Trading Properties after the Earthquake: The Rebuilding of Eighteenth Century Lisbon.

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This paper introduces the innovative system used in the reconstruction of Lisbon after the 1755 earthquake, based on original documents that offer a detailed picture of the principles and methods established to convert the land and properties of the old city into the new standardised ones of the new gridded Plan.

Keywords: Baixa Pombalina; 18th Century; urban history; urban planning; planning ordinances; reconstruction; earthquake.

Introduction

The 1758 Reconstruction Plan for Lisbon promoted by Pombal is an outstanding reference in the history of urban planning. Nevertheless, very little is known about how in practice the urban redevelopment was implemented, nor about the transference of the old properties into new ones. Research aimed at explaining how this brilliant achievement was carefully prepared and executed, based upon the existing documentation held within the *Arquivo Nacional da Torre do Tombo* - A.N.T.T- in Lisbon, is a precursor to compare the Lisbon case with others that established the basis of a new discipline in the 18th Century.

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An extraordinary institutional response.

Searching through this documentation, it appears that a quick and effective institutional response was made to the devastation and confusion arising from the earthquake, contributing to overcome the population's immediate and urgent needs. The administrators succeeded in providing first aid and basic goods, establishing an efficient police control to avoid robberies in the ruins, cleaning the streets to allow for the flow of traffic and constructing a provisional dock and customs building for the arrival of ships from Brazil and others colonies. However other dramatic decisions were to be taken, also methodical and organised, relating to the future: The *Inspecção dos Bairros de Lisboa* – a new organism created from the very first moment to manage the then current situation and to implement the rebuilding process - would be crucial for the rebuilding under the supervision and orders of the *Regedor da Justiça*.¹

The *Dissertação* of Manuel da Maia.

Manuel da Maia, the eighty year old Chief-Engineer of the Kingdom, took charge of the elaboration of the proposals for *the renovation of the destroyed lower area of Lisbon*, as he wrote in his memorandum -the *Dissertação*. This document, which constitutes a reliable – and *avant la letter* - treatise of urban planning, framed the method for defining not only the shape of the future city but also for the implementation of the reconstruction on the former location.²

1. See Jorge Hugo Pires de Lima, 'Elementos para a história da Lisboa Antiga. Vol.II - Inspecção dos bairros de Lisboa'. Separata dos *Anais das Bibliotecas e Arquivos* (Lisboa, 1950).

2. The *Dissertação* was first published in Cristovão Aires, *Manuel da Maia e os engenheiros militares portugueses no Terremoto de 1755* (Lisboa: Imprensa Nacional, 1910: 25-50). It is the transcription used in the present study. The importance and originality of Manuel da Maia's work was studied by Helena Ribeiro dos Santos 'Baixa Pombalina. Passado e futuro' (Lisboa: Livros Horizonte, 2000); 'As Fachadas da Reconstrução: características e evolução' (paper presented at *O Terramoto de 1755. Impactos Históricos*. Lisboa: Livros Horizonte, 2007); 'A Praça do Comércio e os Planos para a

One of the main aspects Manuel da Maia defined was a fair and feasible method for transferring the old properties into new ones with appropriate equivalent values, responding to the landlords' heterogeneous situation. These equivalent values were to be set up by dividing the total new surface area created within the Plan by the total value of the old properties. An owner could renounce his or her land and be paid the value by some other or, otherwise, 'His Majesty will order to build at his expense, and collect the income to his (royal) patrimony'. The previous locality rents would be taken into consideration, such as the proximity to the Rossio or to the river, and the existing legal obligations – like majorats (*morgados*), chapels (*capelas*) or leases (*aforamentos*) - would be transferred to the new lots.³

According to Manuel da Maia the new architectural façades ought to be regular, with the new lots being strictly modulated, obliging the adjustment of the rights from the old property through economic arrangements, with the owner having to buy or to sell the required area or excess area to fit in with the new module. The owner could sell the entire lot to another creditor, with preference being given to the owners of the adjoining site. This proposal would be crucial to enable the achievement of a uniform street façade design for each block by virtue of building upon each individual lot.⁴

Renovação da Lisboa baixa'(paper presented at the Conference *Praças da Europa, Praças para a Europa. Que futuro para a Praça do Comércio?*. Universidade Autónoma de Lisboa, 2009); 'Os 6 Planos da Reconstrução' (paper presented at the *Jornadas sobre A Cidade Pombalina: História, Urbanismo e Arquitectura. Os 250 Anos do Plano da Baixa*. Grupo 'Amigos de Lisboa' and 'Fundação das Casas de Fronteira e Alorna'. Lisboa, 2010); and 'Variaciones en la urbanización de la Baixa de Lisboa' (Master's thesis, Universitat Politècnica de Catalunya, 2009). See also José-Augusto França, *Lisboa Pombalina e o Iluminismo*, 3rd ed. rev. (Lisboa: Livraria Bertrand, 1987; 1st portug. ed., 1966) and Manuel Teixeira, 'O plano de reconstrução da baixa de Lisboa: a expressão erudita do modo tradicional de planeamento da cidade portuguesa' (paper presented at the *Colóquio Internacional O Terramoto de 1755. Impactos históricos*. Lisboa: Livros Horizonte, 2007).

3. *Dissertação*, 2nd Part, §3 and §5 (Aires, *Manuel da Maia*, 33-36).

4. *Ibid.* §6, 37.

As will be seen, the suggestions and recommendations of Manuel da Maia inspired the real reconstruction process.

Four Archive Sources to research the implementation of the plan.

The analysis of the four previously mentioned archives existing in the A.N.T.T. – i.e. the *Tombo*, the books of *Adjudicações e posses*, the *Avaliações* and the *Lisboa Nova* Project – all constitute an impressive source of written documentation. These were presumably elaborated in the initial phase of the redevelopment, which would allow for the subsequent practical application of the principles and rules established by the ensuing legislation.⁵

The ‘Tombo’. The first document is a Property Register, established immediately after the earthquake and subsequent fire, to keep a record of ownership and the state of the buildings as “if the calamity of that day had not occurred”. It surveys the dimensions of streets, squares, public and private buildings of the eight most densely built and severely affected districts – *Bairros* - some of which lie beyond the current *Baixa*. A Property Registrar - the *Ministro da Inspeção* - for each *Bairro* was responsible for this task, as well as for recording it in a Book.⁶

On 12th May 1758 the new Plan, as well as the generic principles to guarantee the property rights, were approved, entitling the owners to take possession of the new lots and specifying the casuistry of the legal ownership. This first normative was elaborated in the process and so, one month later, the Plan and the related regulations

5. The manuscript documentation studied can be found under the following references: ‘Feitos Findos, Inspeção dos Bairros de Lisboa, Bairro do Rossio’: *Tombo, Adjudicações e Posses* and *Avaliações* Books; ‘Feitos Findos, Inspeção dos Bairros de Lisboa, Bairro da Rua Nova’: *Tombo, Adjudicações e Posses* and *Avaliações* Books; ‘Feitos Findos, Inspeção dos Bairros de Lisboa’: *Projecto de Lisboa Nova*. It has also been consulted at the Biblioteca Nacional de Portugal (Lisboa) the simplified copy of the *Tombo*, a manuscript by José Valentim de Freitas (1860-70), and the reconstitution he made of Lisbon before the earthquake (General Plan and 17 partial plans).

6. Ordered by the Decree of 29th November 1755 (Antonio Delgado da Silva, comp., *Collecção da Legislação Portuguesa desde a ultima Compilação das Ordenações. Legislação de 1750 a 1762*. Lisboa: Typografia Maigrense, 1830: 401-2).

(*Instruções*) were published, establishing - at its end - the compensation system and defining the new urban structure and its architectural principles and some technical characteristics required of the buildings. The architecture of the façades was to be ‘*uniform in their design and height*’, with slight variations in different zones of the Plan. The jurisdiction of all the matters concerning the reconstruction was given to the previously mentioned *Regedor da Justiça* and the reconstruction area divided in three zones:⁷

In the hilly higher zone the proposal was limited to correct the main axes and slightly enlarge smaller transversal streets -the *Travessas*. The new public space area would balance the widening of lots or provide *pro rata* affordability for all the owners of the street, in the few cases where a wide street still had to be enlarged.

In the lower city area, where a complete new layout had to be implemented, new precise rules were defined following the guidelines of Manuel da Maia: In the case of main and wider streets, the former properties were to be transferred to new main structuring streets and when previously situated in alleys, they were to be located preferably in the new *Travessas*. Such compensations were favoured by the fact that the large amount of alleys and the fewer new *Travessas*, releasing cheaper land for public streets, were to be paid for *pro rata* by the new owners. The newly adjudicated

7. See the interpretation of a principal street block façade in: Santos, *Baixa Pombalina. Passado e Futuro*, based in drawing n.1 of the *Cartulário Pombalino* (Lisboa: C.M.L., 1999). The Law of 12th May 1758 approved the new Plan and the legal framework that would guide the whole process (Silva, *Collecção da Legislação Portuguesa. Legislação de 1750 a 1762*: 605-8); the Plan of 12th June 1758 together with the related *Instruções* (regulations), defined the new urban structure and its architectural principles (Joaquim Inácio de Freitas, comp., *Collecção Chronologica de Leis Extravagantes, Posteriores à Nova Compilação das Ordenações do Reino, Publicadas em 1603. Tomo II. Que comprende o Reinado do Senhor D. José I até o anno de 1761 inclusivamente*. Coimbra: Real Imprensa da Universidade, 1819: 87-100). All these ancient legal documents relating to the rebuilding process referred to in the text can be found at <http://iuslusitaniae.fcsh.unl.pt/>. See also the letter sent by Sebastião José de Carvalho e Melo to the Duque de Lafões, *Regedor da Justiça*, on 16th June 1758, sending the Reconstruction Plan, and the Decree where ‘His Majesty has decided all the doubts that were discussed in the latest Conferences about the re-edification of the part of the City, (...): So that Your Excellency may order to mark and set out the Streets and *Travessas* defined in this Plan, in the

lots would maintain the same relative sequence as they had in the street before the earthquake, ‘especially to situate in the straight streets with more movement and farther or nearer the sea, the houses that previously were situated in such conformity.’⁸

The area north of the Terreiro do Paço Square and the seafront deserved another specific treatment, due to the large number of properties with small surface areas and of high commercial value. The Plan specified here that the old streets and public land should substitute and compensate every new principal axis. Any remaining land should be handed back to His Majesty and, on the contrary, any land falling short of that required should be taken from unknown owners’ lots or *comuns* - the shared ones - as when ‘the ground belongs to one person and its air to a different owner’. Furthermore, if a greater area were still to be required, it would be taken preferably from properties other than the Majorats or Chapels. Existing houses could be preserved if they did not interfere with the street façade design. The new building could enclose them so they would not be seen from the outside, but allowing them sufficient air and light by means of a courtyard.⁹

One year after the rules were established, an edict of 12th June 1759 announced the beginning of the urban redevelopment and the procedures to re-parcel out the 60 palms wide central axis of the lower city grid, Augusta Street, replacing the main sequence of ancient streets linking the two major squares of the city: Terreiro do Paço Square on the waterfront and Rossio Square. The *Inspecção* would organise with

conformity with what His Majesty has decided about.’ (Freitas, *Collecção Chronologica... até o anno de 1761*, 103).

8. See § 35 and § 39 of the *Instruções* (Freitas, *Collecção Chronologica... até o anno de 1761*, 96-7).

9. The ancient Nova dos Ferros and Confeitaria Streets will become the new *Nova d’El Rey* Street, parallel to *Terreiro do Paço* Square, that will be crossed by the three main streets. It will be available the public land in the Pregos and Barrete Arches, and in case it will not be enough would be complemented with public area not occupied in the Pelourinho and in the Ver-o-Peso Squares. In the case of *comuns*, *majorats* and *chapels* the lot should be evaluated considering its revenue before the

the owners the schedule of ‘the days, and the hours, on which the mentioned adjudications will be made and, by this action, give them the ownership and the possibility to build, with the assistance of the Officials in charge of this diligence and of the necessary evaluations and demarcations.’¹⁰

The Book of *Avaliações* represents the second set of books found, one for each *Bairro*, concerning the evaluations (*avaliações*). As the transfer implied adjustments - the owner having to buy or sell some area - a specific document was elaborated by the Engineer Alexandre José Montanha in order to define clear rules for every distinct new street, indicating the monetary values that should be considered.¹¹ The amount resulting for the new frontage ought to fit with the modulated façade and – of course - the lots. They also were to be used to compensate the owners whose properties had to be occupied by public space, streets or squares, or those that did not comply with the minimum legal frontage, defined as 26 palms¹².

The *Alvará* dated 15th June 1759 defined the rules for the construction - most of them were aimed towards achieving a uniform design for the façade. Four days later, new *Instruções* were approved with the procedures - including a draft version of the document to be used - for the handover of properties, referring to a previous “Conference” (*Conferência*) of 10th June, at which – it must be assumed - the distribution of the lots had been approved by the King. The *Aviso* of 30th June 1759 stated that old irregular lots would be changed to rectangular ones.¹³

earthquake and discounting the damages, and this value should be paid for *pro rata* by everyone in this zone, because they all will benefit from the new Street layout (Ibid. §44, 99).

10. Augusta Street substitutes the former Ourives do Ouro, Douradores and Escudeiros Streets that were formed by covering the *Cano Real* in the 15th Century. The Edict of 12th June 1759 (Silva, *Collecção da Legislação Portuguesa. Legislação de 1750 a 1762*, 662-3) was printed and a copy can be seen glued in the f.2 of the *Posses* Book of the Bairro da Rua Nova.

11. Each *Avaliações* Book begins with a copy of this document as ordered by the Arcebispo Regedor Dom João in the *Aviso* of 29th December 1760.

12. See the *Alvará* of 15th June 1759 with new rules to comply in the rebuilding (Silva, *Collecção da Legislação Portuguesa. Legislação de 1750 a 1762*, 663-5).

13. The author of the Reconstruction Plan, Capitão Eugénio dos Santos, and the Property Registrar (*Ministro*) in charge of the District ought to be present at the adjudications in order to execute what *was decided* in that Conference of the 10th of June, presumably to solve any doubts and questions in the very moment of the adjudication. The letter of Sebastião de Carvalho e Melo quoted previously states clearly the importance of these ‘Conferences’ to discuss the problems of the Reconstruction of the city (see note 7).

There was a close relationship between the modulated architectural design of the urban project and the distribution of the properties: The new lot frontage always had to be a multiple of the module constituted by a door on the ground floor, a balcony on the first floor and a window in the two more upper floors. That is why the number of windows was used, right from the very beginning, as a synonym of the modules in this part of the city, as demonstrated by the record of the number of windows, written for each lot in the books of *Adjudicações*. Similarly, because the depth of the lots in each block was constant, this frontage modulation was used subsequently in the calculation of the lot area adjustments, as explained above.

Books of *Adjudicações e Posses*. These comprise the third source of documents found in the research. They record the adjudication acts of the handover of new lots. Following the instructions referred to previously, they are structured by *Bairros* like the *Tombo* survey book. For each property the act states: a) the owner's and his (or her) former property's identification with the page of the *Tombo* where they were recorded; b) the transfer of the area of the old property to the new lot, specifying when any area had to be bought or sold; and c) finally, the conditions to be accepted and subscribed, such as the maximum period of five years during which the construction had to take place, the compulsory façade (*prospecto*) given by the city architect, and any other instructions that might be approved later. Once the act was signed, the lot was considered adjudicated and ready to be built upon, and a note was then added to the *Tombo* giving information relating to its location in the book of adjudications.¹⁴

The 'Lisboa Nova' Project. The fourth archive source has a quite different character from the previous ones and – unexpectedly for the authors – is even more interesting. It is in a box named *Projecto de Lisboa Nova*, a generic designation to indicate that it belonged to the Reconstruction of Lisbon. The documents have no numbered pages, some are badly deteriorated and lacking sequence, and they were hand sewn, probably for better preservation. The more appealing are the ones that refer to the new streets showing an ordered distribution of the lots along each side and, for every block (*quarteirão*), the area of each new buildable lot (*morada*) as well as the compulsory adjustments needed, with a relation of the old properties that should be indemnified, as well as the eventual grouping of some of them to obtain a larger lot.

14. See the *Instruções* of 19th June 1759 (Freitas, *Collecção Chronologica... até o anno de 1761*, 110-1).

A case study: The first four blocks of Rua Augusta.

For a better understanding of how this system was developed, a detailed analysis was carried out of the first four blocks of the Augusta Street from where the street commences in the *Rossio* Square. The first lots to be located in the new street came from the old *Escudeiros* Street, situated virtually on the same site, respecting the sides of the street – East or West - and the sequence - 2nd, 4th, 5th.

The distribution of the new lots in these blocks, as shown in the scheme, was carried out by virtue of the previously explained system and had to be related to the modular design of the façade block. The module measures 13.59 palms (2.99 m) in the first blocks of the street and 13 palms (2.86 m) in the next. The lot frontage modulated dimensions, based on 13 palms, are increased in the corners in 5.50/5.56 palms (1.21/1.22 m) corresponding to the pilaster. Due to the constant depth of the lots in each block, this frontage modulation was used subsequently in the calculation of the lot area adjustments, as explained.¹⁵

The small dimensions of the old properties obliged the majority of the owners of these blocks to buy some land in order to complete the minimum legal frontage of 26 palms. That dimension, corresponding to two typical modules of 13 palms recalls - it seems interesting to stress- the width of medieval lots, based upon the maximum length of the timber beams.¹⁶

15. The slight difference found in the module of the first blocks of the street is due to the accommodation of the *Rossio* lots that had a 100 palms depth. Even if initially the corner lots were to follow the rules used for Augusta Street, afterwards they changed to the *Rossio* Square project that – almost simultaneously - was approved on 19th June 1759 with its own specific equivalence and distribution process.

16. In this zone of the plan, the standard block is a rectangle of 323p x 116p = 37,468 sp (71.06m x 25.52m = 1,813.5 m²). The common depth being 58 palms (12.76m), the 2 modules lot area has only 73 m² (1,508 sp). Most of the former lots had areas from 34 m² (700 sp) to 180 m² (3,700 sp).

Rossio

However, although the rules allowed for those small lots, the process finally resulted in the fairly spacious lots seen today. In fact, as can be seen in several later annotations in the aforementioned documents, the lots were sometimes not built upon and were subsequently bought in auction. Later legislation approved to enforce the building process recognised that the owners often not only had not built, but that they had not even taken up possession of their properties. In fact, few of the small initial lots were built upon – being too small for the new uses of a rental investment – but gathered and built together as larger lots of 4 (146 m²), 5 (182.5 m²), 6 (220 m²) or more modules, enabling the construction of buildings with in general two apartments per floor.

A provisional conclusion.

In the absence of a date of reference, these documents should be considered as a basis for the working process to establish the compensation rights for each case, and the proposed layout of the properties. Nevertheless, it is not considered that they show properties already adjudicated and as a continuation of the research carried out to date, this information will be cross-checked with the real adjudications, to expand upon the understanding of the process through time.

The example studied provides a clear radiography of the first phase of the rebuilding process in the lower city area. The analysis of other selected case studies will lead to an understanding of how the initial roles were developed to solve other situations.

The rational approach of the Lisbon Plan is consistent at different scales: at the scale of the regular urban grid, at the scale of the modular organization of façades and lots, and finally, at the scale of the structural building system that is already well known. It can be said here that the anti-seismic, three-dimensional and modular timber frame - the *gaiola* -, of easily buildable dimensions, not only attains better safety, but also the commodity and beauty of a regular and homogeneous *enlightened* architecture and urban layout.¹⁷

Implemented in the mid-18th Century, the system outlined in this paper was – undoubtedly - a point of reference for the large-scale redevelopment operations that would come forth in the urban improvement of 19th Century Europe.

17. See João Appleton, *Reabilitação de Edifícios Antigos* (Amadora: Edições Orion, 2003) and Stephen Tobriner, 'A gaiola pombalina: o sistema de construção anti-sísmico mais avançado do século XVIII', *Monumentos 21* (Lisboa: DGEMN, 2004).