

## Lisbon: towards a suprametropolitan configuration?

Sofia MORGADO

Professor Dr, Architect, Department of Urbanism, Faculty of Architecture,  
Technical University of Lisbon, Portugal | FCT-Fundação para a Ciência e a Tecnologia (research fellowship)  
Pólo Universitário do Alto da Ajuda, Rua Sá Nogueira, 1349-055, Lisboa, Portugal, [smorgado@fa.utl.pt](mailto:smorgado@fa.utl.pt)

### 1 FROM THE UNOCCUPIED.

#### AN INTERPRETATION OF THE METROPOLITAN FORMATION OF LISBON

Absence is the contemporary protagonist in the metropolis. Nevertheless, no author has attempted to interpret a concrete metropolis from this point of view, examining the circumstances in which unoccupied spaces occur, even when such spaces have been latent in conventional urban planning readings based on occupied space.

This then was the challenge: how to interpret a concrete metropolitan formation starting from its unoccupied space. On the one hand, it would be necessary to show that unoccupied spaces really determine the various stages of urban development that lead to an effectively metropolitan status. On the other, it would be necessary to choose a metropolis where this premise is unquestionable. Such a premise is true of Lisbon, which is formed around a large unoccupied central space: the Tagus Estuary. The progress of the research determined a simply and extraordinarily flexibly structured approach.

Analysis of the metropolitan formation of Lisbon around the unoccupied is based on five significant moments in which three principles – water, land, and artificial creation – are used to identify morphologies of unoccupied spaces, using the same conceptual criteria, expressed according to identical cartographic criteria. Considering the motives and forms of occupation, as well as how they inter-relate with each other, the metropolis of Lisbon is not only described, but trends for future development are also outlined (Morgado, 2005).

This reading matrix made it possible to establish an analytic criterion which was coherent at all stages of metropolitan development discussed here. In addition, it was possible to see how the three elements related to each other, characterising the territory as a whole, as well as how each element over time has adapted to the circumstances of the metropolitan formation itself:

- 1860 | the founding of the metropolis: the shapes of water and land were the main factors determining formation, resulting directly in the artificial creation which definitively marked later development of the ways of occupying territory;
- 1940 | the infrastructural base of the territory: the territory where the lines of development of the future metropolis of Lisbon were taking shape was transformed by large-scale infrastructures, particularly the railways and the port of Lisbon;
- 1965 | the machine-space: a pre-metropolitan conurbation began to be formed, and territory began to be more intensively exploited, involving functionalisation of space expressed in maximum-productivity forms;
- 1992 | a metropolis of opportunities: this was when Lisbon first achieved real metropolitan status, with renewal of land-use opportunities in comparison with the foregoing period;
- 2001 | a supra-metropolitan transformation: insertion into larger networks has led to an apparently homogeneous reduction of unoccupied space, which contributes to an undifferentiated landscape and few urban reference-points.

Analysis of each period showed a territorial structure under construction, from its foundation to its current status as part of a supra-metropolitan formation. Each stage has been dealt with in a completely autonomous reading but the time-sequence explains the present configuration of the Lisbon metropolis around unoccupied spaces, and allows us to draw some conclusions concerning the trend of future development. Progressive knowledge of the formation of the metropolis has made it possible to describe and classify it at every stage, showing that unoccupied space is the essential determining factor in the territory of Lisbon.

This study proposes an innovative interpretation of a concrete territory starting from a discussion of a space which remains unoccupied, based on a specific methodology. The use of some GIS techniques applied to a

specific territory, in which the importance and role of the various types of unoccupied territory are systematically assessed at each of the five stages of metropolitan formation, also led to the production of new cartography on this theme, with potential future use, together with a new detailed cartographic archive on the territory under analysis. Furthermore, the methodology and conclusions may be used to interpret other metropolitan realities and comparisons have already been established with identical urban research, both applied to metropolises of Southern Europe (Font, Indovina, Portas, 2004, *The Explosion of the City*, International Research Project, 13 Metropolises in Spain, Italy, Portugal and France) and specifically to Lisbon (George, Morgado, 2004, previously mentioned research project).

### 1.1 1860 | the founding of the metropolis: inland sea

The shapes of water and land were the main factors determining formation, resulting directly in the artificial creation which definitively marked later development of the ways of occupying territory. In territorial terms, the existence of estuaries is always a major factor. Yet here, the truly extraordinary facts are that there are two estuaries, and that the relationship established between them offered a major urban opportunity by creating special dynamics between the two main cities in the area: Lisbon and Setúbal. The urbanisation of this territory was incipient, merely comprising structures that were adapted to the water and the land. On the one hand, this demonstrates the structure of the rustic space; on the other, it enables the identification of artificially created features that interpret the territory and point towards an embryonic concept of territorial identity.

In the middle of the 19th century, the territory under analysis was at a very early stage of development in terms of urbanisation, since the start of industrialisation only truly came about for political and economic reasons at the end of the century. This conjuncture is of exceptional relevance for this study, as it reveals the real foundations of the future Lisbon metropolis.

At that time, the layout of the water and the land were the most decisive factors in determining the structure of urbanisation, directly resulting in the artificial creation that would definitively shape the future evolution of the forms of land use.

In fact, prior to industrialisation, the urbanisation of what is now the Lisbon metropolitan area was organised around an open and central heart of water. All the infrastructural lines that would define the later shape of the metropolis converged on this expanse of water (Morgado, 2005).



Graph 1: 1860 | the founding of the metropolis: inland sea (Sofia Morgado, 2005, *Protagonismo de la ausencia*. Interpretación urbanística de la formación metropolitana de Lisboa desde lo desocupado, ETSAB-UPC Barcelona, FCT fellowship)

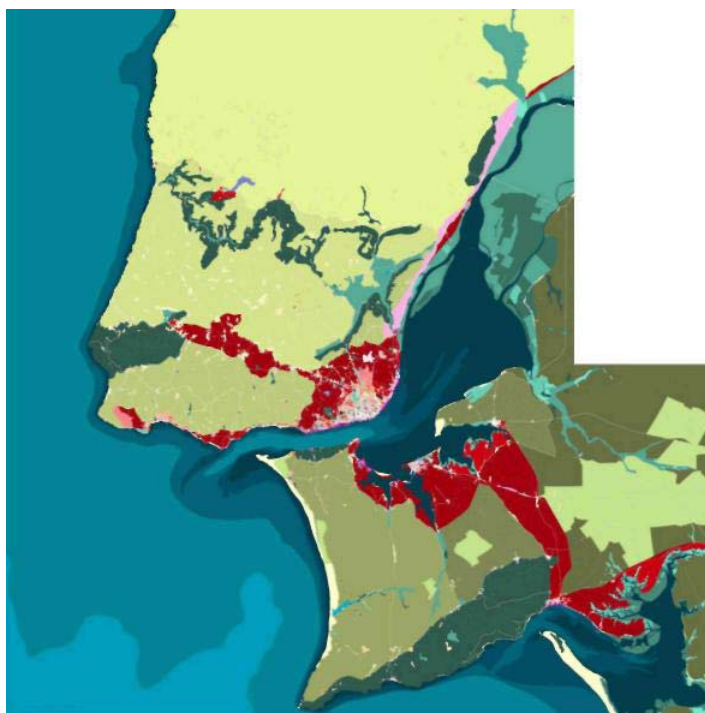
## 1.2 1940 | the infrastructural base of the territory: a new hierarchy

The territory where the lines of development of the future metropolis of Lisbon were taking shape was transformed by large-scale infrastructures, particularly the railways and the port of Lisbon. These spaces were large specialist areas that established radial expansion along the lines of communication (national roads and railways). These highly specialised and artificial spaces included port areas shaped by the natural conditions of the water and large agricultural areas whose direct connection to the railway and ports imposed investment in land redistribution, mechanisation and colonisation. These productive areas were overlapped by the axial spaces of greatest infrastructural intensity that began to establish the skeleton of the metropolis

Between the middle of the 19th century and the 1940s, there was a major transformation as the effects of technological change inextricably associated to industrialisation began to be felt. The political conjuncture and the effective development of a country that was investing in creating new infrastructures, combined with various urban plans, also contributed to this phenomenon. Their impact on the territory had a defining influence on the growth that led to the current metropolis of Lisbon.

These highly specialised and artificial spaces included port areas shaped by the natural conditions of the water and large agricultural areas whose direct connection to the railway and ports imposed investment in land redistribution, mechanisation and colonisation. These productive areas were overlapped by the axial spaces of greatest infrastructural intensity that began to establish the skeleton of the metropolis.

This was the dawn of a new form of territorial control and organisation: artificial creation. It would overwhelm natural spaces, beginning a profound restructuring process and creating the infrastructural base for the territory in terms of specialisation and the intensive and productive use of the unoccupied space (Morgado, 2005).



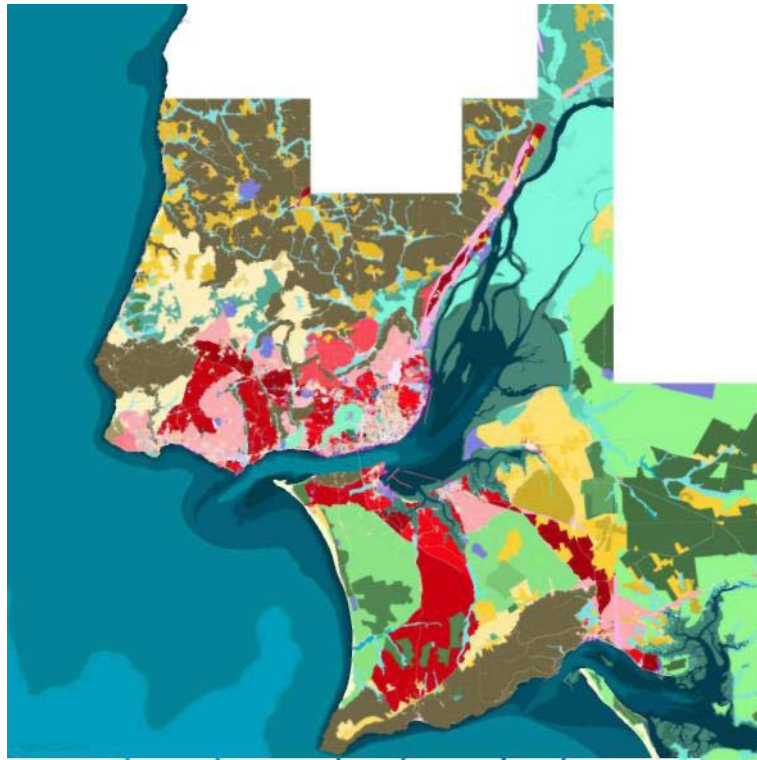
Graph 2: 1940 | the infrastructural base of the territory: a new hierarchy (Sofia Morgado, 2005, Protagonismo de la ausencia. Interpretación urbanística de la formación metropolitana de Lisboa desde lo desocupado, ETSAB-UPC Barcelona, FCT fellowship)

## 1.3 1965 | the machine-space: selective exploitation

A pre-metropolitan conurbation began to be formed, and territory began to be more intensively exploited, involving functionalisation of space expressed in maximum-productivity forms. This situation created a territory that was organised according to the efficiency of its infrastructures and that characterised the land according to activities in specific zones, particularly in terms of the artificial creation of urban occupation. The main axes of opportunity drove urban growth, both through specific uses (industrial and/or residential occupational) and through proximity to infrastructures whereby they were directly dependent on routes, fundamentally around railway stations.

The guidelines for introducing the infrastructures into the territory generated a series of dynamics that in turn resulted in important modifications to the forms and structures of Lisbon's incipiently metropolitan space in the middle of the 20th century. A pre-metropolitan conurbation began to emerge both from the efficiency of the infrastructure lines and the opportunities that they created. This also involved intensive exploitation of the territory that implied functionalising the space, which took the form of maximising production.

In brief, artificial creation defined the extent and specialisation of the unoccupied space when could be directly accessed from the mobility networks. Applying both to agricultural land (large-scale holdings) and to spaces of opportunity, this definitively segregated these spaces from the others whose peripheral nature and inherent fragmentation (smallholdings on steep and frequent slopes) mean they are not able to compete with intensive production, either urban or agricultural (Morgado, 2005).



Graph 3: 1965 | the machine-space: selective exploitation (Sofia Morgado, 2005, Protagonismo de la ausencia. Interpretación urbanística de la formación metropolitana de Lisboa desde lo desocupado, ETSAB-UPC Barcelona, FCT fellowship)

#### 1.4 1992 | a metropolis of opportunities: a topology of connectivity

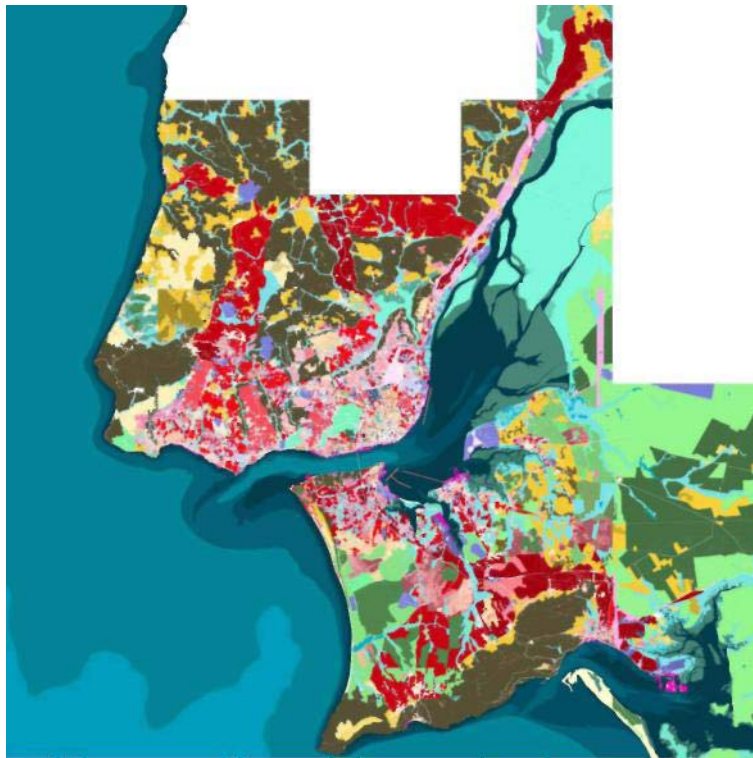
This was when Lisbon first achieved real metropolitan status, with renewal of land-use opportunities in comparison with the foregoing period. The land is also increasingly facing a splintered form of occupation, in this case due to the development of previously identified areas, establishing specific forms of occupation that have different connections to the metropolitan network. Through a process of redistribution, infrastructure development and individual constructions, the characteristic areas that make up the core of the territory examined here define incipient urban perimeters: the basis of low density unoccupied space that immediately becomes widespread.

In 1992, Lisbon reached the first truly metropolitan status as it renewed its land opportunities in comparison to the preceding period. Democracy in 1975 and membership of the European Union in 1986 established a new political and economic conjuncture that went hand-in-hand with major transformations in the productive systems, which started focusing on the service sector, making the industrial and port areas obsolete. The evolution of radial axes of opportunity for an effective mobility network defines multiple central points because of their extraordinary connectivity. These central points stand out in the territory as emerging metropolitan centres set against a backdrop of unoccupied spaces, some of which have a passive function as recipients of occupation, while others act as tensors and organisers of the metropolitan space. It is irrelevant that their previous structures were rural. Above all, what matters is that this space is unoccupied and extraordinarily accessible from any point within the metropolis and even beyond, or that – at the very least – it will become accessible, integrating into the global networks.



Therefore, the spaces that already have urban occupation and intermediate unoccupied spaces that are experiencing occupation out of inertia are actually far more passive vis-à-vis the dynamics and developmental trends in the metropolis of opportunity that Lisbon is progressively becoming. In closely connected unoccupied spaces, expectations are high, and production is far more flexible and mainly based on information or on assembling and storing of products in transit. This only requires a space that is available, mono-specialist and communicable (Morgado, 2005).

Unexpectedly, the true centres are the inhospitable and unoccupied spaces located around motorway exits.



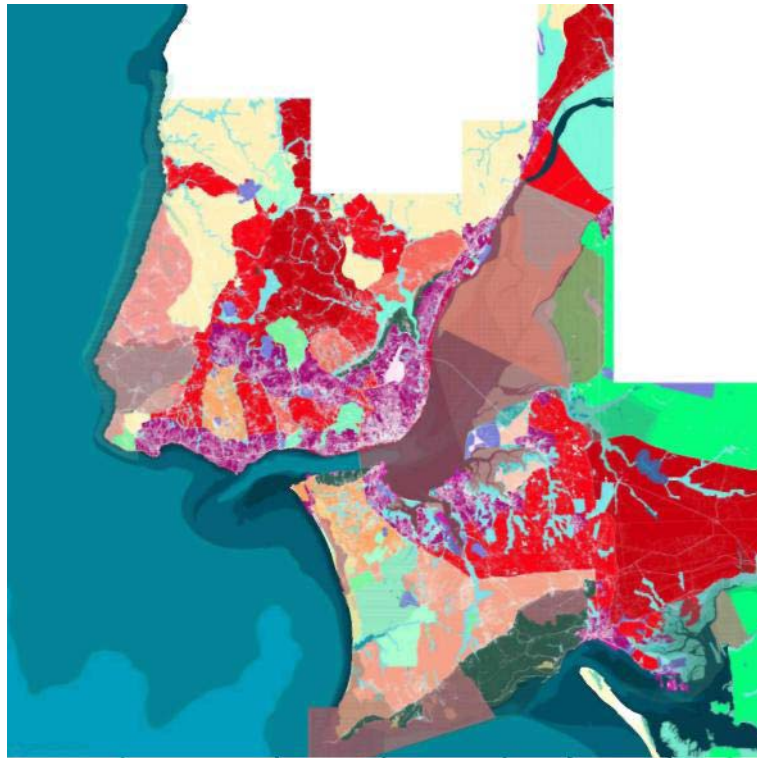
Graph 4: 1992 | a metropolis of opportunities: a topology of connectivity (Sofia Morgado, 2005, Protagonismo de la ausencia. Interpretación urbanística de la formación metropolitana de Lisboa desde lo desocupado, ETSAB-UPC Barcelona, FCT fellowship)

### 1.5 2001 | a supra-metropolitan transformation: indifferent landscapes?

Insertion into larger networks has led to an apparently homogeneous reduction of unoccupied space, which contributes to an undifferentiated landscape and few urban reference-points. In fact, the Lisbon metropolis is faced by a supra-metropolitan transformation that places it within a sub-global category, integrating it into networks that have international – and particularly European – dynamics in terms of the mobility of people and products, and of the productive transformation that is increasingly focused not merely on services but on a broad range of activities associated with a knowledge-based economy. The Lisbon metropolis emerges as an organism with apparently more homogenous forms of occupation that, due to artificial creation, are converted into areas that are large and poorly structured in terms of density and that lack diversity in terms of the formation of these metropolitan lands.

Integrating the Lisbon metropolitan area into larger scale networks brought an apparently identical reduction of the unoccupied space, leading to a uniform landscape and few urban points of reference. However, identifiable forms correspond to this apparent uniformity, reconstructing Lisbon's metropolitan identity according to the aforementioned unoccupied spaces (Morgado, 2005).

From 2001 to 2005, the Lisbon metropolis definitively acquired its form, while simultaneously clarifying its role within an Iberian conurbation stretching between Lisbon and Galicia which (in national terms) covers the northern half of the Atlantic coastline (Gaspar, PNPOT, Portuguese National Urban and Territorial Master plan, 2005). Hence, the Lisbon metropolis suggests a still more complex transformation that incorporates the various metropolitan structures of Oporto, Coimbra and Aveiro.



Graph 5: 2001 | a supra-metropolitan transformation: indifferent landscapes? (Sofia Morgado, 2005, *Protagonismo de la ausencia. Interpretación urbanística de la formación metropolitana de Lisboa desde lo desocupado*, ETSAB-UPC Barcelona, FCT fellowship)

## 2 TOWARDS A SUPRAMETROPOLIS CONFIGURATION?

Initially, progressive knowledge of the metropolitan formation of Lisbon has made it possible to describe and classify unoccupied space at every stage. Analysis of each period showed a territorial structure under construction, from its foundation to its current status as part of a supra-metropolitan formation. Insertion into larger networks has led to an apparently homogeneous reduction of unoccupied space, which contributes to an undifferentiated landscape and few urban reference-points.

As part of an ongoing research (ETSAB-UPC, Barcelona/ FA-UTL, Lisboa), two additional important premises have been defined:

- The potential of unoccupied spaces as instruments for urban control;
- A case study which revealed a certain degree of future impact or an emerging transformation. For this, the following natural and urban areas that are still unoccupied but which will house major infrastructures in the near future were selected: the New International Airport of Lisbon, the International high speed train, and a new local skeleton network formed by a metropolitan tramway.

As a result, it is possible to imply that the Lisbon metropolis is faced by a supra-metropolitan transformation that places it within a sub-global category.

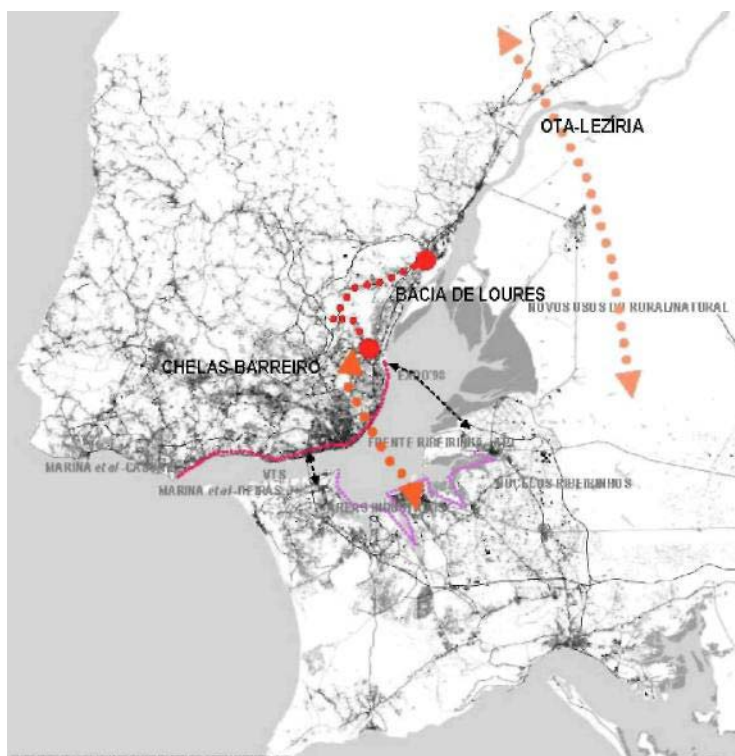
Given the increase in environmental concerns, which impose the definition of protected areas, and the sudden appearance of polarised centres in deserted or rural areas with excellent connections, there is frequent artificial and hyper-real recreation of the metropolis. It is believed that the unoccupied space will continue to acquire new meanings due to future transformations, artificially recreating itself in new forms that are associated to leisure and production, as well as defining new means of urban formation (McHarg, 1992; Dematteis, 1995).

In the current context and given new approaches to the creation of the urban space, which reveal the potential of the unoccupied space, this is an opportune moment to examine innovative ways of urbanistic interpretation and intervention. The work in question is appropriate as the theme has already been studied by highly regarded specialists as a potential instrument for metropolitan organisation and urban intervention (Secchi, 2005, Viganó1999; Pavia, 2002).

Given metropolitan Lisbon's current urbanistic panorama, a concept for the urban project whose main instrument in characterising identity and structuring growth is the unoccupied space is seen as relevant. This also acts as the agent that articulates the territorial and urban scales.

The current projects for major infrastructures (high speed train and new bridge over the Tagus, new international airport, surface lines of the Lisbon Underground) suggests the creation of a new supra-metropolitan hierarchy and a new cluster of centres superimposed on the current ones and transversal to its infrastructural and urban order. This will naturally lead to urban phenomena that must be anticipated with a vision that looks to the future of the territory and of urban development (Graham, Marvin, 2001).

Using a chronological approach and further developing the previous model, the aim is to create a guide that will truly explain the relations between the occupied and unoccupied space in the current metropolitan area.



Graph 6: An approach to a new form of structuring the Lisbon Metropolis (Sofia Morgado, 2007, *Designing Absence*. The unoccupied space as morphological and urban project fundament at the metropolitan formation of Lisbon, FA-TU Lisbon, ETSAB-UPC Barcelona, FCT fellowship)

The basis for selecting the case studies is a territorial interpretation based on the unoccupied space that has become established. The areas that articulate with the Tagus Estuary, previously considered a metropolitan plaza, are of particular relevance:

- Infrastructured lines on the north bank: Loures-Lisbon-Cascais. This is the main area for urbanisation, and also where the richest models of unoccupied spaces can be identified. Moreover, this is where the most significant projects are concentrated, including the only metropolitan project to adopt the proposed form – the Costa do Sol Plan – and more recent projects such as the Port of Lisbon Master Plan and Expo'98.
- Natural borders that are being urbanised on the south bank: Alcochete-Moita-Montijo. This area is enclosed by axes for opportunity where the ongoing division of the land, influenced by major infrastructure projects, has created a type of landscape characterised by dispersion and the obsolescence of rural practices.
- Protected spaces: Lezíria Grande-Rio Frio. This is an area of intensive farming where technological progress and new uses linked to an ecological vision are introducing alterations that must be examined in terms of the demand for space and its usage.

The unoccupied space is finally beginning to be understood as essential in structuring the metropolitan area, not only in terms of environmental protection, but mainly through innovative action on urbanistic tools themselves, which should establish the open space as a high quality place that is accessible to the people.

Thus, territorial definition of the urban project (scale of the integration and spatial structuring projects with urban architectural content) can be particularly relevant as the main instrument for strategies and tendencies.

In this process, it is fundamental to regenerate forms of occupation and uses within the context of a metropolitan structure.

In the meantime, some recent phenomena associated to unoccupied spaces have been identified, and are already considered as of potential value in this formulation.

### 3 REFERENCES

- AAVV (coord Ramon Folch), 2003, *El Territorio como sistema. Conceptos y herramientas de ordenación*, Territorios y Gobiernos (Visiones/3), Diputación de Barcelona, Barcelona
- AAVV (coord. José António Tenedório), 2003, *Atlas da Área Metropolitana de Lisboa*, Área Metropolitana de Lisboa, Lisboa
- AAVV (dir João Ferrão), 2002, *As Regiões Metropolitanas Portuguesas no Contexto Ibérico*, coordenação geral João Ferrão (Instituto de Ciências Sociais – Universidade de Lisboa), (Estudos/5) DGOTDU – Direcção Geral do Ordenamento do Território e Desenvolvimento Urbano, Lisboa
- AAVV (ed. Ángel Martín Ramos), 2004, *Lo urbano en 20 autores contemporáneos*, Escuela Técnica Superior de Arquitectura de Barcelona, Edicions UPC, Barcelona
- AAVV (ed. Antonio Font; coord. científica Francesco Indovina, Nuno Portas, Antonio Font), 2004, *L'explosió de la ciutat*. Morfologies, mirades i mocions sobre les transformacions territorials recents en les regions urbanes de l'Europa Meridional, Col·legi d'Arquitectes de Catalunya-COAC/Forum Universal de les Cultures Barcelona 2004, Barcelona
- BANZO M., MORGADO S., 2006, «Les espaces non construits des périphéries métropolitaines. L'Aire Métropolitaine de Lisbonne». In Crozat D., Viala L. et Volle J.-P. (coord.), *Villes méditerranéennes d'Europe et leurs périphéries*. Mutations territoriales, innovations sociales, Montpellier, Publications MTE, coll. Recherches
- CABRAL, João; MORGADO, Sofia; CRESPO, José Luís; COELHO, Carine, 2007, «Urbanisation trends and urban planning in the Lisbon Metropolitan Area» in AAVV (Oom de Seabra Pereira, coord), *A Portrait of State-of-the-Art Research at the Technical University of Lisbon*, Springer, the Netherlands
- DEMATTEIS, Giuseppe, 1995, *Progetto implicito. Il contributo della geografia umana alle scienze del territorio*, Franco Angeli, Milano
- GASPAR, Jorge, 1993, *As Regiões Portuguesas*, Direcção-Geral do Desenvolvimento Regional, Ministério do Planeamento e da Administração do Território, Secretaria de Estado do Planeamento e Desenvolvimento Regional, Lisboa
- GEORGE, Pedro; MORGADO, Sofia; et al, 2004, «Àrea Metropolitana de Lisboa 1975-2001. De la monopolitat a la matricialitat emergent/ Metropolitan Area of Lisbon 1970-2001. From monopolarity to an emerging matrix pattern» in AAVV (ed. Antonio Font; coord. científica Francesco Indovina, Nuno Portas, Antonio Font), *L'explosió de la ciutat*. Morfologies, mirades i mocions sobre les transformacions territorials recents en les regions urbanes de l'Europa Meridional, Col·legi d'Arquitectes de Catalunya-COAC/Forum Universal de les Cultures Barcelona 2004, Barcelona
- GEORGE, Pedro; MORGADO, Sofia, 2005, «Dinâmicas do Uso e Ocupação do Solo da Área Metropolitana de Lisboa 1940-2001», Pós-Revista do Programa de Pós-graduação em Arquitetura e Urbanismo da FAUUSP, Faculdade de Arquitetura e Urbanismo da Universidade de São Paulo, Nº 18, Dezembro 2005
- GRAHAM, Stephen.; MARVIN, Simon, 2001, *Splintering Urbanism. Networked infrastructures, technological mobilities and the urban condition*, Routledge, London/New York
- GUST, The Ghent Urban Studies Team (dir Dirk de Meyer, Kristiaan Versluys), 1999, *The Urban Condition: Space, Community and Self in the Contemporary Metropolis*, 010 Publishers, Rotterdam
- HALL, Peter, 2002, *Urban and Regional Planning*, Routledge, London and New York
- LANG, Robert E., 2003, *Edgless Cities. Exploring the elusive metropolis*, Brookings Institution Press, Washington D.C.
- MCHARG, Ian L., 1992, *Design with Nature*, John Wiley & Sons, Inc, New York
- MORGADO, Sofia, 2005, *Protagonismo de la ausencia. Interpretación urbanística de la formación metropolitana de Lisboa desde lo desocupado*, (Protagonism of Absence. Interpretation of the metropolitan formation of Lisbon from the unoccupied) doctoral thesis, Departament d'Urbanisme i Ordenació del Territori-Universidade Politècnica da Catalunya, Barcelona
- MORGADO, Sofia, 2006, «Assenza. Formazione e progetto di Lisbona metropolitana» in *Urbanistica & Architettura. Il ruolo del progetto Urbano nella riqualificazione della città contemporanea*, Dossier Urbanistica, INU- Istituto Nazionale di Urbanistica, Roma
- PAVIA, Rosario, 2002, *Babele. La città della dispersione*, (Babele/7), Meltemi editore, Roma
- PORTAS, Nuno; DOMINGUES, Álvaro; CABRAL, João, 2004, *Políticas Urbanas*, Fundação Calouste Gulbenkian, Lisboa
- SECCHI, Bernardo, 2005, *La città nel ventesimo secolo*, Editori Laterza, Roma-Bari
- SIEVERTS, Thomas, 1997, *Cities without cities. An interpretation of the Zwischenstadt*, Spon Press/ Routledge, 2003, London/ New York
- SOJA, Edward W, 2000, *Postmetropolis. Critical Studies of Cities and Regions*, Blackwell Publishing, Oxford
- VIGANÓ, Paola, 1999, *La città elementare* (Biblioteca di Architettura Skira/7), Skira Editore, Milão.