

Book of Proceedings

the time^{of} streets

INCISIONS
OVERLAPS
AND
RHYTHMS

TITLE

City Street⁵

The time of streets:

incisions, overlaps and rhythms

Book of Proceedings

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Alessia Allegri

Francesca Dal Cin

Luis Miguel Ginja

Sérgio Barreiros Proença

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Elisabete Rolo

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Alessia Allegri

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Urban and architectural ennoblement of the city: Designing Rua do Loureiro, Porto

Ângela Brandão Moreira

FAUP, Faculdade de Arquitectura da Universidade do Porto

angela_moreiraf@hotmail.com

Maria José Casanova

FAUP, Centro de Estudos de Arquitectura e Urbanismo (CEAU)

mjcnova@arq.up.pt

Carla Garrido de Oliveira

FAUP, Centro de Estudos de Arquitectura e Urbanismo (CEAU)

up240950@g.uporto.pt

Abstract

The heritage valuation of urban processes –their parcelary and allotment structure, typological, formal and constructive aspects– in the metamorphosis of cities is the underlying problem under discussion in this paper.

The opening of *Rua das Flores* in 1521 by D. Manuel I, connecting *Largo do Convento de S. Domingos* with *Porta de Carros*, followed his foundation of the *Mosteiro de S. Bento da Avé Maria* in 1518, both works in order to ennoble the city. Taking the same idea, the Benedictine nuns organised the space in front of their church, *ennobling* it by designing *Rua do Loureiro*. Replacing the old and by them occupied *Rua de Carros* –also leading to relocate *Porta de Carros*–, the nuns profited from one of their land parcels, allotting *grounds* –considering principles of measurement and modulation– and establishing volumetric and constructive rules to private buildings in their new southern front of the *Terreiro*.

By identifying and drawing overlapped transformation layers in time, we developed a backwards process that, at some point, allows us a plausible onwards reconstitution of the urban and architectural design process, namely three main moments of urban transformation of *Rua do Loureiro* over five centuries: mid-16th, second half of 18th and early 20th centuries. Impressively, the matrix initially established prevails on the southern front of the street, despite the profound transformations inherent to the replacement of the monastery by the central railway station. [1488]

Keywords

Porto; *Mosteiro de S. Bento da Avé Maria*; *Rua do Loureiro*; city transformation; ordinary architecture

First remarks

When we stroll along the historic centre of Porto and come across *Estação de S. Bento*, we rarely ask ourselves what that area had been before the station was built, as it is today one of the most representative monuments of Porto architecture, symbol of modernity and centrality at the new upper downtown of the city since the early 20th century.

The exercise of studying this street prior to that symbol, even though it might be interpreted as unexpected for not considering it as the most obvious reference element, proved to be a necessary exercise to understand the transformations of the city, its multiple rhythms and its regulating principles; furthermore, to identifying its main agents, and also for valuing anonymous architecture, alongside to other architectural and urban elements that were once considered as references.

Notes on method

To carry out this study it was important to firstly recognise on-site the current urban morphology, through a metric, drawn and photographic survey, in order to identify the characteristics that make up the architectural and urban elements that persisted throughout the different historical periods –paying special attention to discontinuities and fragments as possible signs of permanency and overlay.

In parallel, we gathered primary archival sources, both textual and iconographic, including cartography, cross-referencing them with reference literature, monographic as well as thematic, considering the time interval of our study –ranging between 16th and 20th centuries. By orderly mapping this information, both in time as in space, the re-draw of all these materials took design as the main tool and process for the analysis, interpretation, and synthesis. The available and successively increased vector drawings were important for this exercise, as they allowed us to mediate rigour, namely considering the heterogeneity of representation systems of primary sources.

As no iconographic documentary sources prior to 1790 are known to exist, the schemes presented should not be understood as scientific certainties, but rather as plausible reconstitutions of the architectural and urban design process achieved through this method.

Notes on prior and newer circumstances

Throughout time, in different periods, the contribution of religious

entities, namely from monastic and conventual orders, to the urbanisation of urban centres was and has been fundamental, acting as agglutinating poles or as agents of renewal.¹

In Porto, from the 13th century onwards, the establishment of religious orders played a fundamental role in the city's development, confronting powers in an episcopal city, led by a trade-based civic council, and with the royal power struggling to gain some presence. The first mendicant orders –*Convento de S. Francisco*, 1234, and *Convento de S. Domingos*, 1238– chose a position outside the primitive Walls, west of the Cathedral hill and the valley of the main stream in the outskirts, the *Rio de Vila*, promoting territorial dynamics and urban growth. With the construction of the second Walls, two new mendicant orders –*Convento de Santa Clara*, 1416, and *Convento de S. Elói*, 1490, respectively in the outer and the inner side of the Walls, both near city doorways– were positioned in a straight relationship with the new limits of the city, while the former convents played an important role in the city urbanisation.

Thereby, the implantation of these convents accompanied the liminal condition of the two Walls –from newness to obsolescence– and promoted urban transformations throughout the 13th and the 15th centuries. This condition of a changing urbanity over two centuries took advantage both of strategic topographical conditions, in a territorial landscape, as well as considered the conventual complexes' own needs, dealing with the urban constraints of a city in consolidation.

In the context of the early 16th century, with D. Manuel I promoting town planning reforms –both in Lisbon and Porto as well as in several other cities and towns–, the foundation with royal support of a fifth religious order in 1518, the *Mosteiro de S. Bento da Avé Maria*, seems to have played a key role in urban development on a city scale. As soon as 1521, the king ordered the opening of the *Rua das Flores* as well as the reform of the *Porta da Rua de Carros*, setting the new main axis connecting the then city centre, near the fluvial seaport at *Rio Douro*, with the main northern upper gateway. The location of the monastery played a pivotal and referential role, in a real urbanistic operation that the documents of the time refer to as *for the ennoblement of the city* –a late 15th century political, modern and edificant idea. Dealing with existing urban constraints as well as to solve specific needs of a female monas-

tic complex, the Benedictine nuns bought and received some of the bishop's vegetable gardens, but at the same time overlapped their monastery to former spaces of *Rua de Carros* near the Walls, interrupting one of the most important eastern communication routes and ways out of the city, thus creating an urban problem that they would resolve in the following years by designing the *Rua do Loureiro*. In this sense, this monastery played a crucial role in urban connectivity and design, managing two important streets and the northern gateway of the Walls.

Three urbanistic tools in the 16th century settlement of the monastery and the street: plotting property boundaries, a rhythmic morphology and noble building rules

The solution to the urban problem in question was naturally suggested by the religious entity of the monastery, expressed by its willingness to use a plot of land for construction: a *courela*.² As the creation of a new symbol for the city was not restricted only to the construction of the building, its authority was also measured by the “influence” of its urban context. Thus, the construction of a new housing front on land that was difficult to cultivate, with materials considered *nobles* – such as ‘stone and lime’–,³ would *ennoble* the monastic building itself as well as the place and the city, in a propaganda action that would bring prestige to that institution, in line with the action of D. Manuel I.⁴ Cleverly, this solution simultaneously involved the design of a new street that would simultaneously solve the entrance to their church. This monastery, being female, had its choirs in the longitudinal axis of the church and, therefore, its main entrance could only be done laterally, open to south,⁵ with the *Portaria* –or gatehouse– recognising the leading role of the south-western corner.

Therefore, clarifying the physical limits of the land that would belong to the city and to the monastery was the first step towards designing *Rua do Loureiro* –at the time *Rua Nova da Rua de Carros*. This first action, officialised in 1547,⁶ was also our first exercise⁷ –a drawn reconstruction achieved by interpreting written documents reporting the demarcation of boundaries and the use of the *courela*, the width of a future street, and the obligation of the then “*Rossio de Sob a Cividade*” to remain public. Bearing in mind that



Fig.1 – Mosteiro de S. Bento da Avé Maria in the 16th century – Source: Author 2019

the construction of the monastery began in 1518 and that the first known representation is from two centuries later, we ought to clarify that to develop this study we considered plausible that the church had remained in the same position over the centuries. (figure 01)

This exercise was the first sign that we were facing an urban gesture worthy of further study, especially because the agents, without the use of drawing, ensured the possible accuracy of property boundaries through a demarcation process using urban elements for spatial reference (such as cornerstones, corners and landmarks, figure 02) and using a unit of measurement of its time and context –the *vara*, literally a *rod*, an ancient Portuguese measurement unit, corresponding to 1.10 m, being a quintuple of the *palmo*, with 22 cm.

Knowing that the process of systematising urban typologies in written language is a lengthy and constantly evolving process, the 16th century documents demonstrated an advanced capacity for understanding urban space and its volumetric relationships, as well as knowledge of urban design methods, setting out what today we easily recognise as possible premises for discussion at an urban-planning stage.

After securing a provisional urban connection by the *Travessa do Loureiro* in the southern boundary of the *courela*, a new street has been defined –with six *varas*, wider for the *ennoblement* of both the monastery and the city– (figure 03), which would allow an urban design of the church' public entrance courtyard, as well as to the new façade facing it, and the management of the city flows especially those getting to the monastery. By *offering* a new, wider and *noble* street to the city, the *Mosteiro de S. Bento da Avé Maria* played a nodal role at the crossroads of the upper city's main streets, whether they were new or reformed.

The courela's plotting act of 1565:

an operative module of six 'varas' and a normative and 'ennobling' tool

Besides the intention of using the *courela* for economic purposes, the documental sources effectively shows that the religious entity saw here an opportunity to *ennoble* the public space facing its building. Attracting neighbours and establishing a new area of qualified services (as in *Rua das Flores*), already started at the western end of the future street and even including dependencies of the monastery, would also be arguments for the implementation of this intervention. According to our interpretation of primary documents,⁸ the nuns divided the land plot in

eleven lots, *chãos* or *grounds*, distributed in three groups (of six, three and two lots, from west to east) taking into account the slope of the plot and its irregular shape (both rising and narrowing, also from west to east), in order to achieve two major purposes: the privacy preservation inside the monastic enclosure and the profitability of each lot in function of its area and buildability. In this *urbanistic operation*, the nuns established the width of the lots, the number of floors thus the height of the façade facing the monastery, and the height of the rear façade (which could be different from the front one). This allowed them a balanced division of area and floors per lot, and consequently the attribution of a corresponding rent value. More significantly, the street frontage was conceived as an organism in its entirety, with major alignments considering parts of the whole and not simply lot by lot. The urban regulation of the nuns also established principles for constructive detailing, with durable and thus *noble* materials, indeed the main sense of *ennoblement of the city* –in addition to the width of the street as the width of the lot, the building of its façades and its controlled heights and rhythms.

The diagrams presented in figures 04–05 were an exploratory tool to allow us to cross-reference the data from the metric survey (2017) with the interpretation of the aforementioned document. As an exercise of overlapping time and information, our challenge was to understand which would be the eleven lots and how they would be organised based on the mentioned conditions –note the pre-existence of four western lots.

Although liable to be questioned, the diagrams in figure 06 demonstrates how we interpreted the division of the *courela*, taking into account the module of six *varas* (identified with the letter A). The first group of lots has six modules wide by four modules deep –6A x 4A, the geometric figure of a square and a half–, each lot with a 1A x 4A dimension. The second group of lots has three by three modules width and depth –3A x 3A, a square– each lot with 1A x 3A; both the square basis and each lot are proportionately 3/4 smaller than in the previous group. The third group presents a front corresponding to approximately three modules –3A, but with just two lots, the last shifting direction and gaining three façades in its street corner condition. This exception absorbs most of the urban design tensions by its position at the inter-



Fig.2 – The boundaries of the city and the monastery – Source: Author 2019

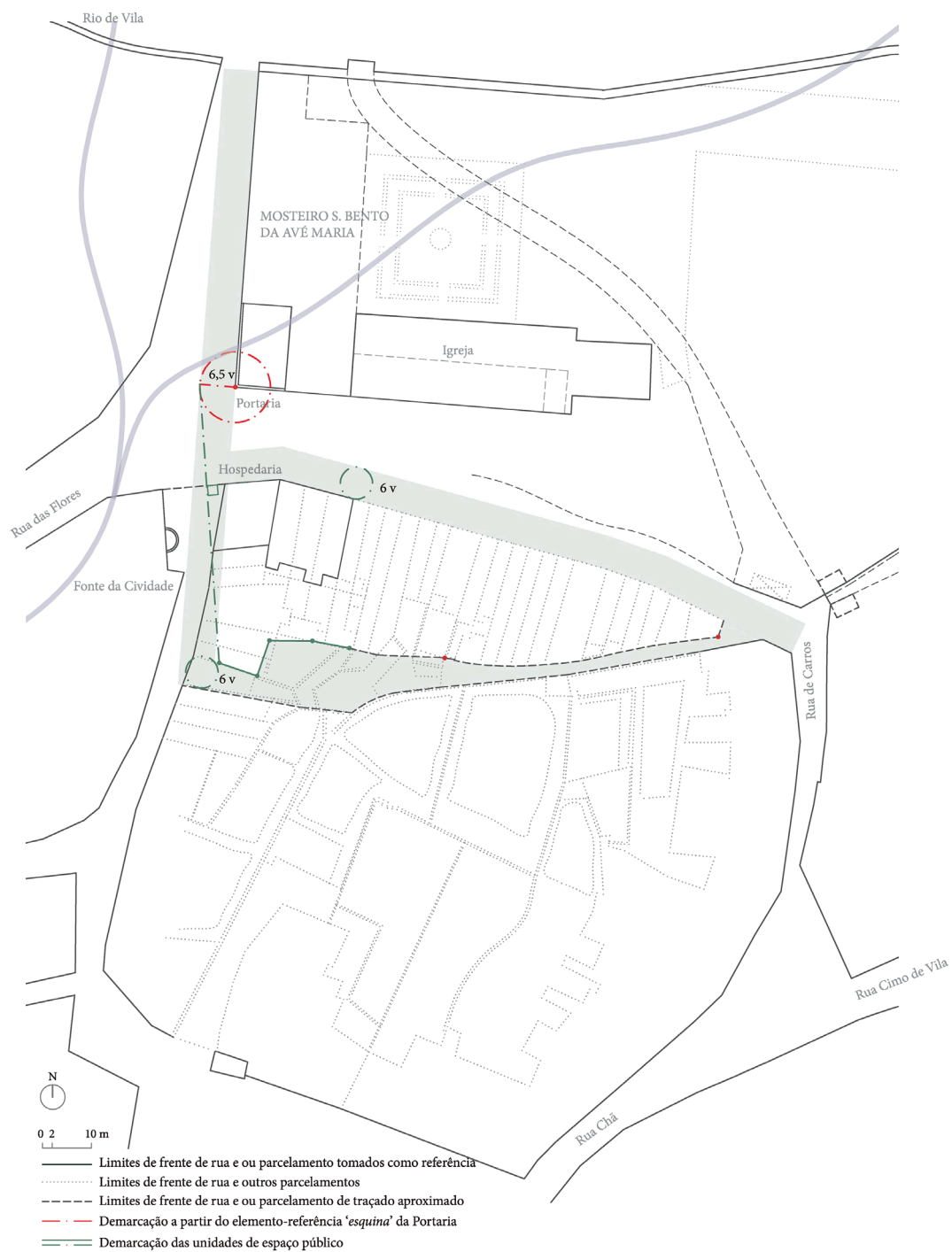


Fig.3 – The process of public space's demarcation – Source: Author 2019



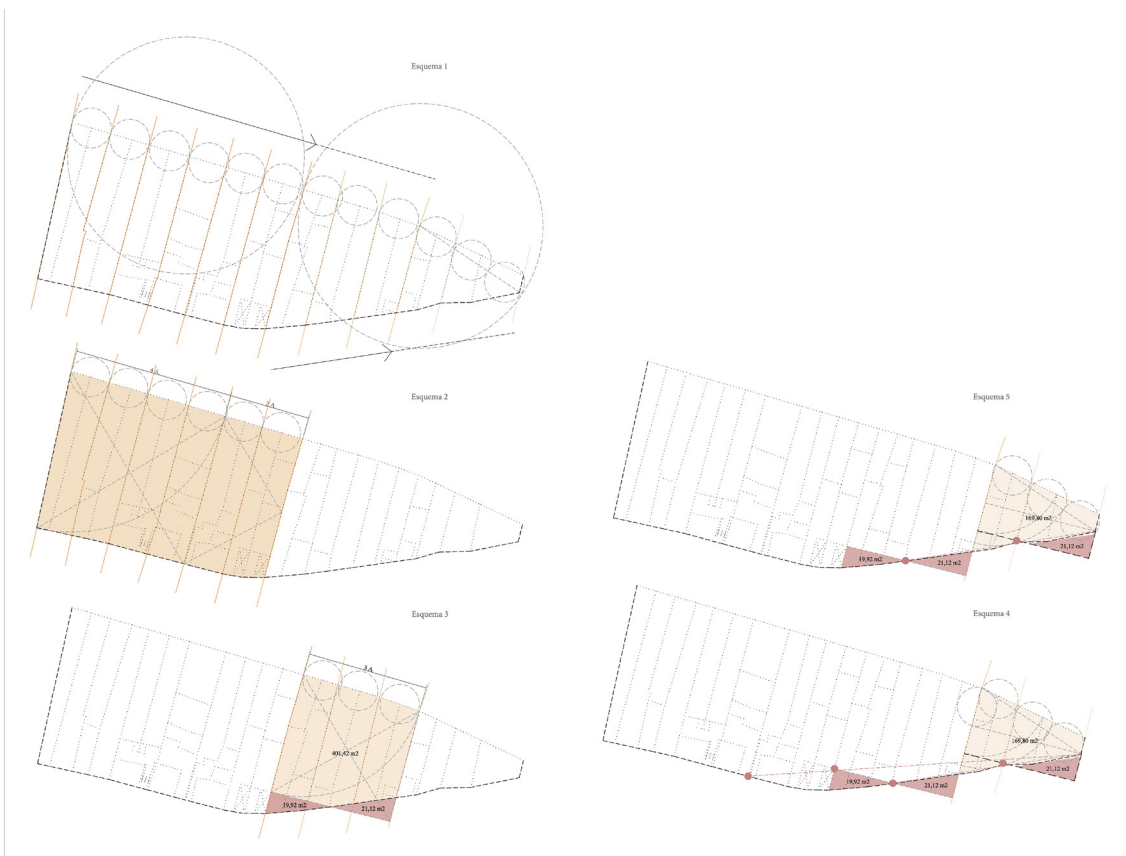


Fig.6 – The *courela* and the 6 *varas* as a module II – Source: Author 2019

section between this new street –*Rua Nova da Porta de Carros*, soon to be *Rua de S. Bento*–, the provisional *Travessa do Loureiro*, and part of the old and southern remaining layout of former *Rua da Porta de Carros* –latter on, this L-shap will be renamed as *Rua do Loureiro* in 1714.⁹ This shows, once again, the importance of public space *ennoblement* for the urbanising agents of the 16th century, prevailing over private space. Worthy of emphasis is also the fact that the module of six *varas* that rhythms the front of the street, and its inner private space, is exactly the measure of its *noble* public width, thus relating private and public elements of the urban fabric.

Concerning to the lots' height, the clauses of the *emprazamento*, i.e. the *leasing* document, also established them with precision: a two-storey volume in the second and third groups of lots –a ground floor and one *sobrado*, i.e. one wooden floor– in the eastern and highest part of the street; and a three-storey volume in the first group. Considering the two-storey seven lots at east with about six *varas* height, we might think of a cubic proportion for each void module of the street, in a three-dimensional matrix, defined in plan and section, relating width, height and depth. Recalling the nuns' purpose of privacy, the height of these two eastern groups of lots ensures it, even starting at the highest point of the street and with it well above of the church' public entrance courtyard. The steepness of the street, downing towards west, and the maintenance of this maximum alignment of six *varas* of the eastern lot (the pink line), allows an increased height to three-storey reinforcing the qualification of the first group of six lots, closer to a neuralgic urban position. (figures 07-08) This balanced management of urban constraints converges in *picturesque* perspectives between horizontal and diagonal dynamics, and will be emphasised throughout the following three centuries, as well as its function in the city at one of its main gateways, supporting complex flows, offering a high-quality public space and services, and hosting religion processions and trade fairs. (figure 09)

Urban and architectural transformations in the 18th century: from ennoblement to Enlightenment

As mentioned for the 13th and 15th centuries, during the long 16th century religious orders kept a key role in urban development and trans-



Fig.9 – From Rua do Loureiro and Terreiro de S. Bento to Clérigos – Source: George Vivian, 1839

formation,¹⁰ as well as in further epochs, namely during the Pombaline urbanistic operations after the great earthquake of 1755, carried out in Porto by the *Junta das Obras Públicas*, *JOP*, in the period 1763-1834. In these two centuries, as in the following ones, the city growth will reinforce the growing centrality in front of *S. Bento*, expressed in the progressive densification and even in the increase of floors in *Rua do Loureiro*.

The fire that broke out in the monastery in 1783 led to the reconstruction of the main façades of the church and monastic facilities, namely those facing the street front under analysis, in a new architectural incision requalifying this public space through the overlapping and convergence of rhythms. The coincidence of this tragic episode with the ongoing urban and architectural transformations led by *JOP* in the vicinity of our case study makes it plausible that, beyond the architectural exceptionality of the new church façade,¹¹ several influences occurred in the attitude of ordering and redesigning the city –even without specific supporting documentation.¹² Furthermore, both in the northern façade of the residential and commercial street, and in the monumental nature of the monastic complex, namely the south-facing façade of its church, it is expected that the phenomena of *aggiornamento* and densification have influenced the urban image of the public ensemble of the *Rua do Loureiro* and the church's public entrance courtyard, the *Terreiro de S. Bento*. (figure 09)

Thus, we superimposed both profiles of this dual urban space (figure 08) in order to pointing out the richness and complexity of their dialogue, regarding height control and alignments permanency, rhythms of lots and their openings. Note that the profiles overlap different times, being an approach to what might have been in the 18th century. The drawing for the analysis is based on a photographic and planimetric survey (2017), then incorporating redrawn old municipal building licences; archive photographs, drawings and engravings; as well as written documents from the 16th century as explained above. (figure 07) The second profile reinforces the levelled relation between the eastern building with six *varas* –the 16th century operative module A, with 6.6 m– and the western one with fifteen *varas*, i.e., two and a half modules A –this building, predating the nuns' act of 1565, was already their property and has always housed services external to the *cloister*, such as

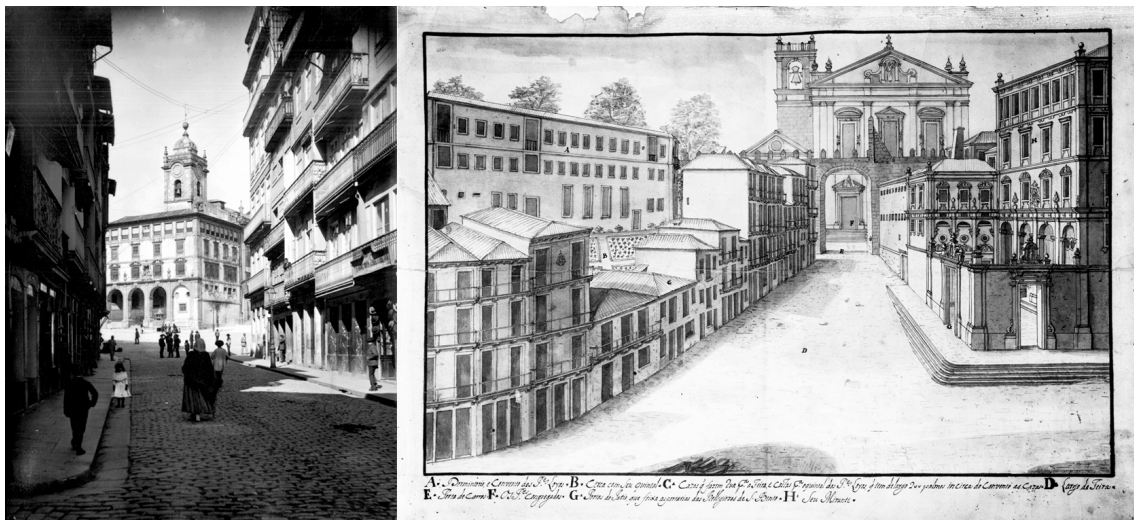


Fig.10 – The southwest corner of the monastery: view from Rua das Flores, 1890's; and its western façade at Porta de Carros, still with its Portaria' courtyard, 1790; in both images, Rua do Loureiro is on the right – Sources: Emilio Biel, 1890's; Unknown author, 1790

the priests' residence. It aims to underline the idea of a conceptual composition of the southern street front, based on architectonic relationships and standard elements, then adapted to the circumstances – note the alignment of balconies and cornices, openings' number, proportion and mouldings, ..., namely in the first-central group of seven lots. In the northern front, prevails the stability of the monumental mass of the monastery, assumedly levelled and to which the topography has been adapted.

Another notable subtlety, even if it may be a simple coincidence, is the cross-axes between the 18th century church portal (whether or not maintaining its exact former position) with the single lot of three openings in the first group of the 16th century, rather than the pattern of two–four in the remaining ten. This reinforces the idea of empathy and dialogue between the symbolic monumentality of the church portal and the whole monastery and its relational public space, with the equally remarkable characteristics of the anonymous or common dwelling architecture. This case shows continuous transformation, and in fact we could not identify any concrete action of the JOP in our case study. We only know that in case they were responsible for some of the urban relations observed, they would have been able to recognize the urban design principles of the *Rua do Loureiro* established since its tracing.

Whether from the *ennoblement* of the 16th century or the *Enlightenment* of the 18th century, we may learn or remind the importance of alignments and rhythms, both in plan as in section, as powerful tools in urban and architectonic design, considering the relevance of its different scales. While they must be exact and essential, for future legibility, they must go beyond the level of abstraction, taking shape and form through dimensions, proportions, systematisation, type and variance, ..., and widths, lengths, heights and thicknesses, materials and construction detailing.

Final remarks

The Liberal Reformation and the dramatic extinction of religious orders in 1834 –whose impact lasted throughout the 19th and early 20th centuries all over the country– and postponed in the female houses

until the death of the last nun, led to a huge metamorphosis of this place.¹³ In fact, what gave importance to the *Rua do Loureiro*, as if in continuity with the *Rua das Flores*, was the position of the church' public entrance and its *Terreiro*; the main focus and the turning point of the *Rua das Flores* was always the corner in the diagonal of the monastery, with its gatehouse and bell tower. (figure 10) The demolition of the city gateways and Walls will reinforce the importance of the north-south-west axis, now connecting to the new and wider 19th century *Rua de Mouzinho da Silveira*, thus relegating the *Rua das Flores* to a secondary role. By shifting the main façade function of the building mass from south to west, with the replacement of the monastery by the central railway station, and accentuated by the opening of the *Avenida da Ponte* in the mid-20th century –both *episodes* worthy of a closer look–, the *Rua do Loureiro* also assumed a secondary urban role. Nevertheless, the street frontage retains a certain identity, arising from the unity and coherence of its *modern* and *ennobling* design.

Learning from 'past presents': designing <> researching

Beyond the specificity of the case study of *Rua do Loureiro*, deepening a crucial moment in the emergence of its condition of urbanity and matrix contribution to the city design, our aim is to highlight the sense of *present time* experienced in each of its main pasts, from the 16th century onwards. Based on the concrete data of the needs, agents, instruments and circumstances of the time, we developed a research method as an attempt to simulate the process of urban and architectural design itself, from its own disciplinary instruments and procedures. This study, using drawing both as a tool and as an operational instance of interaction of heterogeneous materials, may contribute to widen the scope of future comparisons. The capability to interrogate the *Past* with the tools of the urban and architectural design implies a willingness to better understand each one of those *past presents* and thus to rescue the relevant characteristics worthy of transmission and still operative for our *Present*. Beyond its material fragments, recognising the immateriality of principles and processes will be the most effective understanding of heritage.

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End notes and Bibliographic references

1 Catarina Marado. *Arquitetura conventual e cidade medieval: a formação e os impactos dos sistemas urbanísticos mendicantes em Portugal (Séc. XIII-XV)*. Coimbra: Imprensa UC, 2018.

2 *Courela* is an ancient Portuguese agrarian measure used to divide and organise agricultural lands. This plot of land corresponds to 100 *braças* long by 10 *braças* wide, or 220 metres by 22 metres. One *braça* is also equal to two *varas*, that is ten *palmos* –and one *palm* is 22 cm.

3 Amândio Barros. *Em proveito dos Mosteiros e enobrecimento da cidade. Os conventos de S. Bento da Avé Maria e de Santa Clara e as alterações urbanísticas do Porto na segunda metade do século XVI*. Porto/Arouca: I Congresso sobre a Diocese do Porto “Tempo e lugares de memória”, 2000.

4 This operation seems to be in accordance with the document that promotes the settlement and urbanisation within the city of Lisboa –“Carta Régia”, 1500– where D. Manuel I orders “the cutting and razing of the olive groves within the Walls”, even those of the convents of Carmo, Trindade and S. Francisco, giving rise to the *Vila Nova do Olival*. According to Matos Sequeira, the king’s document corresponds to a real urbanisation plan. Gustavo de Matos Sequeira. *O Carmo e a Trindade*. Lisboa: Publicações Culturais CML, 1939.

5 Paulo Varela Gomes. “A fachada pseudo-frontal na arquitectura das igrejas de freiras no mundo português”. *14,5 Ensaios de História e Arquitectura*. Coimbra: Almedina, 2007, p. 250.

6 “Auto que se fez da repartyção amtre a cydade e abadessa e Mosteiro de Sam Bento das Freyras” (1547). José Ferrão Afonso. *A rua das Flores no século XVI: elementos para a história urbana do Porto quinhentista*. Porto: FAUP Publicações, 2000. In this 16th century document the nuns had already shown their interest in making the *courela* profitable.

7 Chapter “1. Cidade e Mosteiro: demarcação dos limites das propriedades (Século XVI)”. Ângela Moreira. *Intervenções modernas de nobrecimento urbanístico e arquitectónico da cidade: O traçamento da Rua do Loureiro no Porto*. Master Dissertation in Architecture, FAUP, 2019.

8 “As freiras do mosteiro de S. Bento da Avé Maria emprazam uma courela junto ao convento a vários povoadores para estes aí fazerem casas” (1565), and “Acto de posse de uma courela junto ao mosteiro de S. Bento da Avé Maria emprazada pelas freiras do mesmo mosteiro a vários povoadores para estes nela fazerem casas” (1565). Transcribed by Amândio Barros, 2000.

9 So from *Rua Nova da Porta de Carros*, to *Rua de S. Bento*, to *Rua do Loureiro*.

10 In Lisbon, this contribution was substantially significant in the 15th and 16th centuries, for instance with the appearance of new consolidated areas as the *Vila Nova da Oliveira* and the *Bairro Alto*. Also after the destruction of 1755, some private operations initiated by religious houses were part of the city's renewal, as was the case of the community of *Nossa Senhora da Soledade* or *Trinas*.

Edite Alberto, Hélia Silva, Rita Mégre, Tiago Borges Lourenço. *E por causa do grande terramoto que houve nesta Corte. O Bairro das Trinas, evolução urbanística e arquitectónica. Cadernos do Arquivo Municipal*. Lisboa: Cadernos AM, Série 2, 12, 2019.

11 Work attributed to Manuel Álvares. Isabel Pinho. *O Mosteiro de São Bento de Avé Maria do Porto, 1518/1899: Uma arquitectura no século XVIII*. Dissertação de Mestrado, FLUP, 2000.

12 We refer, for instance, to the sector plans for the *Convento de S. Elói* (by José Champalimaud de Nussane, 1790) and the Project of *Rua de S. António* (by Teodoro de Sousa Maldonado, 1793), which, attentive to the context of the city and the contact areas between the new and the old city, represent the *Mosteiro de S. Bento da Avé Maria* and the *Rua do Loureiro*.

13 Maria José Casanova. *A extinção das ordens religiosas e os conventos do Porto: Transformação, ruptura, continuidades*. PhD Thesis in Architecture, FAUP, 2015.

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