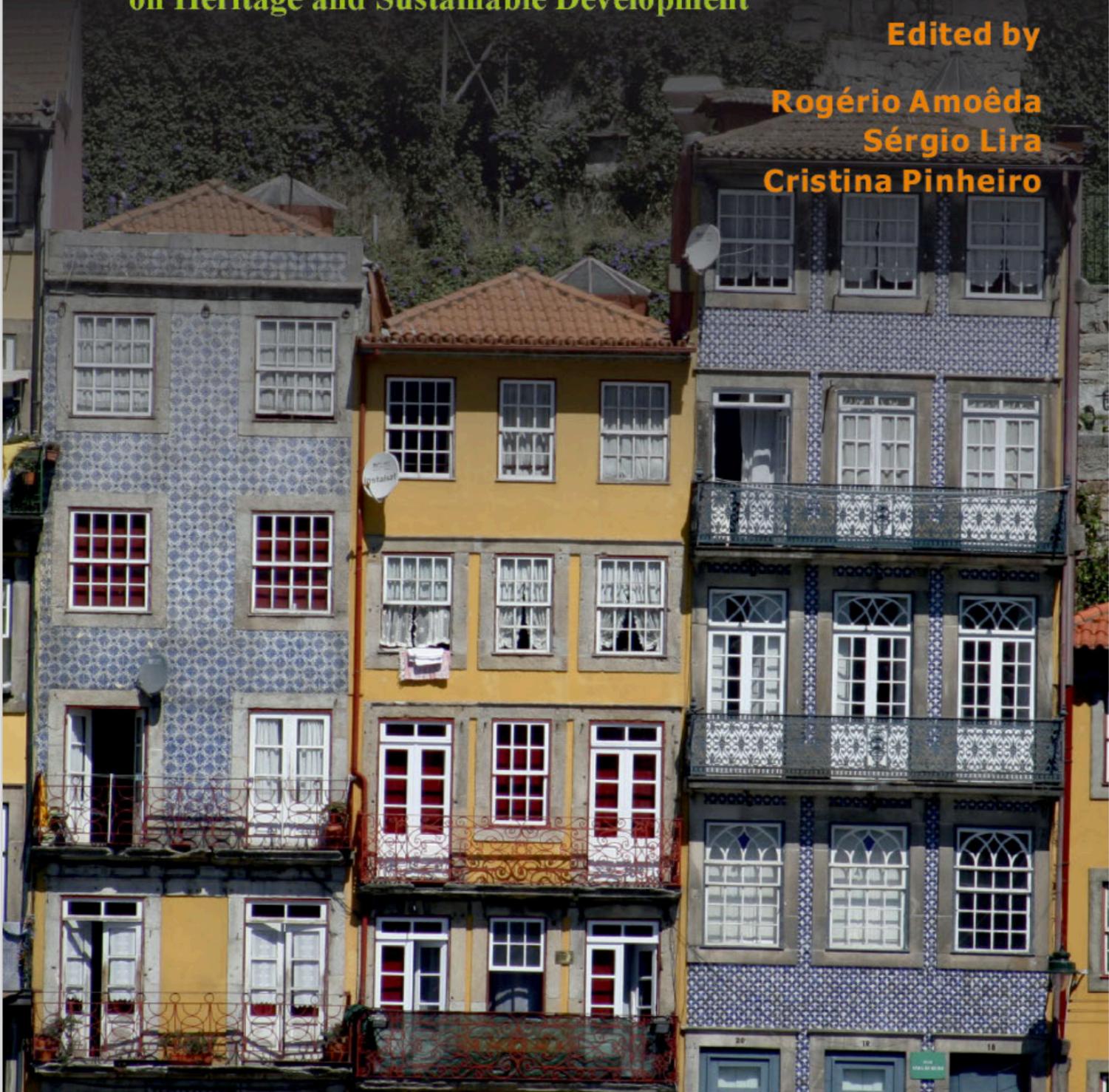


# HERITAGE 2012

Proceedings of the  
**3<sup>rd</sup> International Conference  
on Heritage and Sustainable Development**

**Edited by**

**Rogério Amoêda  
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**Volume 2**

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## Hygienism, salubrity and regulations. The Oporto's collective dwelling in the 1st half of the 20th century

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**ABSTRACT:** This article aim is to question the regulation's role in the collective housing production, not only in the design of the domestic space, but also in the transformation of the city's image and its morphological character at a specific historical period. The research framework proposes the concepts of "hygienism" and "salubrity" to support this aim and refers to the buildings that were conceived in Oporto between 1925 and 1957, and also to building and urban legislation applied in that period. There's a special interest in the housing's typological transformations and their urban morphological consequences. This recent and relatively unknown heritage is worthy of consideration as it engages deeply changes in Oporto's building tradition.

### 1 A PARTICULAR SOCIETY AND CONTEXT. THE HYGIENE AND THE SALUBRITY AS HOUSING PROBLEMS

In Oporto, the debate of the city's hygienism and salubrity started to arise in the late 19th century, with growing diseases related to the inadequate housing conditions of the poorest population. As in other European cities, engineers, doctors and politicians started to handle these questions by creating building legislation. The General Improvements Plan of 1864 (*Plano Geral de Melhoramentos das Cidades e Vilas do Reino*) was the first regulatory framework from which some issues began to be considered, like soil treatment, infrastructures (water supply system, sewerage system and street lighting) and general building conditions (Matias 2002, 9-10). This national decree gave rise to the *Plano de Melhoramentos da Cidade do Porto* presented to the City Council in 1881 by the engineer J. A. Correa de Barros (1835-?). At that time, many other documents demonstrated hygienist concerns, such as the well known writings of doctor Ricardo Jorge (1858-1939), an emblematic figure in Oporto's research context (cf. references).

The Dissertations presented by graduating doctors to the Medical and Surgical School of Oporto, at the turn of the 19th century are also particularly interesting, referring several subjects: sewerage systems (Oliveira & Vale, 1886), microbiological air analysis (Pereira & Pinho, 1894), safer water supplies (Fontes & Frias, 1908) or general housing hygiene (Braga & Brandão, 1894), (Antas, 1902), (Baía Júnior, 1909), (Lemos & Martins Junior, 1914). Contemporary authors, such as Seixas (2003) for example, are reflecting on the meaning of the hygienists written heritage in the contemporary city's construction.

Authors such as Teixeira (1992), Trevisan & Matias (2002) and Maia (2000) inform about Oporto's context between 1830 and 1950 (housing policies/strategies, legislation and epidemiology, respectively), revealing a local administration that was increasingly aware of the need to control private construction and the housing conditions. Nevertheless the implementation of rules and laws, the general overview is that the municipal services were unable to get significant results in the field, especially in connecting buildings to the public sewerage system (Gros 1982, 11). The main reason given is the absence of urban planning Plans, integrating parceled interventions (Trevisan 2002, 31). Oporto only began to be thought in a planned way since 1932, with the presentation of *Prólogo ao Plano da Cidade do Porto* by engineer Ezequiel de Campos

(1874-1965), in which he produced the first generalist considerations about this subject (Campos, 1932). This reality wasn't that far from what happened in European capitals like Paris, despite the gap of several decades. In this city, health policies regarding housing were being developed since 1850, producing significant theoretical treatises and debates (in this particular aspect differing hugely from Oporto's situation), but in fact, it was only by 1900 that they began to influence housing structures (Moley 1998, 11).

In the 1st half of the 20th century, Oporto was effectively a technical and scientific city. The collection of *Centro Português de Fotografia* (CPF), based in Oporto, enabled the illustration of some ideas explained so far. Several themes emerge in the photographs that framed the existing city, or recorded the occurrences taken place there: events (visits from the king, military parades, presentations), thematic exhibitions at the *Palácio de Cristal* (new car models, medicine congresses, agricultural products). The most developed factories are also photographed, showing their advanced gear and their employees: it's the city of mechanical efficiency.

These pictures also document everyday moments in the city, like the destruction and transformation of the urban fabric or the installation of transport infrastructures: the train, its station, the trams and their lines' installation. It's the emergence of a "techno scientific" city that is radically different from the one that preceded it. The town center wasn't being built from scratch, on the contrary it was clearly being built on a reasoned balance between new and pre-existence, as the photographer Domingos Alvão (1872-1946) documented (Figs 1, 2).



Figure 1, 2. Domingos Alvão, Public transport systems at Oporto, [19--], PT/CPF/ALV006666, (on the left); Domingos Alvão, Oporto, General view of the tram lines works' at Sá da Bandeira street, [19--], PT/CPF/ALV004696, (on the right), *Centro Português de Fotografia*/DGARQ/MC.



Figure 3. Aurélio Paz dos Reis, Oporto, [Technicians at the Laboratory], [1882] - [1949], PT/CPF/APR2921, *Centro Português de Fotografia*/DGARQ/MC.

As in other European cities in the late 19th and early 20th centuries, the subjects of salubrity and hygiene are carefully recorded: the doctor in the laboratory and the exhibitions of sanitary equipment in medical congresses, for example (Figs 3, 4). The question of healthiness is combined with the need for comfort, particularly in bourgeois rental housing. Therefore, these concerns were taking place not only through urban and building regulations (plot's occupancy, boundaries, courtyards), but also by the means of the apartment's technical apparatus. The "Modern Oporto" comes to us in these photographs, and at this specific subject through the work of Aurélio Paz dos Reis (1862-1931).

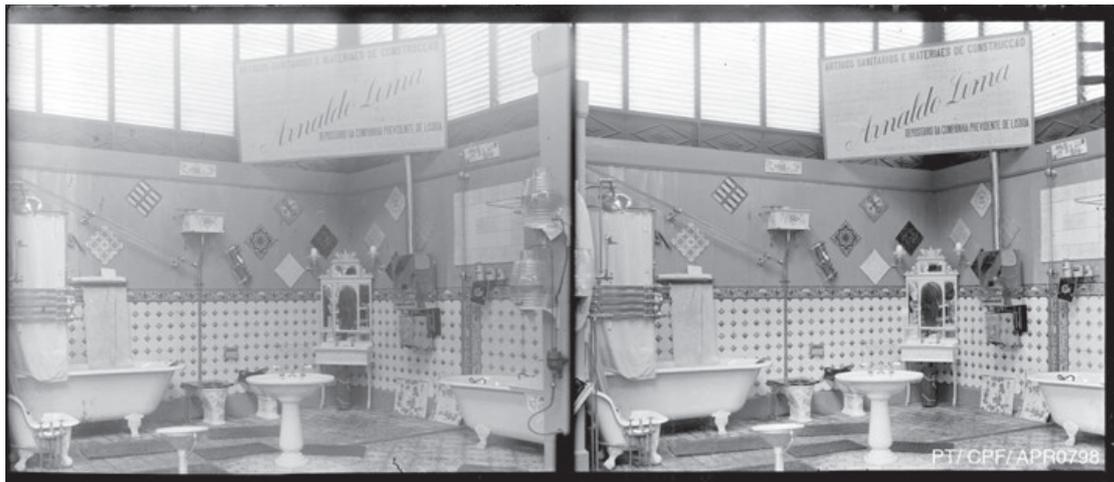


Figure 4. Aurélio Paz dos Reis, Oporto, [Exhibition at Market *Ferreira Borges*], [1882] - [1949], PT/CPF/APR0798, *Centro Português de Fotografia/DGARQ/MC*.

## 2 THE REGULATIONS AS CONTROL INSTRUMENTS

Building regulations: "A system of control through which statutory standards on matters such as safety and energy conservation are enforced by local authorities." (Cowan 2005, 42)

In the 1st half of the 20th century, the central and local authorities significantly expanded the number of instruments at their disposal to control the growth and the construction of the city, gradually overcoming the general considerations that ruled the housing sanitary field, which were evident in the general improvement plans in the late 19th century. In 1903 it was published the *Regulamento de Salubridade das Edificações Urbanas* (RSEU), a document of national implementation specifically about building. The replacement of this regulation, the *Regulamento Geral das Edificações Urbanas* (RGEU) was only approved in 1951, among other general use legislation. The RGEU is still in use today despite the repeal and revision of some decrees and in its origin had several objectives namely:

- to regulate the activities of private developers;
- to establish rules for both applicants and those who evaluate the licensing process;
- to establish a minimum level of building's sanitary and safety conditions;
- to include the scope of urban aesthetics.

The RSEU of 1903 is essentially a regulation referring to salubrity and hygiene ignoring the last two given subjects, i.e. the building's security and urban aesthetics.

Between RSEU and RGEU, the cities of Lisbon and Oporto approved some intermediate regulations aiming to specify and adapt the general rules to local conditions, an objective suggested by the RSEU itself. Looking at building legislation, the most significant of these intermediate regulations was the *Regulamento Geral da Construção Urbana para a Cidade de Lisboa* (RGCU) of 1930.

It's interesting that in Lisbon, with the growing controversy surrounding the "quality of construction", the aesthetic control arisen as a relevant question (Agarez 2009, 40-47). It became one of the basic subjects of the RGCU of 1930, in conjunction with other important issues: the

buildings conditions (elevation of building façades, courtyards, lighting, ventilation), the habitability of the interior spaces (ceiling height, areas, spans), and the construction elements' characteristics (floors, roofs, walls, stairs).

Maintaining the chapters' structure of the RGCU of 1930, the RGEU of 1951 reinforces the issues of domestic healthiness, repeatedly invoking the need for proper geographical exposure to the sun, but clearly reducing the concerns about architectural aesthetics.

Table 1. Synthesis of the main construction and building regulations approved between 1863 and 1957.

General use legislation*	
1863	<i>Construções que ameaçam ruína (Lei de 16-7-1863)</i>
1864	<i>Obrigatoriedade de edificação nos terrenos confinantes com a via pública (Lei de 31-12-1864)</i>
1903	<i>RSEU - Regulamento de Salubridade das Edificações Urbanas (Decreto de 14-2-1903)</i>
1914	<i>Regulamentação da construção nas cidades de Lisboa e Porto (Decreto nº 902, de 30-9-1914)</i>
1915	<i>Utilidade pública das expropriações a efectuar pelas Câmaras Municipais (Lei nº 438, de 15-9-1915)</i>
1918	<i>Regulamento para o emprego do betão armado (Decreto nº 4036, de 28-3-1918)</i>
1924	<i>Recursos relativos às determinações municipais sobre prédios que ameacem ruína (Lei nº 1670, de 15-9-1924)</i>
1935	<i>Regulamento do betão armado (Decreto nº 25948, de 16-10-1935)</i>
1936	<i>Regulamento de segurança dos ascensores e monta-cargas eléctricos (Decreto nº 26591, de 14-5-1936)</i>
1943	<i>Regulamento do betão armado (Decreto nº 25948, de 16-10, com as correcções introduzidas pelo Decreto nº 33021, de 2-9-1943)</i>
1943	<i>Regulamento geral de abastecimentos de água (Portaria nº 10367, de 14-4-1943)</i>
1946	<i>Regulamento geral das canalizações de esgoto (Portaria nº 11338, de 8-5-1946)</i>
1951	<i>RGEU - Regulamento Geral das Edificações Urbanas (Decreto-lei nº 38382, de 7-08-1951)</i>

\* Regulations with national purposes.

In Oporto, despite several intermediate building decrees approved between RSEU and RGEU, it's a fact that there wasn't any document with the integrating basis of the Lisbon's RGCU (which clearly set up the basis for the RGEU).

However, after the promulgation of RGEU the Oporto Municipal Services were able to introduce some novelties that didn't occur in the Lisbon's legislation. By the mid 50s, a new regulation emerged in Oporto, the *Regulamento do Plano Regulador da Cidade do Porto* (RPRCP) of 1956. This apparently concise document with urban concerns took the opportunity to address and clarify some of the most ambiguous articles provided by the RGEU - those about the building's aeration. The RPRCP fixed clear restrictions towards building design, having an inevitable impact in new collective dwelling.

Before the Oporto's RPRCP of 1956, the overview is that the building regulations' role is to set a "demanding framework" for private buildings, ruling over the public space (streets, building façades, building size, infrastructures) and the general quality (in terms of ventilation and lighting) of the dwelling interior spaces. The same occurred in the French context, where the central and local authorities managed carefully the balance between the private initiative and the public interests, avoiding restraints in private investment (Moley 1998, 22).

Oporto has its own specificity regarding collective dwelling. It's a phenomenon that occurred only in the 1st half of the 20th century, first with the over occupancy of single-family structures. Around the 20s, new housing structures began to be constructed, which building regulations had necessarily to control and supervise.

Although we're analyzing a short period of time (1925-1957) it's a relevant specific historical period, between the appearance of the first new collective housing buildings and the settling of some models/typologies in the early 60s (Barata 1999, 238-241). At the time, it's also relevant that the Oporto's city image was changing, as "modern" buildings (at least engaged with sanitary rules) started to appear, exhibiting their large façades and "updated" floor plan typologies. In our perspective, these typological and morphological changes can be related to several factors besides legislation. But in the long run, it's a fact that some specific rules had severe conse-

quences in this transformation process. Considering the content and scope of activity of those regulations, it seems important to understand and discuss their effective impact in collective housing production.

Table 2. Synthesis of the main regulations approved in Oporto between 1869 and 1957.

Oporto	
1869	<i>Código de Posturas do Município (Acordão do Conselho de Distrito de 4-3-1869)</i>
1889	<i>Código de Posturas do Município</i>
1901	<i>Regulamento Geral de Saúde</i>
1905	<i>Código de Posturas do Município do Porto (Edital de 11-2-1905)</i>
1915	<i>Regulamento da Comissão de Estética da Cidade</i>
1919	<i>Regulamento do Município do Porto relativo à Instalação do Saneamento</i>
1924	<i>Postura sobre obras particulares na Cidade</i>
1925	<i>Regulamento da Comissão de Estética da Cidade</i>
1929	<i>Regulamento de obras particulares na cidade do Porto (Edital de 28-1-1929)</i>
1929	<i>Distâncias entre prédios contíguos (Edital de 24-5-1929, modificado por proposta de 14-7-1938)</i>
1929	<i>Regulamento para a Instalação do Saneamento Urbano da Cidade do Porto</i>
1929	<i>Regulamento para o abastecimento e consumo de água (Edital de 28-10-1929)</i>
1930*	<i>RGCU - Regulamento Geral da Construção Urbana para a Cidade de Lisboa (Edital de 6-12-1930)</i>
1941	<i>Varandas envidraçadas nas traseiras de prédios (Proposta de 14-8-1941)</i>
1941	<i>Ligação dos prédios urbanos aos aquedutos de águas pluviais (Edital n° 9/41, de 21-8-1941)</i>
1943	<i>Regulamento do Serviço de Saneamento da Cidade do Porto (Portaria de 29-11-1943)</i>
1943	<i>Instalação de elevadores em prédios (edital n° 9/43, de 26-5-1943)</i>
1944	<i>Regulamento sobre construção civil na parte referente à defesa contra incêndios (Edital n° 6/44, de 14-3-1944)</i>
1944	<i>Regulamento dos Serviços de Abastecimento de Água à Cidade do Porto e Concelhos Limitrofes (Portaria de 4-9-1944)</i>
1956	<i>RPRCP - Regulamento do Plano Regulador da Cidade do Porto (Separata do Boletim Municipal n° 1036, de 18 de Fevereiro de 1956)</i>

\* Lisbon specific regulation. Just for reference.

### 3 THE NORMATIVE DISCOURSE AND THE COLLECTIVE HOUSING IN OPORTO

Let us focus on two architectural aspects that are relevant in the design of Oporto's urban housing in the 1st half of the 20th century: the small inner yard - a ventilation/lighting enclosed area placed inside the building (Fig. 5), and one of the building's main dimensions: its depth.

The normative discourse around these subjects does not express itself equally in Oporto and Lisbon, despite of RSEU (1903) and RGEU (1951) being common regulations. The Lisbon's RGCU (1930) and the Oporto's RPRCP (1956), introduced important specifications to national regulations, that had effect only on their specific context of application.

The small inner yard, or just yard as it was called, was a permitted enclosed area in both RSEU and RGCU. In this last document, the restrictions were stricter in terms of dimensions and areas than in the first one, following the normative references of the Parisian legislation.

In RGEU, the small inner yard disappears from the normative vocabulary (references only to street, courtyard and backyard) and procedures were introduced that largely inhibited the use of this architectural element (but not with a textual prohibition). The authors Agarez (2009) and Reis (2009) have recently discussed the implications of these regulatory changes in the Lisbon context, namely the proliferation of buildings with irregular posterior façades, which tried to "open" the inner yards and therefore circumvent the stricter ruling concerning this sort of spaces. These authors express opposite perspectives towards the usefulness and value of the small inner yard in the design of urban housing. Agarez argues that already in the 50s, buildings with irregular posterior façades or inner aeration yards were outdated, while Reis explores the advantages of contemporary recovery of the small inner (open or closed) yard, acknowledging the added value of typological models that made use of it.

In Oporto, we don't find neither echoes of this current discussion, nor detailed studies on the use/reinterpretation of the small inner yards on new buildings (at least, while it was possible to make use of them). The only perspicacious clue seems to be given by F. Barata referring to the transformation of existing buildings, in the beginning of the 20th century. He alerts about the consequences of the pure and simple prohibition of the small inner yard in Oporto, implicitly mentioning the RPRCP's 31st article (Barata 1999, 246):

*"Article 31 - In new buildings intended for housing, small inner yards are not allowed.*

*§ Single - By small inner yard is meant a space enclosed by four walls; when one side is the contiguous property boundary it will be considered as a façade."*

This article seems to clarify the ambiguities found in the RGEU of 1951, which permitted architects and constructors to build small inner yards in new buildings, stating exceptional circumstances. For instance, the "Building of Foz" designed by architect Fernando Távora, and licensed in 1954, has a small inner yard for kitchen's ventilation, making use of exceptions tolerated by the 71st Article of RGEU (Fig. 6, LO 0094/1954).

Having as framework the Parisian housing buildings, C. Moley demonstrated that small inner yards gradually disappeared not by the constraints of regulations, but simply because the designer/builder needed its area. The author documented this progressive phenomenon, stressing how the small inner yard was increasingly used to ventilate only toilets, being recurrently located at the bottom of the apartment, and step by step being reduced up to become a conduit/shaft (Moley, 1998). In France, the "typological leaps" are not as evident as in Oporto, given the much older tradition in rental housing building (a reality that dates back to the 18th century).

It is a fact that before the RGEU of 1951, and the peremptory RPRCP of 1956, it is possible to find buildings with or without small inner yards (Figs 6, 7). The reasons to include these enclosed areas are among several: the plot's width and the building's maximum depth (and therefore maximum profitability), the owner's preferences and the architect/constructor's references (and their ideal way of life representation). The dimensions of the small inner yards are also extremely diverse, and not strictly following the minimum stipulated by regulations, which indicates some sort of freedom.



Figure 5. Closed small inner yard in an Oporto building built in the mid 40s.

Table 3. The small inner yard.\*

Regulation	Kitchens	Toilets, stairs, galleries
RSEU (1903)	9 square meters	4 square meters
RGCU (1930)	1/4 of the façade height (width) 2,5 meters at least**	1/6 of the façade height (width) 2 meters at least**
RGEU (1951)	1/2 of the façade height, measured from the apartment floor (width); 3 meters at least***	
RPRCP (1956)	not permitted	not permitted

\* Minimum dimensions/area

\*\* Kitchen and one bedroom

\*\*\* Inner yard permitted as exception.

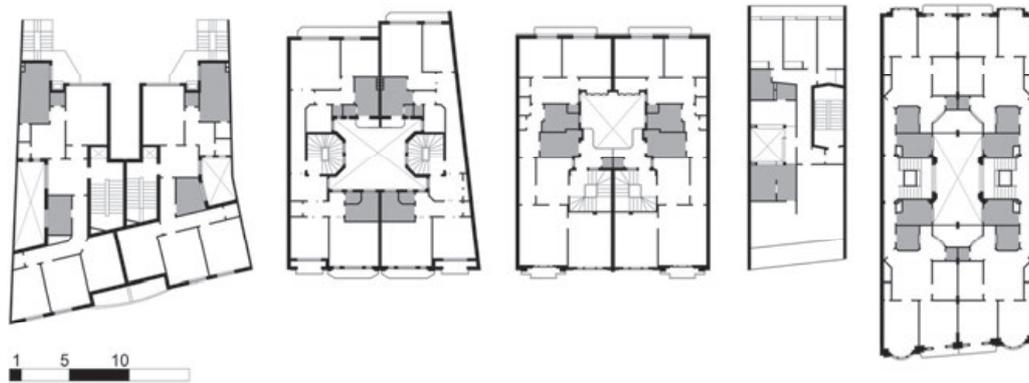


Figure 6. Oporto housing buildings WITH closed small inner yards (some floor plans conceived before 1956). From left to right: LO 1032/1935; LO 1471/1936; LO 0056/1939; LO 0260/1938; LO 0094/1954 - *Departamento Municipal de Arquivos da Câmara Municipal do Porto (DMACMP)*.



Figure 7. Oporto housing buildings WITHOUT closed small inner yards (some floor plans conceived before 1956). From left to right: LO 0400/1939; LO 0055/1939; LO 0090/1937 - *DMACMP*.

The Oporto's banishing of the small inner yard in 1956 was complemented by another restriction that indicated clearly how housing should be built from that point: "*Article 30 - The depth of the buildings that have only two non adjacent façades (front and posterior) must not exceed 15 meters, usually measured from the axis of the street.*"

Both RSEU of 1903 and RGEU of 1951 were quite silent on this subject. In the case of RGEU, the width of the street and backyard were strictly regulated (where the distance between façades should be equal to their height: the "45° Rule"), so the depth of buildings turns out to be a consequence of the street's width, the particularities of the plot, and the configuration allowing more profitability to owners. Nearly the same factors were involved in the option of including small inner yards. Before 1956, this resulted into an extremely variable set of buildings' depths, some of them 15 meters deep, but not by imposition (Figs 6-8, 10).

Shortly before the Oporto's RPRCP of 1956, the Lisbon's legislation also produced regulations that established rules regarding to the building's depth (1955), but always in strict areas (core areas or new avenues), in certain cases requiring the parallelism of the façades.

Oporto's legislation was clearly much stricter. The imposition of a maximum depth, together with recommendations for the alignment of posterior façades (which were not explicit in the Regulation of 1956, but were in fact being implemented by Municipal Services since the 40s in several streets like *Sá da Bandeira* or *Ceuta*) lead to the eradication of typological plans with irregular configurations (Figs 9, 10). The Municipal Services aim was to render hygienic both building and backyards, forcing more compact and aligned buildings, which created obvious difficulties to plots with narrow widths. By regulating and controlling parceled interventions,

the building's shape and enclosed areas like the inner yards the Municipal Authorities were shaping the city, both in a typological and a morphological manner.

Table 4. The depth of the buildings.\*

Regulation	
RSEU (1903)	not referred; restrictions in yards between buildings regarding their height: 18 meters - 30 square meters; more than 18 meters - 40 square meters
RGEU (1951)	not referred; restrictions in yards between buildings regarding their height minimum distance = the building façade height ("45 Rule")
RGPRCP (1956)	15 meters

\* Minimum dimensions.



Figure 8. Oporto housing buildings up to 15 meters deep (some floor plans conceived before 1956). From left to right: LO 0643/1948; LO 0673/1939; LO 0275/1952 - *DMACMP*.



Figure 9. "Compact" Oporto housing buildings (some floor plans conceived after 1956). From left to right: LO 0397/1957 and LO 0016/1958 - *DMACMP*.

#### 4 SOME CONCLUSIONS. THE IMPACT OF REGULATIONS. HYPOTHETICAL TYPOLOGICAL (AND URBAN) CONSEQUENCES

In Oporto, were the regulations the main cause of collective housing's typological change, in the period between the mid 20s and the mid 50s of the 20th century? At this point, we can state that they weren't.

By referring to the French situation, C. Moley proposes releasing the idea of immediate causal relationship between regulations and architectural production. He alerts that architects and house builders are vehicles of a shared culture assimilated over a long period of time (consciously or unconsciously). This phenomenon is more connected to an "inherited culture", with particular "principles" and "codes", then with a set of constraints (Moley 1998, 271). This author also points out that throughout history, no decree on building's regulation has focused on the distribution of floor plans, so it seems abusive to see in the regulations the main cause of the fixation of certain typological models or specific floor plan organizations.

These assumptions are essential to understand the production (transformation and adaptation) of some housing types and typologies. They are verifiable in Oporto, by observing the diversity of floor plans that were conceived since the mid 30s (Figs 6-10), but it doesn't change the fact that, in certain specific situations, regulations had remarkable consequences in architectural his-

torical practices. According to F. Barata, the proscription of the small inner yard, interrupted historical processes of typological transformation, which used simple elements to adapt the existing architecture to newer conditions, such as the over occupation of single-family buildings. The inner yard permitted the migration of kitchens and bathrooms to the apartment central areas as a permanent solution to the collective housing program (Barata 1999, 245-246).

In our opinion, it also interrupted recent parallel typological experimentation in new building design, leading to the fast disappearance of some types. With respect to the Oporto new housing buildings, the thesis we've tried to suggest (rather than demonstrate) is that prohibiting the small inner yard and limiting the building's depth by regulations enacted in 1956, more than giving rise to evident changes on building types, lead to the impoverishment of architectural design. A building type was being imposed, with regular shape and aeration conduits, on the grounds of "proper lighting and ventilation" of spaces.

Only two building types seemed to succeed in consolidated urban areas, generating several models and different typologies. In large plots the privileged model was the 15 meters deep slab, with regular configuration and compact volume. In narrower plots, which historically had relied in long depth and small inner yards to ventilate the central areas of the apartment, profitability problems naturally occurred. The kitchen's inner location was no longer possible. According to F. Barata, the solution for building in narrow plots was apparently found in the association of two parcels (approximately a 12 meters façade building), with a standard structure of 2 apartments on each story, sharing a common staircase. This solution was widely spread in the 60s, with varying degrees of architectural quality (Barata 1999, 245-253).

Therefore, it represents an enormous reduction of design possibilities, taking into account the typological richness and adaptation possibilities of floor plan designs that can be found from the mid 20s to the early 50s, particularly those that made use of small inner yards and explored the association of several housing units.

This is where we consider the Regulation of 1956 a "shortsighted" instrument, transforming a "demanding framework" into a prescriptive one. This doesn't mean that regulation changes can't generate typological innovation. The emergence in Lisbon of buildings with open posterior yards (*redentes*) in the 30s was a manifest way to overcome stricter rules on inner ventilation yards, imposed by the RGCU. The Lisbon's house builders were clearly following the solutions presented by the French building tradition, which was an historical important reference.

It is a fact that the Oporto's regulation of 1956 was imposing building types, but neither this document nor RGEU addressed restraining decrees about floor plan disposition. Therefore it's unlikely that these regulations are the only justification to the typologies similarities that were becoming ordinary: more compact plans, simplified household and aggregation of bedrooms/bathrooms at one side and kitchen/living room at another.

In this line of ideas, it seems important to transpose the warning of C. Moley to the Portuguese reality: the (contemporary) argument that the continuity of some housing models/typologies and their uncritical reproduction is the result of the growth of regulatory restrictions it's a misjudgment. The consolidation of certain building types or typologies is the result of the slow process of architectural, social and economic validation of shared inherited logics (i.e. a cultural process). Consequently, the transposition and revision of depleted models/typologies will have to naturally fit into these long-term cultural processes, and it's unlikely that the solution can be proposed or imposed by regulations of any kind.

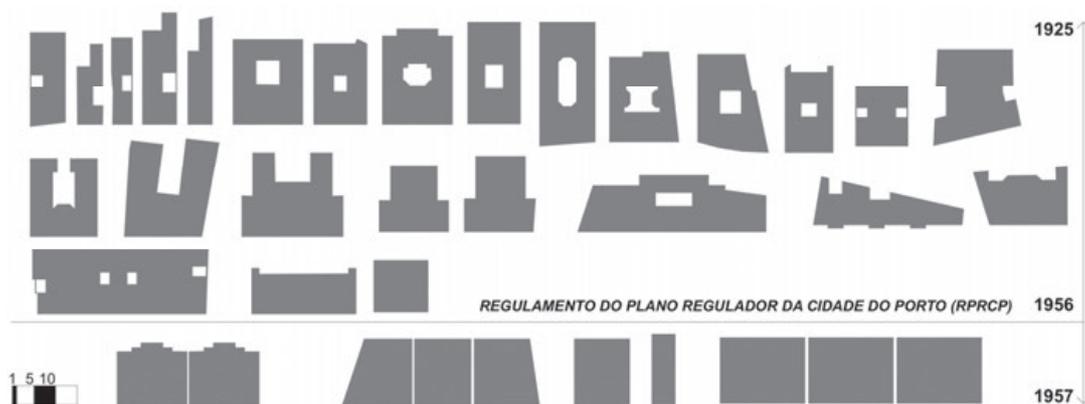


Figure 10. Buildings between party walls conceived between 1925 and 1957. Some examples.

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#### FIGURE REFERENCES

Figures 1 – 4: photographs from the archives of *Centro Português de Fotografia/DGARQ/MC*.

Figures 5 – 10: author's photographs and representations concerning licensing floor plan drawings, held by the Oporto Municipal Archives (*Arquivo Histórico e Arquivo Geral da Câmara Municipal do Porto*).

