The notion of limit in architectural theory.
Two case studies in Portugal

La noción de límite en la teoría de la arquitectura.
Dos casos de estudio en Portugal

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Abstract

Modern Portuguese architecture has been seen as the result of an eminently empirical and intuitive practice, dissociated from any effort of theoretical structuring. This paper intends to contradict that predominant view, presenting the notion of spatial limit as a subject that earned particular consideration from a younger, more critical and intellectually demanding generation of architects. Firstly, it introduces two notions directly related to limit - 'extensions of the dwelling' and 'transition-space' - presented in theses by Nuno Portas (b. 1934) and Pedro Vieira de Almeida (1933-2011) respectively, two highly innovative works in the academic panorama of early 1960s. Next, it focuses on the fundamental role each of the notions taken in investigative works that are parallel in time but substantially different. The first, *Habitação evolutiva,* is a typological study reflecting the spirit of its time by claiming the 'right to the city' as the founding principle of a model critical of CIAM urbanism. The second is an essay stemming from a critical reflexion on the work of an eclectic architect that eludes categorization (Raul Lino, 1879-1974) which sheds light on the need for a critical approach to the history of modern architecture.

Keywords

In-between, transition-space, semi-public, semi-exterior, porch.

Resumen

La arquitectura moderna en Portugal ha sido interpretada como el resultado de una práctica eminentemente empírica e intuitiva, aislada de cualquier esfuerzo de estructuración teórica. Este artículo tiene como objetivo contrarrestar esta lectura dominante, presentando la noción de límite espacial como un tema que ha recibido especial atención de parte de una nueva generación de arquitectos más crítica e intelectualmente exigente. En primer lugar, introducimos dos nociones directamente relacionadas con el límite – 'extensiones de la vivienda' y 'espacio-transición' – presentadas respectivamente en las tesis de Nuno Portas (n.1934) y de Pedro Vieira de Almeida (1933-2011), dos trabajos innovadores dentro del panorama académico de principios de la década de 1960. A continuación, analizamos el papel fundamental de cada una de las nociones en dos trabajos de investigación coetáneos, pero en esencia muy diferentes. El primero, *Vivienda evolutiva,* es un estudio tipológico que refleja el espíritu del tiempo al reivindicar el 'derecho a la ciudad' como principio básico de un modelo crítico con el urbanismo de los CIAM. El segundo es un ensayo teórico sobre la obra de un arquitecto ecléctico y de difícil clasificación (Raul Lino, 1879-1974) que pone en evidencia la necesidad de un enfoque crítico a la historia de la arquitectura moderna.

Palabras clave

Espacio-intermedio, espacio-transición, semipúblico, semiexterior, porche.

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[Fig.1]. Scheme by Alison and Peter Smithson on the streets of Bethnal Green: the street as social 'arena'. Source: Smithson, Alison, ed. 1967. *Urban structuring.* London-New York: Studio Vista-Reinhold Pub.

Yards

terrae house

street

arena space

terrace house

yards
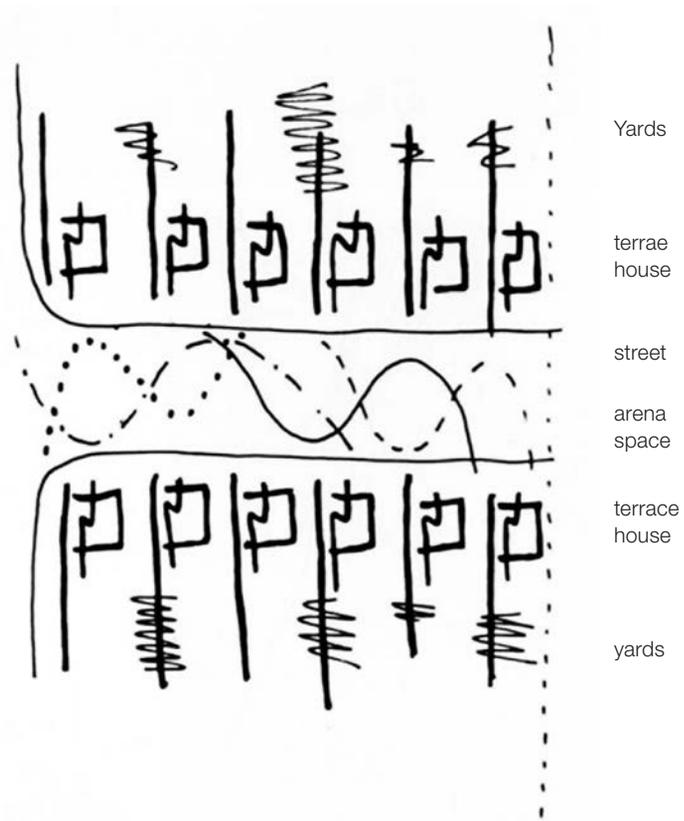
1   'The greater reality of doorstep,' an expression that synthesized a confluence of interests within Team 10 from that point, was suggested for debate at CIAM X along with two other issues: 'growth and change' and 'the aesthetics of number'. See Francis Strauven, *Aldo van Eyck. The Shape of Relativity* (Amsterdam: Architectura & Natura, 1998).

2   Aldo van Eyck, "Is architecture going to reconcile basic values?"/"Children's Home, Amsterdam", in *CIAM'59 Otterlo: group for the research of social and visual inter-relationships,* ed. Oscar Newman (London: Alec Tiranti, Ltd., 1961), 26-35. Aldo van Eyck indistinctly uses the terms 'dual' and 'polar'; however, we feel the latter expresses more rigorously the idea of complementary phenomena: the term 'dual' implies incompatible categories of relation, while 'polar' refers to opposing categories understood within harmonic unities. This differentiation is essential to accept the idea that 'space is not homogeneous' in criticising modern architecture (indeed, this clarification was present in Pedro Vieira de Almeida's rebuttal of the Gestalt visual theories). See Nold Egenter, "L'ici domestique et l'au-delà imaginaire: Une typologie anthropologique des conceptions de l'espace", in *Figures architecturales. Formes urbaines*, Pierre Pellegrino (Geneva: Anthropos, 1994), 303-32.

3   Alison Smithson, ed., *Urban structuring* (London-New York: Studio Vista-Reinhold Pub., 1967), 15.

4   van Eyck, "Is architecture going to reconcile…", 27. With this he confirms his interest in the relation between architecture and anthropology in the search for the essence of architectural gesture. In this case, he rediscovers founding theories in the field of anthropology, amplifying their meaning and complexity from the point of view of architecture. See Arnold van Gennep, *Les rites de passage: étude systématique des rites* (Paris: A. & J. Picard, 1981[1908]).

Introduction

At CIAM IX in Aix-en-Provence, Alison and Peter Smithson approached the subject of urban design through four dimensions of human association: house, street, district and city. Between the first two a fundamental question was raised: when man steps outside his dwelling, how does this contact between the individual and the collective take place? The term coined by the Smithsons, *doorstep*, became imprinted in Aldo van Eyck's mind to a point where he reframed it and presented it as one of the main issues to be discussed by the participants of CIAM X.[1]

Later, in Otterlo, Aldo van Eyck enounced a theory for the first time that amplified the meaning of intermediate space. In his words, to define that space, the *in-between*, implied a reconciliation of 'conflicting polarities' and a reestablishment of 'original dual phenomena' (part and whole, individual and community, interior and exterior…).[2]

Both the Smithsons and Aldo van Eyck supported their first intuitions in examples of popular or vernacular architecture that they were well acquainted with. The workers housing in Bethnal Green, London, provided the Smithsons with an example of a balanced equilibrium between house and street. Composed by about forty to fifty units facing a common area, the streets were, in their words, 'arenas for social expression' with a strong sense of security and emotional bond[3] [Fig. 1]. As for van Eyck, his interest in primitive culture led him to visit the Dogons of Mali and the Zuni pueblos in America in 1961 and 1962, where he took notice of the organic and anthropomorphic features of a vernacular architecture that seemed to address his own aphorism on the in-between: 'Man still breathes both in and out. When is architecture going to do the same?'.[4]

The rediscovery of spontaneous architecture, be it anonymous or without architects,[5] constituted a widespread reaction to the post-war crisis of modern architecture, attracting northern and southern European architects. The most influential publications of Italy, Spain, and Portugal, issued articles and, sometimes,

entire sections on the subject. In Portugal, interest in 'authorless' architecture grew with the support of investigative work that sought a survey of the situation of the national territory through more or less exhaustive field work. Books such as the *Inquérito à Habitação Rural*, by the agronomists Lima Basto and Henrique de Barros,[6] *Portugal, o Mediterrâneo e o Atlântico* (1948), by the geographer Orlando Ribeiro, *As Mulheres do Meu País,* by the journalist and political activist Maria Lamas,[7] or the work of the ethnologist Jorge Dias, made way for the implementation of a survey of vernacular architecture with the coordination of the National Union of Architects (SNA, 1955-58) and the subsequent publication of *Arquitectura Popular em Portugal* (1961).

These works were influential for the generation that was by then leaving university in a context of a full revision of the Modern Movement, igniting interest in a rural Portugal that is noticeable in the CODA[8] by Arnaldo Araújo (in Bragança, 1957), José Dias (in Espinhosela, 1960), Sérgio Fernandez (in Rio de Onor, 1964) and José Forjaz (in Mourão, 1967). They were also subject matters of the first relevant theoretic works developed as CODA: those by Nuno Portas and Pedro Vieira de Almeida. Both their CODA-theses present operative contributions for the notion of spatial and architectural 'limit' and demonstrate their awareness of the debates started by the Team 10.

The 'extensions of the dwelling' and the 'transition-space'

Nuno Portas' thesis, presented in March 1960, constitutes a methodological study on collective housing. With the title 'A habitação social. Proposta para a metodologia da sua arquitectura',[9] the main body of the work consists of an in-depth analysis of multifamily typologies divided into two sections, 'the design of the ensemble shape' and 'the internal organization of the family cell'. The common thread of the argumentation evolves from the public exterior space to the private space of the house, closing with the return outside, in the author's own words 'the final issue facing a social notion of housing'.[10] It was in this context that Nuno Portas developed the notion of 'extension of the dwelling'.

The term, already used by Le Corbusier,[11] had resurfaced in the works of his disciples, such as Georges Candilis, and gained relevance in the post-war CIAMs. Nuno Portas adopted it and broadened its meaning by considering that forms of immediate extension of the dwelling (veranda, loggia, patio, etc.) should be differentiated from a wider notion of exterior extension that encompasses the first sphere of sociability outside the family nucleus. In his words, a house that is 'closed upon itself and not organically inserted in a wider setting, is an amputated house, where most of the functions of the habitat cannot properly take place'.[12] His notion of *habitat* was therefore connected to a wider meaning of 'extension of the dwelling': the exterior space, shared by several families and humanized by the presence of children, that surrounds the building and connects with the city. In that sense, Portas emphasized the importance of carefully kept surroundings, where children can circulate freely and safely, with no car traffic and visible from the day areas of house, as a compensation mechanism for a policy of 'minimum dwelling'.[13]

At this point in his thesis, Portas adopted a strategy similar to that of the Smithsons' 1953 grid on the four dimensions of association:[14] using the working classes and particularly children as an example. Critical of the SNA's survey for its favouring of the rural over the urban, Portas visited several examples of workers housing in Lisbon [Fig. 2], such as the 'vila' in Rua D. Maria Pia [Fig. 3], where the inhabitants reiterated their preference for patio schemes 'because of the children and the liveliness'.[15] From his point of view, the 'permeability between inside and outside

5   'Architecture Without Architects' was the title of the MOMA exhibition (November 1964 – February 1965) and catalogue, both developed by Bernard Rudofsky.

6   Published in three volumes between 1943 and 1947. The 3rd volume was prohibited by the state censorship.

7   Published in booklets between 1948 and 1950.

8   'Concurso para a Obtenção do Diploma em Arquitectura', the final step of the Fine Arts degree in architecture.

9   'Social Housing. Proposal of a methodology for its architecture.'

10 Nuno Portas, *A habitação social. Proposta para a metodologia da sua arquitectura, Vol.I* (Porto: FAUP Publicações, 2004), 169. [see original 1959 document: https://repositorio-tematico.up.pt/handle/10405/48149]

11 See Le Corbusier, *La Maison des Hommes* (Paris: Librairie Plon, 1942).

12 Nuno Portas and Nuno Teotónio Pereira, "Habitação", *Jornal Encontro* 21 (1959), 6.

13 Portas, *A habitação social, Vol.I,*173.

14 'Urban Re-identification grid', presented at CIAM 9 in Aix-en-Provence.

15 Portas, *A habitação social,Vol.II.* Handwritten note on file no. 101, about the workers housing in Rua D. Maria Pia, Lisbon.

16 Portas, *A habitação social, vol.I,* 174.
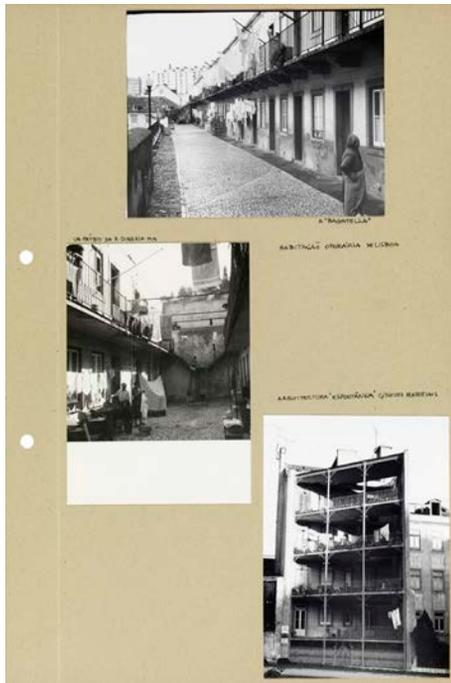
[Fig.2]. Photographs by Nuno Portas of workers housing in Lisbon: in the centre, the 'vila' on Rua D. Maria Pia. Source: Nuno Portas / Calouste Gulbenkian Foundation, Fine Arts Section, folder 00848.
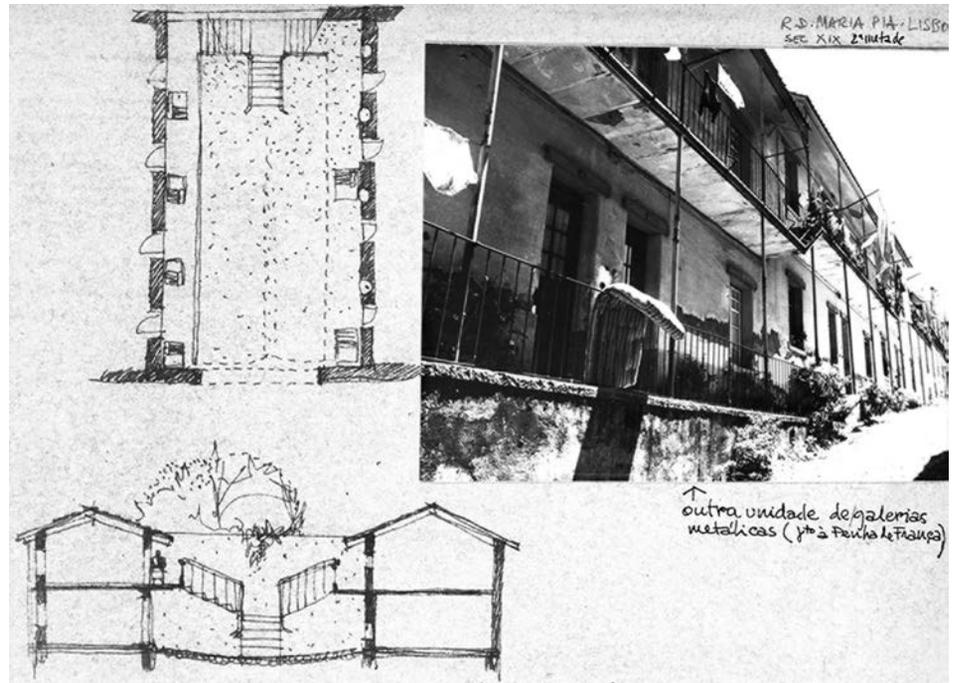
[Fig.3]. Study file by Nuno Portas on the 'vila' in Rua D. Maria Pia, with a collage of workers housing near Penha de França, Lisbon. Source: Nuno Portas / Calouste Gulbenkian Foundation, Fine Arts Section, folder 00848.

living'[16] is what truly defines the popular perception of the house. It is also what justifies his interest in the 'extensions of the dwelling' developed in continuity with the surrounding urban fabric, where the limits of public and private, as well as those of class situation itself, are diluted.

This social view is also present in the reconsideration of the vertical surface as one of the most important elements of housing, following the works of Le Corbusier and Georges Candilis. Besides the aesthetic value and the adaptation to local climate, the reticulated alveolar structure allowed for the individualization of each cell. Portas valued this liminal space both for its functional extension (play, conviviality, laundry) and its ability to convey the multiple 'habits and tastes' of the users. In this sense, he noted that its design would be as much effective as it promoted its use and appropriation with planters, curtains and other elements.

In turn, Pedro Vieira de Almeida completed his thesis at the end of 1962, with the title 'Ensaio sobre o espaço da arquitectura'.[17] He proposed resuming the debate started by Bruno Zevi on the protagonism of space in the formal definition of architecture and urbanism. Recovering the argument of space as Zevi had laid down – attaching the best formal contributions to their social content – implied a simultaneous refusal of the 'headlong rush' of technical and formal exploration and the 'strategic retreat' to the fields of sociology, anthropology and political activism.[18]

One of the main contributions by Pedro Vieira de Almeida was the development of series of critical categories that allowed for more rigour in the characterization of architectural space. The overtly insufficient two primary categories – inside and outside –, already suggested by Zevi when analysing the space of St. Peter's Basilica in the Vatican, led him to the development of a third category, the 'transition-space.' Springing from an interpretation that declines the direct transposition of the dual 'figure-ground' logic (Gestalt) to the field of architecture, the 'transition-space' conveys the problem of linking inside and outside and questions one of the modern dogmas: the immediate relation that the 'literal transparency' of the curtain wall intended to establish between those two spheres.[19]

17 'Essay on architectural space'.

18 Pedro Vieira de Almeida, *Ensaio sobre o espaço da arquitectura* (Porto: CEAA, 2013), 22-5. [see original 1962 document: https://repositorio-tematico.up.pt/handle/10405/48199].

19 See Colin Rowe and Robert Slutzky, *Transparency* (Basel: Birkhauser Verlag, 1997). In this edition, note the history of the successive refinement of this 1956 essay by the authors.
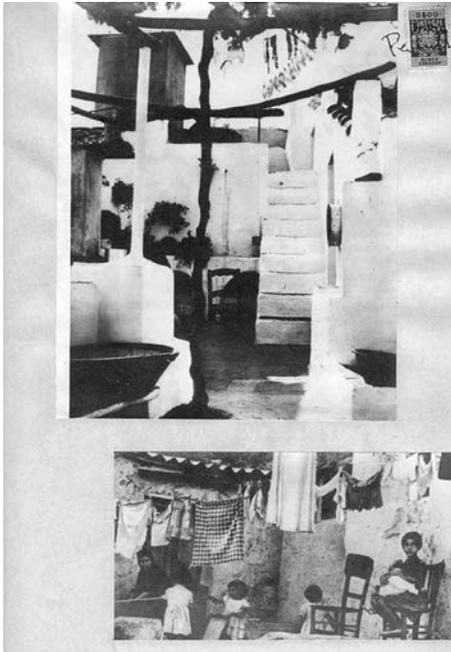
[Fig.4]. CODA by Pedro Vieira de Almeida: above, a patio in Alentejo (from *Arquitectura Popular em Portugal*). Source: Image courtesy of Maria Helena Maia, from Pedro Vieira de Almeida's archive.

Functionally, the 'transition-space' also constitutes a criticism of a stricter functionalism. Vieira de Almeida distinguishes it from other spatial elements by associating it with an *ambiguity of action*, that is, an unprescripted and open use that is not connected to the programme: 'Admitting the existence and need for nuclei, and therefore of action-defining areas, it is precisely where that action is undefined, unguided, that the feeling of ambiguity automatically appears'.[20]

Although he defended a theoretical approach based on the generic characteristics of architectural space, Vieira de Almeida also admitted the usefulness of determining some spatial characteristics within a specific cultural context, namely, the Mediterranean. From Eglio Benincasa's 1955 article 'L'arte di abitare nel mezzogiorno' he retains an important precision: the life in the open air that the meridional inhabitant appreciates is not '*la grand vie en plein air*' that the North longs for, but actually a 'semi-open' protection from the summer sun and the winter wind.[21] In the material collected for *Arquitectura Popular em Portugal,* Vieira de Almeida detected a series of spaces of such characteristics that suggested an 'art of inhabiting' established upon a social life outside, 'where the most care of the spontaneous builder lies'[22] [Fig. 4]. An exterior that matches the intermediate space Benincasa alludes to: 'what is made clear in a perfectly generalizable way, both in the Mediterranean and in the Atlantic area of a typological classification, is the permanence and richness of ways of life to the "semi-open" (...) and therefore the creation of transition spaces'.[23]

By associating the 'transition-space' to a permanence of meridional living, Vieira de Almeida imprints it with a timeless feel, placing it beyond a mere formal device of reaction to the Modern Movement's 'platonic solid' and curtain wall. By recognising that this way of living was still fully valid at the time, Vieira de Almeida caught up with the structuralist views of Aldo van Eyck, who in Otterlo had criticised the obsession of modern architecture with *zeitgeist* and the insistence on what is different in our time, to the point of losing touch with 'what is not different, what is always essentially the same'.[24]

'Evolutive housing' and the broader meaning of exterior extension

Nuno Portas and Pedro Vieira de Almeida both wrote their theses while collaborating in the office of Nuno Teotónio Pereira. The reflexion on 'extensions of the dwelling' and 'transition-space' was transferred to the design process, a fertile ground for experimentation and verification of ideas.[25] Simultaneously, both consolidated those concepts in several articles, reinforcing them with a critical operability that allowed for theoretically consistent research. The examples we will focus on intend to demonstrate how the notion of 'limit' fuelled that research, in the first instance on urban design and in the second on architectural history.

The document *Habitação evolutiva. Princípios e critérios de projectos*[26] (1971), authored by Nuno Portas and Francisco Silva Dias, hinted at a radical solution for the severe lack of housing in Portugal. Part of a series of studies developed at the National Laboratory of Civil Engineering (LNEC) and coordinated by Nuno Portas with the support of a varied team of experts, the document presented the basis for a systematic enforcement of a model of housing alternative to collective vertical blocks: the 'compact horizontal estate' made up of individual houses equipped with basic infrastructure and a primary nucleus, expandable according to the family's needs and possibilities.[27] The patio-house solution, destined for low-income classes that arrived in the city attracted by job prospects, allowed for a qualified yet doable growth of the house over time.

From his thesis, Portas recovered the *concept of the patio-house as a social cell*[28] in which he highlighted that typology's capacity to generate a dense and socially

20 Vieira de Almeida, *Ensaio sobre o espaço da arquitectura*, 70.

21 Eglio Benincasa, "L'arte di abitare nel mezzogiorno: vita all'aperto", *L'Architettura. Cronache e Storia* 2 (1955): 240-44. The article was published in six parts, in the first six issues of the magazine edited by Bruno Zevi.

22 Vieira de Almeida, *Ensaio sobre o espaço da arquitectura*, 93.

23 Vieira de Almeida, *Ensaio sobre o espaço da arquitectura*, 93.

24 van Eyck, "Is architecture going to reconcile…", 27.

25   This issue has already been evoked in: Tiago Lopes Dias, 'O «espaço-transição» no atelier de Nuno Teotónio Pereira: realismo e idealismo na década de 1960', in *Movimiento moderno: patrimonio cultural y sociedad. Actas del IX Congreso DOCOMOMO ibérico* (2018): 134-39.

26 'Evolutive housing. Design principles and criteria'.

27 Nuno Portas and Francisco Silva Dias, *Habitação evolutiva. Princípios e critérios de projectos* (Lisboa: LNEC, 1971), 3.

28 Title of an article published in *Arquitectura* (64, January-February 1959) that reproduced part of his thesis.
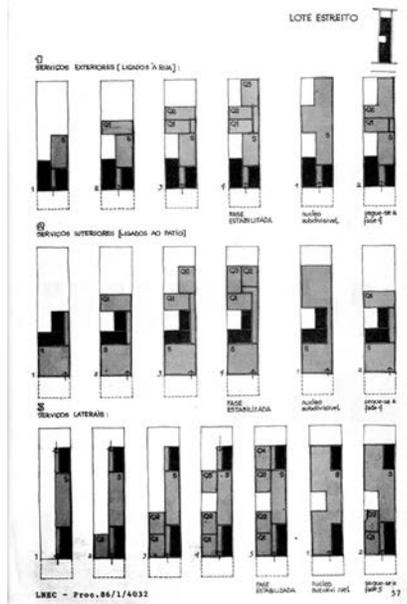
[Fig.5]. A case study in evolutive housing: narrow lot, with access from the street. Source: Portas, Nuno; Silva Dias, Francisco. 1971. *Habitação evolutiva. Princípios e critérios de projectos*. Lisboa: Laboratório Nacional de Engenharia Civil.
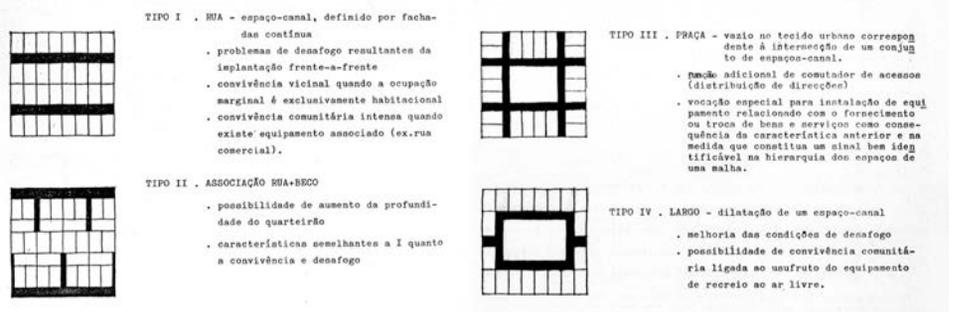
[Fig.6]. Evolutive housing: four basic types of urban space. Source: Portas, Nuno; Silva Dias, Francisco. 1971. *Habitação evolutiva. Princípios e critérios de projectos*. Lisboa: Laboratório Nacional de Engenharia Civil.

lively urban fabric. Building on the precept of the patio as structural and organizing principle of the house, patterns of growth were analysed according to different parameters. The analysis focused particularly on the form and dimension of the lot (with three variations) and on the relation between built volume and free area, also referred to as 'built modules' and 'void modules' [Fig. 5]. The void acquires a fundamental significance in spatial structure, not only in the response to demands of light and ventilation, but mostly as a generator and regulator of house growth. In that sense, the limit between inside and outside is presumed as provisory,[29] to be modelled by the inhabitants themselves according the family's growth and aspirations.

Typological definition considers not only the relation between built area and free area (essential to the evolution of the house), but also the relation between the lot area and the access areas, and rules for lot association, an instrumental aspect of the evolution of these ensembles to satisfactory levels of public equipment and free spaces. In fact, as important as the study of the sequence of evolution within the patio-houses is the study of their forms of association and of physical structures of urbanization, themselves presented as necessarily 'adaptive, (...) designed in such a way that allows for growth, extension and renovation with minimal cost and institutional friction'.[30] Time was incorporated in the house's structure and the house was itself incorporated in a grid that was expected to be densified over time, allowing for a physical and social consolidation of urban fabric.

Seeing as it was a type of operation destined for classes under a process of urban integration, the authors of *Habitação evolutiva* set four basic types of public space (resulting from the association of several types of lot) while introducing variations within them. The basic types are the street, the association of street and alley, the plaza and the square; their combination allows for a fabric of communal spaces in close relation to the patio-houses [Fig. 6]. The introduction of a level of 'intermediary spaces' connected to specific social groups[31] was also suggested, 'a type of urban space characterized by the existence of a free, semi-public area, easily appropriated, to be used by the inhabitants of nearby houses (traditionally identified as "patio" or "vila")'.[32] Portas and Silva Dias expected those forms of popular association to contribute to the development of communal relations and affective bonds, in the same terms as those which the Smithsons identified in Bethnal Green.

We see how the 'extensions of the dwelling' were considered in a broader sense. Besides the use of the patio as an extension of intrafamily life, the document *Habitação evolutiva* analysed the potential for the use of public spaces as living spaces and extra-familial relations, allowing for several gradations: 'at the level of small groups, generated from neighbourly, daily relations close to the house' (street, patio, square), 'at the level of large groups' occasionally gathered or connected to commercial activity (plaza, garden, commercial street), and an intermediate, semi-public level,

29 With the exception of the lot's street front, usually considered stabilized from an early stage.

30 Portas and Silva Dias, *Habitação evolutiva*, 3.

31 From rural or ethnic origins.

32 Portas and Silva Dias, *Habitação evolutiva*, 69-70.

caberia aos habitantes dos fogos circunvizinhos (corresponde na toponí-
mia tradicional ao "pátio" ou "à vila").

A introdução de unidades deste tipo no tecido urbano, pode contri-
buir para vincular os moradores a formas de habitar afectas a um compor-
tamento rural (caracterizado pela apropriação limitada de uma parcela do
espaço da cidade, em confronto com um comportamento dito mais urbano, li
gado ao usufruto do conjunto da cidade) deverá ser informada das circuns
tâncias sociais que podem justificar ou não a sua utilização. É de admi-
tir ainda que, ultrapassados certos estágios de adaptação, os espaços li
vres inicialmente afectos à comunidade vicinal possam vir a ser ocupados
por equipamentos interessando à comunidade urbana contribuindo para a in
tegração dos núcleos de vizinhança no conjunto da cidade.

C - Factores relacionados com a economia de infraestruturas e elementos
envolventes da construção.

As formas de associação de fogos entre si, enfocando, portanto, ago
ra a textura do tecido urbano definido pela malha de distribuição viária
e de convivência, são ainda condicionadas, pela economia das envolventes
(justaposição de empenas e muros-pátio) e pela economia da relação dos
fogos com os acessos que servem de leito às instalações referentes à adu
ção da água, transporte de energia e evacuação de esgotos.
Os tipos de associação que é possível detectar sob esse ponto de vis
ta podem agrupar-se em:

70   LNEC - Proc.86/1/4032

[Fig.7]. Evolutive housing: scheme of intermediate semi-public spaces. Source: Portas, Nuno; Silva Dias, Francisco. 1971. *Habitação evolutiva. Princípios e critérios de projectos*. Lisboa: Laboratório Nacional de Engenharia Civil.

33 Portas and Silva Dias, *Habitação evolutiva*, 69-70.

34 This according to the observations of French sociology, that associated opening housing ensembles to the exterior (to neighbour estates and other parts of the city) with the 'liberation' from a dependence on neighbourly relations, a vital need among lower social classes. See Chombart de Lauwe, coord., *Famille et Habitation, vol. II* (Paris: CNRS, 1961).

35 By considering, on one hand, the compact and horizontal traditional city model and studies on self-construction in informal settlements of Northen Africa and Latin America, and, on the other, studies of French sociologists on the symbolic value of the individual house with garden as a field for appropriation. (e.g. H. Raymond, N. Haumont, M-G. Raymond, A. Haumont, *L'habitat pavillonnaire*. Paris: Centre de Recherche d'Urbanisme et Institut de Sociologie urbaine, 1966).

36 Portas and Silva Dias, *Habitação evolutiva*, 18.

37 Following the ideas of Henri Lefebvre, a referential author for Nuno Portas.

38 Postcard from Nuno Portas to Oriol Bohigas, undated. Bohigas Archive, 'Correspondència' File, year 1970.

39 SAAL – the Serviço Ambulatório de Apoio Local [Local Ambulatory Support Service] – was created by a Nuno Portas dispatch right after the Carnation Revolution of April 25 1974, while he was Secretary of State for Housing and Urban Affairs. It was part of an emergency plan to counter housing deficits in Portugal.

40 See, to this respect, the ideas of Álvaro Siza (leading architect of the S.Victor brigade) in the fundamental text: "L'isola proletaria come elemento base del tessuto urbano / The proletarian 'island' as a basic element of the urban tissue", *Lotus International* 13 (1976): 80-93.

of a limited group that shares a space that is adjacent to their houses [Fig. 7]. In this case, they admitted that once 'certain stages of adaptation were surpassed', the free spaces initially allocated for neighbour communities would be occupied by facilities of interest for the urban community, 'contributing for the integration of neighbour nucleus within the ensemble of the city'.[33] By considering that the urban fabric to be created in a relocation should establish relations of continuity to its surroundings and foresee facilities in a broader network of services, Portas and Silva Dias alluded to the creation of wider spaces of conviviality, associated with favoured social classes and more urban behaviours of use of the city as a whole.[34]

Although the study of evolutive housing is part of a broader picture of critical studies within modern architecture and CIAM urbanism and is a reflection of a paradigm shift in housing that marked the 1960s,[35] it is also the product of a specific cultural reality. In fact, the document established a determined type of social organization that was connected to Mediterranean culture. The authors made this very clear by stating that the solutions presented tended 'to compact ensembles around concentrated public spaces, closer to the tradition of a "system of streets" than to "dispersive free space between building blocks"'.[36] By recovering this model, characterized by the interconnection of street and house and by a communal life developed without accounting for rigid limits between public exterior and private interior, Portas and Silva Dias criticized both the capitalist logic that reduced space to an exchange value, expunging it of its *use value,*[37] and the functionalist logic that eliminated the cultural vector from the organization of the modern city.

To the authors of *Habitação evolutiva*, the Mediterranean model was also useful in face of one of the most relevant issues of their time, the paradox between the permanence of physical structures and the rapid changes in social structures. Defined on a basic level of ways, alignments and typology, their system allowed for flexibility, transformation and expansion, that is, the so valued 'metabolism' of the 1960s. In this respect, a note which Nuno Portas included in a postcard to his Catalan friend Oriol Bohigas at the time the LNEC document was being produced is revealing [Fig. 8]. On the back of a photograph of the city of Olhão, in the Algarve, with the roof terraces and stairs of popular houses in the foreground, Portas added to the image's description the following lines: 'example of evolutive mass housing *avant la lettre,* or how mass architecture is designed through a logical system of typological, architectonic laws, yet open to local and temporal developments'.[38]

The document *Habitação evolutiva* was distributed as a guideline among SAAL technical teams.[39] Although its influence may have been limited, some SAAL's operations denote a synchrony with its generic premises, beyond the evolutive conception of the house. Several teams, particularly the ones that operated in Porto, saw the resettlement operation as an opportunity to rethink the entire network of public and semi-public spaces of the intervention area, located mainly in the historic centre. The operations in Leal, Antas and S.Victor neighbourhoods, to name just a few, were not limited to the morphological definition of the architectural object: the new buildings were integrated in the existing urban tissue through a series of intermediate spaces which connected the interior of the city block with consolidated public space.[40] This approach, considered essential to avoid segregation and strengthen ties between the community, is in line with Nuno Portas' broader interpretation of the 'extensions of the dwelling'.

The 'transition-space', a key to interpreting the work of Raul Lino

Throughout the second half of the 1960s, Pedro Vieira de Almeida developed an intense critical activity that led him to publish articles in several magazines about architecture and art, culture and thought and social and human sciences. This
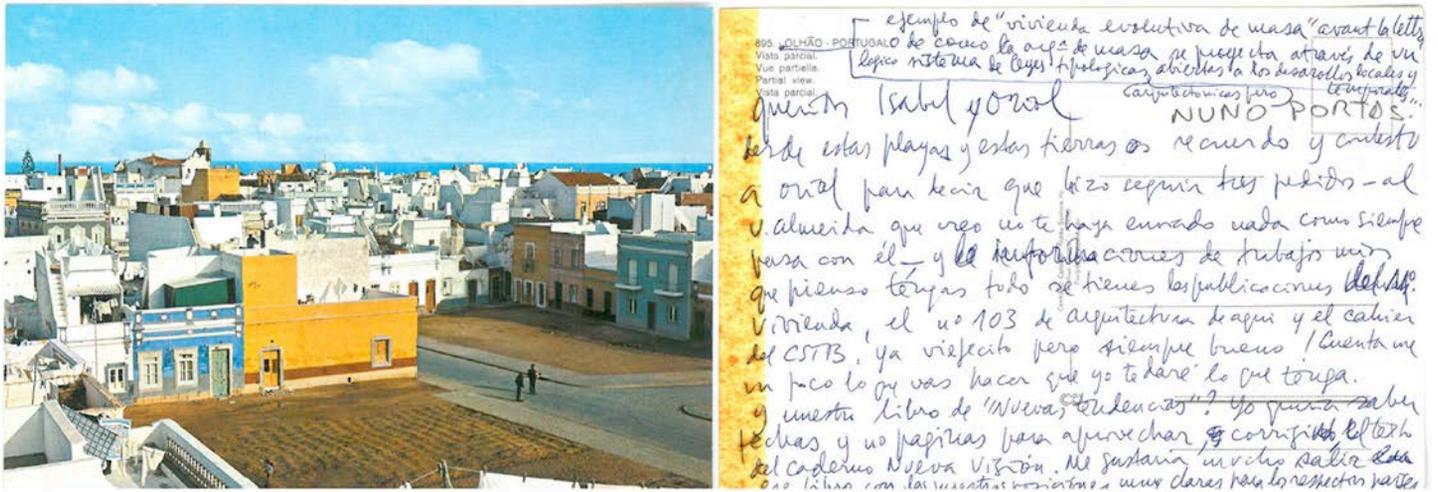
activity must be seen within the context of his approximation to the history of modern architecture in Portugal, of which the first step was the text written for the catalogue of the retrospective exhibition on the work of Raul Lino.[41] By then almost ninety years old, Raul Lino was a controversial architect, considered to be close to the Salazar regime and 'anti modern' by most modern architects.

Provocatively titled 'Raul Lino, arquitecto moderno',[42] the essay by Pedro Vieira de Almeida effectively spearheaded the challenge he had himself set for his professional class: to embark on a 'rereading of the vast work of Raul Lino,' something he saw as the 'obligation' of a younger generation armed with new 'critical and conceptual tools'.[43] With an influential built and written body of work, particularly *A nossa casa* (1918) and *Casas Portuguesas* (1933),[44] Lino was both admired and disavowed exclusively for his formal proposition, an eclectic articulation of popular tradition and elements of conservative erudite European architecture with a strong sense of building pragmatism based on an understanding of Portuguese circumstances. For Vieira de Almeida, a merely syntactical analysis was insufficient to understand Lino's architecture. Instead, his method was founded upon a spatial analysis, even if the author at stake did not coherently isolate a 'critic concept of space' and, when feeling the need to do so, used such vague terms as 'ambiance' and 'picturesque'.[45] Stemming from the critical categories he had defined in his thesis – particularly the 'transition-space' –, Vieira de Almeida highlighted the spatial quality of Lino's houses and their subjacent semantic value, that is, an idea about inhabiting.

For this purpose, some aspects of Raul Lino's education were highlighted in the first part of the essay, such as his stay in Hannover to study architecture with Albrecht Haupt, his integration into certain intellectual circles after returning to Portugal and, particularly, his two travels at the beginning of the 20th century to the Alentejo, in Southern Portugal, and to Morocco. Vieira de Almeida considered both of these travels to have awoken in Lino an interest in meridional architecture and in a particular poetic universe involving a kind of 'Moorish tradition.' On the first travel, made with a notebook to carry out a personal survey, Vieira de Almeida stated that the long 'pilgrimage' across the Alentejo had made clear to Lino 'the formal values of a sun architecture, the subtleties of plays with chiaroscuro, transparencies and reflections of rendered walls, and in a more responsible fashion, the values of inhabiting that such a vocabulary defined'.[46]

In the four houses designed by Raul Lino approximately around the time of the travels to Alentejo and Morocco, Vieira de Almeida identifies a characteristic common thread of *Arab revivalism.* In another instance, he had already noted how that manifestation of a late 19th-century romantic spur would develop later

41 Inaugurated at the Calouste Gulbenkian
    Foundation on October 30 1970, organized by
    Diogo Lino Pimentel with the support of Pedro
    Vieira de Almeida, José-Augusto França and
    Manuel Rio-Carvalho.

42 'Raul Lino, modern architect.'

43 Pedro Vieira de Almeida, "Raul Lino e a
    responsabilidade da nova crítica", *A Capital,*
    November 19 1969, supplement 'Literatura e
    Artes'.

44 Work that would definitively associate the
    author to the ideology and doctrine of the
    'Portuguese House', a reminiscence of the
    nationalist movement of the late 19th century.

45 Pedro Vieira de Almeida, "Raul Lino,
    arquitecto moderno", in *Raul Lino. Exposição
    Retrospectiva da sua Obra,* Almeida, França,
    Pimentel, Rio-Carvalho, coord. (Lisboa:
    Fundação Calouste Gulbenkian, 1970), 148.

46 Vieira de Almeida, "Raul Lino, arquitecto
    moderno", 138.

[Fig.9]. Raul Lino: Monsalvat House, 1901. Source: Almeida, Pedro Vieira de; França, José-Augusto; Pimentel, Diogo Lino; Rio-Carvalho, Manuel, coord. 1970. *Raul Lino: Exposição Retrospectiva da sua Obra*. Lisboa: Fundação Calouste Gulbenkian.
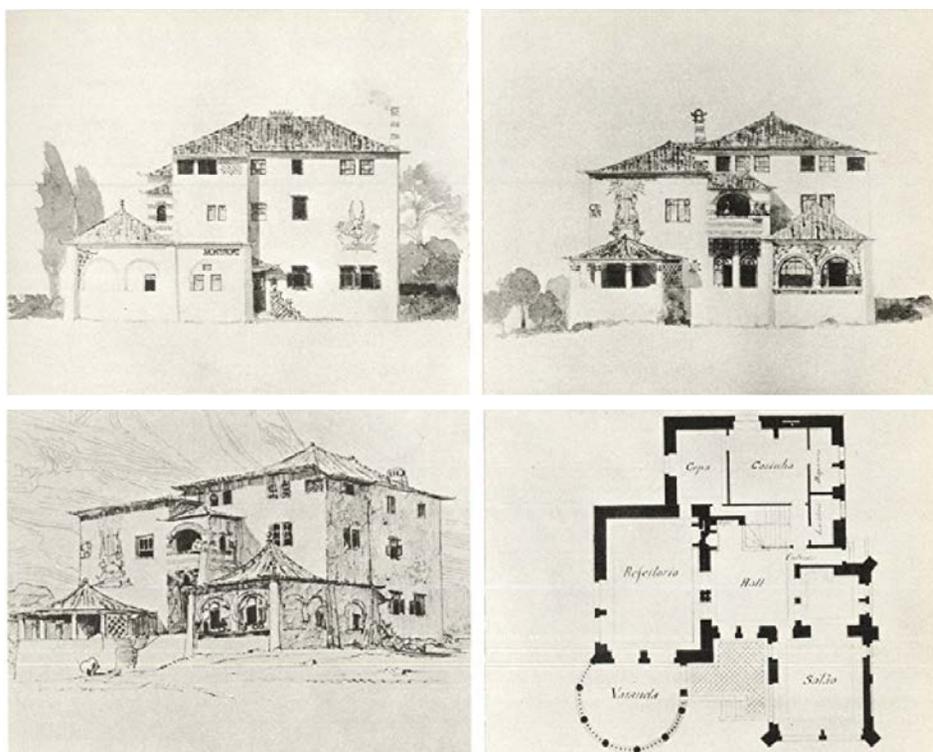
47 Pedro Vieira de Almeida, "O revivalismo árabe e os elementos estruturais da arquitectura", in *Estética do Romantismo em Portugal* (Lisboa: Centro de Estudos do Século XIX do Grémio Literário, 1974), 214. Presentation to the 'Colóquio sobre a Estética do Romantismo em Portugal', May 14-17 1970. See examples such as Villa Kérylos (1902-1908, Beaulieu-sur-Mer, Cap-Ferrat, France) by Emmanuel Pontrémoli (1865-1956) in: P. Pinon, "The architect and the archaeologist: The villa by Emmanuel Pontrémoli for Théodore Reinach", Lotus 60 (1988): 112-27.

48 See Giovanni Pirrone, *La Tradizione Europea dell'Abitazione* (Università di Palermo, 1961).

49 Vieira de Almeida never advocated such a path, as he made clear in the following passage: 'The risk of the nationalist position is clear: the possibility of creating a shell of immobility, that controls and gauges, with a subtle understanding, the gradual awareness by popular masses, in the name of principles that by historical coincidence are always comfortable for the dominant elites…'. Vieira de Almeida, "Raul Lino, arquitecto moderno," 126,128.

50 See the lecture given by Raul Lino in Brazil, "Casas Portuguesas do Século XVIII" (June 4 1935), successively resumed in his work and published in *Auriverde Jornada: recordações de uma viagem ao Brasil* (Lisbon, 1937). On this topic, see: Marta Rocha, "O Valor do Tempo: o Programa Intelectual e Arquitectónico de Raul Lino" (PhD thesis, Faculty of Architecture, University of Porto, 2016).

51 Vieira de Almeida, "Raul Lino, arquitecto moderno". Recalls that Raul Lino 'studies' Portugal through Albrecht Haupt, a scholar of Portuguese architecture who published a book on the architecture of Renaissance in Portugal.

52 One of four houses designed around the time of the travels to the Alentejo and to Morocco: Monsalvat (1901), O'Neill (1902), Silva Gomes (1902) and Tânger (1904), known as 'Moroccan Houses.'.

53 Vieira de Almeida, "Raul Lino, arquitecto moderno", 140.

on the possible characterization of meridional life;[47] it was set apart from other tendencies by not limiting itself to the formal and exterior aspects of the 'object' but instead constituting a 'spatial proposal' and even a way of living, in which he found similarities to the works of Eglo Benincasa and Gianni Pirrone.[48] In a way, the thesis enunciated by Vieira de Almeida throughout the essay on Lino sets out from the realization that Arab revivalism, while a manifestation of the romantic spur and its inherent nationalist intellectual movement, was an ignored path to a 'national response in architectural terms',[49] although it contained the fundamental elements of architecture and was materialised in the first works by Lino.

According to Vieira de Almeida, by interpreting light modelling and traditional southern spaces, Raul Lino was able to match his architecture to the cultural and geographical reality of the Mediterranean area of influence. At the same time, Lino pedagogically developed a national path in architecture based on values he discerned in manor houses[50] and popular 'provincial' houses which he tried to reclaim in the context of a 'possible Portugal, or the idea he had of it'.[51] Vieira de Almeida maintains that Lino's programme was structured on *ecological bases* relative to *spaces for living*, more than on formal bases.

Vieira de Almeida demonstrates how the 'transition-space' is a permanent architectural element in the work of Raul Lino. The importance of atriums and covered verandas (porches) in spatial organization and ambiance qualification in Lino's houses is underlined in several parts of the essay, such as the following passage on the 1901 Monsalvat house[52] [Fig. 9], clearly stating the method of analysis:

> "The intimate care in shaping the light through externally projected lattices, the use of tiles for semi-external ambiances such as the atrium, and all of its organization underlining this intention, the porch that suggests another level of transition space, the way the windows *observe* the landscape and frame it, the coherently intimate scale (…) contribute to this being one of the most successful and perfect of Raul Lino's works".[53]

Vieira de Almeida assigns to these two elements – atriums and porches – a fundamental role for a feeling of 'welcoming' and 'shelter', values which he highlights in the work of Raul Lino and which relate directly to the notion of limit. However, this limit is not defined as an unequivocal confrontation between two opposing realities (a hostile outside and an inside that greets and protects, in the
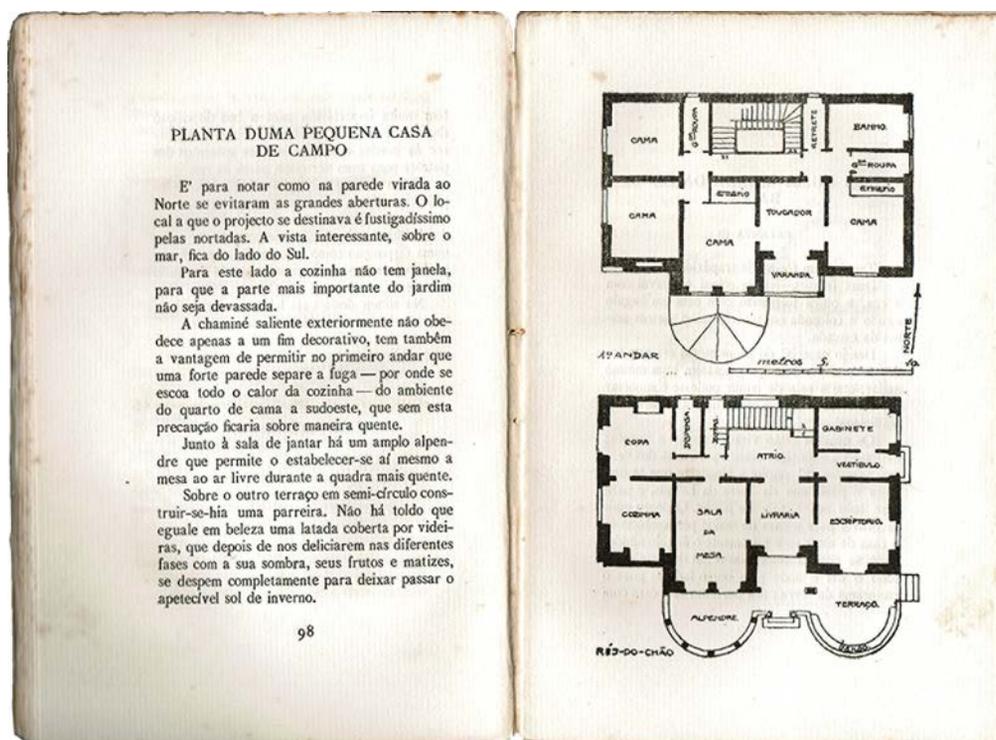
[Fig.10]. Raul Lino: design for 'a small country house' with atrium, porch and terrace adjacent to dining room, library and office. Source: Lino, Raul. 1918. *A nossa casa. Apontamentos sobre o bom gosto na construção de casas simples.* Lisboa: Ed. Atlântida.

sense that Heidegger, Bachelard and Bollnow had defined inhabiting); instead it shapes an ambiguous coexistence of two contrary, yet complementary, realities. The reference to the atrium designed as an 'outwards interior space' and the porch as an 'inwards exterior space'[54] underlines that view and brings the interpretations of Vieira de Almeida and Aldo van Eyck closer together. It is not about *seeing* the exterior from the interior (or the interior from the exterior), but to simultaneously feel both in the same space.

Vieira de Almeida also highlighted the malleability of uses of atriums and porches, for the position they hold in the structure of Lino's houses. By setting privileged connections with the main rooms, he notes, they boost their spatial coordination and functional extension, contributing to that distinctive aspect of transition spaces, the *ambiguity of action* [Fig. 10]. The values Vieira de Almeida associated with the use of these semi exterior and semi open spaces are perhaps those of the bourgeoisie that owned them, which he associated with a 'relaxed and tasteful lifestyle, from a period when there was time for relaxing and tasting'.[55] Raul Lino himself had upheld such values in his books, stating that his advices was intended for those who hoped to 'leisure themselves with spiritual occupations', and not to those who 'live a hotel life inside their own home'.[56] Lino's programme was perhaps an *elite programme,* with nationalist streaks, yet Vieira de Almeida reminds us that the option made viable after the end of the First World War – a 'liberal bourgeois internationalism' – was no less elitist, with the aggravating factor of social and cultural disengagement.

The essay by Pedro Vieira de Almeida was written at time of criticism of the rational and functional architecture of the modern movement which started in the 1960s and predates the so-called 'postmodernism'. That criticism focused mostly on the need to adapt architecture to local reality, both technologically and technically, but also geographically and culturally. The resistance by Raul Lino (and many others of his generation)[57] to any internationalist adhesion is seen, in this context, as an almost visionary gesture. The formal principles of modern architecture, set by a central European elite, would reveal themselves to be dramatic when adapted to a Southern climate and traditional construction techniques that would prevail until the end of the 1950s. Large glass panes and the continuous reduction of wall and roof

54 Vieira de Almeida, "Raul Lino, arquitecto moderno", 160. Vieira de Almeida demonstrates how Raul Lino understood the porches as a 'problem of space,' for the proportion set between the height of the roof and the depth of the veranda and the luminous ambiance he intends to fixate with the use of ceramic materials such as tile.

55 Vieira de Almeida, "Raul Lino, arquitecto moderno", 160.

56 Raul Lino, *A nossa casa. Apontamentos sobre o bom gosto na construção de casas simples* (Lisbon: Ed. Atlântida, 1918), 24.

57 See Luis Soares Carneiro, *Casas Ermas: a arquitetura dos irmãos Rebelo de Andrade e os discursos do moderno* (Porto: Fundação Marques da Silva, 2016).

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Cartografías del límite
Mapping the boundaries

TIAGO LOPES DIAS
RUI JORGE GARCIA RAMOS

The notion of limit in architectural
theory. Two case studies in Portugal

La noción de límite en la teoría
de la arquitectura.
Dos casos de estudio en Portugal

thickness and of column profiles completely changed the notion of limit between inside and outside. The revaluation of 'transition spaces' in the work of Raul Lino enhanced the timeless qualities of an architecture that assimilated from popular tradition the distinct gradations and shades of light and temperature introduced between the interior and the exterior through the creation of semi-open living spaces with no functional separation.

Pedro Vieira de Almeida acknowledged that, in the work of Raul Lino, the *expressive strength of syntax* had obfuscated *latent semantic concerns*. Concerns that were set on *ecological bases* not so much on the terms of adaption of houses to the climate as on the way of life they fostered: to inhabit the diffuse limit between inside and outside, architecture and nature, shelter and adventure.

Conclusion

The theses presented by Nuno Portas and Pedro Vieira de Almeida are amongst the first theoretical works accepted as CODA in the Fine Arts School of Porto. Its importance has been recently emphasized by several scholars.[58] Certainly, one of the most distinctive aspects of both theses is to put forward critical tools such as 'extensions of the dwelling' and 'transition-space'. The two case studies presented (*Habitação evolutiva* and 'Raul Lino, arquitecto moderno') allow us to see how such critical tools, closely related with the notion of limit, are applied in research with very different objects of study. Both works, however, share some common threads, such as a structuralist vision concerning a reading of the characteristics of territories of Mediterranean influence and an open, non-prescriptive and operative use of theory, which fosters strong relations with the fields of design, criticism and history.

In 1961, two years after completing his thesis, Nuno Portas joined the LNEC to lead a project of inquiry into state-subsidized housing complexes. Considered as a fundamental basis for a more realistic study on economic housing, this fieldwork was the beginning of a research programme that culminated in the document *Habitação evolutiva* and made the implementation of SAAL possible after the Carnation Revolution of April 25 1974. The 'extensions of the dwelling' are a fundamental issue in this research process, which opened the way for Portas' interest in urbanism.

As for Pedro Vieira de Almeida, the 'transition-space' is a part of the conceptual tools he used in his critical analysis of 20th-century architecture. In the essay on Raul Lino, it is the key to assigning a whole new meaning to his disparate work. This was the first in a series of critical essays on relevant Portuguese architects of the 20th century (Carlos Ramos and Viana de Lima would be studied respectively in 1986 and 1991, also within the context of monographic exhibitions) in which Vieira de Almeida developed complex relations between criticism and history. The notion of 'transition-space' kept a prominent place in his theoretical *corpus.* In the 2000s, it was presented as one of the analysis parameters for a critical review of the survey on vernacular architecture of the 1950s, a research project based at the R&D unit CEAA, which he helped to found.[59]

58 See, e.g.: Patrícia Santos Pedrosa, "Habitar em Portugal nos anos 1960: ruptura e antecedentes. Um caminho pelo interior do discurso" (PhD thesis, Barcelona, Universitat Politècnica de Catalunya. Departament de Projectes Arquitectònics, 2010); Margarida Marino and Paula André, "O valor patrimonial do 'Ensaio sobre o Espaço da/em Arquitetura' (1963) de Pedro Vieira de Almeida (1933-2011)", in *Antologia de Ensaios - Laboratório Colaborativo: dinâmicas urbanas, património, artes. IV Seminário de investigação, ensino e difusão*, P. André, P. Simões Rodrigues, M. Brito Alves, M. Reimão Costa, coord. (Lisboa: DINÂMIA'CET-IUL, 2018), 56-76.

59 See: Pedro Vieira de Almeida, *Dois parâmetros de arquitectura postos em surdina. O propósito de uma investigação* (Porto: CEAA, 2010); Pedro Vieira de Almeida, *Dois parâmetros de arquitectura postos em surdina. Leitura crítica do Inquérito à arquitectura regional, vols.1 & 2* (Porto: CEAA, 2012). Pedro Vieira de Almeida died in 2011, without completing this research.

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