat@itu.edu.tr , guloksuz@itu.edu.tr

The French school of typo-morphology analyzes the built form within its dialectical relationship with social forces, which are both a precondition and a product of space. Influenced by Henri Lefebvre, the French School recognizes the position of the urbanist with their critical “view from above and below” and proposes an understanding of the “social phenomena” of the built environment. On the other hand influential social theorists like Simmel, Lefebvre and Harvey and others have theorized the features of the capitalist city which dissolve the community, transform the public space and the public person, prioritize exchange value over use value, and exacerbate socio-spatial injustices; albeit at the expense of the quality of human life as well as other life forms. Considering these diverse approaches to understand urban space, this study attempts to discuss an interdisciplinary method of analyzing the built form through the trialectical attributes of the built environment, which are lived, perceived and conceived spaces of Lefebvre’s “production of space”. Therefore, based on a qualitative research, the study focuses on everyday life and spatial practices of a selected group of female service workers in Istanbul to analyse the implications of a set of spatial forms, from the macro form (i.e. place of work, place of residence, forms of transport and the like) to urban design elements at the community and street level on the daily life experiences of the selected group. It seeks to find out the elements of contemporary urban space which help or impede individuals in their strive to make a living, and those which improve or degrade their quality of life

Key Words: everyday life, interdisciplinary urban design research, urban morphology, female service workers, socio-spatial practices.

Characterization of the relationship between commercial plots and building patterns: a general survey in urban area of Nanjing, China

Jingjing Jiang

School of Architecture and Urban Planning, Nanjing University.

E-mail: jingjingjiang0919@gmail.com

Public buildings in commercial plots play an important role for urban tissues. Following Conzenian tradition of urban morphology, several studies have explored characteristics of commercial plots in China in a framework identifying the fundamental elements of urban form: blocks, plots and buildings. However, previous researches lack exploration on the relationship between building patterns and plots, without taking the complex controlling factors of commercial plots into account. Therefore, interdisciplinary approach must be applied to explain the formation rules of building patterns. Four perspectives on commercial plots are added into discussion: function, design discipline, fire code, and user behavior. Based on a general survey over all the 649 commercial plots along the main roads in Nanjing urban area, this paper groups them into a hierarchically structured category in terms of morphological characteristics such as plot shape, plot area, plot coverage, and geometrical shape of building pattern. It examines the positional relationship between buildings and plots; identifies several rules of the building arrangement within commercial plots; and demonstrates how these correlates to the shapes and sizes of plots. It also proves that underlying plot conditions such as fire code have a dramatic impact on the building patterns within commercial plots. Such knowledge of rules can support subsequent urban analysis, planning, and guide future design of commercial plots.

Key Words: commercial plot, building pattern, morphological characteristics, correlation.

The commercial-residential building: an architectural process to understand the socio-economics of urban morphology

Laura Narvaez

Bartlett School of Graduate Studies, University College London.

E-mail: l.zertuche@ucl.ac.uk

People use buildings in many different ways, which reflects a degree of architectural and morphological flexibility affected by any given economic situation, such as renting a house, renting a retail space, use of one's own dwelling to make a shop or business. The combination of commercial and residential uses is argued to be also an architectural process that allows a myriad of architectural and social relationships between dwelling and workplace or shop (Davis 2012), which also makes it a matter of cultural diversity. The mixing of urban uses –living and working– is always possible and at times increasingly necessary. However, such architectural process also impacts on a larger scale of the city, which provides a need to address a wider interrelation of urban morphology with other fields, such as the socio-economics of the built form. The paper presents a study of the commercial-residential building from the building scale design to the morphological attributes of its urban location. The approach is to study this particular common type of building within the context of the city of Cardiff. Conzenian and space syntax approaches are combined with urban economic models, addressing two main questions: What are the effects, if any, in which the combination of commercial and residential uses, as an architectural mechanism of building use and design flexibility, on the morphology of the city? And, how does the commercial-residential building relate to the local urban economy? The paper particularly focuses on the issues of how the commercial-residential building, as a collective urban phenomenon, can potentially generate local centres and it concludes by reflecting on some of the implications in urban design and planning practices.

Key Words: commercial-residential building, space syntax, architecture, urban morphology, urban economics.

References:

Davis, Howard (2012) *Living over the store, architecture and local urban life* (Routledge, London and New York).

Municipal average building capacity: a strategic instrument for economic and financial sustainability of urban developments

Emília Malcata Rebelo

CITTA - Research Centre for Territory, Transports and Environment, University of Porto, Faculty of Engineering. E-mail: emalcata@fe.up.pt

The main goal of this research consists in the development of a methodology – based on territorial plans and urban morphologies – that supports the computation of how much average gross built surface is allowed in each municipality. It fits into the overall scope of the revision of the juridical regime of Territorial Management Instruments currently taking place, in the wake of the approval (last November) of the new Portuguese Basis Law of Land Policy, Territorial Ordinance and Urbanism. The assessment of building capacity herein proposed supports the application of current territorial management instruments – such as the Municipal Urbanization Tax (Almeida et al, 2013; Leitão, 2011; Silva, Deus and Tenedório, 2012) – or new territorial management tools (based on a fiscal monitoring over urban developments), in a clear, accurate and objective way. It, thus, enables the implementation of the most innovative goals of this new Basis Law: raising equity and social cohesion, and ensuring that urban development processes are sustainable from an economic and financial perspective. The methodology to compute the average municipal building capacity is applied, as a case study, to the municipality of Ourém, considering the classification of spaces and the urbanistic indexes settled in Ourém's Municipal Master Plan, in Fátima's Urbanization Plan, and in the currently in force Detail Plans (Correia et al., 2002; PDM de Ourém, 2002; PU de Fátima, 1995; P. P. da Avenida Papa João XXIII, 2009; P. P. da Caridade, 1999; P. P. da Quinta do Ribeirinho, 2000; P. P. da zona industrial de Casal dos Frades, 1991; P. P. da Zona do Centro de Saúde de Ourém, 1997; P. P. para o Quarteirão formado pela Rua Francisco Marto, Estrada da Lomba de Égua e Rua do Mercado, 1999). It can be concluded that urban morphologies that derive from territorial plans support the design of new territorial management instruments in order to: Strengthen municipal finance, ensuring municipalities' economic and financial sustainability; Assess, in a clear and objective way, the concrete building capacity of certain urban operations as compared with the municipal average building capacity; Quantify the concrete values that can possibly be collected through current or innovative urban management tools; Warrant a better equity in the distribution of benefits and charges that accrue from urban development processes.

Key Words: economic and financial sustainability, territorial management instruments, equity, building capacity, urbanistic indexes.

References:

- Almeida, J., Condessa, B., Pinto, P. and Ferreira, J.A. (2013) 'Municipal Urbanization Tax and land-use management – The case of Tomar, Portugal', *Land Use Policy* 31, 336-346.
- Leitão, D. (2011) 'Taxas e Procedimentos Sustentáveis em Operações Urbanísticas', Tese de Doutoramento, Universidade do Minho, Escola de Engenharia.
- Silva, J.B., Deus, R.F. and Tenedório, J.A. (2012) 'Paying as the urban areas grow – implementing and managing urban development charges using a GIS application', *International Journal of Geographical Information Science* 26, 1689-1705.
- Correia, P., Sousa, R., Lobo, I.C., Alves, R.A., Alves, F.B., Oliveira, V., Monteiro, F., de Sêves, A., Matos, I.3, Costa, P., Martins, P. and Duarte, I. (2002) 'Relatório do Plano Director Municipal de Ourém – Proposta Final, Volume I', Câmara Municipal de Ourém.

Plano Diretor Municipal de Ourém, Resolução de Conselho de Ministros n.º 148-A/2002.
Regulamento do Plano de Urbanização de Fátima, Portaria no 633/95, de 21 de Junho.
Plano de Pormenor da Avenida Papa João XXIII, Aviso no 15622/2009, de 4 de Setembro.
Plano de Pormenor da Caridade, Portaria no 496/93, de 10 de maio, alterado pela Portaria no 445/97, de 7 de julho, e pela Declaração no 376/99, de 17 de novembro.
Plano de Pormenor da Quinta do Ribeirinho, Resolução do Conselho de Ministros no 159/2000, de 20 de novembro.
Plano de Pormenor da zona industrial de Casal dos Frades, Despacho no 195/91 do Ministério do Planeamento e Administração do Território, publicado em Diário da República, em 3 de Dezembro de 1991. Plano de Pormenor da Zona do Centro de Saúde de Ourém, Portaria no 190/97, de 20 de março.
Plano de Pormenor para o Quarteirão formado pela Rua Francisco Marto, Estrada da Lomba de Égua e Rua do Mercado, Portaria no 67/99, de 28 de janeiro.

The morphological sense of commerce: symbioses between commercial activity and the form and structure of Portuguese medium-sized cities

Miguel Saraiva, Paulo Pinho

CITTA - Faculty of Engineering of the University of Porto. Centro de Investigação em Arquitectura, Urbanismo e Design (CIAUD), Faculty of Architecture of the University of Lisbon. E-mail: dec08020@fe.up.pt , pcpinho@fe.up.pt

The act of buying and selling has evolved from being considered a simple need to being regarded as one of the principal wealth generators of post-modern societies. Yet two elements continually elude current theories and practices about commerce's role in the city. Rarely is commerce considered a cause, and an active, rather than a reactive, agent in the structuring of the urban realm. Furthermore most commercial studies have focused solely on the geographical, economic and social fields, neglecting the morphological sense. Only in the last 10 years have authors addressed this perspective, although sporadically, presenting focused views that nonetheless do not zoom on the micro-scale, and lacking interdisciplinary approaches, resulting in the lack of data and knowledge available and, ultimately, in the lack of proper public policies. This paper aims to question the structuring nature of commerce and the influence of the morphological component. For that it introduces various fields of research and a large array of variables at various resolution levels. A conceptual model is devised and tested in four Portuguese medium-sized cities. Four GIS-models, containing commercial, morphological, structural and temporal variables are then produced, explored and compared. Findings include the definition of commercial/morphological indicators, that can constitute values of reference or comparison for commercial policies and other studies; the evidence that morphological (rather than statistical) similarities generate, on the micro-scale, more commercial similarities; and six main aspects that effectively link commercial activity with the form and structure of cities.

Key Words: commerce, medium-sized cities, urban morphology, Space Syntax, urban planning.

Modern tendencies of the location of office functions in European cities

Katherine Zawada-Pęgiel

Tadeusz Kosciuszko Cracow University of Technology, Faculty of Architecture.
E-mail: kzawada@pk.edu.pl

In the article the author describes the specificity and character of office function, frames contemporary developmental tendencies, shows some trends concerning the location of office functions in European cities and extracts two directions of strategic operations of office buildings and office complexes' locations in a city structure. The first is described as deglomeration of office functions outside the city centre area, the second as the reconstruction of portions of inner-city areas in the zone of contact with the city centre, in the degraded areas taken as components' of wide urban planning operations. Author shows three directions within deglomeration operations and defines as: new big administrative-office centres, location of offices in the centres of satellite cities, location of office units in city suburbs or outside a city. As the other direction of action the author indicates two types of action: multifunctional redevelopment of districts including the rebuilding of degraded areas and of fragments of the urban structure. Then author traces the evolution of spatial and compositional relations office buildings and complexes and the urban structure, especially the historic centre. The analyses include some examples, in specific types of activities. Finally, the author summarizes out its observations and draws conclusions about the development of office buildings in the context of development of cities with the preservation of existing cultural values and the possibility of contributing by the function of office of new values in the structure of the city.

Key Words: office function, location, deglomeration, rebuilding of spatial and compositional relations, degraded areas.

The systemic focus on walkability and urban form

Ana Paula Barros

Department of Civil and Environmental Engineering, University of Brasilia, Brazil, and
Department of Civil Engineering and Architecture, Superior Technical Institute,
Portugal. E-mail: anapaulabgb@gmail.com

This paper aims at analyzing walkability – most commonly approached in the studies of Transport Engineering – and the urban form – traditionally applied to research in the field of Architecture – in order to discuss the interdependence between both perspectives. The research is based on systemic thinking (relational) (cf. Capra, 2003. Morin, 2010; Bertalanffy, 2012; Vasconcellos, 2013), in order to articulate different areas of knowledge for a more coherent reading of urban dynamics. In order to accomplish that, a thorough review and analysis of the literature about walkability and urban form was performed, encompassing different areas of knowledge: geography, history, sociology, philosophy, literature, anthropology, architecture, engineering, medicine, etc.. It was possible to verify that although each one of those fields reach the same diagnosis – there is a need for prioritizing pedestrian space –, the different fields hardly ever exchange information, which produces fragmented interpretations. Thus, we suggest that the qualitative and quantitative approaches are merged, in order to effectively enhance the analysis, making it more sound and befitting to the reality of the object under study.

Key Words: systemic theory, multidisciplinary, urban form, walkability.

References:

- Bertalanffy, L. V. (2012) *Teoria geral dos sistemas: fundamentos, desenvolvimento e aplicações* (Vozes, Petrópolis).
- Capra, F. (2003) *A teia da vida: uma nova compreensão científica dos sistemas vivos*. (Editora Cultrix, São Paulo).
- Morin, E. (2010) *Ciência com consciência* (Bertrand Brasil, Rio de Janeiro).
- Vasconcellos, M. J. E. d. (2013). *Pensamento sistêmico: o novo paradigma da ciência* (Papirus Editora, Campinas).

Safety in relation to the urban form

Melinda Benko

Department of Urban Planning and Design,
Budapest University of Technology and Economics. E-mail: benko@urb.bme.hu

Urban safety is one of the most relevant multidisciplinary questions of the contemporary city integrating urban and architectural design, planning, sociology, criminology, psychology etc. The paper uncovers a new approach to the environmental crime prevention using the method of analysis based on the closed/open duality, the most important qualitative dimension of urban form, where space use and space experience come to the fore. In the city, two overlapping levels exist: the visual, as the result of constructed reality (e.g. the range or degree of enclosure); and the physical, as a framework for space use possibilities (e.g. the range or degree of public use). Their differences demonstrate the changing urban situations for security reasons: the historic closed blocks become open by public use, or the modern openness continues to prevail in the contemporary urban scenery, while physically the dynamics of closure and control characterise the use of their open space more and more. To recognise, understand and represent this safety phenomenon, and to find new design typology for the transitional spaces corresponding today's social challenges, urban morphology could be used as an excellent conceptual and practical tool.

Key Words: urban form, space use, safety, crime prevention, transitional space.

Impact of walkable urban form on social security. A study of naragh in Iran

Abdolhadi Daneshpour, Maryam Sabokkhiz, Samaneh Jalili, Hoorieh Taghidokht

Iran University of Science & Technology (IUST), School of Architecture and Environmental Design. E-mail: daneshpour@iust.ac.ir , sabokkhiz@iust.ac.ir , s_jalili@iust.ac.ir , h_taghidokht@iust.ac.ir

Safety was always a need for human even for the primary one. Human started to make society to create the safety and soon realised that this safety can be in danger somehow. But surveys show that urban structure can make direct impact on the safety, therefor this article try to find how to improve safety by forming the urban structure. Cities with huge pavement area impact on the safety because of more social and communication interaction with other people that effect on life happiness. Therefore it's necessary to make multipurpose places where pavements and road neutralised every shape of transports. In fact by widening pavements and reducing road's traffics life happiness can increase. Iran's ancient cities had pavement style such as Naragh where safety was high. Methodology of this article is descriptive - analytical and by using observation and deep interview. Interviewing 20 people of Babel city show that huge pavement and high level of interaction increase safety.

Key Words: walkable urban form, social security, social interaction, Naragh, Iran.

By São Paulo sidewalks: urban form and walkability

Helena Degreas, Paula Katakura, Caio Rubens Gonçalves Santos

Centro Universitário FIAMFAAM

E-mail: hdegreas@uol.com.br, pkatakura@fmu.br, caiorubens@terra.com.br

Streets, avenues, boulevards, lanes ... innumerable are the public spaces designated to the circulations of cars and pedestrians; in fact, the open spaces work as a system and are represented by many typologies that gave form to the city. Brazilian cities, as a rule, have been building open public spaces as if they were residual spaces of private properties. Public policies promote facilities to car owners, so pedestrian circulation was reduced to spaces with little functionality (locomotion, access conditions, shape, dimensions and other morphological attributes), that resulted in places of public life that do not guarantee the quality or safety of the users. São Paulo's master plan has been suffering numerous amendments to promote a better mobility without the presentation of studies pertaining to pedestrian spaces sidewalks. The actions of the public authorities to the issues about urban mobility have been reduced to the deployment of public transport with a focus on buses. Issues such as quality of driveways (one-third of the trips in the city are made on foot), safety against the set of barriers (equipment, public securities and urban infrastructures) randomly distributed in space, private management (the responsibility of management of sidewalks is of the owner of the immediate area property) associated with the intense movement of the land, generate the need for indicators to cooperate not only on qualification of existing spaces as well as in organizing projects guidelines to cities in expansion process. This work is part of the Masters Program in Design, Production and Management of Urban Space of FIAM-FAAM University Center.

Key Words: urban form, urban mobility, walkability, open spaces system, landscape architecture

Urban morphology: a prescription for healthy built environments?

Jason Gilliland

Department of Geography, The University of Western Ontario, London, Ontario,
Canada. E-mail: urbanprof@gmail.com

Does urban sprawl make you fat? The weight of evidence suggesting a relationship between the current shape of our cities and the increasing bodyweights of our populations is certainly compelling. The inspiration for this presentation evolved out of systematic literature reviews we have conducted on the relationship between the built environment and health. Numerous studies by planners, geographers, epidemiologists, psychologists, and other public health researchers over the past decade have suggested that modern forms of development may be "obesogenic" in that they deter walking and cycling, while promoting automobile usage and fast food consumption. Unfortunately, most studies are based on research designs that are inadequate to prove that living in sprawling suburbs actually causes laziness or gluttony. Furthermore, much of this work seems to begin with an incomplete understanding of urban form and how it should be measured, as indicated by an inappropriate use of substitute variables to represent certain characteristics of the built environment. It is this latter problem that should be of greatest interest to urban morphologists. In this presentation I will weigh the state of evidence on the relationship between the built environment and obesity and obesity-related behaviours, highlight some of the critical methodological issues, identify potential areas of research that require more attention, and suggest how urban morphologists can contribute more effectively to this important line of inquiry. Indeed, as experts on urban form, morphologists may hold the prescription for improving research on the built environment, which may ultimately lead to improving public health.

Key Words: built environment, obesity, walkability, public health.

The elements of urban morphology which influence residents' leisure walking activities: case study of Shanghai

Jie Mao, Yong Chen

College of Architecture and Urban Planning, Tongji University, China.

E-mail: ch_yong2011@tongji.edu.cn , 231269952@qq.com

With the rapid development of motorization in modern cities, urban morphology is threatened seriously which gave priority to walking transportation before. It also leads to the changes of residents' walking characteristics. Leisure activities such as stroll, fitness and walk the dog increase significantly, but the essential commuter walking activities reduce gradually. In this research, 21 neighbourhoods were taken as cases to make questionnaires survey, observation on site and multiple regression analysis. Effectively statistic model was made to seek the key variables of urban morphology which influence leisure walking activities. It was found by the research that, objective variables of urban morphology affect the frequency of leisure walking more than subjective perceptions do, while the subjective perceptions of environment affect the duration of leisure walking more than objective variables do. Six variables of urban morphology have critical influence on the frequency of leisure walking. They are penetrability of sidewalk network, mixed land use, proportion of commercial interface in the street, density of the storefronts in commercial interface, wide space with hard pavements, safe and neat community environment. In addition, residents' individuality such as societal attributes and subjective demands have intrinsic influence on choices of leisure walking activities as well.

Key Words: leisure walking activity, urban morphology, built environment, neighbourhood.



7.

Comparative studies of urban form

There is a long tradition of comparative studies of urban form. In the early years of development of urban morphology as a field of knowledge, German-speaking researchers in particular were active in making both inter- and intra-urban comparisons of the physical forms of cities. Indeed comparisons over time became inherent in the concept of the morphological period, which has figured explicitly or implicitly in much morphogenetic research. In a twenty-first century environment in which the scope for international research has become so much greater, a wider compass of comparisons of many types has become increasingly realistic. Perhaps most obvious is the opportunity for cross-cultural comparisons. However, the success of both these and more local comparative studies will relate importantly to progress in research, including comparative research, relating to concepts, theories, methods and different disciplinary perspectives. In these respects the scope for shedding fresh light on urban form by comparative studies is great indeed. This is not to argue that research on individual cities and parts of cities should become of lesser importance. The key point is to ensure that research at whatever geographical scale is placed within a comparative framework. As perceptive researchers were aware long ago, research is not just about particular places. It is about the light that work on a particular place can shed on places more generally, and vice versa. To achieve this, other needs must be addressed: not least it is important to work more actively towards common definitions of the terms being employed. This is a major challenge in a field characterized by a wide range of perspectives, including those emanating from different disciplines and language areas. However, we should take strength from the fact that it was particularly to meet this challenge that ISUF was formed!

J. W. R. Whitehand

The syntax role: differences among urban fabrics in Lisbon

Ana Paula Barros

Department of Civil and Environmental Engineering, University of Brasilia
(UnB – Brasilia/Brazil) and of Department of Civil Engineering and Architecture,
Superior Technical Institute (IST – Lisbon/Portugal). E-mail: anapaulabgb@gmail.com

The present paper aims to explore the differences and similarities between morphological and syntactic aspects of three neighborhoods - Graça, Campo de Ourique and Telheiras – in the city of Lisbon. It is our intention to identify how the local features affect urban mobility, with a focus on walkability, evaluating the use of Space Syntax for the studies of traffic. In terms of methodology, axial maps and pedestrian visibility maps were used, drawn from the Theory of Social Logic of Space, in addition to pedestrian countings carried out in each neighborhood according to the Gate Method. Graça presents a more “organic” street network, characterized by extreme irregularity; Campo de Ourique is structured in a chessboard pattern which tends to an increased regularity; and Telheiras has as its most distinguished feature buildings that are isolated in space that does not border the streets, and this configuration was called “contemporary street network”. The results point to a meaningful relation between the modeling from Space Syntax (cf. Hillier and Hanson, 1984) and the counting, indicating there is a correspondence between the movement on the streets and the integration indexes. The findings clarify that the syntactic analysis is relevant not only for traffic studies (Barros, 2006), but also for walkability studies, in which the pedestrian is the focus.

References:

- Barros, A. P. (2006) ‘Estudo exploratório da Sintaxe Espacial como ferramenta de alocação de tráfego’. Dissertação de Mestrado.
Hillier, B. and Hanson, J. (1984) *The Social Logic of Space* (Cambridge Press: Cambridge).

Urban transformation in meeting places: the cases of Bursa & Yazd

Sima Vaez Eslami, Ayse Sema Kubat

Department of Urban Design, Istanbul Technical University.

E-mail: simavaez@gmail.com , kubat@itu.edu.tr

In 19th century, due to modernization programs, historical cities faced powerful socio-spatial conversion. New and different urban pattern system was imposed on the historic fabric of the city, while traditional urban structure was created over centuries through cumulative growth. By the appearance of modern motorized means of transportation in the old fabric of cities, many physical and spatial changes started to take place in the core of the traditional cities. This fact is also obvious in urban transformation of cities with Islamic culture. This research attempts to find the effect of urban modernization transformations on the fabric of historic cores in cities with Islamic culture; how the modern changes affected the old system specially the structure of meeting places and why is it necessary to preserve the old structure of historical cores in Islamic cities? Is it possible to preserve this structure after urban modernization process? To answer the mentioned questions, two Islamic cities in two different countries (Iran and Turkey) have been investigated; this investigation is made by using Space syntax methodology to compare spatial structure of these cities in before and after urban modernization transformation. According to the result of this comparative syntactic study, in comparison to city of Yazd, the historic core of Islamic city of Bursa is preserved in a better way even after urban modernization changes.

Key Words: urban modernization transformation, Islamic city, space syntax; Bursa, Yazd.

Environmental evaluation method of urban spaces. Case Study: South Wing of Plano Piloto, Brasília – Distrito Federal

Ederson Teixeira, Marta Romero

Faculty of Architecture – University of Brasilia

E-mail: edersonot@gmail.com , bustosromero@gmail.com

The urbanization process tends to create several problems in the environmental condition of the urban space, however not in a generalized way. Nowadays, there are several examples of cities that reached an urban organization that improves the habitat condition of the public space. These solutions could be in the initial stage of city occupation, or a territorial reoccupation, when a city is already consolidated. Based on this, the present paper was prepared from studies conducted in the course Sustainable Urbanism, of the Graduate School of Architecture and Urbanism of the University of Brasilia, where it was developed a method of the Sustainable Urban Morphology Analysis in administrative regions of the Distrito Federal (DF), classifying these regions according to the best sustainable urban passive design. Seeking an analysis of several authors that are concerned with urban morphology aspects and environmental quality of urban space aspects, it was developed a vital research based on specific concepts, grouping then in chart of indicators and attributes, defining values, for when examined under a specific method, it is possible to define the degree of sustainability of the analyzed region.

Thus, this paper seeks to enhance the concepts and attributes acquired in the aforementioned course, developing a new implementation methodology, reducing the results subjectivity by using in situ measurements equipment, computational instruments and urban forms studies, using as study case the Administrative Region I - South Wing of Plano Piloto of Brasilia – Distrito Federal (DF).

Key Words: Urban morphology, comfort, environmental evaluation, urban spaces, South Wing.

Comparing urban forms and rules of the Pearl River delta cities: Guangzhou, Hong Kong, Macau, and Shenzhen

Hendrik Tieben, Doreen Liu

School of Architecture, The Chinese University of Hong Kong.

E-mail: hktieben@cuhk.edu.hk

Since the introduction of the Open Door Policy in 1978, the transformation of Chinese cities has attracted attention of scholars, first focusing on general aspects of Chinese urbanism and individual case studies (e.g. Whitehand and Gu, 2006). According to the goal of urban morphological research in comparative studies of urban forms (Conzen, Gu, Whitehand, 2012), this paper embarks on the comparison of the four Pearl River Delta cities: Guangzhou, Hong Kong, Macau, and Shenzhen. While located in one region, they were shaped by the different planning cultures of China, Portugal and Britain. Due to China's "one country, two systems" policy differences persist, despite a fast-paced integration process driven by large-scale infrastructure projects. This comparison of the urban forms of the four cities aims to facilitate a more meaningful integration process, learning from different experiences. In this context, the study investigates particularly the urban rules, which shaped each of these cities. The interest in rules resonates with recent urban studies (Lehnerer, 2010; Tieben, 2011) and responds to developments in 'parametric design' simulating urban processes, however, often without consideration the specifics of place. Through the focus on rules, the paper seeks to connect urban morphological research better to contemporary design practice. Presenting results of first case studies, the paper also discusses the challenges encountered: the fundamental differences of terminologies, planning frameworks, and building practices in the four cities. The paper is part of a General Research Fund project (GRF4440740) awarded by the Hong Kong University Grants Committee.

Key Words: comparative studies in urban form, urban rules, Chinese urbanism.

References:

- Conzen, MP, Gu, K. and Whitehand, JWR. (2012) 'Comparing traditional urban form in China and Europe: A fringe-belt approach', *Urban Geography* 1, 22-45.
- Lehnerer, A. (2010) *Grand Urban Rules* (010 Publishers, Rotterdam).
- Punter, J. (1999) *Design Guidelines in American Cities, A Review Of Design Policies And Guidance In Five West-Coast Cities* (Liverpool University Press, Liverpool).
- Tieben, H. (2011) 'Cities and design rules: an architect's approach', *Urban Morphology* 2, 163-167.
- Whitehand, J. W. R. and Gu, K. (2006) 'Research on Chinese urban form: retrospect and prospect', *Progress in Human Geography* 3, 337-355.

Research on urban spatial form in provincial areas with different levels of economic development: a case study of Jiangsu Province

Guoping Xiong

Department of urban planning, Southeast University, Nanjing, China.

E-mail: xionggp@vip.sina.com

Different regions take different urban development models according to different levels of economic development to realize the regional overall development has already become main concern of provinces. In this paper, southern, central, and northern areas of Jiangsu Province as an example, to study the differences in urban morphological characteristics and the levels of economic development: pointlike concentration led by large cities, such as Xuzhou, Huaian, Yancheng, Lianyungang in northern Jiangsu; ribbon concentration led by Nanjing-Nantong traffic axis in central Jiangsu; mesh concentration led by Nanjing metropolitan and Su-Xi-Chang metropolitan in southern Jiangsu; southern, central to the Yangtze River, central, north to the coastal ports as a link to form new city zones. Analyze the dynamic mechanism, propose distinguishing urban space optimization measures and policy recommendations to regions in different economic development levels to realize the regional overall development: the focus of the south is to promote regional integration; the focus of the centre is to construct the urban development belts along the Yangtze River and the coast; the focus of the north is to strengthen the central cities.

Key Words: urban spatial form, economic development level, Jiangsu Province.

The urban morphology concept in Brazil

Denise Antonucci

Faculdade de Arquitetura e Urbanismo – Mackenzie; Presbyterian University, São Paulo, Brazil. E-mail: antonucci.denise@gmail.com

The urban morphological analysis, despite its important use in European countries, had few followers in Brazil. Perhaps this lack of interest can be explained by the fact that Urban Morphology emerged in Europe in the context of criticism of the functionalist Modern Movement in the 1950s and 1960s. At this moment we lived enchantment Lucio Costa's design to Brasília, synthesis of the urban principles of the Charter of Athens, defended by Le Corbusier. Another hypothesis is the close link of Urban Morphology with studies of historical, architectural and urban preservation - as present in European culture and little referenced in Brazil - especially when related to the preservation of urban fabrics. We intend to recover, even if briefly, the route of the Urban Morphology concept through recognition of some researchers who used it during the second half of the twentieth century in different contexts. We seek to recover some theorists' thoughts that used the concept in their productions or academic practices. We note that some authors and critics of architecture and urbanism are particularly attentive to certain formulations that architects developed on Urban Morphology. Often a single agent plays as researcher, architect and historian. The work of Michael R. G. Conzen (England), Muratori, Aymonino (Italy), Panerai, Castex (France), Bohigas, Solà-Morales (Barcelona), among others, were instrumental in the development of concepts and methodologies and they have influenced Brazilian researchers in the analysis of urban form as evolutionary logic of social forces. We can mention, among others Brazilian architects and researchers Cândido Malta Campos, Vicente Del Rio, Nestor Goulart Reis and Carlos Nelson Ferreira dos Santos.

Key Words: urban morphology concept, Brazilian researches, modern movement.

Gilberto Freyre's work: between urban morphology and building typology – first approaches

Solange de Aragão, André Marques

Universidade Nove de Julho

Universidade São Judas Tadeu. E-mail: solangedearagao@gmail.com ,
afrm1979@gmail.com

There are many possible ways of reading Gilberto Freyre's work. One can read Freyre's texts in order to know about Brazilian society from colonial times; other can read them to understand the process of mixing races from which resulted Brazilian people; yet some other can do that to get to know the History of Brazil from a sociological point of view. But there is also another possibility which is to find morphological and typological approaches throughout Freyre's work. Since the sociologist adopted the house as the centre of interest of a great part of his works, and analyzed the house and its environs to comprehend, and explain Brazilian society, there is a lot of information in his texts regarding certain types of buildings – particularly those from colonial times and from the first half of the 19th century – as well as information concerning the cities where these buildings were placed. In fact, Gilberto Freyre was one of the first Brazilian researchers who gave attention to the study of the traditional house in relation to the urban landscape it composed. We aim here to present some morphological and typological approaches in Gilberto Freyre's work, considering the trilogy composed by *The masters and the slaves* (1933), *The mansions and the shanties* (1936), and *Order and Progress* (1959), as well as some other important works in which he deals with the theme of the Brazilian house.

Key Words: Gilberto Freyre's work, urban morphology, building typology, the Brazilian house, 19th century.

Meeting of minds: investigation on the common concepts and different approaches of the major schools of urban morphology

Stael Pereira Costa, Maria Manoela Netto, Laura Coelho de Moraes.

School of Architecture, UFMG.

E-mail: staelalvarenga@gmail.com , manolanetto@yahoo.com.br ,
laura_cristina15@yahoo.com.br

The purpose of this paper is to present the results found in research conducted in the years 2011-2013, entitled: "Meeting of Minds": which investigates the common concepts and different approaches of the major schools of urban morphology. The research focused on the survey work undertaken by the founders of the schools in order to make an urban analysis in England and Italy, establishing different methods. Other sources of documentary reference were found in books, publications in professional journals, as well as testimonials of pupils who participated in the formation of these methods. Examples of convergence can be found in these approaches, which consider the form as a product constructed throughout time, through the investigation of the form transformations and continuities in the urban landscape. However, the methods differ regarding the scale of analysis. The English school in their investigations tends to examine the form from the general to the particular, while; in contrast, the Italian school opts for taking the building as the starting point and widens its focus to include the whole territory. In this sense, the concepts adopted by schools show both similarities and differences; however they also reflect the specific goals of each approach. For the English school, the geographical approach is the guideline for a tripartite division of urban form. Conversely, for the Italian school, the architectural approach is the leading point, with reference to the basic built type and the typological process that transforms it over time. The knowledge acquired from the structure of both schools, may contribute to the development of a wider interdisciplinary approach to research on contemporary cities.

Key Words: schools of urban morphology, research, approaches, similarities, differences.

Decipher the Babel Tower: a discourse analysis of urban morphology in China

Andong Lu

School of Architecture and Urban Planning, Nanjing University.

E-mail: alu@nju.edu.cn

The accelerating waves of urbanization in China have aroused a boom of scholarly studies on urban form. Urban morphology based studies appeared in the late 1990s and represents only a small fraction of the whole body of research on urban form and has been strongly intermingled with and deeply influenced by the existing discourse on urban form at the time. This paper will take a historical approach and try to decode this hybrid intellectual landscape by relating the ideas and terminology of urban morphology to the established system of methodologies and network of concepts in the field that could trace back to the early 1980s. This paper will survey and analyse some three thousand plus journal articles in the last thirty years. It is argued that the Chinese study on urban form has various sources of origins and hence separate traditions, and its process of development is a combination of adaptation of old ideas and translation of new concepts, which generates as many understandings as misunderstandings. It is through this process that urban morphology was related and appropriated to the Chinese context and its topics and concerns. This discourse analysis is also intended to reveal the underlying issues and themes distinctive to Chinese urban morphology.

Key Words: discourse analysis, urban morphology, methodology, concept network.

A Portuguese typo-morphological line of thought: from geography to architecture

Teresa Marat-Mendes, Maria Amélia Cabrita
DINÂMIA'CET-IUL, Instituto Universitário De Lisboa ISCTE-IUL.
E-mail: teresa.marat-mendes@gmail.com

This presentation exposes a typo-morphological line of thought, anchored in a Geography of Settlements that reveals an obvious relationship between urban morphology and geography, contemporary to the German Human Geography led by M. R. G. Conzen (1907-2000).

The presentation assesses the impact that a French typo-morphological approach had during the twentieth century in Portugal, through the disciplines of Geography and Architecture, in particular through the study of the Rural Habitat. To do so this presentation identifies, isolates and characterizes the Portuguese typo-morphological line of thought, as enunciated by Orlando Ribeiro (1911-1997), a Portuguese geographer that during his formation in Paris (1937-1940) established contact with Albert Demangeon (1872-1940) whom constituted an authority for the French School of Human Geography, while promoting the development of enquiries grounded on a specific scientific and methodological approach. A comparative analysis between the Portuguese and the French methodologies developed at that time, namely related to the enquiries of the rural habitats, is also presented. Finally, this paper promotes a critical analysis of how, in Portugal, this same typo-morphological line of thought, initially established by the geographers, was assimilated by the architects, while being complemented with knowledge provided by other scientific disciplines, including anthropology. Furthermore, it confirms that the concept of type in architecture, in Portugal, in the context under analysis, was built through the contributions of Geography.

Key Words: typo-morphology, architecture, geography, rural habitat, Portugal.

A comparison between different urban analysis methods: the case study of Rubattino-Ortica district in Milan

Ioanni Delsante, Nadia Bertolino, Emanuele Giorgi, You Yinan
DICAR Department, University of Pavia. E-mail: delsante@unipv.it

The paper deals with urban studies focused on historical districts named Rubattino and Ortica set in the east part of Milan. It represents a focus on urban morphology's analysis and it deals with the comparison of different urban analysis' methods. The given site of Rubattino and Ortica districts in Milan is characterized by very different urban morphologies and building typologies, even if it represents a kind of big urban "cluster" in between railways and highways: the historical settlements with their monuments, the industrial era with productive spaces, the post-war expansion with housing districts, the post-industrial era with large dismissing and new speculations, the recent developments due to cultural events and activities. It is very difficult to find out just one architectural theory that fits this "hybrid" of urban morphologies, but more than one theory can partially describe its features. The aim of the study is to deal with urban analysis accordingly to pre-assigned morphological approaches, showing that they are complementary and not alternative. The approaches have been chosen accordingly to a deep preliminary urban analysis, finding out feasible ways of describing the site with clear urban indicators. Two of the chosen approaches seem more appropriate to describe site's morphology: one is based on the idea of 'urban islands' or 'clusters' that describes cities as a unity of different and independent parts. The other one is based on the idea of city as 'layers', showing also the interference of different functions and 'systems'. Describing the same site through different theory-based urban analysis' approaches represents the chance for a comparative study of theories themselves.

Key Words: alternative urban analysis, 'islands' as cities in the city, reading the city by layers.

Past and present: an architectural survey of Birnin Lafiya, a Dendi village

Jean-François Pinet

Centre HABITER, Faculty of architecture, Free University of Brussels (ULB).

E-mail: jefpinet@gmail.com

In collaboration with the project Crossroads of Empires led by Anne Haour (University of East Anglia) we conducted a research on the contemporary Dendi villages (North Benin). The mutations of dendi villages were few documented since the first European explorations. One of the starting points of the study was to examine possible links between pre-colonial ruins discovered by archaeologists of the project Crossroads of Empires and existing villages in the region. A second important point was to test the “typo - morphological” method of analysis, developed in Europe during the 1960s, whether it could be exported or not to the African rural context. Following this methodology, we analyzed Birnin Lafiya’s urban shape, road network, the development of the village, technical customs and construction methods. As a result, we developed a typological classification of spatial situations. In addition to the survey, interviews with the inhabitants were conducted to understand the current situation of the village. Starting with architecture, we open the study to others disciplines as sociology and history. By applying the typo-morphological method as starting point, we were able to question issues related to the local history, practices, and customs of the inhabitants of Birnin Lafiya. Based upon the high amount of information gathered during the onsite survey, the study developed a first series of conclusions. First of all, in the selected case study, Birnin Lafiya, the study emphasizes the impact at a very large scale of French colonization on the city’s urban structure and architectural techniques. Beside this, the mutations in the urban pattern and architecture are indeed playing the role of material evidence of social and political changes in the region. This phenomenon can be observed also in other Dendi villages.

Key Words: North-Benin, rurality, morphology, types , anthropology of space.

Urban form and its implication for the use of urban spaces

Antônio Reis

Faculty of Architecture/PROPUR, Federal University of Rio Grande do Sul.

E-mail: tarcisio@orion.ufrgs.br

The objective of this paper is to discuss urban form and some of its implication for the use of urban spaces. The relationship between urban form characteristics, such as those related to type of building use and amount of visual and functional connections with the public open spaces, and presence of people are considered (Gehl, 2010, 2011; Jacobs, 1984). A comparison is made between 'traditional' urban form and 'modernist' urban form. Whereas the first is characterized by a direct relationship between buildings and public open spaces, the second is characterized by a loose relationship, with public open spaces merely resulting from the layout of blocks of flats. In a 'traditional' urban form, as in Ouro Preto (Brazil) or in the historic areas of Prague (Czech Republic) and Porto (Portugal), buildings have front doors and windows facing the public streets, whereas in a 'modernist' urban form, as in Brasília (Brazil), buildings tend have doors and windows far away from the public streets and/or facing inward open spaces with no distinction between front and back windows and doors. Therefore, examples from cities in different countries are used for the comparisons and reflections involving these issues. The main outcomes from these discussions emphasize the need for a better understanding regarding the implications of urban form for the use of urban spaces. Additionally, type of building use and amount of visual and functional connections with the public open spaces tend to have significant consequences for the vitality of urban space.

Key Words: urban form, use of urban spaces, traditional urban form, modernist urban form.

References:

- Gehl, J. (2011) *Life between buildings: using public space* (Island Press, Washington).
Gehl, J. (2010) *Cities for People* (Island Press, Washington).
Jacobs, J. (1984) *The Death and Life of Great American Cities - The failure of Town Planning* (Penguin Books, Harmondsworth, Middlesex).

Morphogenetic analysis of Bahçelievler Housing Cooperative, Ankara: exploring the Turkish case

Nazlı Songülen

City and Regional Planning Department, Middle East Technical University.

E-mail: nsongulen@gmail.com

Ankara, after its announcement as the capital city of the newly established Turkish Republic, has been planned starting in 1920s. Reflecting the modern western city planning principles, the Jansen Plan, at this regard, introduced a new morphological repertoire for the housing development areas. However, massive migrations to the city led to rapid urbanisation process after 1950s that the Plan failed to supervise. Following planning attempts proposed increased density in inner city and resulted in the loss of spatial variety introduced with the new morphological repertoire, where diverse housing types are replaced with similar apartment blocks. At this regard, Bahçelievler Housing Cooperative, as a self-sufficient neighbourhood model designed by Jansen based on Garden City principles in 1930s, has been affected from this process to a great extent. Thus, this study analyses the morphological transformation of this neighbourhood between 1930s until today regarding the changing street, plot and building patterns. For this purpose, Conzen's morphogenetic approach developed based on Medieval European Cities will be applied in the Turkish context. Hence, the transformation experienced within 80 years will be discussed under three period in Conzenian terms as, the accumulation of forms, the adaptation of forms and the replacement of forms in Bahçelievler Context based on changing street, plot and building relations. This study will provide insights about the morphological transformation experienced in the Bahçelievler Case based on a historical framework. Such an analysis will reveal the relation between this rapid urbanisation process and relatively reduced morphological repertoire. In addition, the applicability of Conzen's method in different geographies of the world, specifically in the Turkish Case, might play a key role for further morphogenetic analyses as well.

Key Words: morphogenetic approach, Conzen, Bahçelievler, Ankara.

Combining different morphological approaches in the study of Maputo

David Viana, Vítor Oliveira

Centro de Investigação – Escola Superior Gallaecia, Largo das Oliveiras, 4920-275 Vila Nova de Cerveira, Portugal.

Centro de Investigação do Território, Transportes e Ambiente, Faculdade de Engenharia Universidade do Porto, Rua Roberto Frias, 4200-465 Porto, Portugal.

E-mail: david.leite.viana@esg.pt , vitorm@fe.up.pt

The paper will describe the application of different approaches in the study of the urban form of the capital of Mozambique, Maputo. This city exhibits an exceptional variety in terms of urban forms, from Portuguese colonial urban tissues drawn on an orthogonal layout, defining sets of regular plot series comprising a number of buildings, generally, with high architectural quality, to informal fabrics with an irregular layout of streets supporting a scattered and complex organization of plots and of buildings, sometimes with reduced dimensions and often built with what is usually considered as “poor” materials. The paper has three main goals: i) to understand the different types of urban tissues of Maputo, with a particular emphasis on the informal tissues and on the prevailing dichotomy between the «concrete city» and the once called cidade caniço (nowadays known as bairros); ii) to debate the main characteristics of the urban forms (streets, plots and buildings) of Maputo framed by our knowledge of other capital cities of Portuguese-speaking countries; and, finally, iii) to compare the different morphological approaches (including qualitative and quantitative methodologies) that are utilized in this analysis, defining a number of guidelines for their combined use in other contexts.

Key Words: urban morphology, urban form, space syntax, informal settlements, Maputo.

Revaluing urban morphology as Urban Heritage: case studies on Barcelona and Kyoto

Daisuke Abe

Faculty of Policy Science, Ryukoku University, Kyoto, Japan.

E.mail: abe@policy.ryukoku.ac.jp

This article discusses how to expand a concept of urban morphology as urban heritage. For cities and regions, every urban form and activities must be observed as possible urban heritage for next generation. However, the urban spaces formed mainly after 1960s including housing estates, the deprived areas in urban periphery and civil engineering structure, have not been appropriately evaluated due to a lack of methodology for conservation. Especially for cities which seemingly are not abundant in urban and architectural heritage, it is essential to expand a concept of heritage itself. The historic centers are considered to represent cities' identity thus the urban facade has been more or less well preserved. However, in order to conserve old quarters as a living area, the attentions should be focused on the urban fabric that is guided by diversity of plots and blocks, and the importance of public space. In this regard, two cases are examined; Barcelona and Kyoto. Both cases treat two important areas in terms of morphology, that are (1) the historic centers that have been recovering its commercial dynamism but at the same time losing the authentic atmosphere as a result of gentrification, and (2) the urban places in deprived area that include working class housing estates built during the post-war years and more recent suburban neighbourhoods.

Key Words: Urban Heritage; historic centre, deprived areas, Barcelona, Kyoto.

Application of morphological concepts to characterize German immigration's nucleus in Brazil

Bruno Andrade, Elisa Taveira, Renata de Almeida

Heritage and Development's Laboratory, Architecture's Department, Universidade
Federal do Espírito Santo. E-mail: patrilabufes@gmail.com

This article seeks to analyze comparatively morphological structures as a result from german immigration's occupation in Espírito Santo, from middle XIX century. For this investigation, Gunter Weimer's advanced studies it's assumed as reference, concentrated in the decades of 1970 and 1980, about german architecture in Brazil's southern region. Weimer is elected because he's a Brazil's central reference about the approached theme. The intention is to recognize and present by mappings some morphological configuration's particularities of urban sites located in espírito- santense's central mountain region; occupation structured by hydrographic basin from Santa Maria da Vitória's and Jucu's river. It is recognized, at the territory's physical-geographic dimension, both the adoption of river courses as structuring elements of land division and the urban settlement's location at high and cold lands. In the urbanistic dimension, there are two types of nucleus: Strassendorf, urban form structured by a central and commercial road; and Angerdorf, urban form when the central road widens open to a square.

Key Words: urban form; German immigration; Espírito Santo/Brazil.

Spontaneous and induced form: comparing Sao Paulo, Jakarta, Hanoi and Belo Horizonte

Eliana Barbosa, Patrícia Capanema, Nguyen Tú

Faculty of Architecture and Urbanism Universidade Presbiteriana Mackenzie São Paulo,

Faculty of Architecture Universiteit Katholieke Leuven

The Urban planning and Architectural Institute (UAI) and University of Civil

Engineering (NUCE), Hanoi, Vietnam.

E-mail: queirozeliana@hotmail.com

The paper intends to summarize a research, carried out between 2012 and 2013, financed by BID and GDN in which the urban morphology was used as a tool to investigate the relations between urbanization and development. It is a comparative study of the economic development, planning processes and the resulting urban morphology of four different cities: São Paulo, Jakarta, Hanoi and Belo Horizonte, aiming to disclosure the spatial outcomes of peripheral development. Planning policies and urban morphology were compared between the cities in different scales, according to methodology proposed by Llamas (1994). São Paulo and Jakarta were chosen due to their importance and economic relevance on their specific contexts, Latin America and South East Asia, respectively. Their size and characteristics – mega cities or city-regions – offers a possibility of comparison aiming to find similarities. Hanoi and Belo Horizonte have similar positions regarding their context – South Asia and Brazil, respectively. Both are administrative cities – Capital of Vietnam and Capital of Minas Gerais Province – with similar population sizes and currently under economic development and fast urbanization. Despite these similarities, the cities present distinct processes of growth and urbanization, which through this comparison should be highlighted. Therefore, the proposed study investigated São Paulo, Belo Horizonte, Jakarta and Hanoi's patterns of urban form, expose some of their tissues and typologies, reaching a better understanding of how these cities have historically coped with economic processes and how do they work today, opening the possibility of a broader discussion consisted on how do these four cities might learn from the experiences observed in the others and how do these lessons could be beneficial to other cities in general.

Key Words: urban morphology in the South, Southern theory, typology.

References:

Lamas, J. M. R. G. (1993) *Morfologia Urbana e o desenho da cidade* (Fundação Calouste Gulbenkian. Junta Nacional de Investigação Científica e tecnológica, Lisboa).

Exhibition of city: What's next? The case of Lisbon 1940 vs Rome 1942

Elisa Pegorin

CEAU Centro de Estudos de Arquitectura e Urbanismo / FAUP Faculdade de
Arquitectura da Universidade do Porto.

E-mail: eli.pegorin@hotmail.it , epegorin@arq.up.pt

In order to exhibit their own dominance, during fascism in Italy and the authoritarian regime of Salazar in Portugal, the respective capital cities, Rome and Lisbon, were to plan an International Exhibition. At a different scale of analysis, the responses of both States to the public space present analogous elements as well as differences, links of continuity however, can be found. Rome and Lisbon have not been arbitrarily cited as example, but chosen because they are directly related through their planned exhibitions. If we do a comparison between the scales of the two cities (Roman occupied an area of about 400 hectares, Portuguese and a much small area), there are similarities between the two like the choice of the place and manner of their integration (or not) in the existing city. Like in Lisbon wanted to bring the city to the Tagus, in Rome Mussolini wanted to bring it to the sea and, in both cases, the urban redevelopment included a change in the road network, as well as the creation of new connections.

The aim of this essay is to analyze and understand how both these countries responded to urban issues, summarized in three points: the territorial scale, in this case the degree of connection with the historical city; the organization and exhibition of a “new city,” and: what was the future of these areas? What's left today in XXI century?

Key Words: exhibition, estado novo, fascism, urban planning.



8.

Integrated approaches

Although the conference proposals and research papers organised under the theme - ‘Integrated approaches’ include a wide range of theoretical and practical interests and purposes, they are primarily concerned with urban form analyses and their planning and design implications. The study of urban form relies on the identification and analysis of structural elements or a combination of structural elements of the urban landscape. Different disciplines and professional groups have developed their respective research ideas and concepts for describing and interpreting urban form. For example, architects use building type areas and urban tissue to understand the configuration of urban form; planners and urban designers are concerned with land-use zones, ecological areas and historical precincts. There have been efforts to develop an integrated approach to urban form. In particular, geographical urban morphologists, argued that the urban landscape comprises three morphological elements: the ground plan (comprising streets, plots, and the block plans of buildings); the building fabric; and land and building utilization. The idea of urban morphological regions is a key tool for distinguishing and characterizing urban landscape divisions and the relations between them. Morphological regionalisation can be used as a basis for prescriptions in which future changes are incorporated harmoniously into the existing landscape. Recent research on an integrated approach to urban form includes Swedish researchers’ Place Syntax and Vitor Oliveira’s *Morpho*. The use of computer tools and integrating physical and socio-economic elements are increasingly important for spatial data analysis and synthesis. Research papers under this theme are expected to contribute to the exploration of urban form analyses which are fundamental for creating and managing urban landscapes.

Kai Gu

Study on regeneration of downtown area through riverfront development as urban catalyst. Case Study of Tokushima City's regional resource: Shin-machi river's frontage development

Koichiro Aitani, Takafumi Arima

Department of Architecture, College of Architecture, Texas A&M University, USA.
Department of Architecture and Urban Design, Faculty of Human-Environment Studies,
Kyushu University, Japan. E-mail: kaitani@arch.tamu.edu

Catalyst is originally a chemical term which activates chemical actions and reactions. In terms of Urbanism, the term, "Urban Catalyst" stimulates the built environment for the improvement of an existing city. The elements to act as a catalyst are defined physical elements such as buildings, open spaces, and the temporary buildings in various scales, and broadly non-physical elements such as festivals, events and even community developments could be considered to make a significant influence to a transformation on the built environments. The essence of "Urban Catalyst" is to create a new space within a city while maintaining an existing context. This method is quite different from the ordinarily redevelopment such as "Scrap & Build" approach while economy is also booming. In this paper, the downtown area of Tokushima city was chosen as a case study and discussed about the Shin-machi board walk along the River, and its effect to the city. Various communities have been developed for participation to utilize and improve open spaces along the river. These public involvements were summarized sequentially, and chained effect of Catalyst is analyzed. The benefit of "Urban Catalyst" is the initial cost of development is rather small, yet, chained effect is greater; promote further developments by new comers. The purpose of this research is to find out the theory of "Urban Catalyst" for urban regeneration in a shrinking society.

Key Words: urban catalyst, urban transition, water front, event, community development.

Taking a metabolic perspective in urban morphological analysis: the case of Isfahan

Karl Kropf, Yones Changalvaiee

Department of Planning, Oxford Brookes University; Urban Morphology Research Group, University of Birmingham.

Department of Art and Architecture, Science and Research Branch, Islamic Azad University, Tehran, Iran.

E-mail: kkropf@brookes.ac.uk , Johna.urbanism@gmail.com

The idea of urban metabolism is being used increasingly in seeking to identify and promote sustainable forms of urban development. At the same time, a number of authors have been investigating ways to integrate metabolic and morphological approaches (see for example Salat 2009 and Osmond 2010). While this work rightly focuses on the stocks and flows of materials and energy to construct particular forms and their environmental performance, it is also important to understand the phenomenon of transformation and adaptation from a metabolic perspective. With the existing building stock responsible for a significant proportion of energy use and carbon emissions, how we transform that stock is vitally important. Of particular significance is understanding the dynamics of different kinds of transformation from gradual modification to large scale intervention. The paper will address these issues by first establishing a morphological framework for analysing the transformation of urban form from a metabolic perspective. The city of Isfahan will then be used as a case study to highlight issues at different scales. Issues considered include economic context and industrial change, the adaptability of forms, heritage values and economic vitality.

Key Words: morphology, transformation, adaptation, metabolism, Isfahan.

References:

- Osmond, P. (2010) 'The urban structural unit: towards a descriptive framework to support urban analysis and planning', *Urban morphology* 1, 5-20.
- Salat, S. (2009) 'Energy loads, CO2 emissions and building stocks: morphologies, typologies energy systems and behavior', *Building research and information* 5-6, 598-609.

Sous le pavé la plage: squares of Lisbon

Madalena Matos

CIAUD, Faculty of Architecture – University of Lisbon.

E-mail: mcunhamatos@fa.ulisboa.pt

In the vast territory of the metropolitan area of Lisbon persist a number of open areas which are decisively rural in character; what is less ordinary is that in the city itself, inside the administrative limits of its central ‘concelho’ or municipality, continues to exist several squares that are predominantly irregular or present a disposition more influenced by geography and history than by self-conscious design. A striking feature in this group is that they include a few of the most important public areas in the Portuguese capital. They are an outcome of history – the superposing of layers that roughly defined a perimeter – but also of geography, in a city originated in a few settlements on a hilly setting that kept densifying and transforming to form an urban tissue. They are also the product of a millenary relationship between rural occupation and agriculture usages with the proximity of military and political power, in close vicinity. Campo das Amoreiras, Campo Grande, Campo Pequeno, Campo de Santa Clara and Campo de Santana are such open air areas that combine in different manners urbanity with an atmosphere of semi-rurality, of which their toponymy is evidence. The paper is set to observe their physical outline, their distinctive quality and their commonalities and differences. In so doing, it aims to define their morphology and find the traits that would help pinpoint the architectural and urban distinctness of the city in relation to other European capitals.

Key Words: plan, public spaces, Lisbon, urban morphology.

Urban morphology and the ecological paradigm

Karin Schwabe Meneguetti, Stael Pereira Costa

Department of Architecture and Urbanism, Universidade Estadual de Maringá, Brazil.

E-mail: ksmeneguetti@uem.br

Urban morphology seems to be ever more configuring a convergence zone for researchers from distinct areas; despite particular methods and concepts, the debate around urban morphology has leading to common grounds and similar interests. However, a new paradigm for town planning and urban studies strives to formulate methods and propositions that respond positively to the challenges of urban sustainability and the insertion of natural processes into the urban environment. By establishing a new role to ecology as the primary requirement of development, this paradigm compels architecture and urban and landscape design to rethink planning processes in order to guarantee the permanence over time. Sustainable urban development means the minimization of negative impacts on the territory and the pursuit of balance between natural settings and urbanization. Thus, the association of urban morphology approaches and this thought can improve methodological studies about the town and its transformations. Likewise, the juxtaposition of morphological studies and the Landscape Ecology could be given by the identification of open spaces that configure fringe belts as potential places for leisure and recreational activities but, above all, for nature inside the town as a way to ensure the ecological quality of urban areas, as suggested by Hopkins' recent paper (2012). Bearing that in mind, this paper aims to carry out a discussion about the applicability of the urban fringe belt concept onto Brazilian cities and its possible contribution to the ecological planning and the landscape ecology.

Key Words: urban morphology; landscape ecology; fringe belt; new towns.

References:

Hopkins, M.I.W. (2012) 'The ecological significance of urban fringe belts.', *Urban Morphology* 1, 41-54.

The population spatial evolution impacts on urban morphology in urbanization process of China

Chang Chen, Wei Zhou

Tianjin Urban Planning & Design Institute. E-mail: rachel_letter@163.com

With the rapid urbanization of China, violent changes in the urban economic, social and cultural, affected the development of urban form development. And it showed high correlation between the population spatial evolution and urban form development. The study on the characteristics of population density, spatial autocorrelation and multi scale analysis of the spatial pattern, fully demonstrate that the urban morphology and population density has a strong dependence. China's Tianjin as an example, from 2000 to 2010, urban population increased by 23%. Meanwhile urban form develop from one core to multi cores, and the scales of streets, residence zones, blocks changed greatly. Combined with population spatial characteristics, the paper systematically analyses the influence of population distribution, population density, population structure on urban form, based on population, spatial and land use data. In combination with the development of economy and society, the paper explores the dynamic mechanism and development mode of urban morphology, from the perspective of population distribution guidance. Finally, the paper provides planning strategies for land use, transportation, public facilities arranged.

Key Words: urbanization, population spatial distribution, urban morphology.

Effects of migration processes on urban form

Antonio Carlos Guimarães, Pedro Moreira Neto

Universidade do Vale do Paraíba UNIVAP.

E-mail: guimaraes@univap.br , perdoribei@univap.br

Changes in the urban forms are also included among the effects of migration processes. New groups sharing the territory with old dwellers - spaces of cultural negotiation, as pointed by Homi Bhabha (2004), engender new places of sociability, new manners of perceiving the townscape and new kinds of using the territory. All of it becomes more evident in neighborhood scale. Anyhow, the backdrop of these changes is the meeting of different cultures in the city and the specific relations among the groups gathered there. Thus, studies on Urban Morphology should consider, in coordination, different approaches, originating from different fields of knowledge - Geography, Urban Planning, Anthropology, among others -, in order to contextualize the transformation of urban design and the changes in its use. Keeping the focus on the impact of migration on urban form, this paper seeks to contribute to the discussion by the example of an old area of the city of São José dos Campos, located near São Paulo (Brazil). In recent decades, this city became an important industrial and technological hub, with migrants, Brazilians and foreigners, adding more than 50% of its population. We selected an old area of the city, where we could identify two major groups. One of them consists of families that inhabit that neighborhood for several generations. Other, less stable, brings together those that were attracted by industrialization. Somehow, it repeats the situation which was studied by Norbert Elias and John Scotson (1994): the tense relationship between the two groups that inhabit the same area. This is also reflected in how each group perceives and takes up the space, also being possible to see different patterns of housing related to the two groups. In our approach we make use of photos, maps, paths and statements in order to show the changes in urban form arising from a strong migratory movement and with the sharing of the territory by established and outsiders.

Key Words: urban form, migration, cultural diversity, townscape.

References:

Bhabha, H. K. (2004) *The Location Of Culture* (Routledge, New York).

Elias, N., Scotson, J. L. (1994) *The Established And The Outsiders* (Sage, London).

Diaspora typo-morphology analysis: a study of post-colonial city in critical approaches

Po-ju Huang, Chaolee Kuo

E-mail: pajuhuang@gmail.com

Diaspora is a spatial representation of colonialism, that is also prime phenomenon of urban is constantly duplicating and reproducing urban form. Colonial city's planning often by the advanced standards of Western countries equitable distribution of the overall planning in order to erase the gap between the local and construct the hypothesis of a homogeneous city by ignoring the people's "sense of place". In fact, during the process of spatial practice, standardize modification would be impossible to complete, and only highlight the complexity that populations and societies possess in colonial cities. In recent years, development in Taipei is dictated by the economics of space, creating competition between builders and politicians. Many new plans for the redevelopment of industrial sites show how global capitalism has resulted in a homogeneity of architectural types. Such implementation often contradicts local traditions, resulting in a discrete landscape, a grafting of modern and traditional urban forms. It's not only show the "practice of social behavior" and "spatial practice" to simultaneously, but also combine with each other or resistance to each other. In order to analyze the diaspora phenomenon, we attempt to explore the historical changes that took place along the city's borders and explore Taipei through morphological analysis and narrative scenes in order to understand the Diasporas typo-morphology. The study combines urban form weaving together a complex web of relationships, analysis and dialectic relationship between buildings, open space and social practices in order to critical the local traditions meaning and contradictions of modern city, that as a reference for future development of urban space.

Key Words: de-construction, post-colonialism, typo-morphology, diaspora, hybridity.

Morphological analysis of the informal city. The ‘Villa 31’ in Buenos Aires, Argentina

**Marco Maretto¹, Anna Rita Amato², Nicolò Boggio¹,
Gabriele Catanzano¹, Antonio Corvigno¹**

¹Department of Civil Engineering, Environment, Land and Architecture. Università degli Studi di Parma, Parco Area delle Scienze, 181/A, 43124 Parma, Italy.

²Department of Architecture and Design. Sapienza Università di Roma, Via Antonio Gramsci 53, 00197 Rome, Italy.

E-mail: marco.maretto@unipr.it , anna.rita.amato@alice.it , nickboggio@yahoo.it , gabriele.catanzano@libero.it , corvigno.a@gmail.com

This research comes from the idea that the tools of urban morphology can be applied on ‘informal’ contemporary city. Informal fabrics are basically spontaneous fabrics, but ‘spontaneous’ are a large part of the pre-modern urban fabrics on which urban morphology developed as a discipline, let us recall the studies of MRG Conzen on Alnwick and those of S. Muratori on medieval Venice. It is possible then to find some interesting morphological analogies between the urban processes of pre-modern historical cities with those of the major slums in many contemporary metropolis. Starting from this assumption it was taken the case study of the Villa 31 in Buenos Aires. This fabric is of great interest for the purposes of our work. It is located in a strategic position with respect to the historical and economic centre of the Argentine capital, between the harbour, the railway station and the compact fabrics of the consolidated city. It is crossed by a main motorway overpass, the Autopista 25 de Mayo. It has already a first social and building stratification that makes it a very useful example to extend to other similar cases. The application of the urban morphological tools to contemporary slums should, in our opinion, make it possible to critically understand the transformation processes of these kind of neighbourhoods (often considered chaotic, illogical and so ‘unreadable’), either from the urban point of view and from the social-economic aspects, in order to consciously design the regeneration of its fabrics. This is the direction of our research on Villa 31 and the approach taken on other similar situations on which we are still working.

Key Words: informal city, urban morphology, social and urban transformation, urban design.

Urbanization in the Ave Valley region: more than a sum of building projects?

Nuno Travasso, Daniel Casas Valle

Centro de Estudos de Arquitectura e Urbanismo (CEAU), Faculdade de Arquitectura da Universidade do Porto (FAUP). E-mail: dcv@cityeu.eu

In the diffuse urbanized pattern of the Ave Valley region (NW Portugal), a dominant urban morphology is absent. The fragmented and discontinuous urban form is a result of a layered urban landscape with a big variety of urban patterns. In contrast to compact urban settlements, this region has a very dispersed urban image. Not only have the physical and social conditions determined a relative small development grain, but also the planning system. In VN Famalicão – despite the availability of urban or project planning instruments (PU, PP) which have been the exception – the urbanization process has been highly determined by the sum of small loteamentos (since 1994, when the overall spatial municipality plan – PDM – was approved: one PU and one PP – global and detailed urban plan types - and 510 loteamentos). These are private urban developments regulated by a simple procedural regime almost without a specific urban regulation. The autonomous character of this urbanization mechanism has led to an uncontrolled or unplanned urban pattern for the whole, without a leading role from public administration. Central question is what is the result of the total of all individual building projects, which patterns and structure can be mapped? What is the spatial contribution to the public space structure (streets and roads) and public facilities (schools, sport, etc.), which design rules or urban regulation are applied? What kind of instruments are used to guide building projects, within the framework of the loteamentos? And what kind of instruments are included into the licence process of building projects for future use and maintenance?

Key Words: loteamentos, private urban development, planning system, urban pattern, street.

The implementation of urban plan strategies in Sintra: integration, identity and development

João Cardim, Tiago Bragança Borges, Filipa Fiúza
DINÂMIA'CET, ISCTE-IUL. E-mail: caardim@gmail.com

The Sintra County – integrated in the AML (Lisbon Metropolitan Area) – it is specially known by its historical core, classified by UNESCO as a World Heritage site in 1995. However, its landscape has many different territorial expressions that are characterized by dissimilar kinds of settlement. Part of this territory has traditional cores, with a rural reality, spreading in the northern and west parts of the county. In opposition, the most urban ones are located near the railway and freeway that connects the county to Lisbon's centre. In the beginning of these realities, urban planning was inexistent and many mistakes were made, especially in what concerns with sustainable growth logics, ignoring the pre-existent characteristics. In the last 30 years the first administrative urban plans were designed, and some growth and preservation strategies were developed to improve the relations between these different realities. Almost none of them were actually implemented in this territory and, in the recent past many old errors were made again. Local tourism is still one of the most lucrative factors of development, but especially at the UNESCO classification core, which boasts over one million visitors per year – mostly foreign. This essay intends to make an evaluation not only of the planed strategies that are in today's governing programs but also of its influence in the territory. Furthermore, we intend to understand the possibilities of use local pre-existent characteristics as a model of sustainable growing for the future, taking in question the economical issues of local development and the best integration of different social and even cultural realities.

Key Words: Sintra, urban plan strategies, heritage sites, identity, economical development.

Integration of public spaces into the urban environment in case of Perm

Anastasia Kuznetsova, Svetlana Maximova

Department of architecture and urban design, Perm National Research Polytechnic University. E-mail: nastyakyz@mail.ru , svetlana-maximova@yandex.ru

The quality of urban environment is constructed not only with help of certain elements of it but with help of interaction between them. Historical buildings, nature elements (the river, the lake, the forest) should be integrated into public spaces of the city for the best perception of them. In this case public spaces have one more social function. The tool for planning is a graphical method of a placement building mass (filled spaces) and open spaces. The open spaces are streets, parks, embankments, the yards inside the blocks, etc. Such morphological elements directly influence on the quality and comfort of urban environment and create the impression about the city as well. Interaction between open spaces and buildings takes place with help of facades of buildings. It is necessary to take into consideration the morphotype, condition of the facade, relation between the facade area and open space area, etc. Perm is the Ural city which partly has historical buildings of XVII-XIX centuries. The events of XX century contribute to lose historical shape and authenticity of the city. Seven rivers valley in the city are existing in bad condition and have no social and recreation functions anymore. The analysis of existing situation of Perm is occurring by the method of placement open spaces and research of facades condition for different morphotypes. It allows to find the ways of improvement of urban environment quality.

Key Words: public space, morphotype, interaction, perception of the landscape, historical heritage.

Urban form in a system view

Anastássios Perdicóulis

CITTA — Centro de Investigação do Território, Transportes e Ambiente, Faculdade de Engenharia, Universidade do Porto, Porto, Portugal; ECT — Escola de Ciências e Tecnologia, Universidade de Trás-os-Montes e Alto Douro, Vila Real, Portugal.

E-mail: tasso@utad.pt

What is in a system — and, in particular, an urban system? What is to be seen of that system, and what is not? Are the unseen, abstract facets of the system, such as motives and relationships, also part of its form? Or perhaps the unseen system elements influence how the system looks like, besides how it is built and works — i.e. its structure and function? It is argued and visually demonstrated that while form refers to the visible parts of an urban system, it is mostly the unseen elements of the system and their equally invisible links or relationships that shape the form of that system. And, vice versa, the form of the system impacts on those unseen, abstract, or ‘soft’ parts — in other words, practically anything that has to do with humans and their state of being. Although this argument and its value are possibly recognised throughout urbanism, the unseen facets of urban systems are seldom displayed next to their visible form — i.e. the abstract system elements and relationships remain as exclusively mental property. What if this ‘meta-level’ of planning (for) the urban system, which resides in the domain of conceptualisation, could be as visible and shared as the urban form? The ensuing proposal entails drafts of complete or integrated system views, giving visual status to the otherwise unseen or ‘soft’ system elements, and the relationships between all system elements. The value of this explicit communication is in opening up, displaying, and sharing mental models about urban systems, so the ‘urban system’ view becomes larger than the form and more debatable and workable. Hopefully, all this should still fit within the working bounds of urbanism.

In between public and private space: the role of cul-de-sacs in the historic urban form of Antakya

Mert Nezih Rifaioğlu, Neriman Şahin Güçhan

Department of Architecture, Mustafa Kemal University, Turkey.

Department of Architecture, Middle East Technical University, Turkey.

E-mail: mertnezih@gmail.com , neriman@metu.edu.tr

Cul-de-sacs are important structural elements of Middle Eastern historic urban forms. Their way of formation in time and the usage by the inhabitants is one of the main research areas in urban form studies. Different from streets, cul-de-sacs create a space in between public and private which is dominant throughout the historic urban cores. The aim of this paper is to analyze the formation of cul-de-sacs in historic urban core of Antakya which is organic in form reflecting the main characteristics of the Ottoman city street systems in the south-eastern part of Turkey. In this way, the paper seeks to understand the formation and the usage of the cul-de-sacs by utilizing property rights and their physical reflections in Antakya historic urban core. Besides, the paper will define the unique grammar and un-known parameters that play a key role for shaping the urban form of Antakya which will provide new insights for urban form studies.

Key Words: cul-de-sacs, urban form, Antakya.

A method for planning viewing spots and cityscape control to contribute the perspective of spectators visiting a Japanese traditional festival

Daichi Yamamoto, Susumu Kawahara

Department of Tourism Science, Faculty of Urban Environmental Sciences, Tokyo Metropolitan University, Japan. E-mail: yfmr1104@yahoo.co.jp

This thesis focused on the developing methods of planning viewing spots and control of cityscape from the perspective of spectators visiting a traditional festival of Japan, especially the fishing village of Manazuru in Japan. To do so, photographs of a portable shrine, which is the most important element of the Japanese traditional festival, including background landscape, were analyzed in a case study of Kibune Festival in Manazuru, a kind of portable shrine that carries a god over the sea by ship. Two surveys were conducted to get the aims of this research. At first, as a photograph collecting survey, 113 festival photographs that were displayed a photograph contest held in Manazuru were collected which shows spectators' interests. At second, as a video camera survey, three video cameras were set up at three fixed points in Manazuru to get the density data of the some place that tells how many spectators were stayed at each viewing spot. Findings are two results as follow. First, several important viewing spots were extracted by analyzing the landscape elements in the central axis of the photographs, and calculating the density of place that shows how many spectators stay at each site. Also, some important cityscapes that should be preserved, because it identifies the specialties of Manazuru were clarified that appeared frequently in the photographs. These results of two new approaches emphasize both important viewing spots and cityscape should be preserved to contribute the perspective of spectators at the Japanese traditional festival.

Key Words: Japanese traditional festival, landscape, planning viewing spots, cityscape control, photograph.

How to find spatial patterns for criminality in urban areas

Helena Almeida¹, Francisco Serdoura¹, Hugo Guinote²

¹CIAUD – Centro de Investigação em Arquitectura, Urbanismo e Design, Faculdade de Arquitectura, Universidade Técnica de Lisboa, Rua Sá Nogueira, Pólo Universitário, Alto da Ajuda, 1349-055 Lisboa.

²ISCPOL – Centro de Investigação do ISCPSP, Instituto Superior de Ciências Policiais e Segurança Interna Rua 1º de Maio, nº 3, 1349-040 Lisboa.

E-mail: halmeida@fa.ulisboa.pt , fs@fa.ulisboa.pt , hdguinote@psp.pt

A key priority of urban planning is to ensure safe environments (Hillier and Sahbaz, 2008). Because fear of crime isn't always coincident with priority crime falls, communities often prioritise police visibility instead lower crime. Since fighting against petty crime has greater effect on population than fighting against organized crime, balancing safety and security is a hard task. On the other hand, urban fabric often results of informal transformation processes, with little or no intention of providing safe public spaces. Portuguese rural exodus had as its main consequence a massive urbanization, leading to unbalanced transformation processes (Serdoura and Almeida, 2012; 2010). The research question is: Is it possible to make cities safer? This study explores spatial properties in relation to the occurrence of criminality, with the aim at analyzing correlations between urban morphology and safety of public spaces. Through spatial analysis of areas which have been chosen for criminal acts, this study intends to find spatial patterns for criminality, as well as hotspots for crime, by analyzing clustering patterns. The methodology used for this study is the spatial analysis of two Lisbon's neighbourhoods, namely Santa Maria Maior, in the inner city, and Olivais, a modern district at the north periphery of Lisbon, and the comparative analysis between the resulting properties of the urban system and the respective criminal acts' mapping for the last five years (2008-2013). The research aims at informing urban planning and management how to design urban spaces that can be more effective against crime (Friedrich, et al, 2009).

Key Words: urban morphology; space syntax; spatial patterns; criminality; safety.

References:

- Friedrich, E.; Hillier, B. and Chiaradia, A. (2009) 'Anti-social Behaviour and Urban Configuration. Using Space Syntax to Understand Spatial Patterns of Socio-environmental Disorder', in Koch, D.; Marcus, L. and Steen, J. (Eds.) *Proceedings of the 7th International Space Syntax Symposium*, Stockholm, 8 – 11 June.
- Hillier, B. and Sahbaz, O. (2008) *An evidence based approach to crime and urban design. Or, can we have vitality, sustainability and security all at once?*)Bartlett School of Graduate Studies, London).
- Serdoura, F. and Almeida, H. (2012) 'Geographic morphology in informal settlements. Influences on urban liveability and segregation.', *Proceedings of the Conferência Internacional PNUM 2012 - Portuguese Network of Urban Morphology*, ISCTE – Instituto Universitário de Lisboa, Lisboa, 5 – 6 July.
- Serdoura, F. and Almeida, H. (2010) 'Urban Centralities. Places of liveability', *Proceedings of the 3rd Annual Conference on Planning Research Bringing City Form Back Into Planning (CITTA)*, Faculdade de Engenharia, Universidade do Porto, The research centre for territory, transports and environment, Porto, 14 May.

Assessing the impacts of urban barriers on the arterial system of the city: a case study in Montréal, Canada

Juan Buzzetti, Pierre Gauthier

Department of Geography, Planning and Environment, Concordia University.

E-mail: jbuzzetti@gmail.com , pierre.gauthier@gmail.com

Natural and human-made barriers constitute a morphological matrix, as they organize space, in particular by delineating zones that can accommodate residential and other associated urban functions. Drawing from urban morphological studies, space syntax as well as landscape fragmentation methods, this paper explores how intrinsic characteristics as well as topographical and geometrical attributes of barriers impact on some qualities of the urban form. It focuses more specifically on the relations between urban barriers and the arterial system of the city. Urban morphology provides the theoretical foundation for the understanding of the city as a complex system, comprised of interrelated elements. This project looks particularly at three categories of objects and their spatial dynamics: the urban barriers, the neighbourhoods (i.e. “patches”), and the arterial system. It seeks to evaluate the influence that urban barriers and connections, or lack thereof, have on the properties of the arterial system such as connectivity and integration at both citywide and neighbourhood levels. At the citywide scale, the geometry of the barriers’ network is assessed using landscape fragmentation techniques whereas space syntax metrics are used to characterize the arterial system. The analysis seeks to reveal if there exists any relationship between the level of fragmentation of the landscape and the extent to which roads are integrated or segregated within the arterial system. At the neighbourhood level, the analysis intends firstly to evaluate how the dimensions and configuration of patches impact on the arterial system; and secondly, to measure how the level of integration of the local arterial system varies in regards to the type and nature of barriers that delineate the patch.

Key Words: urban barriers, space syntax, landscape fragmentation, urban form.

Urban form and orientation in urban space

Anna Kantarek

Faculty of Architecture, Cracow University of Technology.

E-mail: akanta@poczta.onet.pl

The question is about developing research disciplines based on human abilities of perception in the spatial reality of a city and refer them to urban morphology and typology. This means also posing a question about human orientation abilities in nowadays urban space. Urban structure and spatial legibility relation is extremely important. It is possible to formulate an orientation codes of the urban form (the own codes of a form, signaling codes, mass transmission codes and others codes incorporated in culture) and find determinants which could define the notion of orientation of the balance in the urban space as an criterion of Urban Form.

Key Words: urban space, space orientation, codes in urban space, urban meaning, urban signs.

Urban form and social output

Romulo Krafta

Department of Urbanism, Federal University of Rio Grande do Sul, Brazil.

E-mail: krafta@ufrgs.br

Assuming that the ultimate purpose of the city is to provide support to human interaction, and that opportunities to social interaction are unevenly distributed across the urban fabric (Batty, 2013), this paper reports some attempts to describe such a distribution, as well as to infer the role of urban form in it. In order to do that, it is proposed, firstly, a method to describe urban form from its smallest components up to the different urban fabric patches, to the entire spatial system, and second, a model to represent social interaction as a process associated to the urban morphology. Early results suggest that urban places' performance are dependent upon their actual form in two ways, both local but strongly related to the city overall spatial configuration: a) degree of convergence between public space's size and relative position. Central public spaces are more demanded for traffic and pedestrian circulation, and their size (capacity) should follow suit in order to keep performance; b) built form characteristics, related to buildings' functions. Public buildings are expected to attract people from other places, increasing their places' performance and affecting other places ones. Both the spatial description and the analytical model are discussed through the examination of some results, obtained through simulation. Descriptive and analytic model is developed through graph theory and configurational analysis, combining morphologic and functional attributes of urban form (Krafta, 1994, 1997). Quantitative measures of social output are provided, assuming that social output involves various types of social interaction, differentiated by relevance (Bettencourt, 2013).

Key Words: spatial interaction, urban spatial configuration, urban form performance.

References:

- Batty, M. (2013) *The new Science of Cities* (Cambridge Mass, MIT Press).
Bettencourt, L. (2013) 'The Origin fo Scaling in Cities', *Science* 340, 1438.
Krafta, R. (1994) 'Modelling Intra-Urban Configurational Development', *Environment & Planning B* 21, 67-82.
Krafta, R. (1996) 'Urban Convergence: Morphology and Attraction', *Environment & Planning B* 23, 37-48.

Mapping and morpho-typological inferences in low-lying coastal Tianjin

Linchao Wang¹, Li Li ^{1,2}, Qingyu Gong¹

¹Tianjin University, School of Architecture, P.R. China.

²BIAD & JAMA Co., Ltd., Beijing, P.R. China.

E-mail: gong@tju.edu.cn

Nowadays, a large number of Chinese small towns and villages are undergoing an unprecedented transformation. The redevelopment normally favours a one-off urban design method and replaces the traditional fabrics with identical new faces. Although morpho-typological analysis are widely used to inform the characteristics of urban structures, not many studies focus on the role of environmental elements in pattern formation and infer the underlying forces of the structuring in coastal low-lying areas. In this paper, we first mapped 32 coastal towns and villages in Tianjin and extracted some key elements such as street networks, parcels and buildings. We classified the levels of structural complexity based on the underlying mathematical structures according to Salingaros. We then deduced the possible driving forces by using the historical and current satellite imagery. Finally, we derived shape grammars for courtyard buildings and adaptive rules under the environmental pressure. The grammars can be applied to future urban design practices, by which the grammars can be tested and help understand how water features interact with the built environment.

Key Words: pattern formation, morpho-typological analysis, shape grammar, mapping; coastal low-lying.

Industrial-housing ensembles at Lisbon – morphology and specialization

Gonçalo Antunes, José Lúcio, Nuno Pires Soares, Rui Pedro Julião

e-GEO, Research Centre for Geography and Regional Planning, Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa. Avenida de Berna, 26-C, 1069-061, Lisboa, Portugal. E-mail: goncalo.ant@fcsh.unl.pt , jmr1@fcsh.unl.pt , nhpssoares@fcsh.unl.pt , rpj@fcsh.unl.pt

This communication aims to analyse the consequences of demographic and urban explosion particularly the spread of the houses where the proletarians dwelt at Lisbon. The importance of the 19th century in the development and expansion of Lisbon prompted the main objective of this communication. It is intended to describe and analyse the small urban ensembles associated with the industries, in which thousands of workers dwelt from the end of the 19th century to the beginning of the 20th century. We intend to analyse the internal colonization of courtyards^{EN}-pátios^{PT} - and subsequently the emergence of hundreds of workforce-housings^{EN}-vilas-operárias^{PT}. These industrial small urban ensembles are an important industrial heritage, especially due the typology varieties, singular architecture and spatial distribution. Scientifically we are contributing with: i) a urban morphological approach, trying to intent the different typologies of pátios and vilas-operárias at Lisbon. This urban ensembles have various socio-urban typologies that we want to analyse and describe; ii) understand the relation between urban morphology and toponyms. This analyse especially focus in these small industrial ensembles, where the Portuguese substantives ‘pátio’, ‘vila’, ‘rua’, ‘travessa’, ‘beco’ intermingle in complex ways; iii) analyse the spatial distribution and density of points for these phenomena, using Geographic Information Science (GIS) potentialities; iv) due to the urban importance of these ensembles it is also our intension to discuss and analyse what has been done in Lisbon for the conservation and adaptation of this singular and complex heritage.

Key Words: urban morphology, specialization, industrial-housing heritage, patios, vilas operárias.

An urban taboo

Marco Falsetti

Departement Diap, Doctorate Draco, University of Rome 'Sapienza', Italy.

Email: levonraisen@libero.it

Defined through monumental perspectives, dimensionally related to historical roman avenues, and philologically connected to the Mausoleum of Alexander Severus, the Don Bosco district in Rome has both the characters of a lithic wing and the obsessive seriality of its housing blocks. It was mostly planned by Gaetano Rapisardi in the early fifties, by further development of the "Plan of Rome" made in 1931, and represents the only discontinuity in the Italian panorama of low-cost housing districts, More related to the foreign contexts than its coeval experiences. While almost completely ignored by Italian architectural debate, the Don Bosco district denotes a refined spatial stronghold thanks to: the monumental dimension of the courtyards and the scenic continuity of Viale Don Bosco (one of the largest axis in Italy); all those elements define a highly discernible morphological area, enclosed by two poles: the Mausoleum and Cinecittà. A perceived figurative relation with the fascist model of urban planning-which is one of the reasons that this district has mostly been considered as a taboo in the Italian architectural debate- is a source of avoiding to solve this problem in a rational way.(The urban problematics posed by a, highly populated peripheral area.) District of Don Bosco offers an original opportunity to investigate the only operational methodology of those days that acted in counter trend to its coeval experiences. The district nowadays still keeps a unifying and recognisable design keeping a dialogue with the existing city, while the modernist districts near to it , built in the sixties, share the difficulties of a rude interruption in the surrounding urban fabric.

Key Words: monumental districts, countertrend methodology, Don Bosco, urban-integrity.

Classical ideas, progressive aspirations: academicist urbanism designing northern Paraná new towns

Renato Leão Rego, Taissa S. Ribeiro, Jaqueline Taube

Department of Architecture and Urbanism, State University of Maringá, Brazil.

E-mail: rlrego@uem.br

Articulating town planning history and morphological studies, the paper aims to show the effect of academicist urbanism in the layout of three Brazilian mid-twentieth-century new towns planned from scratch by civil engineers graduated from the Faculty of Engineering, in Curitiba. Academicist urbanism is understood as the planning in the 'grand manner', a set of formal ideas drawn from traditional European planning practice that were usually referred to in North America as the City Beautiful movement. The Urbanization Plan for Curitiba co-authored by Alfred Agache in 1943 was an important local reference, particularly for the civil engineers regarded in this paper. Thus, morphological elements such as diagonal avenues, tree-lined boulevards, and the grouping of main public buildings, and their ordered, symmetrical organization convey an artistic approach amid regular, gridiron urban forms, typical of land-speculation enterprises.

Key Words: planning diffusion, new towns, Tamboara, Paranacity, Cidade Gaúcha.

Graphing history: the example of early American studies of Japanese settlements forms

Tyana Santini, Takahiro Taji

Kyoto University, Graduate School of Engineering, Architecture department.

E-mail: tyanasantini@gmail.com , taji@archi.kyoto-u.ac.jp

In the first decades of the 20th century the American geographers were producing their first studies of settlement forms. The approach and methods that should be adopted in these new studies were then intensely discussed, being the role of history a recurrent subject of debate. The present study will first examine the conditions that encouraged the inclusion of historical data in the study of settlements, to then discuss how this historical data was managed and interpreted, paying special attention to its graphical use. For this purpose the work of the American geographer Robert B. Hall will be analysed. During the 1920s and 30s Hall performed pioneering studies of rural and urban settlement forms in Japan¹. In these studies Hall made use of graphic tools for the analysis of form and structure of settlements, including previous morphological stages as well as information of the relevant political historical events. But, the purpose of integrating history in any of its forms, or the way to use it, was not yet clear. Besides the collection of actual historical data, geographers drew upon the discipline of History in the search for an appropriate way to use and interpret such data, either to recognize patterns of growth², to find causes³, or to look for origins. Through the discussion of these subjects this study hopes to contribute to the better understanding of the early link between the study of settlements, the use of historical data, and its graphic representation.

Key Words: Japanese settlements, settlement morphology, graphic representation, Robert B. Hall.

European spatial paradigms. Urban infrastructural morphologies

Manuela Triggianese, Fabrizia Berlingieri

Department of Architecture, Faculty of Architecture, Delft University of Technology.

E-mail: m.triggianese-1@tudelft.nl , info@berlingieriarchitetti.it

Because of their impact on urban fabric and economy, infrastructural changes, are key components of complex urban transformations. These large scale interventions are shaping major European (EU) cities for the forthcoming years, mostly related to the Trans-European Network Program (Berlingieri and Triggianese, 2013). The nature of this development results in an the increasing evolution of urban hybrids and multi dimensional realities in the territory infrastructures cross. The multi use system, formed by aggregations, juxtaposition and super positions of different modality of transport, and the fragmented urban and architectural interventions around it, constitute new interconnected morphological-types, linked to a larger urban frame (Huck *et al.*, 2011). This paper aims to explore how EU territorial changes can be supported by research and methods of analysing urban form and its structural elements. In that sense it intends to develop an integrated approach in terms of: (a) Coding Urban Morphological Types in the analysis of infra-architectural elements that are changing the character of EU cities. (b) Investigating the interactions between multiple agents (economy, architecture and territory) that transform contemporary urban realities, driven by private-public sectors (Terrin, 2011). The empirical approach is based on the examination of large scale interventions associated to the role of infrastructure (i.e. high speed line) in the EU context through the last decades. From theory (a) to practice (b) the paper attempts to enlighten the meaning of new spatial paradigms within a design and analytic approach.

Key Words: infrastructure, morpho-type, multi dimension, Europe.

References:

- Berlingieri, F. and Triggianese, M. (2013). 'From Utopia to real world: Construction of a unique metropolitan space of Europe.', *MONU: magazine on urbanism* 19, 18-23.
- Huck, T., Keller, R. and Kleinekort, V. (2011) *Infrastructural Urbanism Addressing the In-Between* (DOM, Berlin).
- Terrin, J.J. (2011) *Gares et dynamiques urbaines Les enjeux de la grande vitesse* (Parenthèses, Paris).



9.

Teaching urban form

Considering how aspects of urban form are taught is of increasing importance as the subject becomes more international and more interdisciplinary. Further, some key figures in the field are retiring, and a new generation of researchers and practitioners needs to be recruited and educated. Finally, the challenges posed by technological advances in data collection and analysis need to be explored. This is a big agenda, and this session can only make a start. We have sought contributions from academic and professional courses, and from different national contexts. We have deliberately sought comparisons, with local innovations being set in wider contexts. But this session does not provide a 'how to' manual for teaching urban form: it questions approaches and demonstrates good practices. Many issues will remain unexplored; but the profile of teaching urban form will be raised for future conferences.

Peter J. Larkham

A constructivist approach to urban morphology: engaging students in the study of urban form

Mirko Guaralda

Centre for Subtropical Design, School of Design, Queensland University of Technology. E-mail: m.guaralda@qut.edu.au

Queensland University of Technology architecture students are mainly exposed to the design and understanding of buildings, their structures and systems. In this syllabus 'Architecture and the City', a third year unit, is quite a unique experience for students to engage with urban form and gather an understanding of urban studies. This subject used to be delivered mainly as an overview of theoretical positions; although students' appreciation was average and the outcomes satisfactory, there was no direct link between the theories exposed and how an understanding of urban form could be applied in the design studios. After completing the unit students had no idea of what to do with the content acquired in this curriculum. This paper illustrates a constructivist approach (Biggs et al, 2007) to the teaching of urban form stressing also the importance of the implementation of a teaching-research nexus (Healey, 2005). Architecture and the City is currently delivered in a blended mode (Anderson, 2008) through a series of face-to-face lectures and online learning activities, articulated in self-directed workshops and asynchronous studios. Students are engaged in the unit exploring the practical application of tools and theories of urban form through 3 assessment items that stimulate critical thinking and creativity (Race, 2007). Data collected so far support the idea students' understanding of the topic and its relevance within the curriculum has increased, as well as their ability to transfer the skill acquired to other units and also in their work environment.

Key Words: morpho-typological research; education; constructivism; teaching-research nexus.

References:

- Anderson, T. (2008). *The theory and practice of online learning* (Athabasca University Press, Edmonton).
- Biggs, J. B. and Tang, C. (2007). *Teaching for quality learning at university: what the student does* (McGraw-Hill/Society for Research into Higher Education & Open University Press, Maidenhead).
- Healey, M. (2005). 'Linking Research and Teaching to Benefit Student Learning', *Journal of Geography in Higher Education*, 2, 183-201.
- Race, P. (2007) *The lecturer's toolkit: a resource for developing assessment, learning and teaching*. (Routledge, London).

Exploring pedagogical intersections between urban design and morphological methods

Wendy McClure

Architecture, University of Idaho. E-mail: wmccclure@uidaho.edu

Most urban design and architecture program curricula in the United States do not currently include course content in urban morphology. ISUF's emerging manifesto, which seeks to enlighten design and planning practitioners as to the value of urban morphology, suggests a need to educate future design practitioners in relevant theory and methods. This paper will discuss pedagogy used in a graduate seminar to engage architecture students in applying morphological methods for context documentation, analysis and interpretation and to formulate urban design recommendations. Discussion is based on an applied research project designed to help inform changes in planning and urban design policy for the small city of Moscow, Idaho. Local decision-makers aspire to transform incongruous and suburbanizing sections of the city's main commercial street into a positive urban corridor by establishing "visual continuity" between Main Street's eroded blocks and those located within the heart of the city's downtown National Historic District. Project goals, as choreographed in partnership with city officials, provided fertile ground for participating students to apply and compare relative contributions of methodologies for urban context analysis and interpretation. Student teams adapted methods familiar to architects and urban designers, such as Kevin Lynch's "imageability" analysis and form-based transect analysis, as well as morphological methods to identify key spatial elements that define Main Street's spatial structure, scale and character. Additionally students created hybrid approaches to help evaluate changes in scale and urban grain along the corridor through integration of morphological approaches with concepts championed by Danish architect/urban designer Jan Gehl.

Key Words: pedagogy, practice, applied research, service-learning.

Urban form in diagrams

Evandro Ziggiatti Monteiro

Faculty of Civil Engineering, Architecture and Urban Studies, UNICAMP,
Campinas, Brazil. E-mail: evandrozig@fec.unicamp.br

Teaching urban morphology is a task based on scattered ideas, physical examples of past and present cities but very few methods of analysis and evaluation. The classic authors must be summoned in the classroom to guide architecture student's first steps on the path of understanding and dealing with the complex physical nature and dynamics of our cities. This article describes an effort made on constructing diagrams based on classical texts of Cullen (1971), Lacaze (1993), and Kostof (1991), aiming to provide the students basic tools for reading the urban form through Conzen's (1960) three dimensions. The diagrams were presented summarizing urban morphology basic principles, followed by exercises and site activities. The exercises consisted of common drawing over map activities, outlining and hatching recurring features, like the grid, organic, picturesque and monumental style street-systems; or pointing out possible situations for Gordon Cullen's qualities. The site activities were based on visits to Campinas-SP region cities, where students were challenged to use a "see through the classic authors' eyes" approach. Aside for the urgent need of developing more methodological tools for teaching urban morphology or translating the classics into more classroom-friendly procedures, this teaching experiment highlights not only the value of the diagrams as easy learning and effective reinforcing study material, but also as daring investigation tools of urban form.

Key Words: urban morphology teaching, built environment, urban studies diagrams.

References

- Cullen, G. (2004) *Paisagem urbana* (Edições 70, Lisboa).
- Conzen, M.R.G. (1960) *Alnwick Northumberland: a study in town-plan analysis* (Institute of British Geographers, London).
- Lacaze, J.P. (1993) *Os métodos do urbanismo* (Papirus, Campinas).
- Kostof, S. (1991) *The City Shaped - Urban patterns and meanings through History* (Thames and Hudson Ltd., London).

Learning about urban form in Spain. A comparative study of urbanmorphological curricula in Spanish Schools of Architecture

Borja Ruiz-Apilanez, Eloy Solis, José Ureña, Juan Ramón Alfaro

Urban Design and Planning, School of Architecture, Universidad de Castilla-La Mancha, Toledo, Spain. E-mail: borja.ruizapilanez@uclm.es

According to The Bologna Declaration of 1999, the first objective of creating and developing The European Higher Education Area (EHEA) was to adopt a “system of easily readable and comparable degrees” among the countries involved by 2010. For various reasons, this goal has revealed quite hard to achieve. In the particular case of urban morphology, the task is not easier since it is a body of knowledge that belongs to a wide range of different faculties, schools and departments, which actually differ from one country to another. Historically, the study of urban form in Spain has been developed by geographers, architects and civil engineers, since there has not been specific schools or faculties for other professionals involved in the design of the built environment such as landscape architects, urban designers or planners. Because of this, Schools of Architecture in Spain are actually responsible for the education of most designers of the urban environment. Taking this into account and taking advantage of the unique opportunity given by the upcoming International Seminar of Urban Form 2014, we propose to study, analyse and present the case of the Schools of Architecture in Spain in order to contribute to generate a wider picture. It will allow us to better know about the reality of urban morphological curricula in Higher Education Institutions. The research method analyses all the different undergraduate and postgraduate programs offered in every School of Architecture of the country, which constitute a group of more than thirty institutions both private and public. The study will reveal similarities and differences in urban morphology curricula among undergraduate and postgraduate programs in Spain, but, perhaps more importantly, could be performed in different countries. In the case of those in the EHEA, these studies could play an important role to further modify the programs in order to make them truly ‘comparable’ and to get a better understanding of possible relations among European professionals and educational institutions.

Key Words: urban morphological curricula, Spanish Schools of Architecture, European higher education area, undergraduate and postgraduate programs.

Teaching and seminar of urban morphology in Peking University, China

Xinkai Xiong^{1,2}, Feng Song^{1,2,3}

¹College of Urban and Environmental Sciences, Peking University

²Urban Morphology Research Group, CHINA, Peking University

³Urban Morphology Research Group, Birmingham University.

E-mail: email.xxk8005@126.com

There are three teaching and seminar activities on Urban Morphology in Peking University, whose academic background is urban geography and urban planning, under the charge of Prof. Feng SONG, from UMRG.CN. The first one is the undergraduate course, *Introduction of Urban Morphology*. The second is the graduate course, *Senior Lectures of Urban Form and Culture*. The third is the seminar about theory and practice of Urban Morphology in the research group for both undergraduate and graduate students. Through the design of curriculum, the research group focuses on 5 important issues: (1) Multidisciplinary Background of Urban Morphology; (2) Disciplinary History: Conzenian School, Italian School and Chinese School; (3) Method and Tips of Field Work Survey; (4) Integrated Research with Practice; (5) Multi-cultural Comparison and International Communication. On the other hand, there are also some difficulties during the urban morphology teaching, like language, field work survey, multi-cultural comparison etc. The paper also gives the future plan of urban morphology teaching in Peking University.

Key Words: urban morphology; teaching and seminar; Peking University.

Building-type and permanence of layout-plan: a study on the densification of Los Mochis urban fabric (Mexico)

Luis Armiño, Ignacio Reig, Vicente Colomer, Gonzalo Vicente - Almazán

E-mail: luis@arminoarquitectos.com , ibosch@pra.upv.es, vcolomer@urb.upv.es ,
gvalmazan@arquired.es

For some time, Mexican authorities have aimed at controlling the sprawl of urban land, until now based in single family housing-developments and real estate sector initiative, with little coordination nor attention to other aspects of urban planning and design. Future urban growth should be approached through the densification of existing urban land and increasing provision of urban equipment and services. A recent Architecture and Urbanism Workshop held in the city of Los Mochis (Sinaloa), allowed us to analyse the characteristics of the structure and form of residential urban fabric: among others, low residential densities (around 30 dwellings per hectare), abuse of single-family dwelling-unit, lack of miscibility between residential uses and other urban activities (tertiary uses, commercial, offices, etc.), inefficiency in terms of urban mobility, underutilization of urban equipment. Simultaneously, and in an urban area designated by the municipality, a number of solutions were tested, employing denser urban structures, multifamily buildings, mixed-uses, hierarchy in establishing a local 'system of places' and integration of urban transport, which could serve as a reference or counterpoint for future decisions in sustainable urban planning.

Key Words: urban morphology, building typologies, urban densification, sustainable urban models, mixed-use urban areas, multi-family housing types.

Teaching urban form in urban design program: experiences from South Korean context

Kwang-Joong Kim

Department of Environmental Planning, Seoul National University.

E-mail: kjkim@snu.ac.kr

The presentation intends to share the author's seven-year experience of teaching urban form in the graduate urban design program at Seoul National University, South Korea. To educate the future urban designers, the class (Theory of Urban Form) deals both with practical/normative dimensions of urban form as well as theoretical perspectives of urban change. Though not required, many of students have taken the course as one of essential classes in their graduate study. The presentation will syllabically introduce the authors' urban form class and discusses its achievement and limitation in general terms. Particular focus will be on the value of Seoul-Tokyo comparative study project that served well in invigorating the descriptive morphological analysis and drawing urban design implications of urban form. The following points will be highlighted: To provide the theoretical foundation of urban form study, the class employed three perspectives: urban morphology, cultural landscape study, and history of urban form. Each provided the complementary perspectives for fuller understanding of urban built form. The conceptual framework of European urban morphology was useful to help the students understand how cities are made and change overtime, especially at urban tissue and district levels. Given the weak historical legacy of Korean urban form, however, the applicability of urban morphology tended to be limited to conservation issues. Yet, Seoul-Tokyo comparative study at subarea level showed that the morphological approach can be vital to the contemporary urban form study. It enlivened the students' interest, helping them to understand urban form as cultural product with each own identities and practical urban design implications.

Key Words: urban form, urban morphology, urban design, pedagogy, South Korea.

Imagining Ranha, Porto, from the subtropics

Peter Richards

Queensland University of Technology.

E-mail: p.richards@qut.edu.au

‘Imagining Ranha, Porto, from the subtropics’ is a Master of Architecture studio project being undertaken by students from the Queensland University of Technology, (QUT) in subtropical Brisbane, Australia. Brisbane hosted ISUF 2013 and Porto is hosting ISUF 2014. Tutors assisting the studio are PHD students from Lisbon and Porto and provided insights into the people and the architecture of Porto and Portugal. One has been a practicing architect in Lisbon for 20 years. Ranha is on the edge of the Porto municipal area and is largely derelict land. However, it is well located in the broader urban settlement on the major street network and has a university, a large shopping centre, employment and a school nearby. New connecting streets have been constructed through the area and a new light rail stop on the site, Nau Vitoria, provides excellent public transport connections to the historic city centre. These infrastructure investments are catalysts for redevelopment of high quality, transit -oriented urbanism. The municipality has 0.8 floor space requirement in an isolated building configuration for this area. This density seemed to undervalue the opportunity of the site, so students were required to design at this density as well as double and triple this density, hence, 0.8, 1.6 and 2.4. An imperative of the project was to understand the resultant building types and urban form of each density. The design process was highly structured and was informed by research into the building types, block patterns, street types and open spaces of the city with readings about urban form from both Lisbon and Porto. Designing in a far away location that is not familiar challenges preconceptions about design. When the project is familiar, it is too easy to rely on intuition, old habits and overly personal responses to design. Unfamiliarity sharpens analysis and requires a considered effort understand the site, the place, the urban context, the culture and people. This process also allows the designer to reflect on how the design may be different if it was in Brisbane and apply the skills learnt through unfamiliarity to more familiar situations.

Key Words: transit-oriented urbanism, Porto, education.

Teaching urban form in public administration context: aims and challenges

Paulo Silva

University of Aveiro – Department of Social, Political and Territorial Sciences.

E-mail: paulosilva@ua.pt

The University of Aveiro celebrated last year 30 years of the first bachelor program dedicated exclusively to Regional and Urban Planning, which with the Bologna process was replaced by a master program. Within this program of studies, urban form gained a relevant place, with a curricular unit exclusively dedicated to its study. In the meantime the context in which Regional and Urban Planning is taught changed significantly. Keeping their multidisciplinary profile the structure of the plan of studies was adapted to the change of weight of different disciplines and to a departmental move. In the present and near future a new society demand is being questioned. The aim of the proposed paper is to discuss the way urban form is | can be taught in a context where social and political sciences became dominant and in a master program on Regional and Urban Planning with a deep connection with a bachelor program on Public Administration. The results to be discussed will be based on: the comparison between students' background in different Regional and Urban Planning related master programs; the comparison of students' Urban Form curricular unit perception in comparison with other curricular units; and finally the teaching staff perception of the role of urban forms within the context of the master program and also of the Department of Social, Political and Territorial Sciences' mission.

Key Words: public administration, urban form, Bologna process, civic university, urban and regional planning.

Serious urban play – a digital game for teaching urban spatial design

Nicholas Stevens¹, Johanna Rosier², Ben Rolfe², Uwe Terton³, Christian Jones²

¹Regional and Urban Planning Program.

²ENGAGE Research Lab.

³Computer Based Design Program, University of the Sunshine Coast, Maroochydore, Australia.

E-mail: nstevens@usc.edu.au

Urban planning is a multi-faceted and collaborative discipline. Consequently, the articulation of the roles and complexities of spatial planning to prospective and first year higher education built environment students can be challenging for learning and teaching. This paper outlines the research and development of a ‘serious’ game (Prensky, 2006; Gee, 2007) which enables students to explore the relationships between and within complex urban systems. An interactive, multi-touch table PC allows teams of students to simultaneously collaborate on the spatial planning and design of an urban district. Two major types of game have emerged which are of pedagogical interest to planning educators: simulation games and virtual worlds. While these digital games use urban planning and development as their premise, many rely on a singular user interface and the establishment of financially or environmentally successful communities. Few consider planning education as their primary purpose. Furthermore this game allows the development of multi-stakeholder collaborative and negotiated outcomes which seek to balance the social, environmental, economic, and mobility needs of a community. Design-based research (DBR) is the principal methodology and theoretical basis for implementing and evaluating this teaching and learning intervention (Anderson and Shattuck, 2012). DBR is valuable here as an established education based research framework which seeks to ensure the transfer of research into improved practice. The development of the game advances the pedagogy of the ‘studio’ for the teaching and learning of urban spatial design. This is the first ‘fit for purpose’ teaching and learning tool for urban planning, which is a simultaneous multi player ‘serious’ game, played cooperatively on a horizontal plane, with planning education as its primary purpose.

Key Words: serious games, urban spatial design, urban planning education.

References:

- Anderson, T. and Shattuck, J. (2012) ‘Design Based Approach Research: A Decade of Progress in Education Research.’, *Educational Researcher* 41, 16-25.
- Gee, J. P. (2007) *What video games have to teach us about learning and literacy* (Palgrave Macmillan, Hampshire, England).
- Prensky, M. (2006) *Don't bother me mom, I'm learning: How computer and video games are preparing your kids for 21st century success, and how you can help!* (Paragon House, St Paul MN).



10.

The relations between research and practice

In January 2013 Michael Conzen, then president of ISUF, launched a task force to strengthen the relation between urban morphological research and planning practice. Subsequent responses to accounts of progress of the work, published on the ISUF website and in *Urban Morphology*, including an exceptional number of Viewpoints, confirmed that there was a latent body of opinion and experience which seemed to be waiting for a vehicle for its diffusion. The papers in these parallel sessions confirm the extent to which urban morphology has been applied in practice in wide variety of countries and through a diversity of practice instruments which range far beyond those few western countries which have hitherto dominated the field. This broadening of the context also responds to a major intention of the embryonic Porto Charter and it is hoped that it is a start to a new and fruitful chapter in ISUF's endeavours.

Ivor Samuels

The impediments for small-scale development in Miami-Dade County

Eric Firley, Andrew Frey

School of Architecture, University of Miami. E-mail: efirley@miami.edu

Following Moudon's work on the history and philosophy of the ISUF (International Seminar on Urban Form) movement, urban morphology can be described as a way of studying the physical form of cities and the process of city-making. Particular emphasis is given to the notion of time and the importance of the single lot as the fundamental unit of evolutive analysis. As a professional and foremost academic set of methods, urban morphology functions empirically and descriptively, even though the complexity of city-making, its multi-disciplinary character and behaviorist interdependencies do not facilitate the scientific proof of causalities. This paper further explores the discipline's normative challenges, particularly on the base of the above-mentioned positivist limitations. To what extent, and for whom, can or should common goals be defined? Which ones are crucial for the creation or retention of an urban environment that does not mock the fundamentals of what we call "urban grain"? How can we have an impact on city- and policy-making without losing the freedom of a neutral academic discipline? As a very tangible example of one of the discipline's allegedly most important issues, the one of scale, the paper discusses regulative and economical impediments for small-scale development in Miami-Dade County. Deeply marked by the definition of the city as «the accumulation and integration of many individual and small group actions » (Moudon, 1997, p. 3), the author would like to address today's frequent impossibility to implement this principle as a result of systemic and political pressures towards large-scale development. The paper includes an economical appraisal, underlying the claim that the large-scale approach does not produce more value for the community.

Key Words: normative challenges, small-scale development, Miami-Dade County, policy implications, academic freedom.

References:

Moudon, A. V. (1997) 'Urban morphology as an emerging interdisciplinary field', *Urban Morphology*, 3-10.

Towards a flexible definition of limits in urban planning: controlling urban form under uncertainty

Bruno Moreira

Centro de Estudos de Arquitectura e Urbanismo, Faculdade de Arquitectura da
Universidade do Porto. E-mail: bmoreira@arq.up.pt

The Portuguese formal planning system was born in the 1930s along with a dictatorship more concerned with individual interests than with collective progress, promoting the development of an opaque, centralized, hierarchical and ineffective planning system. In the 1970s democracy was restored and modern concepts of planning began to be applied, yet still limited to consolidated urban areas and their surroundings. The reality was that the territory beyond those limits was growing with little to no control, pushed by industrialization, increased mobility and people's expectations towards better work and life conditions. When the first plans that considered the municipality as a whole were born in 1982, and the strategy towards a more strategic planning approach gained momentum in the 1990s, the territory was already faced with disorder and conflicts. Plans and regulations created to *limit* and *control* the individual's increased capability to transform the territory took part on a reactive and prohibitive system instead of on one based on pro-activity and responsibility: the inflexible nature of these plans led to delays in their definition and approval as a response to uncertainty, when other countries were making regulations more flexible (Portas, N., 1995). The concept and expressions of *limits* are structural and deeply embedded in plans and regulations, as they influence and control urban form, which is gaining significant relevance within urban planning since the 1980s (Oliveira, V., 2006). Our goal, as part of a research focused on the flexibility of planning instruments and their efficacy on regulating contemporary urban space, is to identify how these limits have been defined and represented in key moments of the urban planning theory and expressed in their plans and regulations. We will pay a special interest to the municipality of Santo Tirso, showing how a flexible definition of limits can lead to a more efficient planning system, more adjusted to the uncertainty of our contemporary territory.

Key Words: flexibility, limits, municipal planning, uncertainty, urban form.

References:

- Oliveira, V. (2006) 'The morphological dimension of municipal plans.', *Urban Morphology* 10, 101-113.
- Portas, N. (1995) 'Os planos directores como instrumentos de regulação.', *Sociedade e Território*, 22, 22-32.

The role of morphology in redesigning old downtown in The Dalles, Oregon

Hajo Neis

Department of Architecture, Portland Urban Architecture Research Laboratory
PUARL, University of Oregon, USA. E-mail: hajoneis@uoregon.edu

The Portland Urban Architecture Research Laboratory, or PUARL, was approached by representatives of the Port of The Dalles to investigate their traditional, economically less sustainable, downtown with the objectives of attracting new growth and development while bringing it into the 21st century in terms of architecture and urban design. Key questions include how to make the old downtown attractive and viable enough so that people want to spend time there, live and work there, and how to make it a comfortable place for inhabitants and visitors alike. In addition, the citizens of The Dalles are concerned with an overall developmental perspective that includes economic prosperity, sustainability, urban landscape and urban issues such as street facades, signage, connection to the riverfront, citizen participation, and pattern development. In terms of urban morphology, an initial urban structure analysis was made and a Form Language and a Pattern Language were developed that may help to make the old downtown attractive and help to find its physical identity again as well as new economic and social viability. Based on a single urban plan, we selected different sites and made actual urban architecture and urban design proposals in response to the needs of particular urban sections. Using urban principles and generative rules based on A New Theory of Urban Design, sequential individual building projects together create urban clusters in which each project helps and communicates with other projects that together contribute to the larger urban structure of old downtown as a whole (Alexander *et al.*, 1987).

Key Words: Oregon, rural towns, old downtown, a new theory of urban design, morphology.

References:

Alexander, C., Neis, H., Anninou, A. and King I. (1987) *A New Theory of Urban Design*
Oxford (University Press, N.Y.).

Interpretation of morphological data to inform design Bridge to Bridge: Ridge to Ridge urban design workshop

Paul Sanders

School of Design, Queensland University of Technology. E-mail:
ps.sanders@qut.edu.au

The importance of design practice informed by urban morphology has led to an intensification in interest, signaled by the formation of the ISUF Research and Practice Task Force and voiced through several recent academic publications. Cognisant of this current debate, this paper reports on a recent urban design workshop at which morphology was set as one of the key themes. Initially planned to be programmed as a augmented concurrent event to the 2013 20th ISUF Conference held in Brisbane, the 2 day Bridge to Bridge: Ridge to Ridge urban design workshop nevertheless took place the following month, and involved over 100 design professionals and academics. The workshop sought to develop several key urban design principles and recommendations addressing a major government development proposal sited in the most important heritage precinct of the city. The paper will focus specifically on one of the nine groups, in which the design proposal was purposefully guided by morphological input. The discussion will examine the design outcomes and illicit review and feedback from participants, shedding critical light on the issues that arise from such a design approach.

Key Words: urban morphology, urban design, design workshop.

‘Recovery Machizukuri’ through the creation of a ‘network community’ for Namie, Fukushima

Rieko Shiraki

Creative Science and Engineering, Waseda University.

E-mail: rieko.shiraki@aoni.waseda.jp

In this paper, research on ‘recovery machizukuri’ the use of bottom-up local community development techniques to help communities affected by the combined disaster of earthquake, tsunami and nuclear meltdown in the Tohoku region of Japan in 2011. The paper aims to consider the concept of a ‘network community’, which aims to respond to the future needs of the people of Namie, in Fukushima prefecture, a community that is in a state of flux and uncertainty following the nuclear disaster. The term ‘network community’ in this piece refers to the situation where different stakeholders collaborate closely together to sustain and reconstruct the community. We clarified the evacuation status of the Namie refugees and social collaborative activities in host local municipalities. Namie residents 21,172 were evacuated in various areas of Japan. For the local municipality, the equal provision of housing and social services for all Namie community members is very difficult due to the complex processes of negotiation and agreement with those other local municipalities. For community-based recovery machizukuri process, *NPO Namie* gathered local community leaders and sponsored the Study Group. With technical support⁶ from specialists and *Waseda University*, the Study Group began to develop a recovery scenario for the people of Namie and has been engaging in activities to bring this about. This network community needs to be supported by a wider collaborative mechanism between their original local municipality, the other local municipalities to which they were evacuated, the various supporting agencies, the private sector and the refugees themselves.

Key Words: recovery Machizukuri, network community, Great East Japan Earthquake, Fukushima

Urban form study for better future of the city

Anna Kantarek

Faculty of Architecture, Cracow University of Technology.

E-mail: akanta@poczta.onet.pl

A look at the problems of urban forms from the point of view of the practice of architecture, urban planning and urban design is especially needed today. Contemporary sprawling cities and metropolitan areas need a holistic perspective from the point of view of synthesizing Urban Form while maintaining respect for historical tradition and cultural meanings of the place. The research problem boils down to the question of how, through research on urban form in its historical and spatial complexity we can find or formulate models for good solutions for the coherent and harmonious development of the city. Basis of such a specific approach is: understanding Urban Form Study as crucial for better urban design and spatial planning; recognition a level of Urban Form as a base level of synthesis; understanding locality as a main determinant of the overall Form of the City; finding basic relations between contemporary Urban Form and possibility of its perception.

Key Words: spatial planning; urban form design; urban structure; contemporary urban form.

The relation between research on urban morphology and planning

Eleni Maistrou

National Technical University of Athens. E-mail: email.elmais@central.ntua.gr

The analysis of urban morphology, the understanding of the spatial structure in conjunction to the physical layout and the examination of street patterns and urban tissue in historic cities and settlements is a prerequisite for every planning process. More interesting is the study of the unplanned environments that have been organically developed, as well as the study of some cases where a new regular modern planning system is superimposed on older medieval structures. The identification of urban morphology should be performed through a historical analysis explaining the formation of urban form, through the recording and analysis of the geometrical features of the urban tissue as well as through the image analysis and the identification of its three-dimensional organization. Such a research includes the identification of major buildings – landmarks that constitute the “unique features” of the city or settlement. Cities’ patterns can help to establish the necessary background for urban conservation and preservation by pointing to the principal elements of its formation. Some case studies highlighting the relation between urban morphology, urban design and urban conservation will be presented to the conference.

Key Words: urban morphology, urban conservation, urban design.

The morphological dimension of planning documents: case study Belgrade, capital of Serbia

Ana Niković, Vladan Đokić, Božidar Manić

Institute of Architecture and Urban&Spatial Planning of Serbia, Belgrade, Serbia

University of Belgrade – Faculty of Architecture.

E-mail: anan@iaus.ac.rs , vdjokic@arh.bg.ac.rs , bozam@iaus.ac.rs

The aim of this paper is to present one of the main issues and tasks of the ISUF – the importance of introducing concepts of urban morphology to professional practice, in a systematic and coherent way, to achieve a better built environment - in the specific context of Belgrade's designing and planning practice. A review of relevant up-to-date research topics and developed concepts found in the current theoretical discourse presented in the Urban Morphology Journal and ISUF, such as: morphological dimension of municipal plans (Oliveira, 2006, 2013), the issue of boundaries (Whitehand, 2007, 2013; Larkham, 2011; Morton), the question of scale and key concept – block or tissue (Kropf, 2006, 2011; Samuels, 2008; Hall, 2008a, 2008b) will be conducted. A number of major themes in the agenda of the morphological debate, will be examined to establish how existing morphological criteria in the Master plan of Belgrade and related planning documents correspond. It was determined that the morphological dimension of those criteria is questionable and that the real form-based approach in Belgrade's planning documents and procedures were absent which had a detrimental impact on the quality of physical and urban structure. It can be stated that there is a need, firstly, for a detailed theoretical elaboration of relevant concepts of urban morphology and then integrating them into planning documents and procedures in Belgrade and Serbia. The principal conclusion reached is that urban morphologists should have a key role in the prescription of future changes through coordination of design guidance, codes and plans at different scales.

Key words: Belgrade, urban morphology, urban form, planning, designing.

References:

- Hall, T. (2008a) 'Bridging the gap: applying urban morphology to successful planning practice', *Urban Morphology* 1, 54-57.
- Hall, T. (2008b) 'The form-based development plan: bridging the gap between theory and practice in urban morphology', *Urban Morphology* 2, 77-95.
- Kropf, K. (2006) 'Crisis in the typological process and the language of innovation and tradition', *Urban Morphology* 1, 70-73.
- Kropf, K. (2011) 'Urbanism, politics and language: the role of urban morphology', *Urban Morphology* 2, 157-162.
- Larkham, P. J. and Morton, N. (2011) 'Drawing lines on maps: morphological regions and planning practices', *Urban Morphology* 2, 133-151.
- Samuels, I. (2008) 'Typomorphology and urban design practice', *Urban Morphology* 1, 58-62.
- Oliveira, V. (2013) 'Morpho: a methodology for assessing urban form', *Urban Morphology* 1, 21-33.
- Oliveira, V. (2006) 'The morphological dimension of municipal plans', *Urban Morphology* 2, 79-89.
- Urban Planning Institute of Belgrade (2003) *Master Plan of Belgrade 2021* (Official Gazette of the City of Belgrade, Belgrade).
- Whitehand, J. (2013) 'Urban morphological research and practice', *Urban Morphology* 1, 79-85.
- Whitehand, J.W.R. (2007) 'Conzenian Urban Morphology and Urban Landscapes'. *6th International Space Syntax Symposium*. Istanbul, Turkey 12-15 June

Future urban changes through design guidance: new principles

Marichela Sepe

Irat-CNR, DiARC University of Naples Federico II. E-mail: marisepe@unina.i

The urban condition we are experiencing today shows many changes in terms of the rhythms and exploitation of the city, the modalities of living, working, moving around, and the opportunities for enjoying leisure (Banerjee, Loukaitou-Sideris, 2010; Carmona et al, 2010). The emergence of new typologies of place and changes in the patterns of usage for the existing typologies have given rise to whole new cityscapes: striking juxtapositions and fragmentariness seem to predominate in the wholesale dispersion with which subjects, things and habits coexist, characterised by boundaries which are transparent and yet at times unbreachable. The identity of a place, often at risk due to globalization process and rapid urban changes, expresses a harmonious balance between variant and invariant components, people and urban events, which are intrinsically linked by a reciprocal relationship that makes a specific place unique and recognizable (Hague, Jenkins, 2005; Lynch, 1960). Based on these considerations, this work aims to illustrate the "12 principles for place identity enhancement", which were created from a reasoned set of blueprints for the various experiments carried out using the PlaceMaker method (Sepe, 2103) of urban analysis and design. The method has been created in the context of a broader research project under an agreement between the Italian National Research Council (CNR) and the Urban Design and Planning Department of the University of Naples Federico II and for specific IRAT-CNR projects. The paper describes those principles, designed as checklists for urban projects with place identity at the core and the evolution of some of these principles in the Charter of Public Space which was adopted during the II Biennial of Public Space, which was held in Rome in May 2013 (www.biennalespaziopubblico.it). The Charter, composed by 6 parts devoted to public space - definition, typologies, creation, obstacles, maintenance, management, and enjoyment - includes both specific principles for place identity safeguarding and enhancement and for public space creation. Following the Charter adoption, practical codes are in development in order to realize a toolkit for public space.

Key Words: place identity, urban landscape, urban changes, contemporary fragmentariness, urban principles, urban codes.

References:

- Banerjee T., Loukaitou-Sideris, A. (eds.) (2010) *Companion to Urban Design* (Routledge: London-New York).
- Carmona, M., Heath, T., Oc, T., Tiesdell, S., (2010) *Public places-Urban spaces* (Architectural Press: Oxford).
- Charter of Public Space (2013) (www.biennalespaziopubblico.it).
- Hague C., Jenkins P., (eds.) (2005) *Place Identity, Participation and Planning* (Routledge: Abingdon).
- Lynch, K., (1960) *The image of the city* (MIT Press: Cambridge Massachusetts).
- Madanipur, A. (2010) *Whose public space* (Routledge: London-New York).
- Sepe, M. (2013). *Planning and Place in the City. Mapping Place Identity* (Routledge: London-New York).

Changing patterns of urban development in Turkish cities: an investigation into planning practice

Tolga Ünlü

Department of City and Regional Planning, Mersin University, Turkey.

E-mail: tolgaunlu@gmail.com

Many Turkish cities have undergone rapid development since the Second World War as a result of migration from the countryside to urban areas. In this period, the population living in urban areas increased threefold, with numbers increasing particularly rapidly after the 1980s. New unplanned settlement patterns developed on the outskirts of cities – so-called squatter developments. They were created in response to the immediate sheltering needs of people migrating to the cities and became parts of urban fringe belts. There were also augmentative and adaptive redevelopment processes. Some fringe-belt sites were ‘absorbed’ by commercial uses, especially shopping centres. The paper is concerned with several questions. Are master plans capable of coping with urban change at the city-wide scale? Can local plans guide the shaping of urban form in Turkish cities? And, not least, in what ways can urban morphology contribute to Turkish planning practice by helping to formulate tools for shaping the built environment at both city-wide and local scales?

Key Words: urban fringe belts, planning practice, Turkish cities.

Density, urban form and quality of life

Charlotte Baurin, Guillaume Raymondon, Igor Andersen, Sara Dias
Région Morges, townships 'association (Switzerland, Vaud)/ Urbaplan (Private
office). E-mail: charlotte.baurin@regionmorges.ch ,
guillaume.raymondon@regionmorges.ch

Within the political context of Switzerland, the contemporary debate on urban morphology has to become central to the implantation of state-wide policy that focuses on the limitation of urban sprawl. This is particularly emphasised because the legal framework focuses primarily on landscape protection rather than on urban development strategy. In fact, if urban sprawl has been a real threat for Switzerland's small territory and attractive natural landscape since the 80's (DFI, 2009), the corollary urban densification within already urbanised areas is threatened by a rejection by the citizens, through legal referendums, primarily triggered by an misunderstanding of the morphological consequences of density targets. In particular, citizens frequently overlap 'densification' with 'towers'. A central challenge to the public planners of the township's association of Morges is then to establish a public communication strategy on the importance of the densification of urban cores, focusing in particular on the relation between density, urban morphology and urban quality. In collaboration with a private consultant office, a comparative analysis on density, urban form and quality of life relying on local case studies has been made, completed with numerous participatory actions aimed at shifting the focus from legal density targets to a shared discussion and debate on the qualitative attributes of neighbourhoods. Local workshops, exhibitions, a website, a booklet and local newspapers publications are among the supports of this communication campaign for decoding the quality and versatility of swiss urban forms. Once the foundation has been laid, we expect to achieve a horizontal dialogue with citizens and developers about the quality of their neighbourhoods in a day-to-day basis and avoiding density numbers and misperceptions. Our practical experience, methodology and results achieved so far with this process will be presented as well as our ambitions on how the project can evolve and constitute a bridge between theoretical and participatory urban morphology research.

Key Words: density, public participation, quality of life, urban form, urban practice.

References:

Département fédéral de l'intérieur DFI (2009) 'Statistique suisse de la superficie, Etat et evolution du paysage en Suisse', *Office fédéral de la statistique OFS - Espace et environnement* 898-1100.

Study on relationship between urban morphology and policy in China

Caixia Gao, Wowo Ding

School of Architecture and Urban Planning, Nanjing University,
Hankou Road 22, Nanjing 210093, China.
E-mail: ggcx1977@gmail.com , dww@nju.edu.cn

Abstracts: Urban form might be described as the result of numerous shaping processes in varying social layers at a given place through time, especially from the power of internal and external economic development and urban policy control. Moreover, urban policy plays very important role particular in China in terms the proprietorship of the land. Therefor, the morphological description is indicative of the different academic disciplines that engage in urban morphology, surely should include the urban policy. Focusing on urban policy in China our project has investigated in urban policy in the State level, provincial level, city management and the coding of the site. At the same time the research explore the policies and regulations which impact of urban form generating process and clarify the correlation of policies and urban forms. Three classifications were made according to the intervention of urban form: directly affect, indirect impact and no impact. Finally, through cases study this paper demonstrated how urban policy intervention the physical urban form and the process, which has shown that study reveals the impact of policies on the specific physical structure of the form, the results has significance for specification revision of urban policy and urban design.

Key Words: urban policy, urban morphology, correlation, intervention.

Re-trial the role urban morphology in Taiwan's modern planning mechanism

Yan-Wen Huang

Department of Landscape Architecture, Chung-Yuan Christian University.

The urban morphology is important in many aspects (Whitehand, 1997), and it is connect to the local cultural identity, living qualities and geo-historical context in Taiwan. Especially, the earlier morphological patterns in Taiwan were closed linked to people daily life (Huang, 2002b). The improving building technologies provide possibilities for planners and designers to create built forms without the geographical and local socioeconomic limitations (McGlynn & Samuels, 2000), which broken the relationships between socioeconomic and morphological patterns. In Taiwan most current years (~2014) these are many unpleasant projects which often mislead the public in beginning but came out with disappointed planning results (Huang, 2002a). The traditional morphological tissues are seriously impacted by them and local living style and socioeconomic structures are also interrupted (Huang, 2003b). Even urban design was introduced and intended to improve original Taiwan's planning system (Lin, 1995), but the built forms and morphological approaches are never in never be considered seriously (Huang, 2003a). In author's earlier studies, the Taiwan's spatial developments are identified into several key stages, and the key factors linked to morphological patterns are identified (Huang, 2002b). Those conflicts and chaos between planning and developments are interpreted the continuity of morphological tissue and the relationship between urban tissues and socioeconomic context (Huang, 2004). It is need to review current developing mechanism and introduce morphological approaches into planning system. Those earlier finding could establish a foundations for a potential morphological guidance to maintain the continuity of local socioeconomic context and environmental qualities (Samuels, 2008). Four major issues in this paper: i) The forming of traditional morphological tissues and there factors; ii) The conflicts and chaos between modern developments and traditional urban tissues; iii) To discover the reasons and context behind those conflicts and chaotic phenomenon; iv) To review current planning system and find out a penitential approach to improve operating framework and planning guidance, which could lead to desirable morphological patterns and the appropriate quality of built environment.

Key Words: urban morphology, Taiwan, traditional urban tissue, planning impact, planning guidance.

References:

- McGlynn, S and Samuels, I (2000) The funnel, the sieve and template: towards an operational urban morphology, *Urban Morphology* 2, 79-89.
- Samuels, I. (2008) 'Typomorphology and urban design practice', *Urban Morphology* 1, 58-61.
- Whitehand, J.W.R (1997) 'Why urban morphology?' *Urban Morphology*, 1-2.
- Huang, W.-D. (1998) *A research in Taiwan's modern Urban planning – Japanese Governing Period (1895-1945)* (Nan-Tein Book, Taipei).
- Huang, W.-Y., Samuels, I. (2004) 'A Retrial of Public Information, Resource and Private Development in Taiwan's Spatial Production Processes', The 9th Asian Real Estate Society (AsRES) International Conference.
- Huang, W.-Y. (2003a) 'A Potential of Morphological Design Control in Taiwan - New Instruments, and New Morphology in New Socioeconomic Context', *Planning Joint conference*.

- Huang, W.-Y. (2003b) 'Socio-Economic Sustainability, Game Theory, and New Order in an Integrated Spatial Productive Institution in Taiwan', *International Conference on Planning and Design*, November, Tainan, Taiwan.
- (Dec. 2002a), 'An Economic Interpretation of The Urban Planning and Private Development Procedure and Inter-Action - A Case Study in Taiwan', *United Annual Conference Of Chinese Institute Of Urban Planning*, Taipei, Taiwan.
- (Nov. 2002b), 'A Review of the Continuity in Taiwan's Spatial Development Processes, From A Socio-Economic Perspective', *Urban Economic Association (3RD 2002) Annual Conference*, Taipei, Taiwan.
- Lin C-L (1995) *Urban design in Taiwan* (Chuang-Sin Books, Taipei).

A subtropical urban taxonomy: the tension of research informing practice

Peter Richards

Queens University of Technology. E-mail: p.richards@qut.edu.au

Urban Morphology provides an important framework of analysis for understanding growth and change in cities. For the urban design and architecture practitioner however, urban morphology research only provides part of an approach. The task is often to plan for, or design much larger, taller and coarser grained buildings. The demands in new projects with planning efficiencies for lifts, larger floor plates for working and retail make footprints much larger. Accommodating car parking and service vehicles, often above ground, adds complexity to the lower levels of buildings, urban interfaces and public realm. The urban challenge is to fit these projects into existing, usually finer grained blocks, places and buildings. These factors combine to make traditional building types inappropriate for new projects and the sole repetition of traditional urban patterns is not possible. These issues are of a particular challenge for Brisbane, which is a city in search of a subtropical urbanism as a new world city, two aspirations of government visioning for the city. But new buildings can contribute to the city and have good urban manners. Using Brisbane as a case study, this paper proposes a method of creating an urban taxonomy of new urban building and places types that respect the existing city. This work reflects upon recent practice and also draws inspiration from the Form Based Codes movement in the USA, which has a strong emphasis on the essential building types needed to create good urban places. The taxonomy is ongoing research that would benefit from the scrutiny of urban morphology researchers.

Key Words: subtropical, taxonomy, new urban building types.

Current urban regulation and its limits regarding urban form in Brazilian cities

Joyce Ferreira da Silva

Faculty of Architecture and Urbanism, University of Sao Paulo: Master student of Urban and Regional Planning. São Paulo City Hall.

E-mail: joycerfs@gmail.com , jrfsilva@spurbanismo.sp.gov.br

This paper – as result of a master's research - intends to point out the deficiencies regarding urban regulation in controlling the urban form, in legal instruments as zoning. It will be shown that, in spite new legal framework has introduced many innovations, since the Constitution (1988) and Estatuto da Cidade (2001) – to control and plan the urban development – the use of conventional land use regulations persist, especially zoning. It is vast in Brazil, the social, ideological, economic and political reflections regarding zoning (Villça, 2001; Feldman, 2005; Rolnik, 1997). However it is also important the international reflection regarding the limitations of zoning as an instrument to regulate urban form (Barnett, 1982; Del Rio, 1990; Marshall, 2009). Yet, this debate regarding the regulation of urban form is not present among policy makers, especially those which discuss the right to the city and social function of private property. By means of the selection of common urban morphologies and typologies in Brazilian cities as Osasco, Praia Grande, Jacareí, São Paulo, the paper aims to expose in which way zoning regulates urban form, demonstrating its limitations regarding the quality of urban environment. Therefore, the research will tackle not only urban codes proposed by zoning, but also the absence of considerations regarding other dimensions as production, dwelling, environment, historical and the better use of urbanized land. It intends to contribute to possible improvements on the urban regulation framework, as a strategy of fulfilling the social function of property against problems of the contemporary urban environments.

Key Words: urban policy, zoning; urban codes, urban form, contemporary urban environments.

References:

- Barnett, J. (1982) *An Introduction to Urban Design* (Harper & Row, New York).
- Del Rio, V. (1990) *Introdução ao Desenho Urbano no Processo de Planejamento* (Pini, São Paulo).
- Feldman, S (2005) *Planejamento e Zoneamento. São Paulo: 1947-1972* (Edusp, São Paulo).
- Marshall, S. (2009) *Urban coding and planning* (Routledge, New York)
- Rolnik, R. (1997) *A cidade e a Lei: legislação e territórios em São Paulo* (Studio Nobel, São Paulo)
- Villça, F. (2001) *Espaço intra-urbano no Brasil*. (Estúdio Nobel, FAPESP and Lincoln Institute, São Paulo).

Shaping the city. Public space in the (re)construction of Portuguese contemporary city

Rodrigo Coelho

CEAU (Centro de Estudos de Arquitectura e Urbanismo), Faculdade de Arquitectura da Universidade do Porto, Via Panorâmica S/N, 4150-755 Porto Portugal.

E-mail: rodrigo.coelho@arq.up.pt

Due to the fragmented and discontinuous spread of urbanization, the Portuguese and European cities have seen over the past four decades their urban condition profoundly changed, resulting in the mangling and mutation of the urban landscape around the main urban centres, and in the weakening of the role of public space in structuring new urban expansions. Considering this background, and given the lack of consistent models or paradigms to intervene and design (or plan) the city today, will seek to question if, and how, is it possible continue to confer a “shape” to contemporary City from public space, particularly in its more recent and less consolidated parts (questioning also the nature of that hypothetic ‘shape’). We will seek to highlight the role that the project of public space can (still) play in building the ‘shape of the contemporary city’, recognizing it as a system of spaces with urbanisitic, formal and functional qualities, able to provide meaning and identity to the urban space, and able to restructure and support the growth of the city. Based on this understanding, we will defend (as an hypothesis), the need to consider the project of public space from the concept of urban fragment (recovering the importance of the urban project as the most consistent and appropriate way to approach an intervene in the city), seeking to recognize and systematize (using as case-study recent portuguese public space interventions), the purposes, the methodological principles, and the key architectural and urbanistic criteria which may recover the strategic importance of public space project in defining the ‘shape of the Contemporary city’.

Key words: contemporary city, public space, urban shape, urban design, urban regeneration.

An urban analysis method for the historic city the Castelo and Alfama hill in Lisbon

António Ricardo da Costa, Ana Crespo, Jorge Gonçalves

University of Lisbon, IST, CESUR – Center for Urban and Regional Systems,
Research Group on Urban Planning and Environment.

E-mail: arcosta@civil.ist.utl.pt , jorgeg@civil.ist.utl.pt , ana.raquel.rc@gmail.com

Proceeding from the recognised need to improve the relationship between urban planning and conservation in the historic city, a morphological analysis methodology was developed for the historic centre of Lisbon, specifically for the Castelo's hill and Alfama neighbourhoods. The methodology is a response to the lack of guiding principles for interventions in buildings and public spaces in historic centres and allows for cohesive regeneration of these areas. The conceptual basis used was the urban form classification hierarchy devised by Kropf (1993), as well as the Municipal Master Plan assessment method developed by Oliveira et al (2012). A morphological analysis was carried out, applying the Kropf hierarchical model (Kropf, 1993) to the elements that make up the urban structure. The area occupied by the Castelo and Alfama districts corresponds to the Sedes class. An analysis of the site and the local plan made it possible to identify the USUs, which correspond to the Textus class. Of the demarcated USU's we opted for a more detailed analysis of three that reveal different building periods. Subsequently, the elements that correspond to the Sertum, Fines and Aedes classes and those that correspond to the Tectum, Statio and Materia classes were identified. An analysis of the regulations for the Lisbon Municipal Master Plan (PDML) allowed for identification of the regulatory parameters that are not being applied to the historic centre and can be objectified through the morphological analysis described.

Key Words: urban morphology, analysis, urban planning, urban conservation, historical centers.

References:

- Kropf, K. (1993) 'The Definition of Built Form in Urban Morphology', Doctoral Thesis, Department of Geography, University of Birmingham.
- Oliveira, V. and Sousa, S. (2012) 'Urban Morphology in Planning Practice', *Urban Morphology* 16, 80-81.

Empty vacant – redefining interior's block voids in Guimarães

João Martins Dias, Rita Ochoa, María Candela Suárez

UBI, CIES.UBI, CITCEM.UP

E-mail: diaojos@gmail.com

The proposed communication aims to analyze how urban form can influence the configuration of a project, based on the thesis 'Vazios devolutos – reinterpretações arquitectónicas em quarteirões do centro da cidade de Guimarães', held at the Master Degree in Architecture from the University of Beira Interior. From a methodology based strongly on the contact with the territory, through both insightful observation in situ of space for intervention and their respective experiences, as a rigorous analysis of urban morphology, later graphically systematized, were carried into space: dubbed the 'central block'. We also investigated the current needs of the space, upon which was developed a subversion draft of the interior structure thereof. After parallel analysis of current shortcomings in the city, an interventional program based on two fundamental assumptions was built: i) increased parking lot space and; ii) the introduction of public green space in the urban environment. The urban analysis will determine the resolution of the project, whether by the underground floor (parking), that after a 'cleaning' of vacant buildings inside the block, it presents itself as a negative of the new configuration limit, transposed to a new level; either by the ground floor (public green space), which sees in all its new extension a green flooring, occasionally marked by 'carpets' of different materials originated in the new areas of trade perimeter of existing buildings on the block, as conjugates the memory of old servitude pathways.

Key Words: Guimarães, historic center, block, empty vacant, architectural reinterpretation.

Urban design and transition morphologies. Prospects for intervention in Lisbon – Alcântara

Carlos Henriques Ferreira
CIAUD, FAUL. E-mail: cferr@fa.utl.pt

Urban growth forms revealed the interactions of social and economic contexts with geomorphological nature of the territory. Some parts of the city became a successive challenger on the ability to adjust and response between its morphological and architectural nature. In this sense, Alcântara is one of these paradigms processing in Lisbon, assuming as a defensive barrier and as the motor area of great transformations, as the limit of urban growth and opportunity to further accessibility test. The areas of historical transition in the cities represent a permanent challenge to review the process of urban expansion and also new ways to approach the project. Transition areas call for a process of reflection and intervention where opportunities are as appealing as constraints encountered, especially at the level of the infrastructure commitments. The work presents a set of guidelines for the areas of transition as Alcântara considering the historical and cultural context of these areas and the strategies / opportunities for urban projects in a sustainable development. The results presented include a set of guidelines, which includes a critical perspective on the various instruments of territorial management in place, as well as the interaction of these with the conceptualization mechanisms of the project.

Key Words: urban design, intervention in Alcântara, urban morphology, projects for Lisbon, rehabilitation of the city fringes.

Morphological analysis as support for interventions in public spaces in historic cities

Maria Berthilde Filha, Maria Helena Azevedo, Anne César Silva

Laboratório de Pesquisa Projeto e Memória, Departamento de Arquitetura,
Universidade Federal da Paraíba. E-mail: berthilde_ufpb@yahoo.com.br

This article aims to use morphological analysis as support for proposed interventions in urban cores preserved. The object of study is the city of João Pessoa, capital of Paraíba State - Brazil. This has delimited its historic center, since the year 1982, through the state agency conservation (IPHAEP), being contained within this area urban tracings that report various moments of the formation of the city, since its founding in 1585, until the first decades of the twentieth century. In recent interventions in this area are observed misconceptions that interfere with the correct understanding of the city history. For example, the old Rua Direita, reminiscent of early urban layout of the city, is currently characterized as a public place of stay as a result of an intervention performed by the municipal government in Vidal de Negreiros Square, bordering the said street, whose redevelopment project transformed it into a place of passage, emptying the function of permanence, own a square. Given these various mistakes interventions, and having support in the methods of morphological analysis of Capel (2002) and Lamas (2004), the aim of this paper is to sketch an analysis, in historical perspective, of the urban form of this city area, allowing a critical review of some projects recently implemented, in order to contribute with this knowledge for future interventions that respect the history and form of the historic city.

Key Words: morphological analysis, interventions, public spaces, historic city.

References:

- Capel, H. (2002) *La morfologia de las ciudades* (Ediciones del Serbal, Barcelona).
Lamas, J.M.R.G. (2004) *Morfologia urbana e desenho da cidade* Fundação Caloust Gulbenkian, Junta Nacional de Investigação Científica e Tecnológica, Lisboa).

Reviving the heart of a historical metropolis: comparative study between different urban forms in downtown Cairo, Egypt

Kareem Adel Ismail

School of Architecture and Planning, National Institute of Creative Arts and Industries University of Auckland, Auckland, New Zealand.

E-mail: kism817@aucklanduni.ac.nz

In a historical Metropolis like Cairo, where 20 million people live in a city with more than 1000 years of history, many social, economic and environmental problems arise, threatening the historical heritage and the unique urban form that the city have. Downtown Cairo area including Tahrir, Attaba and Opera squares as well garden city area are clear example of this dilemma; these squares and surrounding areas located in the heart of Cairo have suffered from continuous deterioration through the last three decades, with a wide range of complex problems ranging from spread of informal markets, traffic congestion, and most significantly loss of cultural historical values. Through this paper, researcher investigates the existing challenges and issues facing these areas, comparing between its urban form patterns, usage and its affect on the heart of the historical city. The collected data about the current conditions and resident's problems were partly gathered through survey, site visits, and visits to responsible authorities. Data analysis showed that the difference between urban forms between areas is also related to socio-economic and function aspects. Those aspects raise the need for an integrated urban design proposal which connect between these different urban patterns to solve the congested downtown area problems, with consideration to the continuous radical changes to the function of these areas due to socio-political circumstances. In conclusion, the researcher relate between these areas through integrated urban design trying partly to solve part of the main problems facing downtown area and preserving its rich cultural and historical heritage.

Key Words: urban form, downtown Cairo, Tahrir square, integrated urban design, historical conservation.

Urban design guideline for upgrading environmental quality of Niayasar; emphasis on morphological dimension

Sara Amini Lari, Nima Kabiri Dehkordi

E-mail: sara.amini1983@gmail.com

Urban design is a kind of process to meliorate environmental quality and it is trying to make desirable place for people. Considering that environmental factors are not measurable directly; so, finding the quality of dimensions, it is necessary to introduce this. Therefore, in this paper firstly, using descriptive-analytical approach and documentary studies, it will provide a framework for investigating of environmental quality with their dimensions. Then, regarding to the morphological aspect is the most tangible and enduring aspect to review other dimensions such as visual, social, temporal, functional and etc, has been paid to exploring the historic city Niyasar (one of the historic city of Iran) with gathering data through using observations. Thus, recognizing and extracting the unique features of the city texture and applying knowledge of urban design, it will be presented some guidelines to improve the environmental quality and create better place for Residents.

Key Words: urban design guideline, environmental quality, morphology, Niyasar.

Employing typomorphology to restore collective city memory through urban design in Taiwan

Michael Lin, Chia-Lin Tsao

Department of Landscape Architecture, Chung-Yuan Christian University.

E-mail: mlinarch@btinternet.com

Taiwan's planning system was ill-equipped to meet the major changes during Taiwan's rapid post-war urbanization. Since the economic take-off of the 70s, new developments in bulldozer style have destroyed much historic urban fabric and lead to irreplaceable losses in the urban landscape. In the twenty-first century, concern with urban sprawl has been replaced by the need for the regeneration of decayed built-up areas. Meanwhile, the concern of "city without memories" has become an emerging issue in Taiwanese society. The purpose of this research is to explore how much the employment of typomorphology in urban design practice can help restore citizens' collective memory in Taiwanese context. The approach is to first, examine the schemes of six post-graduate students' design works which are centred to a renewal plan of a military housing slum sat on an area where multi-layer of historic fabrics have been accumulated. Students are asked using morphological analysis to identify the physical elements with architectural and urban design approaches which can possibly blend the collective memory with the urban landscape (Moudon, 1994; Ringas et al., 2011). Second, is to set up indicators of urban tissues ranging from architectural to urban scale for use in identifying the effective factors that can better convey citizens' collective memory to Taiwanese urban landscape based largely on citizens' perception of the image of city (Lynch, 1960; Urban Design Associates, 2003). This research demonstrates the operational urban morphology that enables cities to grow yet simultaneously maintain urban memory for those who live in. It provokes broader senses of urban morphology for linking urban design, ordinary cultural heritage and the importance of the historic urban fabrics in shaping place identity (Paraizo and Kos, 2011; Samuels, 2008). This application of neighborhood-scale morphological method would also provide a chance to examine the workability of some changing ideologies in urban morphological research (Samuels, 2013; Scheer, 2008).

Key Words: collective memory, typomorphology, urban morphology, urban landscape, urban design.

References:

- Lynch, K. (1960) *The Image of the City* (MIT Press, Cambridge).
- Moudon, A. V. (1994) 'Getting to know the built landscape: typomorphology' in K. A. Franck & L. H. Schneekloth (eds.) *Ordering Space: types in architecture and design* (Van Nostrand Reinhold, London) 289-312.
- Paraizo, R. C., and Kos, J. R. (2011) 'Heritage, place and interactivity: rethinking space representation as interface design', in Styliaras, K.D., Lazarinis, G. F. (eds.) *Handbook of Research on Technologies and Cultural Heritage: Applications and Environments*, (IGI Global) 188-206.
- Ringas, D., Christopoulou, E. and Stefanidakis, M. (2011) 'Urban Memory in Space and Time' in Styliaras, K. D., Lazarinis, G. F. (eds.) *Handbook of Research on Technologies and Cultural Heritage: Applications*.
- Samuels, I. (2008) 'Typomorphology and urban design practice', *Urban Morphology* 1, 58-61.
- Samuels, I. (2013) 'ISUF task force on research and practice in urban morphology: an interim report'. *Urban Morphology* 1, 40-43.
- Scheer, B. C. (2008) 'Urban morphology and urban design'. *Urban Morphology* 2, 140-142.
- Urban Design Associates (2003) *The Urban Design Handbook* (W. W. N& C, New York).

Project MEAVS / Mapping East Asian vernacular settlements

Leigh Shutter

Griffith School of Environment, Griffith University.

E-mail: l.shutter@griffith.edu.au

This paper will report on the framing of Project MEAVS and the developing geospatial analysis and simulation technology to be employed in the survey work. Project MEAVS will undertake detailed measured surveys, using Zebedee technology, of vernacular settlements in the East Asia region. Zebedee is a handheld 3D mapping system, built around a lightweight LiDAR scanner with a maximum range of approximately 30m developed by the CSIRO in Australia. It is distinct from other currently employed laser scanning systems in that the scanner is mobile during operation; constantly in motion as the user walks through the environment. This enables the scanner to simply and quickly be deployed in a variety of circumstances and locations not easily accessed by alternative laser scanning devices and technologies. This emergent laser mapping technology will be used to create dimensionally accurate detailed three dimensional models, maps and measured drawings of selected settlements in east Asia. The program will provide a comprehensive 'snapshot' of the physical circumstance of each settlement at a defined point in time. It will target settlements under threat from change or destruction caused by phenomena such as: urban expansion; changing social conditions and community needs; changing economic conditions; and, climate change effects. The program will establish an open source on-line archive of the documentary data generated. These virtual models of the regions vernacular settlements will provide the recorded base survey data for ongoing morphological and architectural analysis and study. Initially settlements in Malaysia, Indonesia, Thailand, Vietnam and China will be surveyed and studied.

Key Words: Zebedee; laser scanning; East Asian vernacular settlements.

Urban morphology of historic fabrics and contemporary architectural design. The case study of Lazio

Giuseppe Strappa

Dipartimento di Architettura e Progetto, Laboratorio di lettura e progetto dell'architettura, 'Sapienza', Università di Roma. E-mail: gstrappa@yahoo.com

The problem of the revitalization of small historical centers in the Lazio region is highly topical and requires urgent interventions. These new centers are undergoing a rapid transformation due to the change of functions in buildings and to a new social composition of the population. We should read carefully their urban fabric and built structures to actively protect their historical heritage and to design the indispensable architectural transformation. We need a method to read and design historical fabric transformation, ensuring across time transformations "congruent" with their formative process, also accepting the incontrovertible fact that an urban organism, like any living organism, is subject to continuous modifications. In Lazio these changes have, within certain limits, common characters in different centers that allow an intervention method for some aspects generalizable. Action is needed to update the existing built landscape in order to continue it in a historically coherent form. The proposed paper deals with the study and application of a method of reading and designing the historical built landscape based on the notions of urban organism and on the typological process applied to the historical centers of small towns in Lazio.

Key Words: urban-morphology, architecture, urban-design, historical fabric.



11.

Special Parallel Sessions

11.1

Urban food and urban form: An underexplored intersection

Organizer and moderator: Joe Nasr

Centre for Studies in Food Security, Ryerson University, E-mail: jnasr@ryerson.ca

Contributors

Jason Gilliland

Departments of Geography, Health Sciences & Paediatrics, University of Western Ontario,
E-mail: jgillila@uwo.ca

Michael Hardman

School of Environment and Life Sciences, University of Salford,
E-mail: m.hardman@salford.ac.uk,

June Komisar

Department of Architectural Science, Ryerson University, E-mail: jkomisar@ryerson.ca

Carolyn Mees

GreenThumb, NYC Department of Parks and Recreation, E-mail: mees.carolin@gmail.com

Over the past decade or so, urban food issues have risen dramatically as a subject of public concern and debate, as well as scholarly research and teaching, as terms such as urban agriculture, food deserts, and locavore have become commonly used and understood across continents. This emergence has shone a new light on the historically deep-rooted connections between the physical environment in cities and the workings of the urban food system (including challenges and opportunities associated with these connections). This attention to the materiality of urban food systems and the impacts of specific built – and unbuilt – urban patterns on these systems ought to represent an opening for those researchers interested in urban form to contribute knowledge about urban food. Such an opening has largely remained unexplored. This roundtable seeks to contribute to the exploration of this intersection between urban food and urban form. It builds on two prior sessions at previous ISUF conferences (in 2007 and in 2011) around such a theme. This year's roundtable brings together geographers, architects and urbanists from Europe and North America who have been working on food-system questions by focusing on the urban physical environment. Joe Nasr will open the session by looking back at how some influential publications (including Smit et al, 1996, Viljoen et al., 2005, and de la Salle and Holland, 2010) have adopted typological and morphological analysis without explicitly using some of the approaches offered by urban form researchers. June Komisar will use one such initiative (Carrot City), which identified dozens of cases where urban agriculture has been “designed” (Gorgolewski et al., 2011) to offer lessons about the impact of built patterns on the capacity for urban residents to produce food in the city. Carolyn Mees then focuses on one particular form of urban space – the community garden – to show how it is a space that is designed by its users according to different demands and locations in the city (Mees and Stone, 2012). Michael Hardman will shift focus to the stakeholders who act on and appropriate urban spaces, using

guerrilla gardening as a lens for spatial analysis of the public realm (Adams and Hardman, 2013). Finally, Jason Gilliland will add another layer to this exploration by showing how a better understanding of the intersection of urban food and urban form, and the role of city planners, can be key to understanding (and possibly addressing) urban health issues.

Key Words: Urban food systems; urban agriculture; typological analysis; morphological analysis.

References

- Adams, D. and Hardman, M. (2013) Observing Guerrillas in the Wild: Reinterpreting Practices of Urban Guerrilla Gardening, *Urban Studies*.
- de la Salle, J., and Holland, M. (eds) (2010) *Agricultural urbanism : Handbook for building sustainable food & agriculture systems in 21st Century cities*, Green Frigate Books, Winnipeg (Manitoba).
- Gorgolewski, M., Komisar, J., and Nasr, J. (2011) *Carrot City: Creating places for urban agriculture*, Monacelli Press, New York.
- Mees, C. and Stone, E. (2012) Food, homes and gardens: public community gardens potential for contributing to a more sustainable city, in: Viljoen A., and Wiskerke, J. S. C. (eds.) (2012) *Sustainable food planning: evolving theory and practice*, Wageningen Academic Publishers, Wageningen (the Neth.).
- Smit, J., Nasr, J. and Ratta, A. (2001) *Urban Agriculture: Food Jobs and Sustainable Cities*, United Nations Development Programme, New York.
- Viljoen, A., Bohn, K. and Howe, J. (2005) *Continuous productive urban landscapes: Designing urban agriculture for sustainable cities*, Architectural Press, Oxford.

11.2 Chinese Network of Urban Morphology

The typological process and the morphological period: a cross-cultural assessment

Kai Gu

Planning, School of Architecture and Planning, University of Auckland, Auckland, New Zealand. E-mail: k.gu@auckland.ac.nz

The concepts ‘typological process’ and ‘morphological period’ have received little empirical substantiation despite their familiarity to many urban morphologists. They are examined in three contrasting cultural areas – England, New Zealand and the Shanghai area, China – over the period from the mid-nineteenth century to the late-twentieth century. Sequences of ordinary residential building types are recognized in these areas. Periods characterized by different types and connections between those types are identified. The areas are different in both their building types and their periodizations but commonalities in their processes of change, including those related to the spread of Western fashions, are found. The difficulty of uncovering the mechanism of the typological process whereby one form type is succeeded by another reflects major problems of assembling the requisite data. Many more comparative studies, including between contrasting cultural areas, are needed.

Key Words: building types, historical change, cross-cultural comparisons, data problems.

An application of urban morphology to a structural preservation urban design project

Youpei Hu, Wowo Ding

School of Architecture and Urban Planning, Nanjing University.

E-mail: youpei.hu@gmail.com , dingwowo@gmail.com

Preserving existing urban structures is meaningful to the history, culture and future of cities, which is one of the tasks of urban design project. In the context of Chinese cities, the work of urban structural preservation has a special issue about developing to be addressed. The urban structures of lots of historical cities sustain heavy pressures from urbanization and economical developing process. The relation between preservation and developing is strained. The local municipals are urging to find a balance point between them. The developing issue challenges the traditional preservation methods of urban design. This paper presents an overall structural preservation urban design project. By introducing the theory and method of urban morphology into this project, urban designers are able to deal with the challenge from the economy developing, and to explore new ideas and methods in field of structural preservation.

Key Words: urban structure; urban preservation; urban fabric; urban design.

The mode of landscape and village pattern in Changzhou

Xiaoning Hua

School of Architecture and Urban Planning, Nanjing University
Jinling Institute of Technology. E-mail: huaxn@nju.edu.cn

The pattern of village is mainly determined by the form and structure of landscape. In Changzhou, a typical middle city of Yangtze River Delta, there are different modes of village patterns around the periphery of city. The liner village patterns develop on the waterfront wetland along the Yangtze River with the reclaiming of agricultural land. The strip-like village patterns develop in the net of river system. The patch-like village patterns mainly develop on the plain without obvious reference. The irregular village patterns are common in the hilly area. All these different modes of village patterns respond the different prototypes of landscape and land use, which should be carefully treated in the expansion and renovation of the city edge.

Key Words: village pattern, landscape, China.

Spatial patterns of urban growth in Xi'an, China: a fringe-belt approach

Yunying Ren

of Architecture, Xi'an University of Architecture and Technology, 13 Yanta Road,
Xi'an 710055, Shaanxi Province, China. E-mail: renyunying@hotmail.com

The fringe-belt concept, though widely investigated in Western cities, has hitherto attracted little attention within Asia. Building on a recent investigation of the fringe belt associated with the wall constructed around the small, compact Chinese city of Pingyao in the Ming dynasty, this paper explores fringe-belt development in one of China's major urban areas – the former capital city of Xi'an. Like Pingyao, Xi'an has a fringe belt associated with its Ming wall but, unlike in Pingyao, this fringe belt is deeply embedded within a metropolitan area and has been subjected to major pressures for change, especially since 1980. The development of its inner fringe belt, especially in the course of the first half twentieth century, is examined. Its significance is considered both as a heritage feature and, in very broad terms, in relation to the city's growth farther out. Brief comparisons are made with the conclusions of fringe-belt studies of Western cities.

Key Words: Xi'an; city form; city wall; fringe-belt; Period of Republic of China.

An exploration of complementary utilization of Space Syntax and Spacemate methods in urban design. A case study of a neighbourhood in Nanjing, China

Xiaoxi Li, Ye Zhang

Department of Architecture, School of Design and Environment, National University of Singapore. E-mail: 1 a0109379@nus.edu.sg , 2 akizy@nus.edu.sg

Space Syntax method (Hillier and Hanson, 1984) is among the most popular approaches that have been widely used to study the composition of the physical city. An extensive body of researches have argued that there exists a strong correlation between spatial configuration, i.e. simultaneous relations between the parts of the built form, and pedestrians' movement patterns (Hillier, Penn et al. 1993), which also underscores a number of economic and social urban phenomena (Hillier 1996, 1999, 2002). Nevertheless, density as one of the key features of the built form has received relatively limited interests in Space Syntax researches. In particular, there is a lack of investigation into the relations between urban space as a configurational entity and different aspects of density. Spacemate, developed recently by Pont and Haupt (2004), provides a comprehensive description of density of the built form that incorporates four different variables, namely FSI (Floor Space Index), GSI (Ground Floor Index), OSR (Open Space Ratio) and L (Layers), and casts new light on the understanding of the linkage between density and building typologies as well as the degree of urbanization. Despite enabling an analytical insight into the built form of specific locations, this method fails to take into account the relations between different urban areas and their impact upon density patterns of the entire city. This seems to suggest that Space Syntax and Spacemate methods could potentially complement each other, allowing for more in-depth analyses of the complexity of the built form both in part and as a whole. Some preliminary studies have shown that complementary utilization of these two approaches is likely to contribute to urban design and planning at city or regional scales (Pont et al, 2012). However, there has been so far no similar exploration conducted at neighbourhood level. This research attempts to bridge this gap based on a detailed case study of the built form of one neighbourhood in Nanjing, - a historic city in southeast China. It also aims to investigate how Space Syntax and Spacemate methods, utilised in a complementary manner, can contribute to the more fine-grained neighbourhood regeneration in the context of historic Chinese cities.

Key Words: urban form; spatial configuration; density; Space Syntax; Spacemate.

References

- Alexander, E. R. (1993). 'Density measures: A review and analysis', *Journal of Architectural and Planning Research*, 10(3), 181-202.
- Berghauser-Pont, M. Y., and Haupt, P. (2010). *Spacematrix: space, density and urban form*. Rotterdam: NAI Publishers.
- Hillier, B. (1996). 'Cities as Movement Economies', *Urban Design*, 1(1), 41-41.

- Hillier, B. (1999). 'Centrality as a process: Accounting for attraction inequalities in deformed grids', *Urban Design International*, 4(3-4), 107-127.
- Hillier, B. (2002). 'A theory of the city as object: or, how spatial laws mediate the social construction of urban space', *Urban Design International*, 7(3-4), 153-179.
- Hillier, B., and Hanson, J. (1984). *The social logic of space*. New York: Cambridge University Press.
- Hillier, B., Penn, A., Hanson, J., Grajewski, T., and Xu, J. (1993). 'Natural movement: or, configuration and attraction in urban pedestrian movement', *Environment and Planning B: Planning and Design*, 20(1), 29-66.
- Karimi, K. (2012). 'A configurational approach to analytical urban design: 'Space syntax' methodology', *Urban Design International*, 17(4), 297-318.
- Nes Akkelies Van, P. M. B., Mashhoodi Bardia. (2012). 'Combination of space syntax with spacematrix and the mixed use index. The Rotterdam South test case', *Eighth International Space Syntax Symposium*, Santiago de Chile.
- Pont, M. B., and Haupt, P. (2004). *Spacemate: the spatial logic of urban density*. Delft: Delft University Press.

11.3 Turkish Network of Urban Morphology

A look at the past, present and future: an overview of urban morphology research in Turkey

Ayşe Sema Kubat

Istanbul Technical University
kubat@itu.edu.tr

Contributions to the study of urban form in Turkey are both numerous and varied in their approaches. Although urban form has, in recent years, received adequate attention by Turkish academics, when these studies are compared to those conducted in Europe and North America, urban form has been studied in Turkey under various disciplines; such as architecture, urban planning, urban design, archeology, geography, landscape design and urban history. However today these studies have extended towards sociology, politics and economics bringing a more diversified view to this area. The creation of TNUM would bring these diverse studies under a single lense and strengthen the dialogue amongst researchers. Furthermore TNUM would act as a repository of works both current and historic that would enable future researchers easy access to the field. The three schools of urban morphology, in England, Italy and France came together during 1990's. The bringing together of these schools provided the basis of interdisciplinary field and created the opportunity to establish common theoretical foundations for the growing number of urban morphologists in many parts of the world. A review of the literature reveals that the most significant contributions to the study of urban form in Turkey have come from architects and planners, who have adopted a typo-morphological approach, and urban geographers and historians, who have tended to examine urban form in relation to the factors underlying its evolution. The mission of TNUM would be to expand the focus of morphology studies in Turkey, to support their international dissemination and to enable cross-cultural exchanges with the main schools of morphology. The understanding of TNUM is that the inclusion of studies reflecting the rich historic culture of Anatolia & Thrace would add new viewpoints to studies conducted elsewhere. Application of GIS or quantitative tools can help to move the centre of urban morphological research from its foundation in the study of small historic towns to today's large urbanized regions, and from applications in urban conservation to the management of future urban development. TNUM would also promote exchanges amongst educational institutions both nationally and internationally to further the education of urban morphology in higher education.

The role of ‘TNUM’ in furthering urban morphology research in Turkey

Tolga Ünlü

Department of City and Regional Planning, Mersin University

E-mail: tolgaunlu@gmail.com

ISUF is the organization of researchers and practitioners who are dealing with the study of urban form. It brings together the researchers worldwide since its inauguration in 1994. Besides being a worldwide organization, four regional organizations were founded in order to focus on characteristics of urban form at a local scale. These are settled in Italy (ISUF Italy), in Portugal (Portuguese Network of Urban Morphology), in North Europe (Nordic Network of Urban Morphology) and in China (Chinese Network of Urban Morphology). In addition to these network, a new has been emerging in Turkey through the first meeting of Turkish Network of Urban Morphology (TNUM), hosted by the Center for Mediterranean Urban Studies at Mersin University took place on 11 April 2014 in Mersin, Turkey. The main motive of the meeting was to form a shared medium in order to share separate studies related with urban morphology; to discuss the possibilities to develop collaborative studies on urban form among researchers in different fields of knowledge and institutions at the national level; and to widen the studies at the international level through cooperation with other regional networks and ISUF. Since it was the first meeting of the Network, it was called “Foundation Workshop”. Many fruitful discussions took place during the workshop. The researchers share their studies, and discussed the future of TNUM and its possible course of actions was discussed. In this presentation, the results of first TNUM workshop will be opened to be discussion among other regional networks and it is aimed to examine the possible contributions of Turkish researchers on the study of urban form.

11.4 The Middle Eastern Cities and Isfahan School of Urban Morfology

Discussion about the similarity of the forms of the cities of Porto (Portugal) and Qazvin (Iran)

Rui Rodrigues Ramos, Mona Jabbari

Department of Civil Engineering of the University of Minho, Portugal

E-mail: rui.ramos@civil.uminho.pt , monajabbari@yahoo.com

At present, in major cities, the lack of urban structure cohesion and connectivity promoted by the expansion of street network dominated by cars has increased dramatically. Hence, social life and citizen rights considering anthropocentric and human scale have been put at risk in many cities. As referred by Nyseth and Sognnaes 'Old Towns' are perceived as urban structures of the past that are revitalized and given new significance in contemporary cities. The geometrical order of the cities structure shapes diverse urban tissue and promote the development in several direction. However, the main activities of the cities occur in the places with the most social interactions.

In this context, this paper will present an ongoing research that aims to compare the main areas of Porto (Portugal) and Qazvin (Iran), based on growth of the cities around its historic center, i.e. 'Old Town'. The urban form of the cities will be analyzed and assessed by a methodology based on street pattern identification and will discuss the urban design and environmental quality. Research findings shows that the main areas of the both cities require new planning solutions in order to promote connectivity thru pedestrian network.

Key Words: form, structure, pattern and old town

11.5.1 Open spaces and the new Brazilian urban Form

The open spaces systems and the Brazilian urban form – a national research network first results

Eugenio Fernandes Queiroga, Silvio Soares Macedo

Laboratório QUAPÁ Departamento de Projeto FAUUSP. E-mail: ssmduck@usp.br

In 2012 the researches of QUAPÁ's laboratory of Faculdade de Arquitetura e Urbanismo da USP, in association with a national network of researches started new studies about the open space's system and the urban form in the Brazilian cities and as a defined as a case of study the 36 main cities of the country. At first they defined the conceptual references and decided to adopt a system's point of view to permit to establish the relationship between the producers, the open spaces and the urban form. To develop the research they started to do in 2013 a series of workshops in these cities. The first results are: the definition of the main morphological patterns of the Brazilian cities; the definition of the representation's standards; the comprehension of the dynamics of the distribution of these types in the urban tissues; the patterns of distribution and the main patterns of the urban protection areas; the characterization of the verticalization areas; the production of the first thematic maps; a creation of papers of reference. This paper'll present the main developed concepts and the first results of the research and their capacity to represent the reality of the Brazilian urban form and open's space systems.

Key Words: open spaces/urban form/systems/patterns/workshops.

Open spaces and urban form: a systemic relation

Ana Cecília Campos, Eugenio Queiroga, Vanderli Custódio

Lab-QUAPÁ, FAUUSP, São Paulo, Brazil

E-mail: anacecilia@arrudacampos.com , queiroga@usp.br , vanderli@usp.br

The research project named “The open spaces systems in the Brazilian urban form constitution: production and appropriation” (2012-2016) held by the Architecture and Urban Planning School of São Paulo University (FAUUSP) aims to analyze thirty-five cities in order to characterize and diagnose the relationship between open spaces and urban form, by an multidisciplinary approach. Workshops realized in each city are part of the activities. Campina Grande, Uberaba and Uberlândia were the first three: medium sized cities, with a population varying from 300.000 up to 645.000, they present similar processes together with important differences. Distinct biophysical environment, social, economical and cultural characteristics generated unique cities in terms of urban form and open spaces distribution, mainly public ones. Despite an origin as a railway center, or a growth based on agricultural production, or even a commercial core, some similarities can be pointed out. With good square distribution in historical city centers, recent economical development was not followed by the same accurate care with public spaces. There are parks, intensively used, but concentrated in certain urban zones. The environmental legislation since the 90’s protected natural structures such as rivers, reservoirs and urban native forests, but many areas are still not appropriated by the people. Real state entrepreneurships are concentrated in closed residential areas and tall buildings, mostly for high-income population, and residential areas for low-income people. Therefore, urban legislation does not control the resultant urban form, and does not understand the relation between buildings and open spaces as a systemic one.

Key Words: open spaces; urban form; morphological patterns; public policies; appropriation.

Landscape units as territorial analysis procedure: integration of geo-biophysical and urbanistic-architectural dimensions

Rita C. Montezuma¹, Vera R. Tangari¹, Inês A. Isidoro²

¹Programa de Pós-Graduação em Geografia, GGE/Universidade Federal Fluminense.

²Programa de Pós-Graduação em Arquitetura – FAU/UFRJ.

E-mail: ritamontezuma@yahoo.com.br , vtangari@uol.com.br ,
inesisidoro82@gmail.com

The study area is located in the city of Rio de Janeiro, capital of Brazil's second largest metropolitan area, with 6,323,037 inhabitants (IBGE, 2010). Located entirely in the inter-tropical belt of southeast Brazil (22°45'05"N, 23°04'10"S, 43°06'30"W and 43°47'40" W), the geographical position favors the dominance of wet/semi-wet tropical climate with average annual temperature of 23.7°C and annual rainfall between 1000-1500 mm with large seasonal variability in climate (wet summer, dry winter) and landscape. The influence of relief in urban occupation was prevalent in recent centuries, favoring the coastal plains. Based on previous research (Name et al, 2011; Montezuma and Oliveira, 2010; Tangari et al, 2007; Schlee and Tangari, 2008; Schlee et al, 2009), we adopted the channels watershed as our studied area. The proposed methodology of defining landscape units (Forman 1995, 2008 and Metzger, 2001) was applied as a tool for urban spatial analysis and for an environmental diagnosis combining geo-biophysical and urban-architectural features. As variables, we applied: the characteristics of relief, hydrology, cover surface soil types; land use and occupation aspects; urban form settings. Based on this multidisciplinary approach, four landscape units were defined. Due to its significant heterogeneity associated with geographical location, relief conditions were instrumental in the spatial distribution of hydrological flows and, consequently, in the territorial occupation shapes and the quality of urban life, being nowadays one of the main determining factors for existing urban patterns. The article presents the intersection of geo- biophysical and urban-architectural dimensions, the comparative study of landscape units and their type-morphological characteristics, developed according to Lamas (1992) and Campos *et al.* (2011, 2012), by considering the occupation density, the structural physical elements of the urban tissue and the incidence of open spaces.

Key Words: landscape ecology, urban form, geo-biophysical constraints, territorial planning, environmental risk.

References

- Campos, A.C.A., Queiroga, E., Galender, F., Degreas, H., Akamine, R., Macedo, S.S., Custódio, V. (eds.) (2011) *Sistemas de Espaços Livres – conceitos, conflitos e paradigmas* (FAUUSP, São Paulo).
- Forman, R.T.T. (1995) *Land Mosaics* (Cambridge University Press, Great Britain).
- Forman, R.T.T. (2008) *Urban Regions – ecology and planning beyond the city* (Cambridge University Press).
- IBGE (2010) *Censo estatístico 2010* (IBGE, Brasília).
- Lamas, J. M. R. G. (1992). *Morfologia urbana e o desenho da cidade* (Fundação Calouste Gulbekian, Lisboa).
- Metzger, Jean Paul. (2001) *O que é ecologia de paisagens?* (www.biotaneotropica.org.br).

- Montezuma, R.C.M, Oliveira, R.R. (2010) 'Os ecossistemas da Baixada de Jacarepaguá e o PEU das Vargens', *Arquitextos*, 116.3.
- Name, L.P.M., Montezuma, R. C. M., Sesana, E.G. (2011) 'Legislação urbanística e produção de riscos: o caso do Peu Das Vargens (Rio de Janeiro, Brasil)'. *Territorium* 18, 201-218.
- Schlee, M. B., Souza, M. J. N, Rego, A. Q., Rheingantz, P. A., Dias, M. A., Tângari, V. R. (2009) 'Sistema de espaços livres nas cidades brasileiras – um debate conceitual', *Revista Paisagem e Ambiente* 26, 225-247.
- Schlee, M. B. and Tângari, V. R. (2008) 'As montanhas e suas águas: a paisagem carioca na legislação municipal (1937-2000)'. *Cadernos Metrópole*, 19, 271-291.
- Tângari, V. R., Schlee, M. B., Andrade, R., Dias, M. A. (eds.). (2007). *Águas urbanas: uma contribuição para a regeneração ambiental como campo disciplinar integrado* (PROARQ-FAU/UFRJ, Rio de Janeiro).

The sprawl landscape: relationship between urban and environmental dynamics in the West Sector of the Metropolitan Area of São Paulo

Leonardo Loyolla Coelho; Silvio Soares Macedo

Laboratório Quapá, Faculdade de Arquitetura e Urbanismo, Universidade de São Paulo

E-mail: lloyolla@gmail.com , ssmduck@usp.br

An increasing part of the urban development of the Metropolitan Area of São Paulo (with its population of nearly 20.1 million people in 2013), as so many others in Brazil, is structured on urban sprawling, conforming a variety of urban fabrics with different morphologic attributes – horizontal housing, gated communities, industrial areas, vertical towers, and so on – sometimes not related, and presenting a huge social disparity. Its West Vector exemplifies these attributes, once it presents an urban development structured along the three main road axes, especially since the 1970's. This process took place partly due to the search for job opportunities after the industries' migration to surrounding towns, and thanks to motor vehicles usage structured ways of life. These actions have a great impact on environmental dynamics and on its urban conformation. On the other hand, the urban sprawl contributes, in an unplanned manner, to the proliferation of environmentally significant open spaces in this Vector. The approach under a landscape-planning point of view is imperative for the portrayal of these urban development process effects within the environmental dynamics, and for elaborating urban projects and public policies for the area. The urban sprawl, in this case, does not necessarily represent a threat to the environmental dynamics, and may even contribute to these significant areas preservation, as referred to in the work of Czamanski, and Peres and Polidori. However, we shall guarantee a proper connection between the remaining environmental areas, using principles as those mentioned in the work of Forman, and adding urban value in a way that honors the population's public right of use/enjoyment to these spaces so as to actually build an urban landscape.

Key Words: open spaces; urban sprawl; environmental legislation, Metropolitan Area of São Paulo.

Urban form and land value: morphological types and patterns from spatial segregation in Campinas, SP, Brazil

Jonathas Pereira da Silva, Fernanda Caroline de Lima

Pontifical Catholic University of Campinas

School of Architecture and Urbanism at PUC-Campinas.

E-mail: jonathas.silva@puc-campinas.edu.br , fernandalima.fcl@gmail.com

The urban forms resulting from the phenomenon of urban fragmentation and dispersion, need further investigation. The study aims to present a method of analysis that relates different knowledge: the landscape, ecology and morphological studies. It takes as a case study the Campinas Metropolitan Region located in the most populated area and enhanced economic dynamics of Brazil. The concepts, techniques and methods presented here are the result of years of discussion with the researchers from the search network called QUAPA-SEL that is developing a national survey on the relationship between the system of open spaces and the form urban. As a result the study shows the different techniques of analysis related on urban form on different scales. The article present the procedures used in three scales: a) region: consists of 20 cities, b) neighborhoods: formed by different tissues and urban functions and c) urban block: where the open spaces and building type are the protagonists. The results show that the method of analysis used aids in comprehension of the phenomenon of urban dispersion and fragmentation. The method aims to approach the issues from different sectors of knowledge, integrating morphological concerns of researchers who study the landscape and urban environment studies.

Key Words: morphology, urban fashion, landscape, ecology, urban environment.

Integrated approaches in Vitória workshop: a study on open space system and the urban form in Brazil

Eneida Mendonça

Architecture and Urbanism Department, Arts Center, Espírito Santo Federal University.
E-mail: eneidamendonca@gmail.com

This paper presents the experience regarding the workshop in the study about “Open Spaces Systems in the Formation of Contemporary Urban Form in Brazil: Vitória’s Case”. The activity is part of a national research coordinated by São Paulo University, which links a broad range of researchers from several Brazilian universities (Campos et al., 2012). The concept of open spaces originated in Magnoli’s study (1982) as the space free from construction, streets, squares, parks, areas remaining from plots occupation etc.. Urban form involves the relationship and characteristics including size, shape, articulation of open and built spaces, as in Lamas (s/d) and Panerai studies (1986), among others. The workshop was coordinated by the national and local team, Vitória Nucleus of Espírito Santo Federal University. The region studied covered the state capital, Vitória, in Brazil’s southeast, and its urban contiguity on the vicinity cities. The workshop dealt with the relationship between Open Spaces and Urban form in Great Vitória and possible trends from integrated approaches involving representatives from the Government, Academics, and real estate market, addressing different scales and thematic areas. The activities were carried out in three days and had overflight and land route, lectures, group activities in themes: landscape units, morphologic patterns, legislation and the role of agents. The success of the activity was reached due to the quality and diversity of the participants, allowing achieving complex knowledge in a short time, identifying conflicts, potentialities and trends.

Key words: Urban morphology; open spaces; workshop; integrated approaches.

References:

- Campos, A. C. A., Queiroga, E. F., Galender, F., Degreas, H. N., Akamine, R., Macedo, S. S. and Custódio, V. (eds.) (2012) *Quadro dos sistemas de espaços livres nas cidades brasileiras* (FAUUSP, São Paulo).
- Lamas, J.M.R.G. (s/d) *Morfologia urbana e desenho da cidade* (Fundação Calouste Gulbenkian e Junta Nacional de Investigação Científica e Tecnológica).
- Magnoli, M. M. E. M. (1982) *Espaços livres e urbanização: uma introdução a aspectos da paisagem metropolitana*, Tese, Faculdade de Arquitetura e Urbanismo, Universidade de São Paulo, São Paulo.
- Panerai, P., Castex, J. and Depaule, J.-C. (1986) *Formas urbanas: de la manzana al bloque* (Editorial Gustavo Gili, Barcelona).

11.5.2 Brazilian morphology

Simulation techniques to analyze transformations of urban form, landscape and micro climate in Vargem Grande, Rio de Janeiro/RJ, Brazil

Vera R. Tangari, Rogerio G. Cardeman

FAU/UFRJ. E-mail: vtangari@uol.com.br , r.cardeman@gmail.com

This study is part of a comprehensive and interdisciplinary research being developed since 2012 about landscape transformation and urban form (Bueno et al, 2012). In this paper, we present the analysis of urban design patterns being applied on an environmentally sensible region, which is undergoing rapid urban sprawl, due to urban legislation new code, land value increase, implementation of new investments in urban transportation and existence of large surfaces of open spaces. The study area is located in the west zone of the city of Rio de Janeiro, along the coastal plain with wet surfaces and fragile soil which stand between the Rainforest and the Atlantic Ocean (Montezuma and Oliveira, 2010; Schlee and Tangari, 2008; Macedo, 1993). Presently, the studied area has around 15.000 inhabitants. In order to understand the urban patterns, the future occupation and the prevailing urban forms and to foresee the impacts on the landscape and on the micro-climate environment, we proposed a methodology with the following steps: division into zones/landscape units (Forman 1995, 2008 and Metzger, 2001); selection of measuring points for survey; identification of empty land parcels along the main roads; study of the urban legislation code; identification of current patterns of occupancy and construction types adopted by the real estate market; 2D simulation of the occupancy identified in the plots; 3D simulation of the existing and the future constructions; simulations of micro-climatic changes (Pezzuto and Silva, 2013). We will present the premises adopted to develop the simulations, including building types, urban design patterns, population and housing units estimates, as well as the impacts on landscape and open spaces systems.

Key Words: building types, urban form, landscape units, micro-climate, Rio de Janeiro.

References

- Bueno, L. M. M.; Tangari, V. R.; Silva, Jonathas M. P.; Tangari, V. R.; Pezzuto, C. C.; Montezuma, R.; Rego, A. Q. (2012) 'Mudanças climáticas e as formas de ocupação urbana: processo de criação de cenários socioambientais', *Paisagem e Ambiente* 30, 123 – 136.
- Forman, R.T.T. (1995) *Land mosaics* (Cambridge University Press, Great Britain).
- Forman, R.T.T. (2008) *Urban Regions – ecology and planning beyond the city* (Cambridge University Press).
- Macedo, S.S. (1993) *Paisagem, urbanização e litoral* (FAUUSP, São Paulo).
- Metzger, J. P. (2001) 'O que é ecologia de paisagens?' (www.biotaneotropica.org.br)
- Montezuma, R.C.M and Oliveira, R.R. (2010) 'Os ecossistemas da Baixada de Jacarepaguá e o PEU das Vargens', *Arquitextos*, 116.3.
- Pezzuto, C.C. and Silva, J. M. P. (2013) 'Método de Análise do Recorte Territorial por meio da Zona Climática e Unidade de Paisagem: Estudo de Caso no Município de Campinas', *Anais do XII Encontro Nacional e VIII Encontro Latino Americano de Conforto no Ambiente Construído (ENCAC e ELACAC 2013)* (UNB, Brasília), 1-16.
- Schlee, M. B. and Tangari, V. R. (2008) 'As montanhas e suas águas: a paisagem carioca na legislação municipal (1937-2000)', *Cadernos Metrópole* 19, 271-291.

The urban form of the housing policy ‘Minha Casa Minha Vida’ in the Metropolitan Area of São Paulo

Veronica García Donoso, Eugenio Fernandes Queiroga

Lab-QUAPÁ, FAUUSP, São Paulo, Brazil. E-mail: veronica.donoso@usp.br

This work intends to discuss some results of the recent Brazilian housing policy ‘Minha Casa Minha Vida’ (PMCMV), created in 2008 to attend housing needs in several economical fronts. It is part of a doctorate research developed in São Paulo University, participating in the research Project named “The open spaces systems in the Brazilian urban form constitution: production and appropriation” (2012-2016) held by the Architecture and Urban Planning School of São Paulo University (FAUUSP). The PMCMV sets, for the first time in Brazilian housing policy, the participation of the private sector for the construction of social housing. That production logic brought for the urban space a formal result based on the decrease of the cost of the construction and increase of the profitability for the builder, whose urban form is thought in agreement with financial criteria, assisting minimally the demands of the Program and the daily needs of the population. Due to the economical, social and physical differences in the Brazilian territory, the results of the Program are varied in the different urban realities. In great urban centers, like São Paulo, it’s difficult to make possible social housing products, due mostly for the cost of the urban soil in those areas. With that, builders are producing social housing in cities of the Metropolitan Area of São Paulo, where there are urban soils with accessible prices. Even so, the formal result is homogeneous, not propitiating identity relation, besides a precarious distribution of open spaces and communitarian areas.

Key Words: housing policy ‘Minha Casa Minha Vida’, open spaces, urban form, urban space production.

Open spaces system: describing the urban morphology of Vila Mariana's district

Helena Degreas, Silvio Macedo.

Faculdade de Arquitetura e Urbanismo, Universidade de São Paulo.

E-mail: hdegreas@uol.com.br , ssmduck@usp.br

Many analysis of urban morphology have been done and generally, they emphasize the relationship between the architecture of the buildings, urban land subdivisions and street patterns. The paper proposes another fresh perspective: to consider open spaces as a system, or better, as one of the urban infrastructures responsible of the urban morphology of human settlements. In Brazil in many cases during the XX century, the places where the rich and medium class citizens and sometimes poor people live their public life have been projected, organized, located and distributed from the obedience of public plans by real estate developers and state agencies. Although this adjustment provided developers to accommodate recreation areas, sidewalks and many other places to people, it also created a city with open spaces that seem to be fragments poorly located, unevenly distributes and dimensions and morphology unpredictable not always facilitating the realization of public life or even urban appropriation. Formal and spatial typologies, the concept of functionality of open spaces associated with them and also the role of the spatial fragments created by according to on percentages laws originated by urban plans, are some of the aspects that will be presented. The paper will present a result of a research based on a , São Paulo's district known as Vila Mariana, that is a part of QUAPA-SEL- Network's research, which is developing the national research project entitled "Open spaces system in the constitution of the contemporary urban form in Brazil: production and appropriation".

Key Words: urban morphology, open spaces system, human settlements, landscape architecture.

Urban form and multidisciplinary: contributions to the São Paulo Master Plan revision

Eugenio Queiroga, João Meyer, Silvio Macedo

Faculdade de Arquitetura e Urbanismo, Universidade de São Paulo.

E-mail: queiroga@usp.br , joaomeyer1@yahoo.com.br , ssmduck@usp.br

The Urban Planning applied in São Paulo City during the last 40 years is characterized, as a rule, by a functionalist approach, very few aware of the structuring open spaces system and the urban forms resulting from the zoning legislation. Since the end of 2013, the São Paulo Master Plan is under revision by the City Council and discussed by the society. As a contribution, Lab QUAPÁ, the landscape laboratory of FAUUSP, proposed guidelines and strategies for the open spaces system in order to improve its qualification, creating a greater control of urban form generated by pertinent legislation. Among the main topics, it was suggested the more comprehensive concept of "Municipal Open Spaces System" instead of "Municipal Green Areas System", more restrictive. This embracing focus involves all open spaces for conviviality, leisure, circulation, environmental conservation, private or public owned, vegetated or not. Besides, plans for open spaces system and more integrated management tools on the topic are proposed seeking the control of urban form and ensuring proper public appropriation. Among them are the increasing of necessary public open spaces correlated to the population and building densities growth and the requirement of previous urban projects for all new entrepreneurships in land areas larger than 12,000 m². Moreover, the multidisciplinary approach was the basis for the proposals formulation, bringing together the landscape design, the urban planning, the morphological studies and the real estate evaluation.

Key words: open space; master plan; São Paulo; density; urban projects.

Public policies towards river and streams restoration: perception and appropriation

Fany Galender, Ana Cecília Campos

LAB-QUAPÁ, FAUUSP, São Paulo, Brazil.

E-mail: fgalender@uol.com.br , anacecilia@arrudacampos.com

Since the decade of 2000, São Paulo City has been implemented special programs centered on parks built along rivers and reservoirs. They developed new paradigms in landscape design contradicting the established urban planning, drainage and sanitation policies since the beginning of the twentieth century where rivers were concreted, piped underground or even had their channel rectified. Culturally, these natural structures along with spring sources or lagoons with relevant landscaping importance are understood as hindrances towards urban development. Since the recrudescence of environmental legislation, and following international movements for rivers restoration, new governmental projects involve many different practices. Generally, by stabilizing the banks with hard or living materials, by controlling the water level reducing floods and by deflecting or concentrating water flows away from eroding banks, some satisfactory results towards new forms of occupation are obtained such as public open spaces connection, urban native forest increasing and buffer zones implementation. Therefore, removing urban settlements from dangerous areas, these actions create opportunities for new development in the upland areas, mainly for low-income population. In 2009, there were 48 municipal parks, 15 implemented since 2005, but only 7 linear ones. With a lack of land for new structures, transforming rivers into linear parks constitute an alternative to increase public open spaces and, in some cases, developing social relations through community participation. In addition, they have the potential to transform the urban form of consolidated areas, providing recreational and sports equipments for a population of 11 million people.

Key Words: open spaces; landscape design; urban form; river restoration; preservation.

Morphologic transformations of public spaces in the surroundings of Nova Lima's churches

Marieta Cardoso Maciel, Maria Cristina Teixeira

Project Department, Architecture School, Federal University of Minas Gerais.

E-mail: marietamaciel@gmail.com

The present work aims at evaluating the transformations of central open public spaces in the city of Nova Lima originating from the Portuguese (1700-1884) and English (1884-1939) occupation periods focusing on morphology in different historical contexts until current times. The excessive number of improvised housings, gatherings and the reduced number of plazas and public parks necessary for public leisure were the motivation to this study, which also observes the environmental benefits within the urban perimeter of Nova Lima. This analysis will focus on open public and private spaces modifications in the central area of the municipality since the occupation started there and it also suffered Portuguese interventions and received English villages destined to mining. New landscapes appeared and triggered the search for reasons that could have contributed to the site's morphologic analysis. The places subject of investigation are located in the surroundings of Bonfim, Pilar and Nossa Senhora do Rosário churches including traffic lanes and existing public and private buildings. Also, occupied spaces (public and private), traffic lanes, citizens and existing natural remainings will be included in the analysis for belonging to the urban landscape. These are the elements which allow to evaluate the city's current configuration as well as its environmental quality, and that will certainly contribute to the improvement of the city's landscape and, especially, for the well-being of the population.

Key Words: urban morphology, open public spaces, landscape, environment quality.

