

## *Morpho*, a methodology for morphological analysis

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The contemporary debate on the future of our cities seems to confirm the key role of territory in the overall process of urban development. And yet, a closer look on scientific research and professional practice framed by this debate, reveals the lack of a sound morphological dimension. The existence of a number of gaps within and between different disciplines, as well as the separation between some fields of knowledge and their object of analysis, the city, may help us to understand this phenomenon (see for example Batty, 2010; Whitehand, 2009, 2010). What is critical is that the absence of a morphological basis seems to threaten, in many projects, the achievement of initial goals and of expected results. By the end of the day, this seems to disable significant advances on our common knowledge on the city.

Against this background, in a recent paper published in 'Urban Morphology', Oliveira (2011) proposes three issues to the debate on urban morphology for this decade: i) the need for urban morphology to promote a reflection on the essential morphological elements (a reflection that involves some processes of selection and simplification); ii) the identification and development of significant relationships between urban morphology and other disciplines focused on the city, allowing an effective integrated research; and finally, iii) the development of consistent and systematic relationships between urban morphology and planning. Although these issues are not new, the different morphological approaches that have been proposed throughout the last years have not provided sound answers to these questions.

This paper focuses on the first of these issues only. In fact, one of the main challenges that urban morphology is facing is the promotion of its ability to focus on the essential and the specific contributions that it can give to contemporary societies. The paper proposes a methodology for urban analysis – *Morpho*. This methodology, mainly quantitative, intends to deal with the least set of elements that are able to describe and explain the city in morphological terms (assuring that this simplification does not mean a significant loss of this capacity of description and explanation): the street system, the plot system, and the building system.

*Morpho* provides an evaluation criterion for each of the three elements of this 'morphological core' taken in isolation; one evaluation criterion for each relationship between each pair of elements; and finally, one criterion linking urban form with function. The seven criteria are as follows: i) topological

accessibility of the street system (similar to Space Syntax); ii) topological accessibility to the plot system, expressing the diversity of agents (similar to Place Syntax); iii) the age of buildings, expressing the importance of 'time' in the process of city building; iv) the dimension of urban blocks, expressing the relationship between the street system and the plot system; v) the alignment (or position, using Kropf 1996 terminology) of buildings – expressing the relationship between the plot system and the building system; vi) the relationship between street width and building height; and finally, vii) function, on the ground floor and on the whole building.

The utilization of the *Morpho* method will provide an evaluation of the morphological basis of the city, considering three different dimensions: i) an overall assessment of the city (system of streets, plots and buildings); ii) a specific assessment of the different parts of the city, allowing the identification of the main strengths and weaknesses of this morphological basis, as well as, the definition of the needed practices to deal with these weaknesses; and finally, iii) an evaluation of the physical impact of potential actions or projects on the city.

Keywords: Urban form, evaluation methodology, street system, plot system, building system.

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