

Lisbon at a turning point: metropolitan patterns, trends and cultures

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1 Research outline: Lisbon as a metropolitan laboratory

The paper presents the overall structure and preliminary findings of the research project *Forms of metropolitan spatial production in Lisbon [1940-2011]*, currently developed by the team of M^{urbs} – metropolitan studies and forms of urbanization research group (Faculty of Architecture/ Technical University of Lisbon).

The research project stems from the opportunity to discuss recent metropolitan development under the light of new census data (2011) and of an on-going revision of regional and municipal plans. Thus, expected results are considered to adding new perspectives and further development to findings obtained in previous research. These previous experience includes a range of projects with subjects that span from the morphogenesis and development of metropolitan Lisbon, to comparative studies with other metropolises as well as the adaptability and sustainability of recent land-use policy instruments to managing urban change. A critical and conceptual update of the forms of urban production and territorial planning take into account innovative approaches, not only in metropolitan Lisbon, but also with regard to national and European trends.

Murbs – metropolitan studies and forms of urbanization research group is a research group (Faculty of Architecture/Technical University of Lisbon) with a focus in topics specifically related to metropolitan and urban space issues, including their morphologies, genesis and transformation processes, urban planning and spatial design.

The team gathers several researchers with previous expertise in these themes, especially in what the Metropolitan Area of Lisbon and comparative and multidisciplinary studies with other metropolises are concerned. Besides giving continuity to previous research activities, *Murbs* offers new challenges for future contributes to the scientific community.

The research project *Forms of metropolitan spatial production in Lisbon [1940-2011]* is seen as an opportunity to further develop previous findings and perspectives regarding Lisbon's metropolitan morphogenesis and development in comparative perspective with other 13 Southern European metropolises (George and Morgado, 2004), as part of the "*Explosion of the City Territorial Transformations in the South Europe Urban Regions - Ferrara, Venice, Genoa, Milano, Naples, Valencia, Donostia-Baiona, Vallès-Barcelona, Lisbon, Oporto, Montpellier and Marseille*" (coord Font, 2004). This research proposed a morphogenetic approach according to an identical periodization for all cities, the reading of the shapes and forms of the urban occupation, taking into consideration their dynamics and planning.

The research had as one of the major innovations the production of cartography at various time periods for each metropolitan area, which was published and exhibited in various cities involved. In the specific case of Lisbon, a digital and georeferenced cartographic database (scale 1:25000) was developed, including the buildings, the road and rail network, costal lines, topography and hydrography for 1940, 1965, 1992 and 2001. The urban occupation and land use was analyzed for these time periods, emphasizing an interpretative approach of the relationship between the urbanization phenomena, the census data

and the regional plans (both with publication dates close to the obtained official cartography).

The results from this first comparative study were an opportunity to participate in the project *Dinâmicas de Uso e Ocupação do Solo da Área Metropolitana de Lisboa 1940-2001* (Land Use Dynamics and Occupation in Lisbon's Metropolitan Area 1940-2001), developed under a protocol between the CCDR-LVT (Lisbon and Tagus Valley Regional Coordination and Development Commission) and the Faculty of Architecture of the Technical University of Lisbon.

Some members of this team were also involved in *Super Cities, Sustainable Land Use Policies for Resilient Cities* project (a comparison of five European metropolis, three of them Mediterranean; coord. Eraydin, EU, 2010), addressing the topic of the adaptability and sustainability of recent land-use policy instruments for managing urban change.



Figure 1. Birdseye view, Lisbon. Source: APL, nd.

2 Trends of change – responding to societal challenges

The metropolitan area of Lisbon reveals meaningful differences when compared to other European metropolises. The production of territorial features and urban fabrics into rather contiguous and continuous morphologies, upon which superimposed infrastructural and specialized land uses has often result in spatial disconnection and lack of legibility.

In this context, Lisbon offers a unique opportunity to address the emergence of specific forms of urban space production, related to a changing structural configuration, the stabilization of the national planning system and the shifting of urban policies towards regeneration and metropolitan-wide environmental structures.

Recent urban development issues are critically confronted with the impact of the economic and financial crisis situation, especially after the beginning of the financial assistance programme in 2011. Both long term and short term perspectives regarding urban development have been subject to reassessment and increasing uncertainty as to their feasibility. Conventional urban planning tools and formulas to foster

urban development are met with the collapse of a long established and growth-oriented real estate market.

As the Portuguese social and economic fabric fall into a new and still unpredictable state of unbalance and scarcity, a renewed focus on the living spatial conditions in the metropolis stands as a research commitment to societal development, not only in what Lisbon is concerned but also as a contribution to the theorizing of today's European urban condition.

Additionally, the research is in line with the vision of current European Societal Challenges, particularly those concerning the spatial, environmental and creative aware fields of society and policy.

3 From description to engaging challenges

The project aims to developing research on the topics: 1) Configurations and territorial trends in metropolitan Lisbon 1940-2011, with an emphasis on the 21st century; 2) Planning culture and planning system in Portugal, where Urbanism holds a representative role regarding the European context; 3) Questions and Debate: from metropolitan planning to metropolitan design.

New census data (2011) and an update of highly detailed cartographical representation of Lisbon metropolis are the background sources for outlining the socio-spatial characteristics of this new stage of metropolitan development.

The opportunity for the research project stems from this data as well as from the conceptual discussion and innovation regarding the spatial planning agenda, namely in a number of multi-level (national, regional and municipal) territorial and urban plans and guidance documents (e.g. Europe 2020).

As drivers for competitiveness in a globalized world cities and urban regions are at the core of current EU's policies. Accordingly, recent literature on European metropolises has critically explored the process of extended urbanization, regarding the understanding of such a specific and historically grounded urban condition as a step forward into the adjustment of the policy making, the spatial planning and the urban design.

A critical update on the urban production course of action and respective planning has been conducted, having in mind innovative approaches in the international panorama, as well as the identification of the contemporary trends in metropolitan Lisbon.

Exploring and renewing the conceptual framework regarding multilevel planning for the metropolis, over the last decade, under the scope of EU recommendations and National policies are also envisaged through: i) an outline of updated spatial configurations regarding Lisbon metropolis and its emerging morphologies; ii) a systematized identification of structuring fields for spatial and social cohesion in a fast changing context (i.e. infrastructures and open space systems); iii) a contribution to theorizing urban planning cultures and their adjustment in the face of economic and financial crisis and societal challenges.

4 Conceptual framework - changing fields in the metropolis

The location of the Metropolitan Area of Lisbon in the crossroads of remarkable Atlantic and Mediterranean landscapes contributes to its unique urban development, combining the access to the ocean and global trade and the potential of an inner sea – the Tagus Estuary – as a morphological and identity reference. Its territorial specificities and historic background give rise to characteristic forms of urbanization.

Literature and previous research about the westernmost European capital have shown the contours of leading processes of urban growth in different time periods of metropolitan development. Until mid-20th century by resorting to urban contiguity, then

by introducing spatial disjunction and functional specialization, as a reaction to modern city concepts. However, a third period starts evolving from the late 90's onwards, with characteristics which, so far, may only be sensed.

After three decades of public policies in a democratic political context, current planning in Portugal is gradually changing perspectives on priority areas and sectors. As major urban problems (slum clearance, housing, supply of basic infrastructure and facilities) had been tackled by local and national funding, planning priorities now focus on urban renewal, environmental protection and public space improvement.

Current urban planning – being developed simultaneously at metropolitan/regional and municipal levels – is targeting precisely key topics such as shrinking prevention and the urban and environmental qualification of former sprawl fabrics. Risk assessment, ecological networks and mixed uses associated to a more reticulate infrastructural network is now in the planning agenda. A stronger commitment to multi-level planning approaches, urban-landscape relationships, and to flexibility and resilience concepts is also foreseen in Lisbon's Municipal Master Plan (approved in August 2012).

Trends of change and innovation are also noticeable by analyzing recent patterns of urban occupation and statistical data. A complex mosaic of land uses associated to the knowledge economy, logistics and retail is emerging along with new patterns of urban shrinkage.

The sprawling drifts which characterized metropolitan development after the 1940's – following railroad and motorway suburban axes – are increasingly combined with transversal lines of settlement filling in the open spaces left in-between. These patterns include not only highly connective and specialized land uses – giving evidence to a polycentric system –, but also the spaces of everyday life – housing, working, studying, shopping.

Conversely, population loss and unbalances in the housing market became noticeable in areas other than old districts, increasing the complexity of shrinkage phenomena. Together, they are shaping the contour of what can be perceived as a new stage of metropolitan development.

However, the difficulty in defining a comprehensive conceptualization for the contemporary metropolis, has led many authors to come up with different and exploratory paths for decoding this type of urbanized landscape and in the fields of urban morphology (Font, 2007, Mangin, 2004), metropolitan landscapes (Tatom, 2009, Llop, 2009) and infrastructures (Graham and Marvin, 2001, Shannon and Smets, 2010). A state of *in-betweenness* (Sieverts, 1997) remains a sharp metaphor for the stage at which Lisbon and many European cities stand as they are faced with such unexpected and deep change in recent times.

In spite of representing ground breaking concepts in their context, these contributions to the decoding of contemporary critical fields still require further discussion. The issue is now how to bridge the cutting-edge trends of global urbanization with the reconstruction of an operative and conceptual common ground for intervening in clashing fabrics, such as today's southern European metropolises.

5 Methodology and lines of development

The team developed an update of specific cartography (based on official military charts M888 series/2009, scale 1:25000), resorting to previously tested methodology. This work preceded the exploring and renewal of the conceptual and critical framework regarding the forms and planning of metropolitan - spatial production, under the scope of relevant innovations in the Portuguese planning system.

Due to its specificity, in definition and time span, this cartography is considered both as a result – by extending a vision of a certain territorial development in time – and as a tool for further research in two dimensions: (1) contribution to the definition of a metropolitan design

and morphology, and inherent epistemology; (2) as a basis to share and to cross with other data, for instance, by resorting to GIS potentialities.

The cartographic production is complemented with the identification and classification of the metropolitan changes and its emergent morphologies, by combining a theoretical approach with the direct contact with the territory.

Thus, the territory will be examined according to different sorts of data which will include digital cartography and orthophotomaps analysis (in several scales), available plans and policies documents, statistical and economic data. The vectorial data includes different layers (buildings or blocks, infrastructures, public space and landscape cadastral information), adjusted to a local perspective in various dates in order to examine its morphogenesis and integration within larger metropolitan structural and functional patterns. Relevant data include statistics and planning tools joinable to cartography using CAD and GIS techniques to be displayed spatially, according to the time scope sequence.

The empirical approach is based on field work, analysis of official cartography / documents, statistical data and morphogenetic reading of three interconnected layers of the metropolitan fabric: infrastructures, filaments and the open space system. Thus, the analysis consists in the systematization of the dynamic process of transformation of the metropolitan landscape, by decomposing the relations established between these different elements, with the overall configurations, the demographic trends and the Portuguese planning system, focusing the last 20 years.

The research aims at tracking the contemporary city-making processes, patterns and challenges in metropolitan Lisbon, following three lines of development, which will further be crossed and worked to sort out transversal conclusions. These lines of development include four main fields: i) the patterns of change in the wake of crisis, scarcity and shrinkage; ii) the spatial structures for a smart and cohesive metropolitan landscape; iii) an update on a socially engaging urban planning and theoretical framework.

Although separated under the different layers, the analysis points out the impossibility of their decoupling and their influence on the overall system, inviting to a transversal reading of the various types of relationships established. Four contributions address these trends through the lens of i) infrastructural intermediation spaces; ii) metropolitan filaments; iii) from in-between to a designed open space system and iv) the urban shrinkage and its impacts at the local scale.

5.1 *Infrastructural intermediation spaces – metropolitan interfaces in Lisbon*

Considering emerging forms of spatial development associated to infrastructure in Lisbon metropolis in the last decade, a specific focus will highlight spaces where the recent improvement in mobility networks has rendered a very well connected and interfacial metropolitan fabric.

The last decade can be seen as stage of transition in Lisbon's metropolitan infrastructural strata to what it was called the layering of a connective fabric (Santos, 2012). This fabric is established through: 1) the multi-scalar recombination of various mobility, supply and communications networks; 2) the development of well-connected patches of urban development bridging or regenerating spatial and functional gaps in the metropolitan fabric; and 3) the introduction of landscape and intermodal interfaces in nodal spaces.

In the meantime, transformations at a local level in the city of Lisbon begin to be sensed as the underground system is expanded and connected to the railway, the airport, and to river and bus terminals in a number of new intermodal stations. Public space qualification and urban renewal projects start to be programmed in the areas adjacent to these new stations, taking a role in the framing of a better balanced and cohesive urban structure.

The emerging of a *connective fabric* as a metropolitan configuration is therefore being simultaneously being produced at various levels and through the recombination of transport links, spatial and landscape continuities and multifunctional urban facilities. Three areas in Lisbon show how this incrementally being achieved: the riverside threshold, the national and international mobility hubs of the airport and the main train station in *Oriente*, and the border spaces along CRIL – the first metropolitan ring motorway.

5.2 Metropolitan filaments

This approach to the urban fabrics and its morphogenesis focuses on a set of emerging urban morphologies, arising from processes of concentration of economic agglomerations specialized in the production, distribution and consumption in Lisbon's metropolitan territory, during the last 20 years.

The changes in the physical, economic and political context of the last twenty years have boosted the transformations in the metropolitan structure and the constitution of functionally specialized urban formations, which specific morphologies (*metropolitan filaments*). These are product of the metropolitan infrastructuring and densification, resulting in a system of areas of high concentration of economic activities related to the tertiary (and quaternary) sector and, in parallel, the abandonment and restructuration of large peripheral industrial areas.

The *metropolitan filaments* are the result of processes of great dynamism that, according to their nature and location, have their origins related the industrial fabrics established until the 70s, followed by the exponential growth of the tertiary sector during the 90s and the current presence and strengthening of the quaternary sector. The adaptation to the new demands of the knowledge society, along with the turn from an industrial to a services economy, was materialized in metropolitan Lisbon with the atomization and fragmentation of small/medium scale industrial and logistical activities through the territory, as well as the emergence of dense knowledge-intensive production or commercial clusters. A main feature of the genesis of the *metropolitan filaments* is the presence of an industrial structure as the engine that created the conditions for the establishment of subsequent activities. Although many of these factories are currently inactive, abandoned or converted, the logics supporting their morphology and location are still present in the territory in the dialogue with the (biophysical and anthropogenic) surroundings. The strategic location with regard to the physical support (topography, hydrography, wind and solar orientation, etc.), to the availability of land for occupation and connection to the infrastructural networks laid the foundations for the synergic relations with complementary activities that shape the contemporary urban formations.

The main objective is the identification of these specialized areas and their morphologies, revealing its transformation processes and determinant factors that shaped them, discussing their role in the metropolitan structure and how they can adapt and relate to their surroundings, in the current context.

5.3 Towards a designed open space system

On a wider scale, the main areas of concern focus on transition areas between dissimilar situations. On the one hand, it addresses the ambivalent characteristics of its fabrics, and, on the other, the need for a disciplinary approach that, in terms of projects, answers trans-scale situations and allows working in areas with scientific and conceptual borders that simultaneously encompass urbanism and landscape architecture.

Accordingly, and in the light of recent works, we are probably looking for projects that instead of attempting to mend urban splinters aim to reinvent a fabric composed

of many distinct pieces, conveying the city a territorial coherence through a public realm oriented structure of metropolitan characteristics (Morgado, 2012).

Fringe and splinters slashed the metropolitan support, sometimes in between highly qualified modern neighbourhoods and superposed with major infrastructures. Dereliction and social segregation opened unsuspected issues in modern and post-modern experiments.

However, since recent adjustments to a worldwide crisis have either frozen on-going important infrastructures or impelled the need for a greater proximity with the place. From kitchen gardens to urban parks: the unseen, unperceived, becomes the protagonist of the recovery, through the design of a collective system of open spaces.

These concerns raise the need to clarify the nature of current metropolitan fabrics, as they hold different qualities - from urban and infrastructural to rural and natural - and the indispensable skills to intervene in them. In this process, the growing importance of the space in-between cities is highlighted.

As a result, literature and practices keep on emphasizing the same topics:

- Open space is a key element for the full understanding of current metropolitan and urban morphogenesis and
- The most flexible design component in the articulation of different and scattered elements in the metropolis.

5.4 The urban shrinkage and its impacts at the local scale

Presently, Europe is facing both population decline (shrinkage) and ageing. Eurostat estimates that population decline is experienced in one quarter of the European regions, and it is expectable that the ratio would continue to grow in the near future. In the same way, the life expectancy is predicted to increase.

Although the highest percentage of younger residents can be found in Lisbon's Metropolitan Area (AML), the city of Lisbon is also one of the European capitals with higher percentage of population aged 65 years and over (65+). The already existing oversupply of dwellings, associated to a selective out-migration of younger households towards the city periphery, also lead to a change in the age structures in city centre (most residents are in the 65+ group age), housing vacancies and thus to a situation of underused urban infrastructures.

The demographic trends verified in AML are largely a consequence of a deficit of choices, once the possibility of choosing to live in the city over living in the suburbs shows less affordable for the middle class, who cannot find an adequate housing supply that would fit their economic capacity and housing demands. These trends are accompanied by a decrease in the household size and changes in its classical structure, resulting in a minor density and in the under-usage of dwellings and consequently in a higher per head consumption of housing space.

The housing, especially in the core city, is hardly affected by the population decline and high elderly population proportion. The cheap rental dwellings close to the city centre, mostly occupied with elderly residents due to inflexible rent control laws in effect between 1948 and 1985, and the inability of owners to rehabilitate their dwellings engaged in these low income rents, lead to a state of degradation in the buildings, to a decline of expenditure on maintenance and to a devaluation of the municipal parish property and quality of life. Both the physical deterioration of most of the buildings and urban amenities and the fact that they don't provide the requirements for actual housing standards led to an inner-city decline and depopulation in most of the metropolitan municipalities. (CML, 2009; CML, 2012)

6 Preliminary findings and perspectives for an on-going research

Over the last years, individual research lines (e.g. PhD and Post-doctoral research) have been building a multi-layered database, contributing to the identification of topics where “change” is critically acknowledged. Further developments will allow for a multifaceted synthesis, exploring plural and transversal findings.

The project is expected to render a synthesis regarding: 1) Configurations and territorial trends in metropolitan Lisbon 1940-2011, with an emphasis on the 21st century; 2) Planning culture and planning system in Portugal, where Urbanism holds a representative role regarding the European context; 3) Questions and Debate: from metropolitan planning to metropolitan design.

The research has also been a field to develop a network with a wide spectrum of debate. This includes different approaches from field work to design workshops, publications and development of bonds with several university and research teams, in partnership with municipal and central government authorities, or even under the scope of Thematic Groups and Teams within AESOP and ISOCARP, amongst others.

The project has been a common ground for crossing several lines of research which share Lisbon metropolis and its contemporary condition as its field of study. In its current stage, it has already allowed for a deeper understanding of Lisbon’s emerging forms of spatial production, not only from the statistical and spatial data already developed, but from the opportunities for inquiring into societal changes currently perceived as critical in the face of uncertainty and scarcity.

Besides the dissemination and debate of the research findings, resorting to publications, participation and organization of international seminars and workshops, the project *Forms of metropolitan spatial production in Lisbon [1940-2011]* and *Murbs* multidisciplinary activities are an opportunity to constitute ground-breaking knowledge by contextualizing a reality only sparsely perceived as a wider phenomenon.

The contributions and expertise of the different team members allow for a intertwined link with planning education and scholarship, namely through: 1) the development of theoretical units at PhD level concerning metropolitan territories; 2) the organization of design studios and advanced research workshops aimed at doctoral and master level candidates; 3) the contribution to already concluded post-doctoral research and doctoral theses of team members and 4) the contribution to on-going doctoral theses by team members.

These results are expected to give rise to social externalities, allowing for innovation and debate in the academic field as well as in local and national public administration.

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