

# Land subdivision in Brazilian metropolitan context: The case of the Greater Porto Alegre

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**Cláudio Mainieri de Ugalde**

Fundação Estadual de Planejamento Metropolitano e Regional - METROPLAN,  
Brazil

Universidade Federal do Rio Grande do Sul, Brazil

## Abstract

Today, almost 70 million people live in Brazilian metropolitan areas. These areas, in particular, grow according to an extensive model and incorporate new lands to the pre-existing city, generating a discontinuous and heterogeneous urban fabric, with edges in constant expansion.

Retention of lands provided with substructure and facilities, for economic speculative purposes, and occupation of improper areas, increase environmental degradation, social and space segregation, and diseconomies as well.

In addition to this critical situation, urban land subdivision, despite government regulation, is accomplished by developers who have complete autonomy regarding the location and design of external public spaces. Plans happen to be approved by authorities that frequently are not conscious of the fundamental spatial aspects of urban systems.

Thus, specially in a Brazilian metropolitan context, land subdivision control can be approached as a “part-whole problem”, argued by Bill Hillier in his article “Look Back to London”, published in *Architects Journal* (1992) and discussed in his book “Space is the machine”, published in 1996.

The big metropolitan city, which is a totality, is criss-crossed by institutional and administrative limits which are spatially virtual but which are in fact taken by designers and authorities as real ones. Mayors and technicians of metropolitan municipalities are usually concerned up to the limits of their respective territories, and developers, up to the limits of their projects. Both see themselves as designers of the local space. On the other hand, metropolitan authorities tend to analyse global space as something generic, made by big enterprises, accessed through the super grid, regulated by macro-zoning or restricted by large areas of ecological importance. These two unrelated approaches reinforce each other, tend to minimise complexity and are responsible for many urban planning and design failures.

Space Syntax brings an important methodology that describes spatial relations and properties which are necessary for the analysis of land subdivision projects, their configurational alternatives and influence on urban structure. Therefore, it is able to change insufficient traditional approaches of the land subdivision theme.

## Keywords

Land subdivision,  
metropolitan planning,  
spatial analysis,  
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claudio.voy@terra.com.br  
clugalde@metroplan.rs.gov.br  
securb@vortex.ufrgs.br

The spatial configuration resulting from Brazilian urban reality tends to be different from those representative of cities in developed countries. Axial fragmentation, low connectivity and ringyness, discontinuity and, consequently, a concentrated integration core are very common elements of these systems.

The case study analyses the configurational evolution of three satellite towns of the Greater Porto Alegre at different time periods: 1970, 1990 and in an hypothetical moment after 1990, simulating an alternative of urban growth. It focuses on the space depth increase caused by plots, housing estates and gated communities, each one with specific impacts over the grid. It also evidences typical aspects of Brazilian urbanisation, like the high dependence of global accessibility of inner urban areas upon regional highways, space segregation caused by a surface metro, and the effects of large central areas which cannot be subdivided, such as parks, university campuses and military lands, on the entire metropolitan configuration.

In the face of the Brazilian urban context, which lacks effective global planning and is susceptible to the present impetus of space privatisation, an integrated management of land subdivision is the key to build a more permeable, intelligible and functional metropolitan grid. Guidelines of connectivity increase, barring elimination and avoiding fragmentation, issued for each one of the “parts” will tend to make easier the global and local organisation of the space system as a “whole”. A decrease in spatial and social segregation can be achieved if public agents, conscious of urban spatiality, erase institutional limits and regulate not only quantitative parameters but also indicate adequate positions for streets and open public spaces. This way, once the legal construction of these spaces must be financially supported by developers, its possible to improve low cost planning and design for metropolitan areas.