
PLANNING AND POSTPONING THE URBAN REFORM OF COIMBRA'S DOWNTOWN

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In this paper I aim to analyse the process of transformation and modernization of Coimbra's downtown during the 19th century and the beginnings of the 20th century, firstly carried out to deal with the recurrent flooding of the Mondego River but moreover as a beautification plan carried out according to European models. Coimbra, like all Portuguese cities in this period, faced several sanitary problems due to the absence of water and sewage networks, lighting infrastructures and public transport; in addition in Coimbra these problems were exacerbated by the recurrent floods. The solution was the construction of a new riverbank, planned and executed by state engineers but partially paid for by the municipality. This work endorsed the reform of the main city entrance, the construction of a new bridge and a square, the enlargement of the Coruche Street and the construction of a boulevard by the river. Just a few years later, the riverfront and the image of Coimbra were reconfigured once more to implant a new train line and station. With this project began a new phase of planning that has lasted until today. It started with the opening of a boulevard connecting the station and the town hall. Then, at the beginning of the 20th century and, within the principles in vogue in Europe, the plan was extended to propose a set of wide avenues to sanitize the unhealthy downtown. The financial difficulties and the lack of government support postponed this ambitious plan. But, it was not overlooked, and was followed by a succession of plans and became a part of the collective imaginary. We analyse this set of plans, its motivations and its relation with international models. Furthermore we aim to explore its processes, emphasizing the role of the population yearning for the reform of the old core and the municipal council's efforts to execute these plans. In conclusion we stress the consequences of these unrealized plans for the transformation and growth of the rest of the city.

Keywords

sanitation, urban improvements, municipal policies.

INTRODUCTION

In the mid-nineteenth century all over Europe, cities were being radically transformed to solve the sanitation and circulation problem. Wide avenues were opened up, new modern neighbourhoods were built, and new public infrastructures such as power and lighting networks, water supply and sewer networks were constructed. The largest urban centres such as London and Paris, faced an unprecedented urban population growth which led to serious public health problems.¹ According to the prevailing theory of miasma emanations², the solution for the overcrowded neighbourhoods with poor sanitation and with an environment conducive to the spread of cholera and typhus epidemics was thought to be urban reform, improving ventilation of houses and streets. Furthermore, the wide streets also allowed the circulation of the new means of transportation. Beside the well-known examples of London, Paris, Vienna or Barcelona, these processes were extended to all cities, although on a different scale³. In Portugal, a small country with little industrial development, these urban reforms were delayed and for many almost imperceptible. However, this was a fundamental period not only for the modernization of Portuguese cities but also for the emergence of urban planning as an autonomous field which would be consolidated at the beginning of the 20th century.

Coimbra, a middle-sized city besides being, since 1537, the site of the only Portuguese university, is a good example of the process of modernisation of Portuguese cities. This paper analyses several attempts to apply the new hygienic principles and sanitize the downtown neighbourhood as well as creating a new modernized city emulating European models. It is based on the study of a set of plans drawn up by the municipality or the central government alongside citizens' reaction to these proposals unveiled in the periodical press.

COIMBRA: THE PECULIAR SITE OF THE TOWN

Coimbra has a strategic site by the side of the Mondego's River and at the most favourable point for crossing the Mondego. However, the city's commercial and artisanal area downtown was recurrently invaded by river water, creating serious damage and health problems. Moreover, after the installation of the University in the 16th century, a belt of religious colleges to the north, east and south prevented the city to expand elsewhere than along the river. Since then, several attempts have been made to create a new riverbank at a higher level to prevent flooding. The most consistent plan, drawn up by Estevão Cabral at the end of the 19th century, included the construction of a new bank from Coimbra to the sea. The French Invasions at the beginning of the 19th century stopped these works.

After this, the Liberal Revolution (1820) and the civil war (1828-1834) prevented the continuation of any work and dragged the country into a troublesome period. The liberal regime, established definitively in 1834, was responsible for vast and crucial legal, economic, social and cultural reforms. The extinction of the male religious orders and the nationalization of their assets had a double propose, enriching the public treasury and eliminating one of the supports of the opposing faction. This nationalization had an enormous impact on the transformation of all Portuguese cities, since the older buildings were converted into a set of new state premises re-functionalizing and transforming urban references. Beside this, their plots were urbanized and integrated into the urban fabric. In Coimbra, 22 colleges and three convents were incorporated into the National Property, allowing not only a break in the fence that prevented expansion of the city, but the appropriation of these monumental buildings endorsed the reorganization of the city and its change of image.⁴ Therefore, the old Santa Cruz Monastery would give rise to the new civic centre.

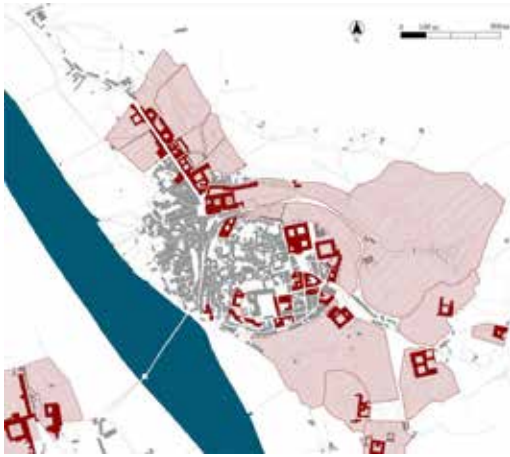


FIGURE 1 Coimbra at the beginning of the 19th century. Belt of colleges and its plots.



FIGURE 2 Places where food produce was sold

DRAWING UP A REFORM PLAN FOR COIMBRA

In 1835, concerning these nationalizations, the first liberal municipal government draw up an extensive reform plan for Coimbra.⁵ This plan proposed the conversion of a set of former convents and colleges into new facilities: the municipal slaughterhouse, the administrative and judicial public office, the market, the military barracks, the hospice, the cemetery and the public garden. It also included the improvement of urban infrastructures like the water network supply, installation of public lighting, and the construction of a network of drains for the lower part of the city. However, the construction of a new bank along the river and the widening of the main street, the old and tortuous Coruche Street, which was part of the old royal road connecting Lisbon to Porto, were the most urgent projects. Like other cities, the most urgent improvements concerned the creation of public facilities to increase public health.⁶

The widening of Coruche Street had a double purpose: increasing the ventilation and insolation of the street and houses; improving the circulation between Lisbon and Porto. In spite of the urgency of this intervention, only after the establishment of the first public transport service connecting the two main Portuguese cities in 1857, did the government instruct the Public Works District Director to plan this project.⁷ This intervention also raised the level of Sansão Square almost two metres preventing water from the Mondego from entering Santa Cruz Church.

Despite the importance of the pragmatic plan outlined by the municipal council in 1835, some of its options were criticized by the population who foresaw in the construction of the new facilities an opportunity to reform the old and unhealthy downtown area. The construction of the public market building is the best example of the clash between the City Council's pragmatic strategy and the population's desires for progress.⁸ At that time the sale of food products was mainly made at St. Bartolomeu Square, Sansão Square and Sota Square. In 1839, after the transfer of Santa Cruz Monastery to the municipal property, the municipal administration decreed the transfer of sales for the Santa Cruz patio. However, this space was far from the usual circuits of the population and saleswomen argued for a more central spot, preferably near the city entrance and the main pier of the city, the Ameias Pier. The struggle increased when the municipality decided to construct a new building for the market on the Santa Cruz estate according to modern hygienic principles.



FIGURE 3 City entrance reformed and Coruche Street, 1875. Visible the new D. Carlos Square.



FIGURE 4 Hypothetic reconstruction of the Downtown Improvements Plan

Traders and the press demanded the location of the new building in the downtown, next to Sota Square, to be near traditional local trade, Ameias pier and Portagem Square. This solution demanded expropriations and expensive landfills,⁹ however, on the other hand this implantation would endorse the reform of the downtown, raising the level of the area and opening a set of new wide streets, improving communication, insolation and ventilation. Despite the accuracy of these arguments, the financial weaknesses of the municipality meant that it could not carry out these expensive works and the new market was built in the ancient monastery estate, and inaugurated on the 17th of November 1867.

However, not even after the opening did the controversy cease, and a few years later in 1893, João Evangelista da Silva Santurnino presented a new proposal for the construction of a new public market near Ameias Pier. As a consequence, three years later, a commission was nominated to study not only the new market but a reform plan for the whole area.¹⁰

THE NEW RIVER BANK AND THE DESIRE FOR A RAILWAY STATION AVENUE

The idea of this urban reform had started to be argued more pointedly after the increase of the level of the riverbank in 1875 and after the construction of the new train station along the Ameias Pier in 1885. After the intervention in Coruche Street, the municipal council started to desire a larger beautification project for the city entrance, according to the new ideals of hygiene and movement of the bourgeois city.¹¹ This included the construction of the new riverbank at a higher level, the construction of a new bridge, the beautification of Portagem Square and the construction of a public park along the river bank.

This plan would become reality thanks to the determination of Mayor Lourenço de Almeida Azevedo,¹² who requested from the government a new bridge and for a new bank between Pedra Pier and the bridge at a higher level. While these works were being designed, the municipal authorities hired an engineer to draw up the desired city entrance at a higher level. This project redesigned the new city image, formed by a regular square and a marginal boulevard connecting the Ameias Pier and the Cerieiro Pier, enabling a green leisure area along the river within the spirit of the time. In 1875 the level of the river bank had been raised 1.5 meters, the new metal bridge had replaced the old stone bridge and the new D. Carlo Square was being built over the old irregular and sloping Portagem Square.

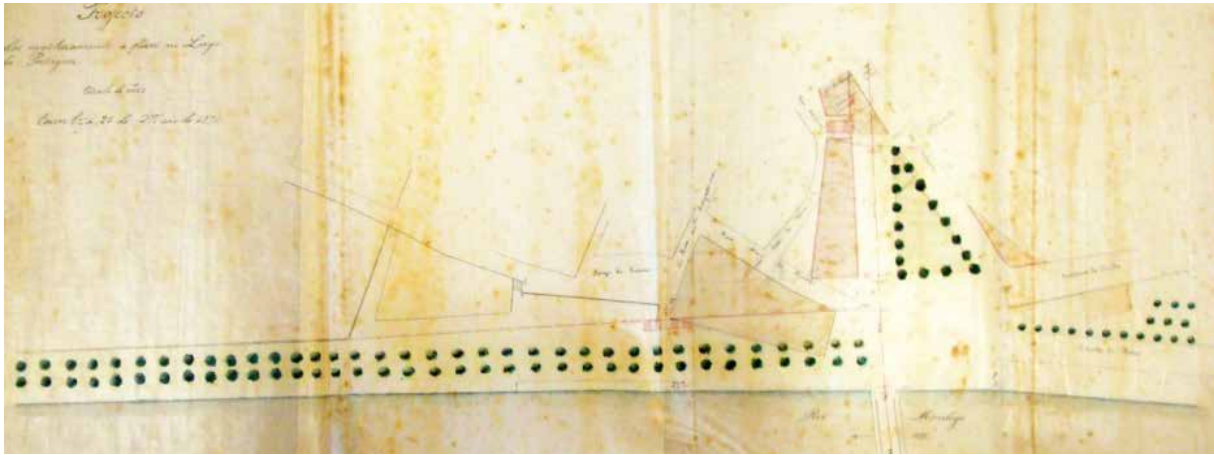


FIGURE 5 New D. Carlos Square and the boulevard by the River, 1874.

However, the unhealthy downtown of narrow streets with old buildings of several floors continued almost unchanged, with only occasional interventions raising the level of some streets. In 1885, after the central railway station was implanted in Ameias Square, the municipal authorities started to plan the opening of a new avenue between this square and the Comércio Square, replacing the old Solas Street.

Meanwhile, the municipality had initiated the expansion of the city with the construction of Santa Cruz neighbourhood, whose works mobilized most of the municipal resources. Moreover, in May 1888, the Mondego's River Public Works administration launched a great intervention that redrew the riverbank, moving it into the river about 35 meters, in order to implant a new railway which would connect Coimbra to Covilhã, the major industrial city of the central region of Portugal.¹³ This intervention enabled a number of new reforms, the enlargement of the marginal public park, the construction of a new park upstream from the bridge and the reform of the beginning of the Beira Street into a wide green avenue. In addition, in 1888, the municipal administration, started the construction of the water supply network from the Mondego. These three interventions consumed all the technical and financial resources of the municipality. Nonetheless, these improvements stimulated the desire for renovation of the unhealthy downtown.

As a consequence, in 1891 the municipal administration requested João Teófilo Goes to make a reform project for the downtown. He proposed the opening of three avenues, one connecting the railway station and Visconde da Luz Street, another connecting May 8th Square, where the town hall had recently been built, and the Oleiros Pier, where the new railway commodity station was being built and finally another one connecting this last avenue to D. Carlos Square. In spite of recognizing the importance of this project, the municipal administration was committed to other key works, particularly sanitation infrastructures, and had to postpone the downtown reform.

However, the population and, more strongly, the Dealers Association, evoked the need to create a new station and a new connection between the railway station and the Visconde da Luz Street.¹⁴ In fact, visitors who arrived at Coimbra station faced an old, small building and were then led through a narrow winding street to St. Bartolomeu Square which was connected to the Visconde da Luz Street by some roundabout and ugly stairs (St. Tiago stairs). In November 1899 the municipal administration responded to these calls, nominating Leonardo de Castro Freire to chair a commission to draw up a reform plan for the downtown. The Downtown Improvements Plan laid out a set of wide streets, very committed to the existing ones (to minimize the expropriations the commission predicted the widening only on one side of the street) resulting in a twisted pattern without geometry. The plan was approved but did not match the municipal council's desires and ended up not being applied.



FIGURE 6 St. Tiago stairs connecting St. Bartolomeu Square to Visconde da Luz Street



FIGURE 7 Plan proposing a set of new streets starting in May 8th Square, Abel Dias Urbano, 1924.



FIGURE 8 Hypothetical reconstruction of Luis Benavente's Plan, 1936

TOWN EXPANSION VERSUS URBAN REFORM

The beginning of the 20th century was, for Coimbra and for the major Portuguese cities, the time of the emergence of urban planning as a municipal activity. In spite of the early attempt of 1864, which created by law the Urban Improvements General Plans, and despite the enthusiasm of many municipal administrations who wished to reform their cities, the truth was that only the two major Portuguese cities, Lisbon and Oporto, had the required technicians (architects or engineers) to plan and execute those plans.¹⁵ Even those cities which hired technicians and designed an Improvement General Plan faced several difficulties in executing them because of the lack of technical and financial resources.¹⁶ At the turn of the century this situation started to change. On one hand the country's infrastructural works, such as the roads and railways were almost completed and started to release engineers to other works; on the other hand the epidemic that plagued the city of Oporto in 1898/1899 drew attention to the urgent need to undertake urban reform.¹⁷

Coimbra was one of the cities which, in 1865, celebrated the law that established the Urban Improvements General Plan and immediately nominated a commission to draw up this plan. However, this commission faced several problems, firstly because of the inexistence of a topographic plan of the city and secondly because of the lack of technicians. The first municipal engineer hired to design the city entrance left the job one year later to join the ministry of public works. Therefore, every time the municipal administration required a plan, they invited an engineer from the Mondego River Public Works Office, mainly its director, Adolfo Loureiro.¹⁸ Despite the absence of technicians, Coimbra's municipal administration managed to redesign the city entrance, expand the city through the Santa Cruz valley and construct the water supply network and the sewer network, everything integrally controlled by the municipal administration. In addition, in 1904, Coimbra municipalized the gas manufacturing and the tram companies to install electrical power and a few years later, in 1911 the electric trams and electric lighting were inaugurated. Thanks to audacious mayors, Coimbra was becoming a modern city, with the most modern infrastructures in use in European cities. However, the downtown remained unchanged; urban reform required expropriations and great municipal investment while urban growth was less expensive, simpler to execute, and it created more consumers for the urban municipal services, paying for its own enlargement (water supply, electric power supply and urban transports).

Nevertheless, the idea of reforming the downtown prevailed, especially among the population. Just a few years later the chief of the municipal urbanizations services, Abel Dias Urbano, proposed a new plan, approved by the municipal council on February 2, 1924. This ambitious plan redesigned May 8th Square, stressing its centrality, and laid out a set of avenues sanitizing the downtown and ensuring easy connections to the bridge, the railway station, the railway commodity station and Arnado, the north area where the industrial district was starting to develop. The redesigned area would host some new facilities like the Court, Commercial Schools, Primary School and Female High School. To improve rain drainage and prevent the flooding of the river, it proposed raising the level of the whole area.

Beyond the street layout, Dias Urbano designed an implementation strategy founded on the application of Lisbon's expropriation law¹⁹ and on the creation of an expropriation fund, sponsored by stakeholders in exchange for plots for the new residential buildings.

Although implying the radical transformation of the lower city, this plan proposed a new modernized and healthy downtown, meeting the population's expectations. Despite wide acceptance and even the compliments received in the periodical press, Coimbra had little industry and it was not easy to mobilize investors. In consequence, only the new constructions had to follow the approved plan, resulting today in some incoherent alignments.²⁰



FIGURE 9 Detail of Etienne de Gröer's plan, 1940. Preserving the ancient urban fabric, opening two avenues starting in May 8th Square. In red the new railway station.



FIGURE 10 Downtown reform Plan, Alberto Pessoa, 1956. Preserving the ancient urban fabric on the right but a new model for the industrial/commercial area.



FIGURE 11 Downtown reform plan. Manuel Costa Lobo, 1971



FIGURE 12 Fernando Távora's proposal, 1992. Restoring the square to its original level and proposing the opening of the central avenue.

The period after this was marked by an accelerated growth of the city area endorsed by the urban transport network.²¹ However, and despite several attempts, Coimbra remained without a plan to regulate urban growth, only guided by a fragile Urban Code.²² In 1933 the municipal administration hired Luis Benavente to draw up an Urbanization Plan for Coimbra. According to the aspiration of the municipal administration, this plan, analogous to Dias Urbano's plan, laid out a completely new downtown proposing the demolition of the majority of the existing buildings. Nonetheless in December 1934, while this plan was being designed, a new national decree changed the Portuguese urban planning system, introducing a compulsory General Urbanization Plan for every city of 2500 inhabitants or more. Coimbra's municipality hired an urban planner of international repute to design the General Urbanization Plan, Etienne de Gröer²³.

FROM DOWNTOWN REFORM TO THE SANTA CRUZ AVENUE

Etienne de Gröer proposed a more realistic plan for the downtown, claiming that it would be economically impossible to demolish and construct everything to achieve the street level proposed in the previous plans.²⁴ Moreover, de Gröer defended the maintenance of most of the ancient district as a memory of the city's past and emphasized the visual and picturesque value of this historic area, proposing only occasional demolitions of the blocks' interior to improve ventilation and insolation. However, the plan proposed the opening of two structural avenues connecting May 8th Square to the river. Santa Cruz Avenue opened through the demolition of an entire block between Moeda Street and Bordallo Pinheiro Street, allowing the conservation of one side of each street, and connected Santa Cruz Church to the Ameias Pier. The other avenue connected to the new railway station, proposed to Oleiros Pier area. For this area the plan proposed the construction of a bus station and a new municipal market. The plan included the widening of Madalena Street, Direita Street and the riverfront road.

De Goer's plan was approved in 1944, although the public and the local authority contested the garden city model, the lower density and the costs required for this type of urbanization. Therefore the municipal administration hired Antão de Almeida Garrett to revise this plan. Despite increasing density in the new extension areas, Almeida Garrett's Plan sustained most of previous ideas for the downtown, and as de Gröer had already stated, he defended a detailed project for this area. This project was designed by Alberto Pessoa and, similarly to de Gröer's plan, he proposed the preservation of the ancient district but for the north area projected an entire modern neighbourhood with a wide marginal avenue and a set of high towers. This colossal plan, following modernist principles and the Athens Charter, was enthusiastically applauded by the local press. However, it was never approved.

With the public health problems of the 19th century discarded, the will to open an avenue continued. Evoking the need to improve circulation, new studies were made. Therefore, the intervention was reduced to the opening of a wide avenue, the Central Avenue, a compromise solution that reduced the number of expropriations. According to these plans some demolitions were undertaken but were left incomplete, transforming the demolished area into a car park.

A few years later, the downtown area started to face new problems such as desertification due to the difficulties of accessibility and strong urban growth. Determined to solve this last problem, the municipal administration required a new plan and in 1992 approved Fernando Távora's project. This project redesigned 8th May Square restoring its original quota²⁵, proposed the construction of some buildings and a new square in the demolished area and proposed the opening of a new avenue aligned with Olímpio Nicolau Fernandes Street, connecting Fernão de Magalhães Avenue. Nevertheless this project proposed only the demolitions required to open the new street, reducing them to a minimum.

Afterwards in 1994, the municipal administration requested from the Central Government the installation of a light railway system in Coimbra. This request was granted, Távora's project was adapted and the street was replaced by the new light railway line. Several studies were carried out and in 2003 the new buildings occupying the demolished area were built. At the same time the proposal to demolish the old urban fabric to implant the new light-railway line caused vast discussion among citizens, technicians and politicians. Despite the controversy the study continued and in 2006 the final solution for the avenue was approved. The aim of this project was to reduce demolitions to a minimum, proposing the opening of a channel through two quarters and demolishing only their cores. To reduce the impact of this intervention in Sofia Street, the project designed a portico building creating the necessary channel for the light railway passageway only on the ground floor. In 2011, the financial crisis postponed the construction of the light railway; nevertheless, the demolitions of the quartier core were almost complete.

Nowadays, the problem persists and almost all the demolitions have been carried out but the light railway construction is still suspended. Moreover, the uncertainty and the indecision of the last decades led to desertification and migration to other city areas or to the suburbs. Last February, the current municipal administration announced the demolition of the three remaining buildings to open a street replacing the light railway line. Many raised their voices against this solution but many others stated the urgency to do something.

CONCLUSION

In the middle of the 19th century, Coimbra's main concern was public health, circulation and beautification. The modern country desired by the Liberal Regime would emerge from modern and healthy cities, connected by train and reformed by the installation of urban infrastructures (water distribution, sewers, light and transport) and by the opening of some streets and squares. In a country, facing huge economic and political problems this was not easy to achieve. Even though, Coimbra, following the beautification principles defined by Marc Augé, redesigned the city entrance with a new embankment, a new square and the enlargement of the main street.²⁶ A few years later and after several unsuccessful attempts to captivate the interest of a private company to install the water and sewer networks, as had happened in most cities²⁷, the municipality took over the enterprise in an innovative way. At the turn of the century, while these networks were being installed and the city was sprawling, the municipal administration emulated the example of Paris, Brussels, Turin or Napoli, although on a much smaller scale planned the Coimbra's improvement plan, which laid out a set of wide avenues sanitizing the unhealthy downtown.²⁸ The lack of municipal technicians, financial and political support postponed this project. A few years later this plan was redesigned by Abel Dias Urbano and later by Luiz Benavente enlarging the proposal to the entire downtown to raise the level of the area. The growing north area followed this plan and some rebuilt buildings were erected according to the planned alignments; nevertheless, the ancient downtown was almost unchanged. De Gröer, a supporter of Howard and the Garden City theories, and certainly influenced by the ongoing discussions in Europe, abolished the idea of rebuilding the whole area and proposed the conservation of the south area.²⁹ However, evoking the need to improve traffic and emphasising Santa Cruz Church, de Gröer projected the demolition of an entire quartier to open a symbolic avenue connecting 8th May Square to the riverside.³⁰ Afterwards, with the need for sanitation discarded, from 1955 onwards, circulation improvement became the main concern. Since that time many projects proposing the extension of Olímpio Nicolau Fernandes Street to Fernão de Magalhães Street have been and are still being designed. Nevertheless beyond its apparent results, all these processes, uncertainties and unrealized projects have been decisive for the urban sprawl and transformation and for the contemporary city. Only the knowledge of this process and these difficulties can help us plan the future with awareness.

Endnotes

- 1 R.A Buchanan, "Public utilities", in *An encyclopaedia of the history of technology*, ed. Ian McNeil (London: Routledge,1990), 949-966 and Richard Lawton (ed.), *The rise and fall of great cities. Aspects of urbanization in the Western World*, Londres, Belhaven Press, 1989, 96-124.
- 2 Before the bacteriology revolution of the 1870s, the dominant view of contagious illness was the miasma theory of disease, which argued that a variety of odd illnesses were the result of poisonous, malevolent vapour or "miasmas".
- 3 Anthony Sutcliffe, ed. *The Rise of Modern Urban Planning, 1800-1914* (London:Mansell, 1980) e *Towards the Planned City: Germany, Britain, the United States and France, 1780-1914*(Oxford:Basil Blackwell, 1981)
- 4 A more detailed description of this process in: Margarida Calmeiro, "Urbanismo antes dos Planos: Coimbra 1834-1934" (PhD diss., University of Coimbra, 2014), 175-241.
- 5 About this issue see Margarida Calmeiro, "Apropriação e conversão do Mosteiro de Santa Cruz. Enjejo e pragmatismo na construção da cidade de Coimbra" *Cescontexto: Debates* nº 6, *Monastic architecture and the city* (2014):229.
- 6 Mário Gonçalves Fernandes, *Urbanismo e Morfologia Urbana no Norte de Portugal*. Viana do Castelo, Povoia de Varzim, Guimarães, Vila Real, Chaves e Bragança entre 1852 e 1926 (Porto: FAUP Publicações, 2005), 140-141; Miguel Sopas Bandeira, "O Espaço Urbano de Braga Obras Públicas, urbanismo e planeamento (1790-1974)" (PhD diss, University of Minho, 2001), 394; Isabel Fontão Pereira, *A evolução da morfologia urbana de Vila Nova de Gaia entre 1864 e 1926* (Msc diss, University of Porto, 2007), 80; Sandra Nunes, *A evolução urbana de Matosinhos (1890-1909)* (Msc diss., University of Porto,1998),152
- 7 The reform of this street required vast expropriations and rehousing only possible with the central government's contribution. To mark this support, the main street was named Visconde da Luz Street after the General Director of Public Works responsible for this funding.
- 8 As related in the daily newspaper *O Conimbricense*. E.g. see March 10; March 31 and April 14, 1866.
- 9 A study presented by Hardy Hislop in 1858 concluded that the implantation at Largo da Sota corresponded to an increase of about 30% of the costs in the Santa Cruz Farm, because of the expropriation and expensive landfills. "Documentos (oito) que acompanham a petição para contrahir o empréstimo de treze contos de réis para a construção de um mercado no lugar da Horta de Santa Cruz", Maço III. Pasta XVII (AHMC, B15/3)
- 10 "Relatório da Comissão encarregada de estudar os melhoramentos do mercado datado de 24 de Dezembro de 1896" (AHMC. Repartição de Obras Municipais, Pasta 36, Doc. 4, p. 2)
- 11 More details about this intervention in: Margarida Calmeiro. "A Paisagem Urbana oitocentista. Embelezamento e política urbana na renovação da imagem de Coimbra" *CEM/ Cultura, Espaço & Memória, «Paisagem»*, 4 (2013): 77-87.
- 12 Lourenço de Almeida Azevedo was a doctor but as mayor had an huge importance in the modernization of Coimbra. He was responsible for the new riverbank, the first topographic survey, the construction of the new city hall building and the expansion of Coimbra through the Santa Cruz vale.
- 13 This enormous and complex work had a sluggish execution especially because of the political and economic instability that characterized the end of the 19th century in Portugal. In consequence, the refilling of the banks with land was only complete at the beginning of the 20th century, the new train line started to work in December 1906 and the new public park was initially planned in 1912 but the final design dates from 1926.
- 14 Exposed in some newspaper articles, like in *O Conimbricense*: "A cidade Baixa VIII", March 20, 1907, 1 and "Os melhoramentos de Coimbra", February 23, 1907, 2.
- 15 Lisbon's General Improvement Plan was drawn up by Frederico Ressano Garcia in 1903. Porto's General Improvement Plan was presented in 1881 by Correa Bastos but was only composed of a descriptive document and a budget.
- 16 Guimarães and Viana do Castelo are two examples of the few cities who were able to draw up and approve Improvement Plans, the first from 1867 and the second from 1882. Mário Gonçalves Fernandes, *Urbanismo e Morfologia Urbana no Norte de Portugal, Viana do Castelo, Povoia de Varzim, Guimarães, Vila Real, Chaves e Bragança entre 1852 e 1926* (Porto: Publicações FAUP,2005), 111-125.
- 17 In 1889 there was a great bubonic plague epidemic in Porto. This epidemic crisis led to the creation in 1903 of the first national legislation to ensure the health of the housing and working places. About this epidemic: Ricardo Jorge, *A peste Bubonica no Porto, seu descobrimento. Primeiros trabalhos*. Porto: Repartição Municipal de Saúde e Higiene, 1899, X.
- 18 Adolfo Loureiro was responsible for the regularization of the Mondego River and the new embankment, for the Santa Cruz neighbourhood plan, the water supply network project, the sewer network project, the district penitentiary and many other projects in the city. He was an expert in hydraulic works, and worked in most Portuguese Harbours but he also worked abroad designing the Port of Macau. I. Mota Oliveira, "Adolpho Ferreira de Loureiro. Nota Biográfica", *Recursos Hídricos*,Vol. 24, N.º 2, Maio de 2003.
- 19 The decree of August 9, 1888 was published to permit the opening of a new neighbourhood and Liberdade Avenue then was exclusive to Lisbon; it allowed the expropriation of land to open a street and additionally 50 metres of land that could be sold by the municipality. The national law only allowed the expropriation of land required for the street.
- 20 This became a problem since some buildings were demolished and constructed according to this approved plan, though most of them prevailed without intervention. As a consequence, some streets have buildings not aligned, creating in the same street wide areas and narrow areas.
- 21 John McKay,"Comparative Perspectives on Transit in Europe and the United States, 1850-1914." In Joel A. Tarr and Gabriel Dupuy (eds.), *Technology and the Rise of the Networked City in Europe and America*. (Philadelphia: Temple Univ. Press (1988), 3-21.
- 22 Urban Code was a law defined by each municipality. In a national level, existed the 1964 decree that created the General Improvement Plans, compulsory only for the two main Portuguese cities, Lisbon and Oporto. Moreover in 1903 was published the General Regulation of Urban Health which effectively applied to building construction, this law was the main reference for these Urban Codes.
- 23 This urbanist had huge experience in urban planning. Professor at Urbanism Institute of Paris where he taught the course Garden City Theory. After designing the Coimbra Urbanization Plan, de Gröer was responsible for the Urbanization Plans of many Portuguese cities. Margarida Souza Lobo, *Planos de Urbanização. A época de Duarte Pacheco* (Porto: Publicações FAUP, 1995), 74-75.
- 24 Etienne de Gröer, *Ante-projecto de urbanização de Embelezamento e de Extensão da Cidade de Coimbra*.
- Coimbra: Câmara Municipal de Coimbra, 1948), 2; José Santiago Faria, "Étienne de Gröer urbaniste à la Ville de Coimbra" (PhD diss., University of Sorbonne, 2000).
- 25 The level of this Square was increased as a consequence of the widening of Coruche Street in 1866.

- 26 In 1753, the abbot Laugier defined the key for city beautification: the entrance, the streets and the buildings. Marc-Antoine Laugier, *Ensayo sobre la Arquitectura* (Madrid: Ediciones Akal, 1999), 128.
- 27 Joel Tarr e Gabriel Dupuy eds., *Technology and the Rise of the Networked City in Europe and America*. (Philadelphia: Temple University Press, 1988) and Álvaro Ferreira da Silva e Ana Cardoso de Matos. "The Networked City: Managing Power and Water Utilities in Portugal, 1850s-1920s", *Business and Economic History on-Line*, 2 (2004):21-23.
- 28 There are various examples of reform plans carried out according to the Paris model. For example the reform programme for Brussels (1864) by Anspach, the interventions in Turin (1872-1886), and the plan of Napoli (1839). Thomas Hall, *Planning Europe's Capital Cities. Aspects of Nineteenth-Century Urban Development* (Londres: E & FN Spon, 1997), 249-258, Benedetto Gravagnuolo, *Historia del urbanismo en Europa: 1750-1960* (Madrid: Akal, 1998), 46-53.
- 29 For this area de Gröer proposed the conservation of buildings, only replacing the most deteriorated ones, to improve sanitation he also proposed the demolishing of the interior cores of quarters. It is of interest to note his proposal since in 1931, the First International Congress of Architects and Technicians of Historic Monuments took place in Athens, where the preservation of city areas was recommended but only when they were surrounding Monuments. However, we should emphasise the participation of Gustavo Giovannoni and his theory for the respectful modernization of historic areas, the "thinning-out" of urban fabric (*diradamento*) proposed by Giovannoni since 1913. About the evolution of the heritage concept see: Françoise Choay, *L'allégorie du patrimoine*. (Paris: Éditions du Seuil, 1992)
- 30 The conservation of Monumentsdemolition its surrounding had a huge diffusion in the begging of the century. Rome is a well known example of this tipe of solution.

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Image Sources

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