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Toward the Adaptive Reuse of Vernacular Architecture: Practices from the School of Porto

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Abstract: Strategies for the adaptive reuse of vernacular architecture are of utmost importance in the current context of social, economic, and environmental vulnerability. This article examines the design strategies of adaptive reuse in three cases of renowned architects of the so-called School of Porto developed across the second half of the 20th century, specifically between 1956 and 1991. The paper aims to introduce a new and deeper knowledge of the selected practices by critically documenting the whole process of the intervention (before, during, after) and not only the final result, as is common practice in specialized publications. The research methodology combines the bibliographical and archival research and interpretation of diverse graphic, photographic, and textual documentation with the production of analytical drawings. The demolitions/additions color code (black/yellow/red) is applied to plans, sections, and elevations as an essential tool for understanding and communicating the transformations undertaken. The selected case studies are Além House (1956–1967) by Fernando Távora, Alcino Cardoso House (1971–1973; 1988–1991) by Álvaro Siza, and the House in Gerês (1980–1982) by Eduardo Souto de Moura. These projects show different strategies of intervention in built heritage, providing lessons on the reactivation of obsolete or abandoned rural constructions with new functions that are compatible with the preservation of their values (historical, landscape, constructive, social, and aesthetic) and guidelines for sustainable reuse.

Keywords: adaptive reuse; design practices; built heritage; vernacular architecture; school of Porto; Fernando Távora; Álvaro Siza; Eduardo Souto de Moura

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1. Introduction and Objectives

The reuse and transformation of existing structures is a common practice in architecture, undertaken both by anonymous users and builders in common construction as well as by prestigious authors in erudite architecture [1]. However, the adaptive reuse of buildings has received much attention recently owing to the current concern for sustainability in architecture, as evidenced by the increasing number and impact of studies and publications on the topic [2–7], among others. Thus, in the context of the present global environmental and societal challenges, the reuse of existing infrastructures, as opposed to new construction, represents a crucial step in mitigating the overconsumption of resources.

The reactivation of abandoned, neglected, or obsolete buildings for new purposes goes beyond economic and environmental issues to include broader social and cultural dimensions, so that intervention in the build faces the challenge of balancing all factors throughout the design process [8–13]. However, there is a lack of in-depth analysis of real case studies with supporting technical documentation for both students and practitioners. Thus, this paper aims to provide critical reflection and detailed documentation of best practices that show a balance between preservation and transformation, combining the implementation of contemporary requirements (aesthetic, functional, spatial, comfort,

technological, etc.) while respecting the essential identity and values of the existing structure (historical, constructive, landscape integration, etc.). Namely, this paper focuses on three exploratory and initial works by renowned architects of the School of Porto, providing unpublished documents and critical reflection on these designs, which represent relevant laboratories for the future practice of these architects.

2. Context

2.1. Research Context

This work is framed within the broader context of the *Atlas of Architectural Heritage Design* research project (hosted by the UNESCO Chair at the Faculty of Architecture of the University of Porto), which seeks to systematically compile, analyze, and disseminate best cases of contemporary design in built heritage. This research initiative aims to serve as both a pedagogical tool for the teaching of Architecture and the practical application of design principles and strategies in professional contexts.

The research initially focused on the *Contributions of the School of Porto* (Exploratory Project funded by FCT), with the aim of identifying, documenting, and sharing the best examples by architects trained at the Fine Arts School of Porto (ESBAP), from which the current Faculty of Architecture of the University of Porto was separated in 1986. This community practice is recognized for its solid pedagogy and consistency with regard to non-specialistic intervention in built heritage in Portugal, characterized by a critical approach—integrating tradition and modernity—in the face of the long-standing hegemony of the ideological doctrine advocated by the General Directorate of Portuguese Buildings and Monuments (DGEMN) during the *Estado Novo* (1933–1974) [14–16]. This research involved the compilation of ca. 150 works into a geo-referenced inventory, in-depth analysis of 22 works through diachronic documentation of the entire transformation process (before, during, and after), and dissemination of the results through various means [17–20].

2.2. Architectural Context

Among the works collected and studied, projects for the renovation of vernacular constructions are particularly representative of the design principles of the School of Porto, since they strongly manifest the desire to symbiotically combine tradition and modernity. This concern arose in the middle of the twentieth century. In 1945, Fernando Távora (1923–2005) launched the manifesto *O problema da casa portuguesa* (reedited in 1947 [21]), in which he advocated the *third way*, that is, "an evolution of modern architecture with the capacity to identify with tradition" [22]. Távora encouraged research into vernacular buildings, as they embodied modern principles such as functionality, formal clarity, material sincerity, and social engagement. He then co-directed an extensive study on vernacular architecture, titled *Inquérito à Arquitectura Popular em Portugal* [Survey on Popular Architecture in Portugal] (1955–1961) [23]. Moreover, Távora's attendance at the International Congresses of Modern Architecture (CIAM) between 1951 and 1959 made him aware of a change of direction in the European architectural avant-garde, noting Team 10's criticism of the orthodox postulates of the rationalism and their call for greater attention to the specific circumstances of places, traditions, and local communities [24–30], among others.

All of the above, together with the influence of Brazilian architecture received through the book *Brazil Builds* [31,32], stimulated a growing interest in vernacular architecture within the ESBAP [33], as well as a new approach to the history of architecture as an operative tool for contemporary design [34]. Moreover, the period after the 1964 Venice Charter was marked by progressive consideration of new heritage values, including the dimension of landscape and architectural ensembles, which extended cultural appreciation beyond exceptional monuments, as reflected in Fernando Távora's theoretical essay *Teoria Geral da organização do espaço* [General theory of the organization of space] (1962) [35] and stated in the *Estudo de Renovação Urbana de Barredo* [Barredo Urban Renewal Study] (1969) [36]. Likewise, projects such as the conversion of the Santa Marinha Convent into a *Pousada* (1972–1985) confirmed a new paradigm of heritage intervention. The general

criterion adopted was "to 'continue innovating' or, in other words, to continue contributing to the long life of the building, highlighting the affinities and the continuity rather than the differences and the break from the past" [37].

The new cultural context in Porto following the *Inquérito* strongly influenced young architects and students, such as Álvaro Siza (1933), who also admired the architecture of Frank Lloyd Wright and Alvar Aalto. Moreover, Siza worked in Távora's studio between 1955 and 1958, establishing a very close personal relationship and assimilating the concerns and interests of his mentor. Thus, the reinterpretation of traditional Portuguese architecture is evident in his early works. Siza found an autonomous path of development, linked to the original essence of rationalism, moving toward figurative abstraction. However, in his approach to building on the built, Siza is similar to Távora, integrating his work into the constants of the place and the building.

Eduardo Souto de Moura (1952), who was also a student of Távora at the ESBAP, worked in Álvaro Siza's studio at the time of SAAL's operation, right after the 1974 Carnation Revolution. Encouraged by Siza to pursue an independent career, he initially focused on achieving a local expression with international grammar. This intention was linked to that of his mentors and also framed within the debate of *critical regionalism* [38], but his proposals diverged from the architecture of his masters, finding inspiration in different references: "Everything drove me towards Mies van der Rohe, the De Stijl movement, industrial construction as the future, and the permanence of the 'classic' with modern materials" [39]. Although his architecture drew from international sources, it required strong anchoring. To this end, he appropriated the memory of the preexistence—inventing it if it did not exist—and resorted to the Portuguese constructive tradition of granite in order to "affirm the own identity in a globalized world" [40]. Thus, the reflection on ruins and the sensitivity to stone are transversal in his early works [41].

These three architects developed autonomous research and practice with different formal results. According to various authors [42–45], the common denominator of the so-called School of Porto is not the transmission of a particular formal language, or even of a design method, but the sense of collectivity and existence of some common concerns, including the use of history and drawing as design tools, as well as the search for a synthesis between the autochthonous and universal conditions of architecture: tension and balance between being local and global [40].

When building on the built, the architects of the School of Porto rejected a clear differentiation between design and conservation. For Távora, any architectural project involved "a problem of creation" [22], whether it was an existing structure or an empty space since there is always a context with which to establish relationships. Therefore, heritage intervention cannot be considered a different discipline from architecture. Similarly, according to Siza, "conservation is not a specialization; it is simply about architecture. It has a strong historical and scientific basis, but it also has something that any architectural intervention has" [46]. For his part, Souto de Moura used the existing constructions as available material for the new project, as "it is new construction, not restoration" [47]. However, despite the different approaches of these three architects, they proceeded to transform only after acquiring a deep knowledge of existing values, proceeding thereafter with full awareness.

3. Materials and Methods

3.1. Case Studies

This article discusses different design strategies by architects from the School of Porto in the adaptive reuse of vernacular constructions. These are projects for the adaptation of a rural building or ensemble as holiday homes. They are all located in the historical province of *Entre-Douro e Minho* in the north of Portugal, which is traditionally characterized by a dispersed population based on small single-family polyculture farms, with a predominance of maize and vineyards complemented by sheep, swine, and cattle rearing for self-consumption. The traditional architecture met the needs of agricultural production

through specialized spaces and elements for each process (stables, sheds, storehouses, granaries, cellars, etc.), combined with residential areas (the house itself). However, the transition from traditional to industrialized agriculture and the rural exodus since the mid-20th century have led to the neglect of many vernacular buildings, which are sometimes converted into second homes for city dwellers.

The three proposed case studies are the works of architects of the School of Porto with the greatest national and international impact: Fernando Távora (1923–2005), who is considered the initial driving force of this community of practice, and Álvaro Siza (1933) and Eduardo Souto de Moura (1952), both winners of the Pritzker Prize in 1992 and 2011. The selected works are, respectively, Além House (Lousada, 1956–1967), Alcino Cardoso House (Caminha, 1971–1973; 1988–1991), and the House in Gerês (Vieira do Minho, 1980–1982).

The period under study (between 1956 and 1982) coincides with a key moment in the regeneration of Portuguese architecture, marked by the critical reception of the Modern Movement and a new sensitivity toward vernacular architecture. Moreover, the selected cases were designed at an early stage in the architects' careers, when they were experimenting and validating ideas, thus expressing with resounding clarity the principles and strategies that would be matured and spread in their later works.

3.2. Methodology

This research adopts the methodology of case study analysis developed for the creation of an *Atlas of Architectural Heritage Design in Portugal* [17], which was also used within the *New/Old* editorial and research initiative [48,49] and other studies by the authors related to this research topic [50–52]. This research aims to reveal design principles and operational methods through a diachronic analysis of the transformation process (before, during, and after), seeking to dissect the steps of the intervention and not just the final result, as is often the case in architectural publications (with some exceptions [53–55]).

The analytic methodology conducts a textual and visual narrative, structured in four interrelated thematic axes, as follows:

1. *Landscape, place, and preexistence*: Characterization of the existing structure in relation to its cultural context (social, historical, geographical, etc.), morpho-typology, spatial layout, construction systems, state of conservation, and the landscape and *genius loci* of the site (referring to the identity or character that defines a place) [56].
2. *Design strategy*: Study of the design principles and decisions regarding the adaptation of existing spaces and structures to new functions, conservation, and transformation operations, and the relationship between the old and the new (contrast, mimesis, analogy, etc. [57]).
3. *Tectonics, materiality, and detail*: Concerning the constructive features and *tectonic culture* [58], the choice of materials and techniques, finishing details, execution of works, etc.
4. *Critical reception*: Significance of the work in the architect's career, impact on the architectural panorama of the time, and repercussions in specialized literature.

These thematic axes also serve as a framework for the subsequent comparative analysis of the case studies and discussion of results.

The research on the case studies is based on a cross-methodology analysis coupled with the interpretation of multiple sources (graphic, written, oral), including:

- *Literature review*: Compilation and analysis of publications, including journal articles, books and chapters, master's or PhD theses, websites, exhibitions, etc.
- *Archival research*: Compilation of information currently scattered in the archives of different institutions, including the Marques da Silva Foundation (holds the Fernando Távora Archive), the Casa da Arquitectura (holds part of Eduardo Souto de Moura's collections), and the Serralves Foundation, the Calouste Gulbenkian Foundation, and the Canadian Centre for Architecture (hold Álvaro Siza's separate collections).
- *Oral history*: Interviews with different actors involved in the projects (architects, collaborators, clients, and workers) who provide unpublished oral information.

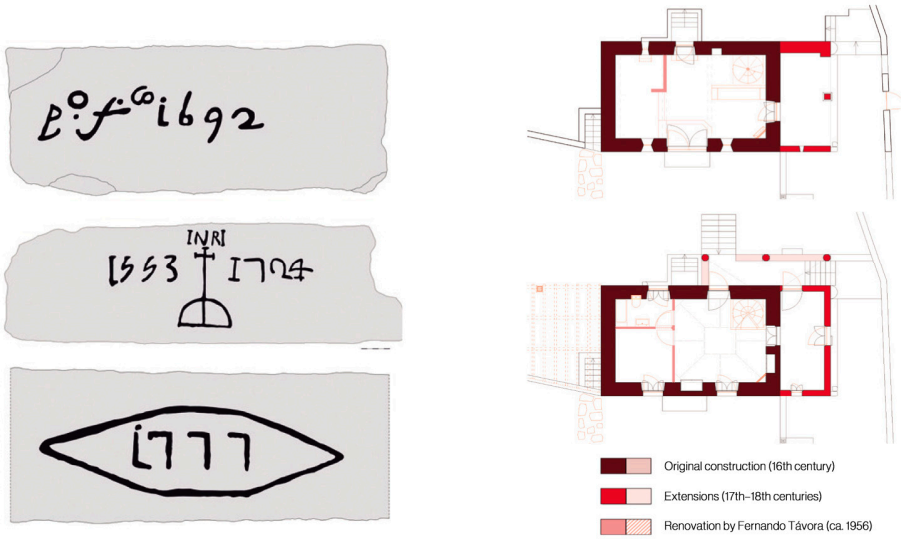
- *Drawings*: Redrawing of plans, sections, and elevations, including before and after the intervention, as well as alterations using the black/yellow/red color code (used for licensing the transformation of preexisting buildings in the Municipalities in countries such as France and Portugal) as an essential tool for understanding and communicating the transformations undertaken (black for remaining elements, yellow for demolished elements, and red for newly built elements).
- *Photographs*: Up-to-date photographic surveys and compilation of images of the initial situation to determine the transformations through comparison with the final state.

4. Fernando Távora: Além House (ca. 1956)

4.1. Landscape, Place, Preexistence

Casa de Além is a small agricultural complex located in the municipality of Lousada, consisting of a house, a yard, and annexes (the granary, the caretaker's house, and the stables). The house is a compact and robust volume, built with large, exposed granite blocks with few openings. The lower floor houses the cellar or the stables. The dwelling occupies the upper floor, which is accessed by a porch attached to the east.

The wooden ceiling of the room, the carved wooden furniture, the façade of the yard, the ornate hardware, and the slightly decorated porch columns are signs of social distinction of a humble rural gentry [23] (p. 43). Even if the original construction dates back to 1527 [59], different landlords have undertaken enlargement and refurbishment works, as the preserved epigraphic remains testify (Figure 1a) [60]. Thus, a simple reading of the walls reveals different constructive phases (Figure 1b).



(**a**) (**b**)

Figure 1. Fernando Távora. Além House (1956). Historical analysis of the house: (**a**) Epigraphs on the walls of the house and yard (source: [53]); (**b**) hypothetic construction phases (source: authors).

In the mid-20th century, the house belonged to the maternal family of Maria Luísa Menéres, who married the architect Fernando Távora in 1954. Shortly after, her mother (Luísa) carried out the renovation, entrusting her son-in-law with the task. At that time, the house was quite deteriorated, particularly the roof. However, the walls, floors, and wooden ceilings were in acceptable condition, so they could be preserved. The house lacked a bathroom and kitchen, as well as an electrical installation and running water. In addition, it was considered necessary to renovate the surrounding space, since the yard was degraded due to the presence of cattle and other agricultural activities.

4.2. Design Strategy

The exterior form of the house remained mainly unchanged, and it was inside that the greatest transformations took place (Figures 2 and 3). On the one hand, the upper floor reveals a desire for continuity, which is manifested in the preservation and emphasis of the traditional atmosphere of the noble house. The original elements (the floors and wooden ceilings, the character of the space, and the baroque furniture) were preserved and the changes made introduced the language of the existing, seeking integration through materiality and color.

Figure 2. Fernando Távora: Além House (ca. 1956). Interpretation of transformations (plans and elevations): (**a**) Analysis of alterations by means of color code (black/yellow/red; i.e., remaining/demolished/newly built); (**b**) after intervention. (source: survey and drawings by David Ordóñez-Castañón and Beatriz Filipe).

On the other hand, the ground floor has been renovated to accommodate a domestic space suitable for occasional and seasonal use and the lifestyle of a new era. This transformation is evident both in the spatial configuration and the architectural language. Indeed, the modern open space provides a greater sense of amplitude in this reduced room, suggesting fragmentation of the living, dining, and kitchen areas through the topographical treatment of the floor and arrangement of the furniture, or their delimitation by low walls. In this context, the old materials (masonry walls, ceiling beams, doors, and wooden shutters) contrast with some new elements of modern expression (such as the white and smooth volumes that define the sofa or delimit the kitchen). The unexecuted fireplace would also attempt this counterpoint, as depicted in various sketches where the architect explores several options (Figure 4).

Figure 3. Fernando Távora: Além House (c. 1956). Photographic report after the intervention (2020): (**a**) Exterior; (**b**) Interior, upstairs room and downstairs room. (Source: David Ordóñez-Castañón).

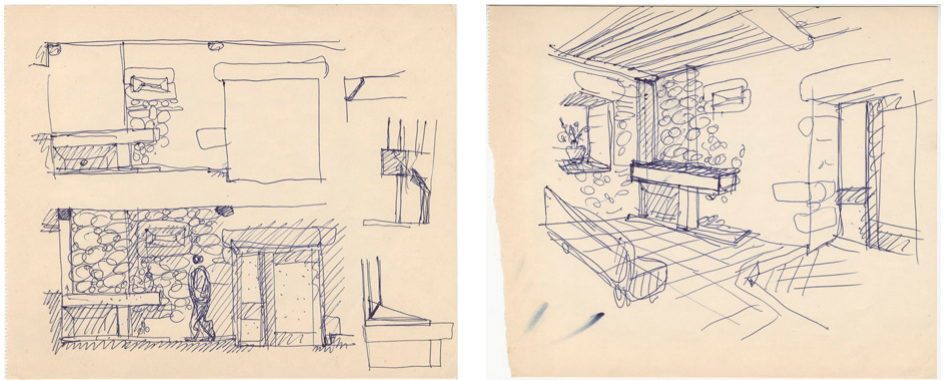


Figure 4. Fernando Távora. Além House (1956). Sketches for a new fireplace on the ground floor: elevation and perspective (source: Marques da Silva Foundation, Fernando Távora Archive: PT/FIMS/FT/0065-pd0001, PT/FIMS/FT/0065-pd0002).

This experimental approach to a modern vernacular is reminiscent of some houses designed by Le Corbusier in the early 1930s, such as Maison Mandrot (1929–1932) or Maison Errazuriz (1930), which combined the roughness of traditional materials with the sophistication of modern construction systems, the transparency of glazed spans, and the rationalist compositional grammar. This reference can also be traced through Alfredo Viana de Lima (the architect of Porto closest to Le Corbusier), whose works in rural settings

during this period, such as Casa Dr. Olívio França (Vila Verde, 1952) or Casa das Marinhas (Esposende, 1953–1957), further reflect this rationalist inspiration. The influence of Lima may also underlie the design of the new windows (overlapped by the old doors and shutters), which provide a strikingly modern counterpoint to the strict preservation of the façades. Similarly, there is a relaxed mixture of antique furniture (cupboard, chest, and chairs) with various pieces of avant-garde design (such as two chairs of the Diamond series, designed in 1953 by Harry Bertoia), as well as a new sculptural spiral interior staircase that connects the two floors.

4.3. Tectonics, Materiality, Detail

The renovation was carried out by local workers without any formal design on paper. This artisanal approach to construction was of great importance to the architect, who recognized in the stonemason an authentic know-how inherited from his ancestors: "It was made by a builder named Monteiro, who I used to say was the great-great-grandson of the builder who had made the house. [. . .] So there is continuity, and it's interesting when that happens, isn't it?" [61]. Indeed, the preservation of many original elements (structure, ceilings, floors, furniture, woodwork) was only possible thanks to handcrafted repairs. The intervention combined major operations (replacement of the roof, repositioning of the floor) with delicate repairs (introduction of structural reinforcements, replacement of deteriorated rafters, grafts on the old doors and shutters).

The renovation thus reflects a dual approach, ranging between meticulous respect for the old matter and the introduction of contemporary construction systems, such as the windows superimposed on the wooden doors (Figure 5). The house had no glass in the past, so this solution protects the original shutters while allowing light to enter. These large panes of glass, with striking red and white metal frames, bring some freshness to the image of the building, but at the same time establish a dialogue with the adjacent granary, in a chromatic reinterpretation of the iron oxide-based paint that was used to coat the exterior woodwork of traditional buildings as a protection from rain and wind erosion [61].

(**a**) (**b**)

Figure 5. Fernando Távora: Além House (c. 1956). Door and window frames: (**a**) Original colors (painted red and white), August 1972 (source: Marques da Silva Foundation, Fernando Távora Archive, PT/FIMS/FT/0065-foto0001); (**b**) preservation of the old doors and ironwork, with delicate grafting and repairs, protected by new exterior glazed doors (source: David Ordóñez-Castañón).

4.4. Critical Reception

This work embodies some key reflections from Távora's mid-20th century period, coinciding with his attendance at the CIAM and the realization of the Survey on Popular Architecture in Portugal (1956–1961). At that time, he sought a synthesis of modernism and tradition, which he finally achieved in several masterpieces of the so-called *third way* that represent an adaptation of the Modern Movement to local circumstances [22]. In

this context, the renovation of Além House can be considered a bold experience, halfway between philological conservation and formal innovation. Despite its undoubted interest, this work has not been discussed in monographs about the architect (except for the author's studies [50,62]), nor has he sought to spread it himself.

5. Álvaro Siza: Alcino Cardoso House (1971–1973; 1988–1991)

5.1. Landscape, Place, and Preexistence

Alcino Cardoso House is located in *Lugar da Gateira*, a small village within the municipality of Moledo in the northern Portuguese region of Alto Minho. It is located halfway up a hillside, in a tangled territory of narrow paths between houses, vineyards, and small agricultural fields (*minifúndios*). The Cardoso family bought this 1780 m^2 countryside estate attracted by the charm of two plum trees with juicy fruits they had found while exploring this semi-abandoned and overgrown property [63]. Attached to its perimeter walls, two small buildings circumscribed a patio on the main entrance (Figure 6).

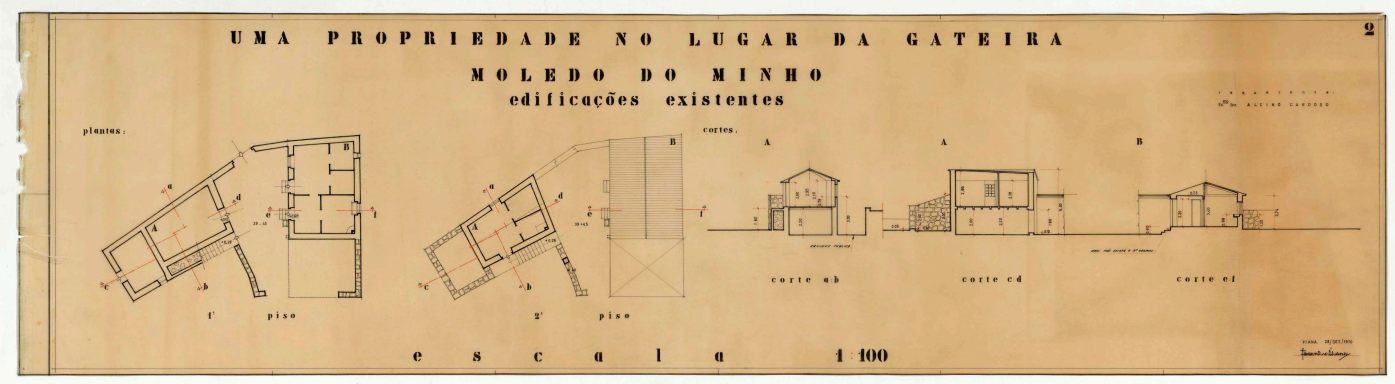


Figure 6. Álvaro Siza: Alcino Cardoso House (1st phase, 1971–1973). Survey of existing buildings (plans and sections): *Uma propriedade no Lugar da Gateira, Moledo do Minho; edificações existentes* (A property in Lugar da Gateira, Moledo do Minho; existing buildings). (source: Serralves Foundation, Álvaro Siza Archive, PT/FS/ASV/12-3-4-0010).

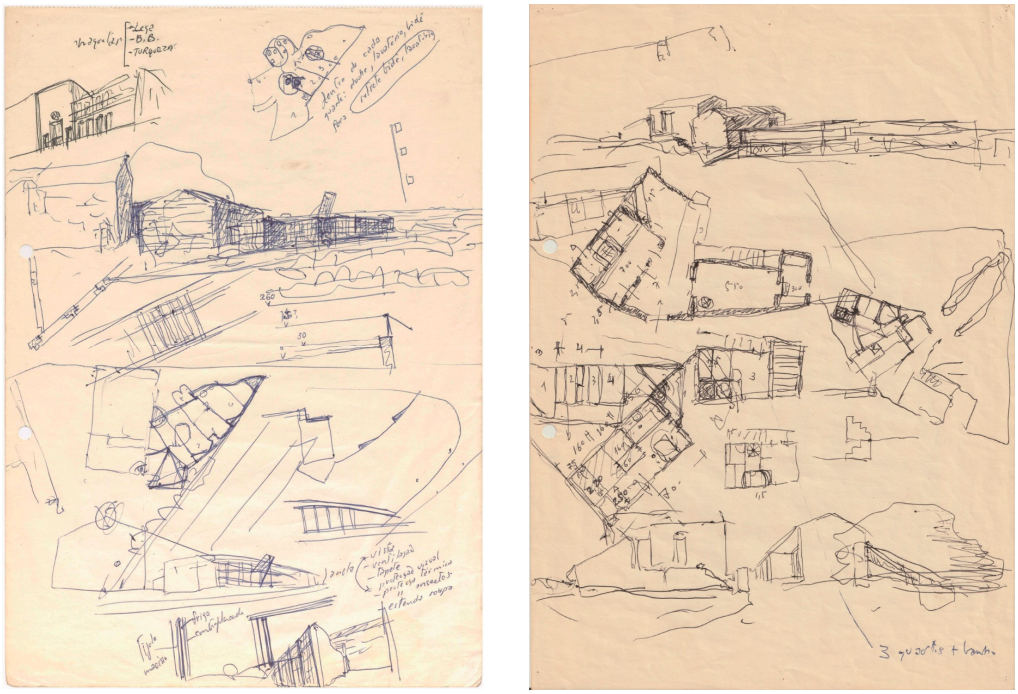
A few years later, they also bought the adjoining estate to the west, now known as *Casa da Eira*. There were three buildings arranged around a courtyard next to the entrance gate, and two *espigueiros* (raised granaries).

The construction systems of these traditional ensembles were simple and involved few materials, as described in the Survey on Popular Architecture in Portugal (1956–1961): "walls, pillars and lintels of stone [granite]. Tile roof, placed on a wooden frame. The internal framework, floors, partitions and doors are also made of wood" [23]. Before intervention, the constructive and typological consistency was still legible, despite the advanced state of material decay (Figure 7).

5.2. Design Strategy

Alcino Cardoso, an employee at the Pinto & Sotto Mayor bank office in Oliveira de Azeméis (also designed by Álvaro Siza, 1971–1974), and his wife Zilda Cardoso commissioned the renovation and extension of the existing buildings to accommodate a holiday house for their family. Siza completely altered the interior layout of the old house, transforming the space into a large living room and kitchen, separated by a light partition panel. However, the stone walls were maintained and the roofs were renovated, thus preserving the volumetry and character of the preexistences (Figure 8).

Figure 7. Álvaro Siza: Alcino Cardoso House (2nd phase, 1988–1991): *Casa da Eira* at the beginning of the renovation works (source: Zilda Cardoso).

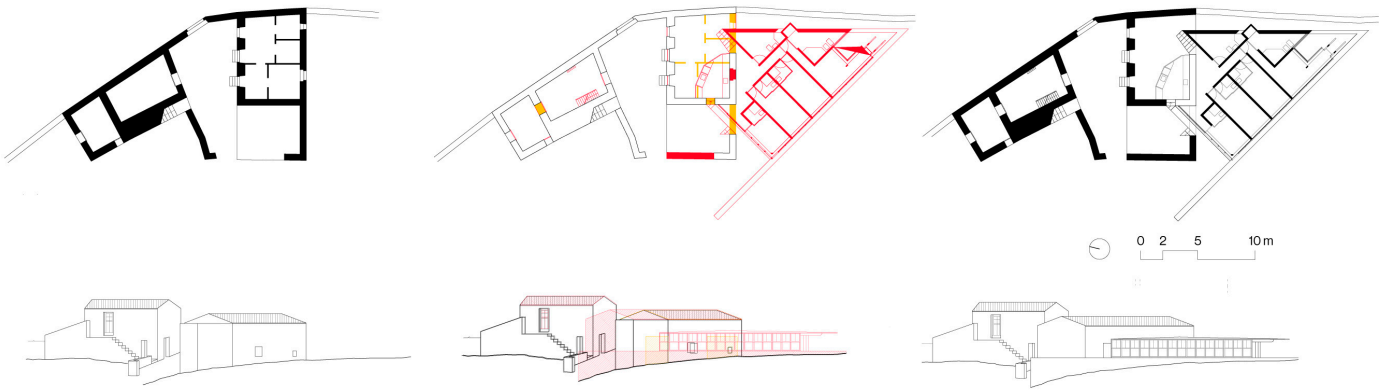


(**a**) (**b**)

Figure 8. Álvaro Siza: Alcino Cardoso House (1st phase, 1971–1973). Sketches: (**a**) Source: Serralves Foundation, Álvaro Siza Arquive, PT-FS-ASV-12-1-1-0002; (**b**) source: Álvaro Siza Archive.

Five bedrooms and bathrooms were incorporated into a triangular-shaped annex, connected to the old construction by means of sharp geometry (Figure 9). Following the concern "to keep the alien novelty to a minimum" [64], this new volume is semi-buried and has a flat roof so as not to disturb the scale and predominance of the previous building. This annex is laid out in parallel to the walls of the property and placed on a sort of plinth, as a new terrace in the landscape. The new partitioning is adapted to a regular grid that forms a 45° angle, embedded in a triangular plan that recalls the geometries of the Ocean Swimming Pool in Leça da Palmeira or Frank Lloyd Wright's Taliesin West. Unlike the rough and heavy masonry walls of the old building, this volume has a light structure and a large curtain wall facing the vineyard so that the glass façade dematerializes as it reflects the vegetation. However, although Siza himself referred to a contrast, the materiality and design solutions inspired by traditional carpentry, as well as the geometric alignment with the vineyards, provide a strong sense of continuity between the old and new (Figure 10).

On the opposite side of the entrance patio, the other building in ruins was transformed into an autonomous two-story dwelling. A few years later, Álvaro Siza designed a swimming pool for the garden, taking advantage of an old irrigation tank.



(**a**) (**b**) (**c**)

Figure 9. Álvaro Siza: Alcino Cardoso House (1st phase, 1971–1973). Transformation sequence (plan, elevation): (**a**) Before intervention; (**b**) analysis of alterations by means of color code (black/yellow/red; i.e., remaining/demolished/newly built); (**c**) after intervention (source: drawings by Eleonora Fantini based on project drawings by Álvaro Siza).

In 1986, Álvaro Siza was again invited to Moledo to design the conservation and renovation of the constructions in the adjacent plot with the intention of establishing a rural accommodation business (Figure 11). Thus, the buildings were transformed into three independent houses (A: 178 m^2; B: 59 m^2; C: 29 m^2). Unlike the first phase, Siza developed a very surgical intervention, without extending the limits of the preexisting buildings with new additions (Figure 12). It involved the preservation of the structures and roofs and the redesign of the traditional window frames following the existing models. Some new features (windows, floors, coverings, and furniture), faithfully inspired by tradition, were introduced without being clearly distinguishable from the preexisting features in order to maintain the ambiance of the site (Figure 13). However, other subtly innovative actions also took place to ensure contemporary living standards. Thus, the most significant changes included the addition of new partition walls and some excavation works.

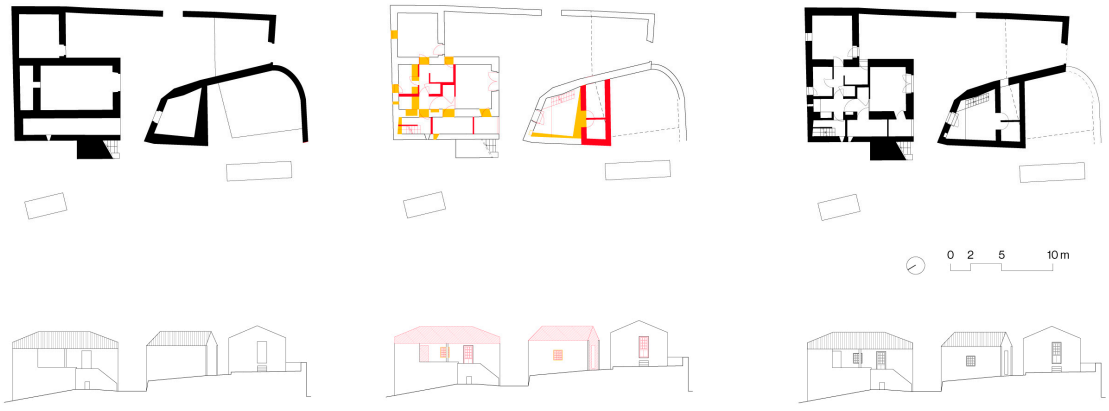
(**a**)

Figure 10. *Cont.*

(**b**)

Figure 10. Álvaro Siza: Alcino Cardoso House (1st phase, 1971–1973). Photographic report after the intervention: (**a**) Exterior (source: Inês d'Orey); (**b**) Interior (source: Inês d'Orey).

Figure 11. Plan of the entire estate, including the area of intervention in phase 1 (1971–1973), colored in red, and the area of intervention in phase 2 (1988–1991), colored in blue (source: colored by the authors on project drawings by Álvaro Siza; Serralves Foundation, Álvaro Siza Archive, donation 2015, PT-FS-ASV-22-2-2-0002).



(**a**) (**b**) (**c**)

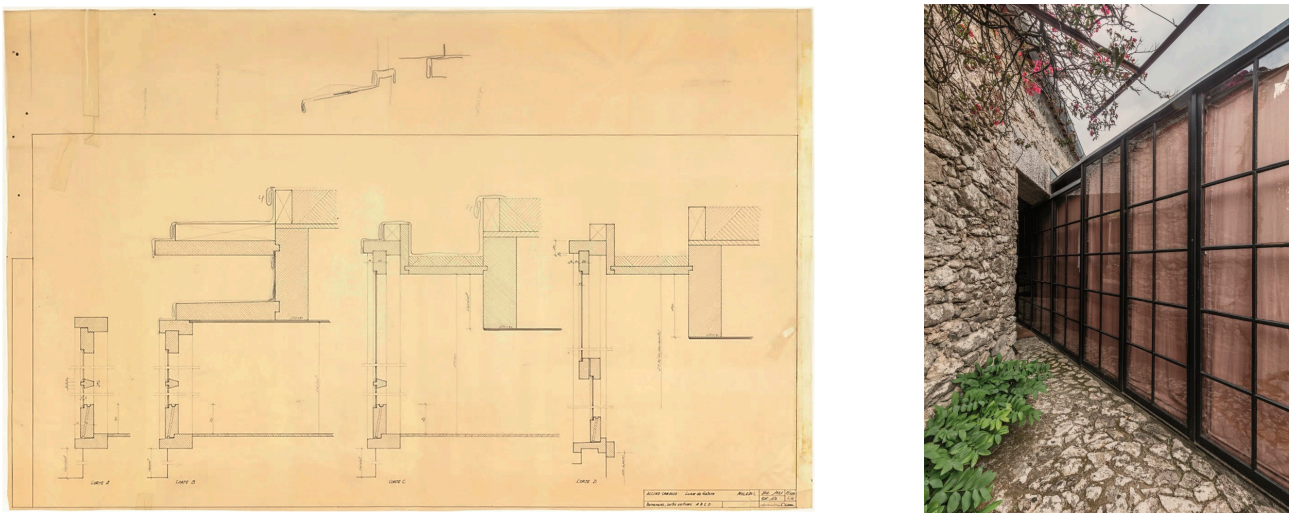
Figure 12. Álvaro Siza: Alcino Cardoso House (2nd phase, 1988–1991). Transformation sequence (plan, elevation): (**a**) Before intervention; (**b**) analysis of alterations by means of color code (black/

yellow/red; i.e., remaining/demolished/newly built); (**c**) after intervention (source: drawings by Eleonora Fantini based on project drawings by Álvaro Siza).

Figure 13. Álvaro Siza: Alcino Cardoso House (2nd phase, 1988–1991). Photographic report after the intervention (source: Inês d'Orey).

5.3. Tectonics, Materiality, and Detail

Due to the remote location of the property and the unavailability of experienced labor, Álvaro Siza made use of common materials (stone and wood) and the traditional construction techniques known to local workers. The flat zinc roof makes a clear distinction between the old and the new. Moreover, the glass curtain wall also constitutes a modern feature. Nevertheless, it is said that the preexisting wooden structure was taken to the workshop and used as a reference for designing and constructing the new curtain wall (Figure 14). The western extremity of the thick masonry wall of the new volume started out as a parapet and later progressed to supporting the light frame before ultimately sinking further eastward to become an indented hollow patio.



(**a**) (**b**)

Figure 14. Álvaro Siza: Alcino Cardoso House (1st phase, 1971–1973). Constructive detailing: (**a**) Glass wall system drawings (source: Serralves Foundation: Álvaro Siza Archive, PT/FS/ASV/12-3-4-0023); (**b**) intersection of the new annex and the existing building (source: Inês d'Oray).

In the interior, the combination of wood with textiles in reddish tones gives rise to a warm and intimate environment. Another important contemporary resource stems from the division of spaces by means of either light wooden panels or even curtains, which

provide a strong sense of continuity and express a possible Japanese influence. Thus, the separation between the living room and the kitchen is only suggested by a light wooden panel, similar to a folding screen (which does not reach the ceiling), which is partially glazed and has movable sections. These elements emphasize the almost provisional character of the new building and introduce modernity to a rural house by providing spatial fluidity, greater luminosity, transparency, and sensory tectonics. A tension is consequently created between the stereotomy and fragmentation of traditional domestic spaces and the light and permeable condition of the new arrangements in accordance with more dynamic and changing lifestyles.

5.4. Critical Reception

Alcino Cardoso House was internationally published in the late 1970s and during the 1980s in important editions such as *Lotus international* (1979) [65], *Architecture d'Ajourd'hui* (1980) [66], *Quaderns d'arquitectura i urbanisme* (1983) [67], and *Professione Poetica* (1986) [68]. The transformation of this rural complex (Figure 15) was also featured in a vast set of monographs on Álvaro Siza, which intensified after he received the Pritzker Prize in 1992, with publications on his work proliferating substantially in the following decades [69–76]. Alcino Cardoso House is included among the 18 works selected for the "Ensemble of Alvaro Siza's Architectural Works in Portugal", submitted to the UNESCO World Heritage Tentative List in 2017.

(**a**) (**b**)

Figure 15. Álvaro Siza: Alcino Cardoso House (2nd phase, 1988–1991). Photographic comparison: (**a**) Before intervention, ca. 1980 (source: Caminha Municipal Archive, file 55/88); (**b**) after intervention (source: Inês d'Orey).

6. Eduardo Souto de Moura: House in Gerês (1980–1982)

6.1. Landscape, Place, and Preexistence

In the early 1980s, the young architect Eduardo Souto de Moura was invited to build a small house in Gerês, using an agricultural construction in Soengas, in the Valley of the Cávado River. The wooden silo rose a few meters above the Caniçada Dam, with the back façade bordering a winding rural road and the frontal façade facing a landscape of great natural beauty. The building had an approximately rectangular plan and was divided into two floors: the ground floor, with thick granite walls and blind (non-perforated) elevation—with the exception of the door –was probably used as a stable; the upper floor had large openings enclosed by perforated wooden panels to facilitate crop ventilation. The building was covered by a gable roof with barrel tiles, following the traditional model of agricultural buildings in northern Portugal (Figure 16).

Figure 16. Eduardo Souto de Moura: House in Gerês (1980–1982). Images of the barn before the intervention (source: Eduardo Souto de Moura).

6.2. Design Strategy

The purpose of the commission was to build a minimum house, conceived as a simple refuge in nature, by taking advantage of the existing building and the views over the dam. Photographs taken before the intervention show the barn was fairly well preserved, but the architect says he found it abandoned, with the roof already collapsed [77]. The granite walls were used as a physical limit, hiding the introduction of a new dwelling, which goes unnoticed from the access road outside.

Although development of the house into two floors was considered in the process drawings (Figure 17), the final solution concentrates all the rooms on the ground floor. Measuring only 30 m^2, the house consists of a kitchen–living room, a bedroom, and a small bathroom. To the rear, "all the same but with a new door" [77]; however, the wall facing the landscape was broken to open a large glass window that allows contemplation of the view. The new roof, flat and at a lower level than the top of the walls, can be used as a terrace "for everyone" [77].

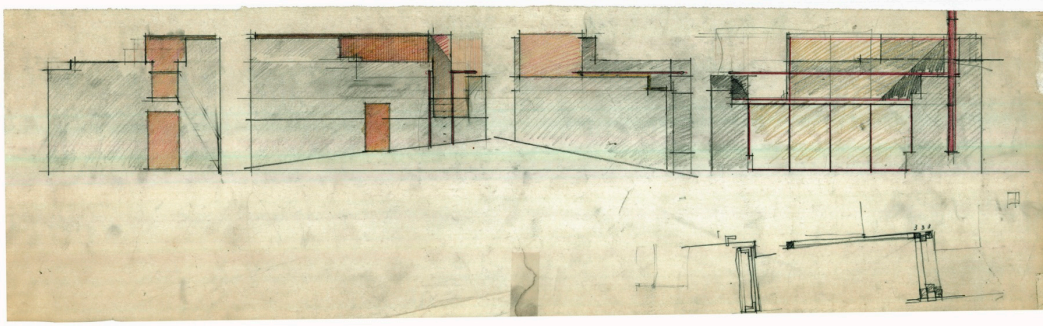
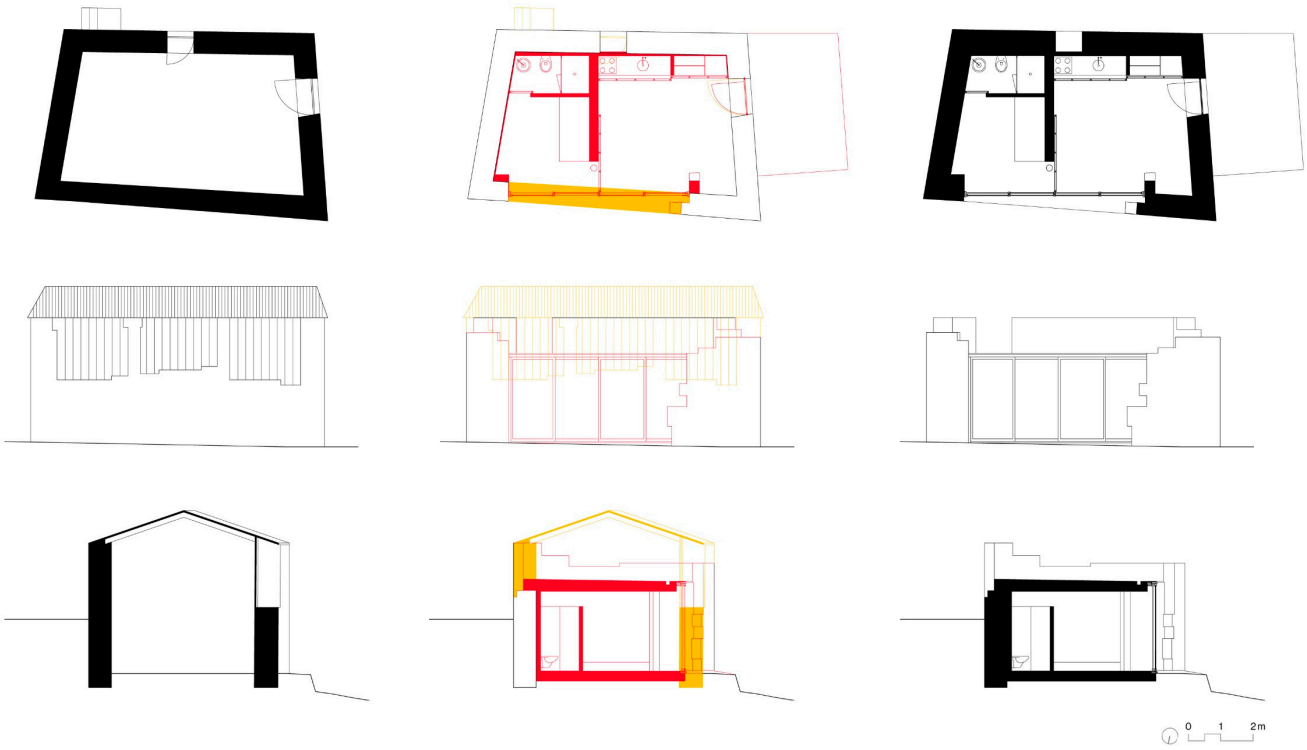


Figure 17. Eduardo Souto de Moura: House in Gerês (1980–1982). Sketches (source: Eduardo Souto de Moura).

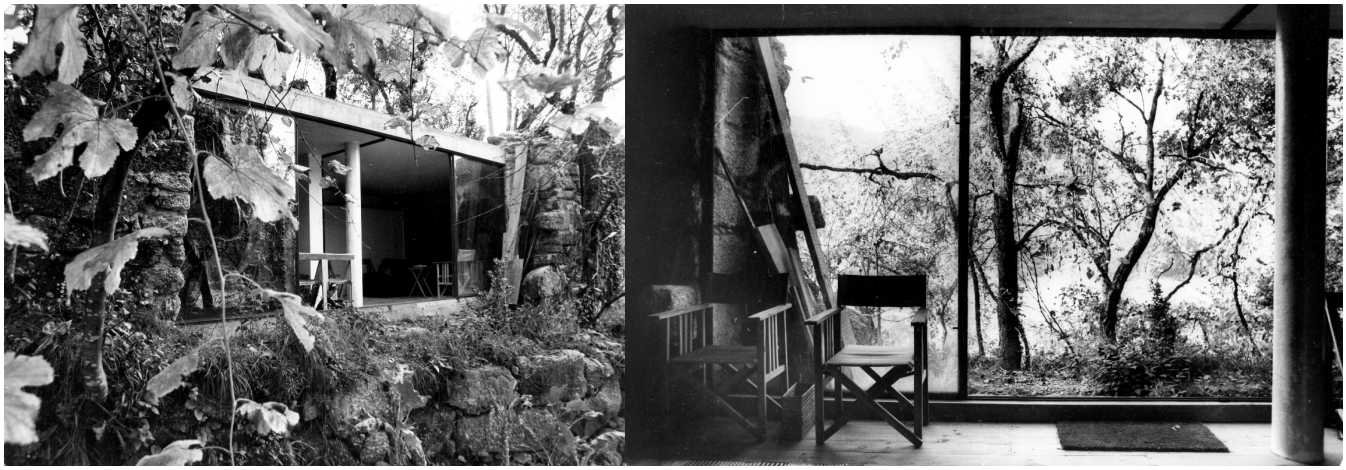
Despite its small dimensions, the interior configuration achieves remarkable versatility and spatial complexity via compositional mechanisms that refer to neoplasticism and the architecture of Mies van der Rohe [78]. The living room and bedroom can be connected or separated by means of a sliding door perpendicular to the glazed wall. This large window suggests the dissolution of the boundary between interior and exterior, promoting the visual incorporation of the landscape as an extension of the domestic space. The point of convergence of the different spaces and planes of the house is expressively occupied by a cylindrical pillar, which also aids in supporting the roof slab (Figure 18).



(**a**) (**b**) (**c**)

Figure 18. Eduardo Souto de Moura: House in Gerês (1980–1982). Transformation sequence (plan, elevation, section): (**a**) Before intervention; (**b**) analysis of alterations by means of color code (black/yellow/red; i.e., remaining/demolished/newly built); (**c**) after intervention (source: drawings by Hugo Mendonça based on project drawings by Eduardo Souto de Moura).

On first reading, the discreet insertion of the new object appears to be a delicate exercise in reusing a collapsed structure. A closer interpretation reveals a suggestive rhetoric on the action of time in architecture. It matters not if the ruin has been *found* or *provoked*; the architect deliberately seeks to aesthetically exalt the ruined walls to stimulate a play of tensions between ancient matter and contemporary addition (Figure 19).



(**a**)

Figure 19. *Cont.*

(**b**)

Figure 19. Eduardo Souto de Moura: House in Gerês (1980–1982). Photographic report after the intervention: (**a**) ca. 1982 (source: Manuel Magalhães); (**b**) 2015 (source: Luís Ferreira Alves).

"The purpose of buildings is to become good ruins, as Perret wrote", says Souto de Moura. Indeed, the Gerês House appeals to the romantic notion of ruin [79]. The degradation of the walls, the loss of material, and the surrounding vegetation are presented as a metaphor for the ephemeral and transience of human works in the face of the relentless and destructive forces of nature and time [77] (p. 41).

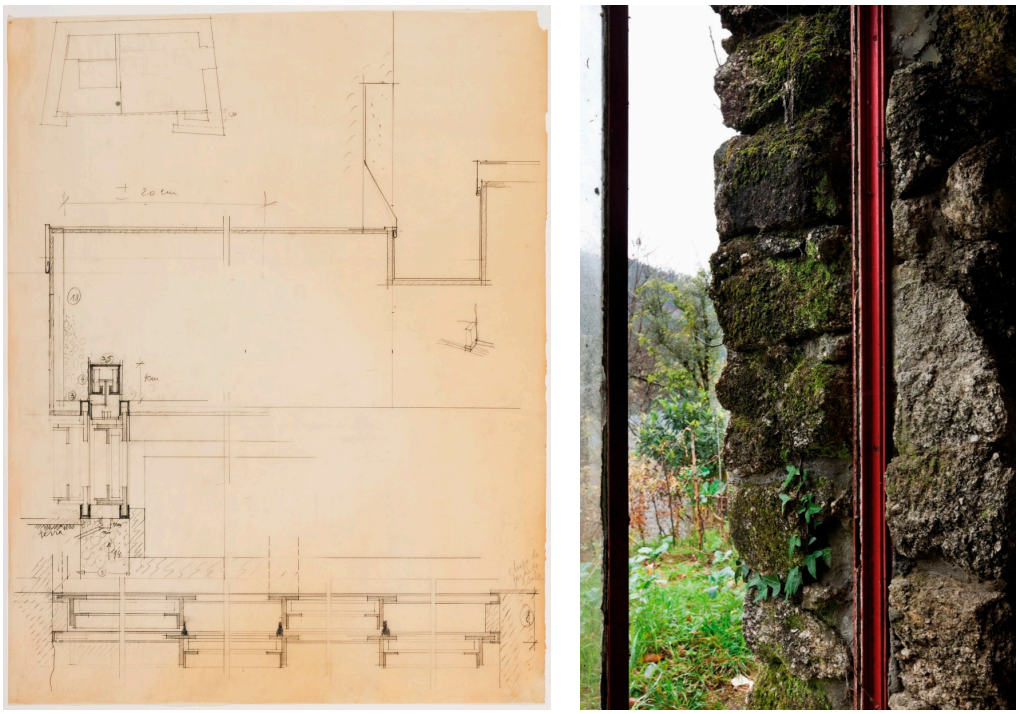
6.3. Tectonics, Materiality, and Detail

In its material and constructive design, the insertion of the new dwelling in the enclosure of the barn promotes an interpellation between the "opposite" identities of the artifact and the preexistence. If the architecture of the continuous walls of the ruin is associated with the qualities of *stereotomic* construction (primitive, massive, opaque, heavy, and durable), the introduction of a *tectonic* object conveys antagonistic sensations (contemporary, light, transparent, and changeable) [80]. Indeed, the housing *insertion/graft* is formed by the articulation of discontinuous elements (partitions, pillar, sliding door, large window, and roofing slab) that allow the creation of open and bright spaces.

The attention paid to the large window is patent in the constructive details that reveal careful study and dimensioning of the metal profiles that make up the frames (Figure 20). The refined detailing, which is reminiscent of Mies van der Rohe, helps to emphasize the conceptual approach to the project. Thus, the positioning of the new frame, set slightly back from the wall, emphasizes its autonomy from preexistence, while the large glass surface reflects the forest, camouflaging the presence of the new object and enhancing the romantic vision of a ruin surrounded by nature.

6.4. Critical Reception

This first independent work by the architect was an opportunity to explore the evocative potential of the ruin, a strategy that he further explored and matured in subsequent works. This design resource—by inducing a tension between destruction and creation, permanence, and transformation—is part of Eduardo Souto de Moura's reflection at the beginning of his professional career, at a time when the theoretical influence of Aldo Rossi and the practical experiences of Álvaro Siza were very present.



(**a**) (**b**)

Figure 20. Eduardo Souto de Moura: House in Gerês (1980–1982). Constructive detailing: (**a**) drawing of the window frames (source: Eduardo Souto de Moura); (**b**) view of the encounter between the stone wall and the glazing profile (source: Luís Ferreira Alves).

The relationship between architecture, nature, time, and memory appears in the competition of *A House for Karl Friedrich Schinkel* (1979), becoming the central theme in the House in Gerês, as well as a leitmotif of subsequent works, such as the Municipal Market of Braga (1980–1984), the Market Café (1982–1984), the House of Arts (1981–1988), the House in Nevogilde II (1983–1988), the House in Baião (1990–1993), or the House in Moledo (1991–1996), among others, in addition to the Conversion of Santa Maria do Bouro (1989–1997), which earned the architect wide recognition. In these works, he explored different mechanisms of forming a relationship between the new object and the matter found (existing or invented), either for its operational reuse or as an element of contemplation [41], thus articulating a poetic combination of binomials: ancient and contemporary, classic and modern, local and universal, archaic and erudite, heavy and light, opaque and transparent, or reality and abstraction.

Furthermore, the House in Gerês features a singular paradox, since it was abandoned shortly before the completion of the work and was never inhabited on a regular basis. In any case, given its pioneering nature, this work has been included in several monographs on Eduardo Souto de Moura [77,81–84], analyzed in academic works [85–87], and discussed in other studies [41,88–90]. However, only recently have some previously unpublished materials been published [91], including photographs that show the original state of the barn (Figures 16 and 21), thus reinforcing the interest in this intervention approach.

(**a**) (**b**)

Figure 21. Eduardo Souto de Moura: House in Gerês (1980–1982). Photographic comparison: (**a**) Before intervention, ca. 1980 (source: Eduardo Souto de Moura); (**b**) after intervention (source: Joaquim Portela).

7. Discussion

7.1. Landscape, Place, and Preexistence

This topic discusses how the preexisting landscapes, sites, and constructions have determined the three analyzed works in the framework of the contextualist approach endorsed by the architects of the School of Porto. Fernando Távora's interventions are always preceded by a holistic understanding of the building to be transformed, through a careful interpretation of both the landscape and the building itself. The analysis includes careful observation and insights from historical documents, and it is supported by his extensive knowledge of Portuguese architecture and history. In this way, Távora sought to identify those distinctive features "that mark the evolution of the building, something that we must respect [. . .]: questions of scale, questions of a certain ritual, questions of atmosphere" [22]. Thus, the typological, spatial, and constructive comprehension of the building would provide him with the keys to contemporary intervention, distinguishing those spaces and elements that should be preserved from those that could be carefully modified.

In the case of Alcino Cardoso House, the design is also based on the premise of preserving as much as possible of the existing farmhouse, thus confirming the statement that "it is not necessary to destroy to transform" [64]. Indeed, the architect struggles to understand the place before intervening, identifying the values that have to be preserved and enhanced by the contemporary intervention: the scale, volumes, materials, colors, constructive know-how, and vegetation, among other qualities that comprise the *genius loci* of the place. This confirms other aphorisms of the architect, such as "the idea is in the place" [92] and "architecture has no meaning unless in relation to nature" [93].

In contrast, Souto de Moura approaches the intervention free of compromises with the preexistence, using the building as available material for a new solution without seeking to consolidate or restore a previous state. In fact, the architect removes the roof and makes a large opening in the wall to suggest the perception of a ruin found in the landscape. In this way, the architect manipulates the existing walls to foster the evocative capacity of the ruin and its potential for integration into nature: "I was fascinated by the near-identification of architecture—an artificial material—with nature, because the ruin ceases to be architecture and becomes nature. And I kept the ruin to maintain this pretension of being almost a natural, anonymous work" [94].

7.2. Design Strategy

The renovation of Casa de Além clearly reflects the desire to embrace modernity and revelation against *pastiche* is reflected in the extensive renovation of the ground floor and the design of the new joinery, seeking greater luminosity and flexibility of the space for contemporary uses. However, a great sensitivity to the "spirit" of the existing building is reflected in the rigorous preservation of the typology, the facades, and the traditional domestic atmosphere of the upper floor. Indeed, the intervention displays a dual approach or counterpoint that Fernando Távora further matured toward a more integrated relationship of continuity between the new and the old, thus attempting to overcome the traditional division between creation and conservation.

Similarly, Álvaro Siza combines respect for the type-morphology of the existing farmhouse with the imbrication of a new volume to meet the new functional needs. The extension, with its sharp corners, large curtain wall, and flat roof, is clearly recognizable as a contemporary addition. However, it refers to the vernacular constructions of northwestern Portugal through the materials used (wood and stone) and the reinterpretation of the traditional carpentry, thus creating a dialectic relationship between the new and old in a sense of continuity. As he states, "architects don't invent anything; they transform reality". Indeed, the client highlighted "the ease with which he harmonized the modern with the traditional. [. . .] Without ostentatious inventions, he transformed what he had found taking the course of history into account in an excellent architecture–nature relationship" [63]. Both Távora and Siza analyze the history and qualities of the site to reveal key principles for contemporary design without disturbing the main features of the preexistences.

In contrast, Souto de Moura explores an opposing relationship between the existing barn and the contemporary artifact, fostering the image of an "inhabited ruin". The architect considered the previous life of the building as concluded, highlighting the passive character of the ruin, and taking advantage of the evocative capacity of the granite walls as cover for the modern insertion. Contemporary functions and requirements are pragmatically addressed through the new artifact.

The three works reflect, through different design strategies from contrast to analogy [57], a common concern to adapt old spaces to new functions, combining modern international references with a strong sense of local identity and a close relationship with the landscape.

7.3. Tectonics, Materiality, and Detail

In terms of construction, Casa de Além also reflects a dual approach between the rigorous respect for traditional construction through anonymous interventions and delicate repairs (the doorways, roof, wooden flooring, furniture, etc.) and the introduction of modern language, materials, and systems in this sixteenth-century house. In the development of the *third way*, Távora accommodated this resounding avant-garde affirmation toward a more subtle reinterpretation of the constructive tradition, as in the case of Alcino Cardoso House, designed by Álvaro Siza fifteen years later. Both works foresaw a contemporary approach to sustainability in terms of recycling existing structures, using local labor, reinterpreting ancient know-how, and using common materials (stone, wood, tile) that were readily available in the area.

Souto de Moura, on the other hand, recalls the ancestral tectonics through the ruined masonry wall, suggesting the decadence of tradition. The insertion, as an autonomous artifact, does not seek to reinterpret vernacular construction systems, but rather expresses the rise of a decidedly modern technological culture, with high sensibility in the design of details, namely in the points of contact between old and new. Even in this case, the architect designed simple and inexpensive solutions, executed by local workers.

7.4. Critical Reception

These works had an unequal impact on the specialized bibliography of recent decades. While Além House is almost an unpublished work, both Alcino Cardoso House and the

Gerês House have had great impacts on architectural literature, especially since the 1980s, when Álvaro Siza and Eduardo Souto de Moura became world-renowned architects. Since then, several retrospective publications have appreciated the importance of these early works as revealing pieces of their authors' design principles. However, with a few recent exceptions, their study and dissemination have not been approached from the perspective of adaptive reuse.

8. Conclusions

This article presents three approaches to adaptive reuse of built vernacular heritage with different design strategies, framed within the modern contextualism of the School of Porto. While in Casa do Além and Alcino Cardoso the preexisting forms, character, and identity (including the pitched roofs with ceramic tiles) are maintained, the existing building in Casa no Gerês is manipulated to include a flat roof. Thus, in this case, new elements explore the contrast with the ruin, affirming a new contemporary identity by exploring the contrast between old and new. In the other cases, the vernacular elements are preserved, and modernity is inserted in a more ambiguous approach, namely, in the window frames or additions, as well as in more fluid and open interior spaces.

Thus, these case studies show different approaches to intervention in built heritage—from contrast to analogy—but are characterized by a prior in-depth knowledge of the existing buildings, high cultural standards, and extreme sensibility in the design of details. Hence, these works express a coherence between the conceptual and tectonic approach that is characterized by exceptional construction technology and details.

These three cases, designed by the most nationally and internationally recognized architects of the School of Porto, provide relevant pedagogy and dissemination among students and architects. Moreover, being among the first interventions in preexisting buildings designed by the architects, they represent a laboratory of experimentation for their future practice, which gradually evolved toward more subtle modernity and strong preservation of the identity and construction features of each site. Through their contextual and humanistic approach, they provide lessons for the sustainable reuse of built heritage, respecting and responding to the social, cultural, and environmental attributes of the sites.

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References

1. González Capitel, A. *Metamorfosis de Monumentos y Teorías de la Restauración*; Alianza: Madrid, Spain, 1988.
2. Stone, S. Notes towards a Definition of Adaptive Reuse. *Architecture* **2023**, *3*, 477–489. [CrossRef]
3. Lanz, F.; Pendlebury, J. Adaptive Reuse: A Critical Review. *J. Archit.* **2022**, *27*, 441–462. [CrossRef]
4. Stone, S. *UnDoing Buildings: Adaptive Reuse and Cultural Memory*; Routledge: Oxfordshire, UK, 2020.
5. Plevoets, B.; Van Cleempoel, K. *Adaptive Reuse of the Built Heritage*; Routledge: Oxfordshire, UK, 2019.
6. Wong, L. *Adaptive Reuse: Extending Lives of Buildings*; Birkhäuser: Basel, Switzerland, 2017.
7. Plevoets, B.; Van Cleempoel, K. Adaptive reuse as a strategy towards conservation of cultural heritage: A literature review. *Struct. Study Repairs Maint. Herit. Archit. XII* **2011**, *118*, 155–163. [CrossRef]
8. Del Río Merino, M.; García, P.I.; Azevedo, I.S.W. Sustainable construction: Construction and demolition waste reconsidered. *Waste Manag. Res.* **2010**, *28*, 118–129. [CrossRef]
9. Pereira Roders, A.; van Oers, R. Editorial: Bridging cultural heritage and sustainable development. *J. Cult. Herit. Manag. Sustain. Dev.* **2011**, *1*, 5–14. [CrossRef]
10. Bullen, P.A.; Love, P.E.D. Adaptive reuse of heritage buildings. *Struct. Surv.* **2011**, *29*, 411–421. [CrossRef]
11. United Nations. Transforming Our World: The 2030 Agenda for Sustainable Development. Resolution 70/1. Available online: https://sdgs.un.org/2030agenda (accessed on 8 March 2024).
12. Buser, B. *Reuse! In Reuse in Construction: A compendium of Circular Architecture*; Stricker, E., Brandi, G., Sonderegger, A., Angst, M., Buser, B., Massmünster, M., Eds.; Park Books: Zurich, Switzerland, 2022; pp. 11–16.
13. Guo, H.; Chen, F.; Tang, Y.; Ding, Y.; Chen, M.; Zhou, W.; Zhu, M.; Gao, G.; Yang, R.; Zheng, W.; et al. Progress toward the sustainable development of world cultural heritage sites facing land-cover changes. *Innovation* **2023**, *4*, 100496. [CrossRef] [PubMed]
14. Tomé, M. *Património e Restauro em Portugal (1920–1995)*; FAUP: Porto, Portugal, 2002.
15. Vaz, P. *Edificar no Património. Pessoas e Paradigmas na Conservação e Restauro*; Edições 70: Lisboa, Portugal, 2019.
16. Ferreira, T.C. Sulla cultura della tutela e del restauro in Portogallo. Nota storica e situazione attuale. In *Le Politiche di Tutela del Patrimonio Costruito. Modelli a Confronto in Europa*; Mimesis: Milan, Italy, 2017.
17. Ferreira, T.C.; Ordóñez-Castañón, D.; Póvoas, R.F. Methodological approach for an Atlas of architectural design in built heritage: Contributions of the School of Porto. *J. Cult. Herit. Manag. Sustain. Dev.* **2023**. [CrossRef]
18. Ferreira, T.C.; Ordóñez-Castañón, D.; Póvoas, R.F. *Atlas of Architectural Heritage Design: School of Porto [Ebook]*; FAUP: Porto, Portugal, 2023; Available online: https://heritageatlasporto.arq.up.pt/publications/ (accessed on 23 November 2023).
19. Ferreira, T.C.; Ordóñez-Castañón, D.; Póvoas, R.F. *Novo/antigo. Escola do Porto: Obras = New/Old. School of Porto: Works*; FAUP/Afrontamento: Porto, Portugal, 2024.
20. H-Atlas.Porto. Available online: https://heritageatlasporto.arq.up.pt/ (accessed on 23 November 2023).
21. Távora, F. O problema da casa portuguesa. *Cad. Arquit.* **1947**, *1*.
22. Frechilla, J. Fernando Távora: Conversaciones en Oporto. *Arquitectura. Rev. Col. Arquit. Madr.* **1986**, *261*, 22–28.
23. Associação dos Arquitetos Portugueses. *Arquitectura Popular em Portugal*, 2nd ed.; Associação dos Arquitectos Portugueses: Lisboa, Portugal, 1980.
24. Cardoso, M. Entrevista com o arquitecto Fernando Távora. *Arquitectura* **1971**, *123*, 150–154.
25. Risselada, M. Fernando Távora no contexto do Team X. In *Fernando Távora. Modernidade Permanente = Permanent Modernity*; Bandeirinha, J.A., Ed.; Associação Casa da Arquitectura: Matosinhos, Portugal, 2012; pp. 80–97.
26. Bahía, P. *A Recepção do Team 10 em Portugal*; Circo de Ideias: Porto, Portugal, 2020.
27. Fernandes, E. From CIAM to Team Ten, between theory and practice: Fernando Távora and the international debate of modern architects. In *Team Ten Farwest*; Circo de Ideias: Porto, Portugal, 2019.
28. García Hermida, A. The role of the vernacular in modern architecture: Questions of form, identity and adaptation to context. *Cuad. Notas* **2019**, *20*, 29–42. [CrossRef]
29. Rodríguez García, A. Huellas de lo vernáculo en el Team 10: Alison y Peter Smithson, Aldo van Eyck, José Antonio Coderch. Ph.D. Thesis, Universidad Politécnica de Madrid, Madrid, Spain, 2016.
30. De los Ojos Moral, J. La arquitectura vernácula a la luz de la revisión de la ortodoxia del Movimiento Moderno, sus premisas y antecedentes. Ph.D. Thesis, Universidad de Valladolid, Valladolid, Spain, 2015.
31. Goodwin, P. *Brazil Builds: Architecture New and Old, 1652–1942*; The Museum of Modern Art: New York, NY, USA, 1943.
32. Milheiro, A.V. *A Construção de BRASIL; Relações com a Cultura Arquitectónica Portuguesa*; FAUP Publicações: Porto, Portugal, 2005.
33. Moniz, G.C. *O Ensino Moderno da Arquitectura; A Formação do Arquitecto nas Escolas de Belas Artes de Portugal (1931–1969)*; Afrontamento/FIMS: Porto, Portugal, 2019.
34. Costa, A.A. O lugar da história. In *Textos Datados*; Costa, A.A., Ed.; Edarq: Coimbra, Portugal, 2007; pp. 253–264.
35. Távora, F. *Da Organização do Espaço*; Sousa&Almeida: Porto, Portugal, 1962.
36. Távora, F. *Estudo de Renovação Urbana do Barredo*; Câmara Municipal do Porto: Porto, Portugal, 1969.
37. Távora, F. Pousada de Santa Marinha: Guimarães. *Bol. DGEMN* **1985**, *30*.

38. Frampton, K. Towards a Critical Regionalism: Six Points for an Architecture of Resistance. In *The Anti-Aesthetic. Essays on Postmodern Culture*; Foster, H., Ed.; Bay Press: Seattle, WA, USA, 1983.
39. Souto de Moura, E. Un'autobiografia poco scientifica = An unscientific autobiography. *Domus* **2013**, *972*, 60.
40. Figueira, J. Local y cosmopolita. *AV Monogr.* **2011**, *151*, 16–22.
41. Merí de la Maza, R.; Olivares Moreno, R. Preexistencias y Ruinas en la Obra de Eduardo Souto de Moura. *TC Cuad.* **2018**, *138–139*, 8–13.
42. Wang, W. Arquitectos de Oporto: Távora, Siza, Souto-Moura; una identidad no lineal. *Arquitectura* **1986**, *261*, 18–21.
43. Figueira, J. *Escola do Porto: Um Mapa Crítico*; Edarq: Coimbra, Portugal, 2002.
44. Fernandes, E. A escolha do Porto: Contributos para a actualização de uma ideia de escola. Ph.D. Thesis, Universidade do Minho, Braga, Portugal, 2011.
45. Leoni, G. Cosmopolitanism versus Internationalism: Távora, Siza and Souto Moura. In *Cosmopolitanism in the Portuguese-Speaking World*; Brill: Leiden, The Netherlands, 2017; pp. 161–219.
46. Siza, A. Recuperação e Manutenção. In *A Intervenção no Património: Práticas de Conservação e Reabilitação*; Costa, A., Ed.; DGEMN/FEUP: Porto, Portugal, 2002; pp. 19–21.
47. Souto de Moura, E. Santa Maria do Bouro. In *Eduardo Souto de Moura*; Esposito, A., Leoni, G., Eds.; Electa: Milan, Italy, 2003.
48. Ferreira, T.C. Editorial Project New/Old: A method for analysis of the intervention in the built. In *Novo/antigo. Fernando Távora: Obras = New/Old. Fernando Távora: Works*; Ferreira, T.C., Ordóñez-Castañón, D., Fantini, E., Eds.; FAUP/FIMS/Afrontamento: Porto, Portugal, 2023; pp. 11–20.
49. Ferreira, T.C. Altas of Architectural design in Built heritage: Pedagogies of the School of Porto. In *CA2RE+ Delft Recommendation: Conference for Artistic and Architectural Research & Collective Evaluation of Design-Driven Doctoral Training Programme*; Carvallo, R., Alkan, A., Kuijper, J., Eds.; TU Delft OPEN Publishing: Delft, The Netherlands, 2023; pp. 186–192. [CrossRef]
50. Ordóñez-Castañón, D. Fernando Távora. La modernidad enraizada: Continuidad e innovación como principios de inter-vención en la arquitectura tradicional. Ph.D. Thesis, University of the Basque Country UPV/EHU, San Sebastián, Spain, 2022.
51. Ordóñez-Castañón, D.; Ferreira, T.C.; Sánchez-Beitia, S. Intervention in vernacular architecture: The lesson of Fernando Távora. *Int. Arch. Photogramm. Remote Sens. Spat. Inf. Sci.* **2020**, *XLIV-M-1-2020*, 123–130. [CrossRef]
52. Ordóñez-Castañón, D.; Ferreira, T.C.; Sánchez-Beitia, S. Adaptive reuse of manor houses: Modernism and tradition in Fernando Távora's approach for heritage renovation. *Int. J. Sust. Dev. Plan* **2021**, *16*, 569–578. [CrossRef]
53. Di Biase, C. (Ed.) *Il Restauro e i Monumenti*; CLUP: Milan, Italy, 2004.
54. Boriani, M. (Ed.) *Progettare per il Costruito. Dibattito Teorico e Progetti in Italia Nella Seconda Metà del XX Secolo*; Città Studi: Milan, Italy, 2008.
55. Boesch, M.; Lupini, L.; Machado, J. *Yellowred. On Reused Architecture*; Mendrisio Academy Press/Silvana Editoriale: Mendrisio, Switzerland, 2017.
56. Norberg-Schulz, C. *Genius Loci: Towards a Phenomenology of Architecture*; Rizzoli: New York, NY, USA, 1980.
57. Solà-Morales, I. Del contraste a la analogía. Transformaciones en la concepción de la intervención arquitectónica. In *Memòria 1984. Història i Arquitectura. La Recerca Històrica en el Procés D'intervenció en els Monuments*; Diputació de Barcelona: Barcelona, Spain, 1986; pp. 48–51.
58. Frampton, K. *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture*; The MIT Press: Cambridge, MA, USA, 1995.
59. Carvalho, A.P. *Pachecos: Subsídios para a Sua Geneaologia*; Editora Gráfica Portuguesa: Lisboa, Portugal, 1985.
60. Nunes, M.; Lemos, P. O livro 'Pachecos': Contributos genealógicos para a arqueologia de Santo Estêvão de Barrosas (Lousada). *Lousada* **2015**, *133*, 21–25.
61. Leal, J. Encontro "Fernando Távora sobre o Inquérito à Arquitectura Popular em Portugal". In *Uma Porta Pode ser um Romance*; Mendes, M., Ed.; FIMS: Porto, Portugal, 2013; pp. [O]1–20.
62. Ordóñez-Castañón, D. Casa de Além, Lousada (1956–1967) = Além House. In *Novo/Antigo. Fernando Távora: Obras = New/Old. Fernando Távora: Works*; Ferreira, T.C., Ordóñez-Castañón, D., Fantini, E., Eds.; FAUP/FIMS/Afrontamento: Porto, Portugal, 2023; pp. 95–118.
63. Cardoso, Z. A Casa da Eira, Moledo do Minho (projecto do Arq. Álvaro Siza Vieira). O Fio de Ariadne. Available online: https://zildacardoso.blogs.sapo.pt/291589.html (accessed on 22 November 2023).
64. Nakamura, Y. *Álvaro Siza: 1954–1988*; A+U: Tokyo, Japan, 1989.
65. Siza, A. Casa Alcino Cardoso a Moledo do Minho, 1971/Casa Alcino Cardoso at Moledo do Minho, 1971. *Lotus Int.* **1971**, *22*, 18–20.
66. Huet, B. Maison Alcino Cardoso, Moledo do Minho, 1971. *L'Architecture D'aujourd'hui* **1980**, *211*, 18–20.
67. Teixidor Roca, P.; Bru, E.; Mateo, J.L. Casa Alcino Cardoso. *Quad. D'arquitectura Rubanisme* **1983**, *159*, 50–58.
68. Frampton, K.; Siza, Á. *Álvaro Siza. Professione Poetica = Poetic Profession*; Electa (Quaderni di Lotus = Lotus Documents): Milan, Italy, 1986.
69. Rodrigues, J. *Álvaro Siza: Obra e método*; Civilização: Porto, Portugal, 1992.
70. Fleck, B. *Álvaro Siza*; Birkhäuser: Basel, Switzerland, 1992.
71. Santos, J.P. *Álvaro Siza: Obras y Proyectos, 1954–1992*; Gustavo Gili: Barcelona, Spain, 1993.
72. Armesto, A.; Padró, Q. *Casas Atlânticas: Galiza e Norte de Portugal*; Blau: Lisboa, Portugal, 1996.

73. Trigueiros, L. (Ed.) *Álvaro Siza 1954–1976*; Blau: Lisboa, Portugal, 1997.
74. Testa, P. *Álvaro Siza*; Martins Fontes: São Paulo, Brazil, 1998.
75. Molteni, E. Design Report/Casa Alcino Cardoso. In *Álvaro Siza. Casas 1954–2004*; Cianchetta, A., Molteni, E., Eds.; Gustavo Gili: Barcelona, Spain, 2004.
76. Machado, C. Álvaro Siza and the fragmented city. *Athens J. Arch.* **2015**, *1*, 177–186. [CrossRef]
77. Trigueiros, L. (Ed.) *Eduardo Souto de Moura*; Blau: Lisboa, Portugal, 2000.
78. Merí de la Maza, R. La casa en el límite. *TC: Trib. Construcción* **2016**, *124–125*, 16–23.
79. Marzo, J.L. La ruina o la estética del tiempo. *Universitas* **1989**, *2*, 49–52.
80. Campo Baeza, A. De la cueva a la cabaña. Sobre lo estereotómico y lo tectónico en arquitectura. In *Pensar con las Manos*; Campo Baeza, A., Ed.; Nobuko: Buenos Aires, Argentina, 2009; pp. 28–37.
81. Wang, W.; Siza, A. *Souto de Moura*; Gustavo Gili: Barcelona, Spain, 1990.
82. Peretti, L.; Carole, A. (Eds.) *Eduardo Souto de Moura: Temi di Progetti; Mostre di Architettura al Museo d'Arte*; Skira: Milan, Italy, 1998.
83. Milheiro, A.V.; Afonso, J.; Nunes, J. (Eds.) *Eduardo Souto de Moura: Vinte e duas casas*; Caleidoscópio: Casal de Cambra, Portugal, 2006.
84. Moura, N.G. *Souto de Moura: 1980–2015*; Stiftung Insel Hombroich: Neuss, Germany, 2015.
85. Castro, C.A.A. Fragmento; representação da memória na arquitectura. Master's Thesis, Faculty of Architecture of the University of Porto, Porto, Portugal, 2006.
86. Moreira, B.M.S.C. Forma e Estrutura na obra de Eduardo Souto de Moura. Oito tópicos de Arquitectura: A contradição como parte do projecto. Master's Thesis, Faculty of Architecture of the University of Porto, Porto, Portugal, 2007.
87. Merí de la Maza, R. La casa del principio del mundo. Mecanismos de disolución del límite del espacio en el Norte de Portugal. Ph.D. Thesis, Universitat Politècnica de València, Valencia, Spain, 2012. [CrossRef]
88. Ströher, R.A. Casas do norte de Eduardo Souto de Moura. *Arqtexto* **2004**, *6*.
89. Merí de la Maza, R.; Mejía Vallejo, C. Naturalezas apropiadas en las primeras obras de Távora, Siza y Souto de Moura. *ZARCH* **2021**, *17*, 108–121. [CrossRef]
90. Ordóñez-Castañón, D. La casa como memoria viva: Injertos domésticos en ruinas vernáculas. In *La Casa: Espacios Domésticos, Modos de Habitar*; Calatrava Escobar, J.A., Ed.; Abada: Madrid, Spain, 2019; pp. 1055–1067.
91. Dal Co, F.; Moura, N.G. *Souto de Moura: Memory, Projects, Works*; Casa da Arquitectura: Matosinhos, Portugal, 2019.
92. Siza, A. Notas sobre o trabalho em Évora. *Arquitectura* **1979**, *132*, 38.
93. Siza, A. *Imaginar a Evidência*; Edições 70: Lisboa, Portugal, 2000.
94. Pais, P. A Ambição à Obra Anónima, numa conversa com Eduardo Souto de Moura. In *Eduardo Souto de Moura*; Trigueiros, L., Ed.; Blau: Lisboa, Portugal, 2000.
95. Ferreira, T.C.; Ordóñez-Castañón, D.; Fantini, E.; Coutinho, M.F.; Cruz, T.T. Adaptive reuse of vernacular built heritage: Learnings from Alcino Cardoso House (1971–1991) by Álvaro Siza. *J. Build. Rehabil.* **2023**, *8*, 73. [CrossRef]
96. Fantini, E. Patrimonio storico e progetto nell'architettura portoghese. Riflessi della cultura italiana nell'opera di Távora, Soutinho e Siza. Ph.D. Thesis, University of Bologna, Bologna, Italy, 2021. [CrossRef]
97. Coutinho, J.M.A.F. Construir a Transformação. Entre quatro paredes, quatro casas com Álvaro Siza. Master's Thesis, Faculty of Architecture of the University of Porto, Porto, Portugal, 2023.