4 Agricultural support units

Buildings to structure the rural territory

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Introduction

Agricultural support units, also known as adjective constructions, represent a significant part of the vernacular architecture that also characterises the cultural landscape of Portugal, particularly in the geographical areas within the rural territory (Oliveira and Galhano, 1998).

If, on the one hand, the dilution of the dialectic between Urban and Rural space is a widely assumed phenomenon, the observation of a territorial matrix that derives from the main regional agrarian systems continues to characterise the national space (Domingues, 2010). Portugal presents a territory with an asymmetrical occupation, predominantly developed on the coast and polarised by administrative nucleus, from which the metropolitan areas of Lisbon and Porto stand out. Its peripheral condition and internal administrative circumstances determined late industrialisation and irregular implementation, with a reduced complement of infrastructures at national level, which would be reflected in the development of the territory.

In this context, buildings of vernacular nature, generally associated with logics of pre-industrial agricultural production, should constitute a determining typological component in architectural heritage inventories (Ordem dos Arquitectos, 2004).

This prerogative is particularly evident in the critical reformulation carried out in the historical and theoretical perspective of national architecture in the 50s and 60s of the 20th century. Aware of the profound social and technological changes of the time, the national professional association and academic community combined efforts to carry out a survey that would allow for a general characterisation of traditional regional construction. The Survey of Popular Architecture in Portugal thus constitutes an unavoidable landmark for the reading of the national built environment, from the conceptual definition of heritage, mainly restricted to its monumental dimension, to the identification of the logic of occupation and management of the territory (Leal and Prista, 2021). Its impact, combined with the reactive currents that, internationally, proposed the revision of the modernist movement is, according to most contemporary Portuguese architecture theorists, a key element in understanding the singularity of the subsequent architectural production that was developed, above all, in the North of Portugal (Toussaint, 2009).

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This national mobilisation initiative, marked between 1955 and 1961, divergent in the political purposes that subsidised it and the scientific objectives that implemented it, thus constitutes a synthesis of an experimental survey and classification process. Constituting an unparalleled in the Portuguese reality, in scale, extension, diversity and representativeness of the architectural object, its ensemble and its geographical relationships.

This was also a time of adjustment in the architecture teaching, through the revision of the regulation of Superior teaching (Moniz, 2011). Aiming to reduce the gap between the technologic fields, architecture schools made an effort to ensure disciplinary autonomy from the Fine Arts teaching as well as to promote scientific research, thus pursuing the necessary objectivity. Subsequently, Architecture will enthusiastically follow the development of Social Sciences, namely in urban application studies, with a clear French influence (Duarte Carlos, 2014).

Conditioned by the size and youth of the human resources used in the process, especially in its field phase, those responsible for the Inquiry, in order to ensure the coherence of the results, resorted to Ethnography as a methodology for collecting information and Geography as a disciplinary area for systematising information. The documentary research carried out to prepare the Inquiry, confirmed by the participants themselves (Menéres, 2023), reveals a reduced but seminal bibliography. Among these, the publication Portugal, the Mediterranean and the Atlantic, by Orlando Ribeiro, constitutes the most operative reference. It was through the previous and pioneering work of this Geographer that the areas of study were structured and the logic of the contextual relationship between the building and its physical support was established (Leal and Prista, 2021).

It was also from his interpretation of rural and urban agglomerations, in their national diversity, that the basis for his general typological classification was established, characterising the essentials in terms of configuration, population, density, communications and their dynamic relationships (Menéres, 2023).

The survey process divided the continental national territory into six zones, numbered progressively from North to South. Each zone was handled by a different team, made up of three elements, a more experienced coordinator, and two young architects, recently graduated (Ordem dos Arquitectos, 2004).

This text will use as a reference the region that was designated as Zone 1, the coastal fringe of the North of the country, which encompassed the administrative areas of Minho, Douro Litoral and Beira Litoral. The Zone 1 team was made up of the architect and professor Fernando Távora, the recent graduate Rui Pimentel and the final year student António Menéres, who made the commitment to complete his studies during the process. Architect António Menéres, the only survivor of the team at the time, was interviewed as part of the preparation of this text.

The selected territorial division intended to establish a compromise between the operational viability of the size of the area to survey and the geographical coherence designated by Orlando Ribeiro. An abstract definition that became difficult in an era in which the means and infrastructure of circulation were quite rudimentary, especially in the more interior and mountainous areas. This circumstance,

regardless of the quality of the results, would decisively condition the sample collected and its consequent systematisation. The team was perfectly aware of the existence of relevant territorial gaps that could not be filled for obvious logistical reasons (Menéres, 2023).

As Orlando Ribeiro, the authors of the Inquiry collect and characterise cases according to their location and the viability of the planned itinerary, confirming on the field the existence of identity logics, testing representative hypotheses that could be graphically substantiated. Despite the dichotomous concept of the time, and the awareness of the enormous gap in knowledge in relation to rural territory, the study portrays an architectural production of a seminal vernacular character, both in the countryside and in the city (Ordem dos Arquitectos, 2004).

In this period, far from the awareness of contemporary hybridising processes, it was the city that invaded and overlapped rural territories. The logic of expansion and growth was a model considered inevitable. Evidently, from the point of view of social dynamics, the process was practically antagonistic, with the accelerated growth of the urban population through the emptying of more rural territories, increasingly accentuated until the end of the 20th century (Wilson, 2021). In this conflict, with lesser or greater adjustment, the urban fabrics of the mid-20th century often brought together, with very specific exceptions, pre-existing principles, logics and vernacular elements. From the compatibility of the cadastral structure to the perpetuation of agrarian-based subsistence complements in family life, here it seemed, instead, the countryside entering the city (Menéres, 2023).

Even in the most expressive urban centres today, it will not be uncommon to see the presence of some of these examples, which, despite their eventual decontextualisation, corroborate their importance in the memory of Portuguese architectural heritage. Areas of great population growth in recent years, such as Guimarães, Braga, Barcelos or even greater Oporto, are no strangers to this circumstance. If these manifestations, in the most developed centres, can be interpreted as remnants of an outdated technological legacy, the analysis of the cadastral correlation with the morphological evolution of urban fabrics, particularly in the North Coast of the territory, will allow us to recognise the importance of the aforementioned rural matrix that hosts the agricultural support units.

Agricultural Support Units, also known as rural equipment, are, as can be seen from their self-explanatory name, constructions exclusively intended to assist the agricultural exploration activities of a given community. In most cases, particularly in places where they became regional archetypes, they represented essential solutions for the implementation of a subsistence economy, often secular. It is above all in these contexts, where the most adverse conditions prevailed, that these constructions assumed a preponderant ethnographic character (Oliveira and Galhano, 1998).

Rural Equipment arises naturally from the need that implies the relationship between man and nature. If housing serves, logically, to shelter or spend the night for humans, rural equipment serves exclusively to solve the problems of the main subsistence activity, traditional agriculture. Thus, completing the cycle of rural

subsistence in the Minho economy, where the peasant's house functions as a unit of both production and family consumption. This interdependent relationship is vividly reflected in various cultural expressions. In Galicia, the most common term used to describe this architectural typology is "adjunct buildings" (Llano Cabado, 1996).

Typologically, they should be understood, not as the antithesis, but as the complement, or the productive extension, of the residential architectural group, regardless of the social condition of the household. In the Minho region, whether in the modest detach dwelling or the farm's built complex, the agricultural support units play a fundamental role in the occupation and exploration of the territory, regardless of the proximity to the residential centre they serve (National Institute of Scientific Investigation, 1985).

Agricultural support elements can be subdivided between Building Units and Resource Management Infrastructures. Within the Building Units we can distinguish generic typologies related to the logic of supporting subsistence activities. Thus, at a first level, we can classify these logics according to their basic purpose, regardless of the area or product, in Units of: 1- Shelter, 2- Storage, 3- Transformation, 4- Maturation.

The *Espigueiro* (corn maze granary) objectively fits the purpose of storage. Its particularity is to serve the function of differentiated storage, intended solely for the temporary (relatively short) storage of a single agricultural product: corn (Dias et al. 1994). The *Espigueiro*, in relation to other built elements, presents different location possibilities, generally consisting of two typified solutions. It may appear associated with a specific dwelling, forming a delimited complex together with other agricultural buildings, such as Wineries or Animal Shelters; or it can integrate a group with other granaries, resulting in a homogeneous nucleus with greater formal expression, constituting what is called a community threshing floor.

Despite its lesser recognition, often because it is limited to a minimally regular rocky soil, it is precisely this element, the *Eira* (threshing floor), which constitutes the common denominator for the establishment of *Espigueiro*. Considering the aforementioned storage stage, the *Espigueiro* is intended precisely to accommodate the cereal between harvesting the fields and the threshing process, which takes place precisely on the floor formed by the threshing floor. The proximity between these two elements is decisive for the efficiency of the corn processing cycle, in preparation for its consumption. This relationship optimises transport needs between the cultivation fields and its subsequent distribution, still in the form of cob, and reduces possible degradation and waste when it is already in the form of grain. The importance it has acquired in the diet of this region, indirectly in the feed of farmed animals and directly in the making of cornbread, thus gives it the status of greater importance in local agricultural production, with its abundance, or scarcity, determining the annual quality of life of communities.

Some authors (Ordem dos Arquitectos, 2004) state that it is this deep-rooted correlation that gives it greater technical development, in comparison with other rural equipment, of more basic and sober construction, progressively assuming a greater role in the composition of building complexes, proportionally evident in

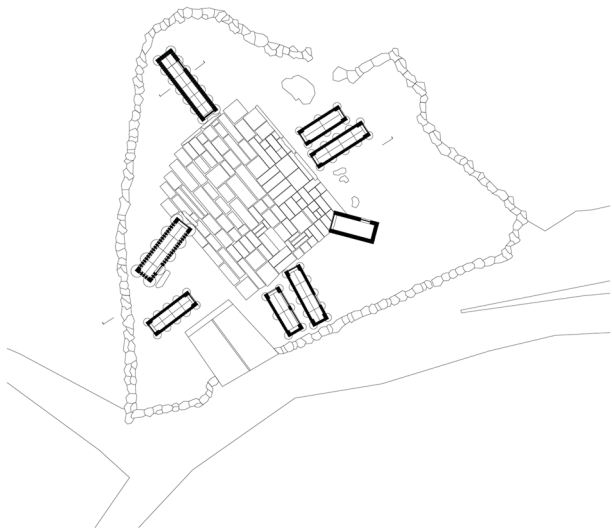

Figure 4.1 Community threshing floor, Parada da Eira, Lindoso.

Source: Drawing by *formaurbis* LAB.

villages with fewer resources and more isolated. It is precisely in the most remote places that the most iconic complexes appear, of which the towns of Lindoso and Soajo are perhaps the best-known examples in the national territory. More isolated and at a higher altitude, these granaries stand out for their quantity, regularity and technological systematisation, demonstrating the collective impetus of communities in mountainous regions and the importance of their combined efforts in the face of adversities in the context.

In the particular case of granaries, in addition to the intrinsic anthropological aspects, it is the specificity of their exclusive function, which gives them evident prominence in the landscape, regardless of the number of surrounding buildings, since it is inherently related to the predicate of their performance.

Programme

Briefly, we can describe this equipment as installations intended simultaneously for the storage and drying of corncobs of American corn, between harvesting and the threshing process. This premise determines a very particular implementation strategy, favouring slopes, or hills, with greater solar incidence and more favourable exposure to mild winds. The granary thus justifies a dominant position in the landscape, towering over the surrounding obstacles, natural or built, ensuring adequate exposure to the weather elements. Their location is generally formalised on ridges or promontories, oriented to the southwest, surmounting the houses of the

communities they serve. Along with mountain communities, they generally take advantage of the rocky outcrops of bare cliffs, allowing a comfortable proximity to the village and minimising the need to sacrifice potential areas for cultivation or forest.

This condition obviously takes advantage of the geological condition of the region, using the granite composition of the soils to configure the *Eiras* without having to resort to the arduous work that their formalisation from scratch would require. In contexts of denser built environments, inserted in villages or within agricultural complexes with greater resources, the search for adequate exposure makes the visual dominance of the granary a very characteristic aspect in the relationship it establishes within the building complex (Oliveira and Galhano, 1998). Extremely conditioned by the properties and dynamics of neighbouring buildings, the inhabitants, when they do not have public spaces large enough to safeguard an unobstructed layout, resort to confronting streets oriented preferably to the south, or with approximate alignments, to attach their granaries to the highest structures. Of its properties. It is therefore not uncommon, in higher density agglomerations, to identify these structures on the lintels of the gates, crowning the fence walls or completing the roofs of other agricultural annexes, at the limit of confrontation with the public domain, or collective domain, of the respective agglomeration. It is above all this condition, even if unconscious, that leads us to a perception of the preponderance of these vernacular elements over others, such as water mills, antagonistically embedded in the thalwegs and partially buried, at the beginning of their own foundations, surrounded by aggressive vegetation riparian (Dias et al. 1969).

Individually, granaries are structures designed as narrow ventilated chambers, elevated from the ground, developed to specifically protect the cereal against humidity in the air and soil and against the attacks of rodents and birds. They are formalised in small buildings, originally made of stone and/or wood, with an

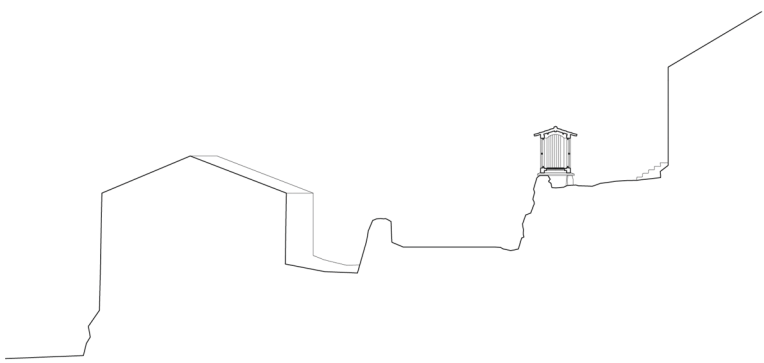

Figure 4.2 Prominent granary in dense cluster, Merufe, Monção.

Source: Drawing by the author.

elongated rectangular plan, with walls torn by gaps for the permanent ventilation of the interior, displayed on a system of robust stone supports.

Its vertical composition is generally divided into two components, the seat (*assento*) and body (*corpo*), below is a very synthetic description of its main characteristics:

- The seat is the system for lifting the pavement, which provides the necessary distance from its humidity, made up of feet, vertical prismatic blocks or rough stone cylinders, which are arranged in pairs at critical points supporting the base of the body, invariably at its ends and possibly at the intermediate points of greatest load, also ensuring its levelling. Superiorly, they are topped by rudimentary discs with a diameter greater than the thickness of the feet, the millstones or rat-turners, in order to configure a protruding flap, which establishes the transition between these elements and the base of the body, its function being to prevent the rise of rodents. Occasionally, the feet can be replaced by transverse blocks or a continuous mass, capped on top by protruding slabs along the entire laying structure, called tables, to ensure the aforementioned protection.
- The body corresponds to the drying tank and in most cases is composed of a structural skeleton in an indented system and a set of closing planes, configured as a systematisation of vertical or horizontal gaps, to ventilate the interior. Its interior is narrow and its height is reduced, so as not to promote the deposit of cobs too far from the periphery, allowing man to move inside within the limit necessary to carry out the respective tasks of accommodating and extracting the cobs to from the access and discharge openings.

The body's construction system presents a wide variety of solutions, traditionally ranging between elements of stone, wood or a combination of both. This diversity of solutions presents a generic geographic affinity, which allows local flexibility, leaving room for the implementation of some singularities even in the most systematised sets.

The skeleton is made up of a base (made up of stone ballast or railing and floor), stone columns and lintels or wooden posts and beams. The upper transversal bracing elements of the walls, which support the roof can be in in stone (*cangas*) or wood (*cambotas*) presenting a triangular shape.

The ventilation planes or walls are the surfaces that fill the vertical spaces between the skeleton elements. They are made up of baluster or slatted panels and, depending on the materials and systems, they have very different configurations. Stone balusters are composed of torn columns, with narrow vertical (more rarely horizontal) slits or simply separated with more generous joints. Vertical wooden slats are composed of oak or chestnut beams, arranged regularly and spaced apart, generally reinforced with an intermediate strap. Like stone granaries with horizontal slits, horizontal wooden slats are less common, possibly due to their greater need for maintenance. They feature an internal skeleton, with a greater number of props to ensure structural locking, covered with small-width horizontal slats. In

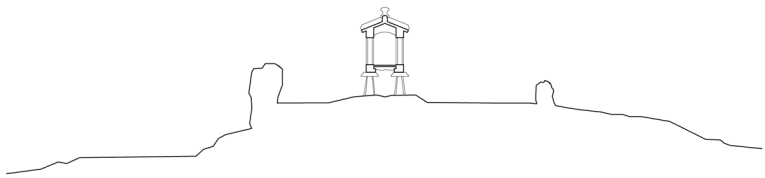

Figure 4.3 Cross section of a narrow Granary, Lindoso.

Source: Drawing by author.

most cases, the angles are reinforced with diagonal struts, fixed between the lower transverse beams, protruding for this purpose, and the corner props.

The roof in narrow granaries with upright walls is generally gabled, transverse to the body, the most common solution is made of tiles placed on lath, which was progressively replacing thatch, the most robust examples can be composed of inclined granite slabs and In shale areas, use slate systems. The tops of the waters are generally topped with stone elements, constituting a prominent cap to protect from the winds, forming a formal transition with the upper lintels (Dias et al. 1994).

Despite the sobriety and pragmatism of their systems and execution processes, granaries reveal some propensity for incorporating decorative elements, particularly the crowning of the roof's capes. Of these ornamental elements, sundials stand out (whose activity would determine adequate sun exposure), crucifixes, figures and various inscriptions, the most common being the date of construction or reconstruction. Naturally standing out from the aesthetic simplicity of other models of popular architecture and revealing the importance attributed by local communities (Llano Cabado, 1996). Of all the types of rural equipment, they are the most symbolic, intrinsically linked to the cult of fertility and the prosperity of rural life, reflecting the importance of corn as the main subsistence crop in the northwest of the peninsula, between the 17th and 20th centuries.

Context

The territory of the Iberian Northwest, when corn was introduced, was mainly structured according to the Roman *ager-saltus-sylva* matrix, deeply dependent on summer cycles and the complementarity of production activities. Despite its modest size, Portugal had few connections, making it particularly difficult to move people and goods, affecting the development of any commercial networks, in quantity and size.

According to Orlando Ribeiro (1945), Portugal's mainland corresponds to three large geographical areas, which, until the middle of the 20th century, would be dominated by the intensive cultivation of three main types of cereals. In the so-called Humid Portugal, geographically coinciding with the area of the Northwest Atlantic, in which the present essay is inserted, maíz corn or large maize,

constituted the dominant cereal; consequently, wheat would be equivalent to the South Mediterranean and rye to the Northeast *Trás-os-Montes*. In this region, with greater or lesser variation, the necessary conditions for the prosperity of this cereal are met. A temperate climate with well-marked seasons and a high level of precipitation (the highest in the Iberian Peninsula) combined with an extensive and intense water network, influenced by the relative permeability of the soils, predominantly granite, allowed a very favourable framework for the introduction and development of this cereal.

With a low mountainous relief, minimising the impact of frost and thermal fluctuations, the extensive network of river basins offered the floodplain as one of the most productive resources in the region. It was in these elements that its primary appropriation was established (similar to its context of origin). Afterwards, toked place the progressive appropriation of the foothills of the mountains, with their systematic modelling of land steps and artificial terraces, intensifying the occupation of areas susceptible to agricultural production. This orographic change, resulting from the current cadastral regime, dominated by smallholdings and crossed by countless water lines, determined the definitive consecration of corn as the main agricultural product in Minho, to the point where its agrarian cycle dominated the entire rural landscape (Dias et al. 1969).

Considering the rurality of the territory and its articulation with towns, independently of their sizes, the impact of this activity on the built environment is clear, determining the configuration of the region's landscape. The abundance of networks of water channels that allowed the adequate and permanent routing of water to the cultivation fields was an important complement. A circumstance that is deeply related with a tradition of shared management, constituting a specific sociocultural component of these communities, inseparable from their architectural and urban expression.

On a larger scale, granaries present a generic identity, easily recognisable among the other typologies, regardless of the variability of construction solutions. Its geometry, constructive systematisation, size and logic of implementation present a constancy of characteristics, to form, together with the threshing floor, one of the most rooted archetypes of rural architecture in the Northwest Peninsular.

> *Cultural ties between northern Portugal and the rest of the country have never been as strong as with the neighboring Spanish province of Galicia. Not surprisingly, horreos (...) have their perfect counterpart in the Portuguese espigueiros,*
> (Rudofsky, 1990:75)

In a more localised interpretation, their differentiation is evident, but it is far from being circumscribed, with many examples of exceptions punctuating the more homogeneous trends. This differentiation demonstrates a subordinate adaptation to available resources. The main distinction between granaries is based on the materials used, forming stabilised sub-typologies or trends associated with a specific intervention carried out in the same period of time. This first contextual

correlation is the most evident and is mainly responsible for the classification of the best-known variants. The full execution variant in stone is associated with mountainous territories, with less accessibility and sparser forest mass (using more resistant and lasting solutions), with the best carving techniques being exemplified in the Lindoso and Soajo granaries (Ordem dos Arquitectos, 2004). The stone variant, but with more rudimentary development, without technical development of the components, is associated with the Serra d'Arga highlands, in Caminha municipality.

The all-wooden variant is associated with floodplain areas, close to settlements with more modest resources and fewer inhabitants, generally in milder climates with greater forest wealth, providing privileged access to oak and chestnut wood. Its dissemination is more dispersed and diluted, usually coexisting with groups of stone or mixed typology, even within very homogeneous groups. However, in some circumstances they can also refer to a technological trend, as in certain villages in Marco de Canaveses municipality in the case of narrow granaries; or the examples of wide configuration located in the areas surrounding the city of Porto, whether those with an upright appearance, located to the North of the Douro, or with sloping walls, to the South of the Douro, namely in the very characteristic case of the city of Vila Nova de Gaia (Dias et al. 1994).

The mixed sub-type, exemplified in the variant that dominates the coastal strip from the city of Viana do Castelo to the town of Vila Nova de Cerveira, with the clear distinction between the stone skeleton and the wooden slatted panels, appears mainly in the most dynamic and greater territorial connectivity. Generally associated with centres with the highest population concentration, administrative headquarters or places with more financial resources. It constitutes an evolutionary synthesis, perfectly defined, of the combination of more accessible material resources and the development of perfectly differentiated construction techniques. This last fact refers to the second distinction in the classification of variants and is related to the technical capacity of local communities. Places with a more developed construction culture, such as Barbeita, in the Municipality of Monção, show technical differentiation in the execution of the stone elements of the skeleton, due to the quantity and quality of local construction sites. As well as the number of cases identified around the towns of Ponte da Barca and Vila Verde, incorporating elaborate carvings and engravings made on the wooden parts of the doors and friezes, demonstrating the transversal relationship between the granaries building techniques and the local community's aptitude for woodcraft (Oliveira and Galhano, 1998).

In a more critical assessment, we can associate types with less material diversity with areas with more extreme conditions, referring to less developed construction cultures and above all associated with self-construction. In contrast, the types that present greater material diversity, developing more elaborate technological solutions, are associated with towns with more resources and more qualified craftsmen with activities that cut across the construction sector.

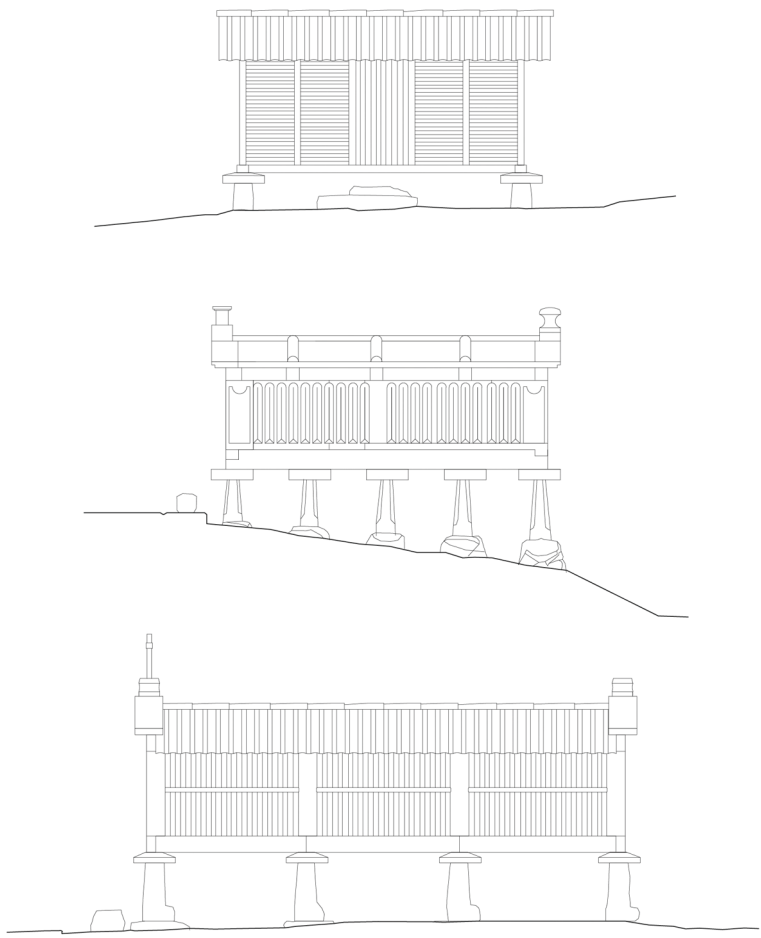

Figure 4.4 Main variants, comparative table.

Source: Drawing by author.

Time

The referential studies argue that granaries variants are primarily conditioned by sub-geographical resources, dependent of the development of construction cultures. With the necessary exceptions, generally associated with the isolation of higher altitude mountain communities, the materials used are uniformly distributed. Its traditional form, as previously seen, oscillates between all the elements made in granite or alternatively in chestnut wood and/or oak (preferably). With

the exception of the ancient replacement of thatched roofs with ceramic tile roofs, the inventories conducted reveal a remarkable morphological crystallization. This change is mentioned significantly although with rare graphic characterisations, so it can be inferred that, except for the variant of integral stone granaries, the tile-covered roof represents a completely assimilated traditional solution. The specific date of the surveys is not objectively identified in the publications, but the time interval can be deduced from the creation of the Centre for Ethnology Studies and the respective editions of published works.

Therefore, it can be safely stated that between the 1940s and the 1980s of the 20th century, considering a conservative interval, the record of the incorporation of industrial production materials is scarce (Dias et al., 1994: 135) and constitutes a gap in the inventory process carried out. However, any field survey carried out at the turn of the millennium, close to the busiest centres of activity, particularly in administrative centres or along the busiest roads, provides objective evidence that the vast majority of existing granaries resort to the use of hollow brick and, to a lesser extent, concrete as essential construction materials, without distorting their morphological configuration and compositional constitution. In some cases, the application of these materials presents a significant consistency, implying two situations that are decisive for their incorporation into the collective memory. The first is related to the production of these elements on a regular basis for this specific purpose, determining the recognition of their purpose and their economic justification, the second is related to the development of technical solutions stimulated by the intrinsic properties of the new material, also expressed in the systematic exploration of their aesthetic potential (Asquith; Vellinga, 2006).

The analysis of examples constructed with industrial materials, as illustrated in the comparative table, reveals a technical evolution that contrasts with the logic of traditional buildings. In these cases, the more recent the construction, the more rudimentary the building solutions employed to self-construction. This inversion of logic is also linked to the programmatic decline of the function associated with agricultural support units.

The examples of brick, present an enormous evolution within their own derivation, constituting areas and nuclei of great general homogeneity and particular feature, as in the case of the vicinity of the National Road N13 that connects the towns of Caminha to Valença with perfectly defined concentrations, or present in the small villages in the interior of the Municipalities of Paredes de Coura and Vila Nova de Cerveira.

Another of the most interesting examples are entirely metallic solutions, composed of profile skeletons and mesh or net walls, covered by profiled sheets, very present, for example, along the road axes between the towns of Ponte de Lima and Barcelos. The configuration of these solutions remains very faithful to the compositional matrix, both in size and proportion. However, in the second case, the components naturally have a much smaller section, which, without detriment to the internal volume, produces an apparently slimmer variant, suggesting an even more elongated configuration.

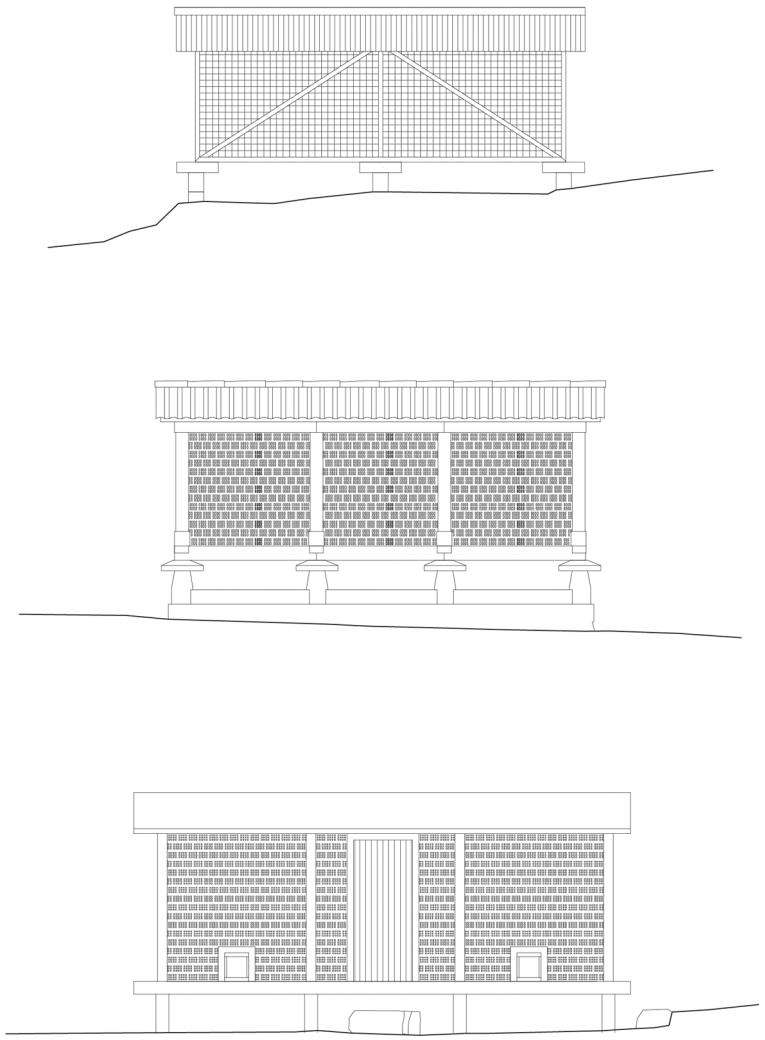

Figure 4.5 Incorporations of industrial elements, comparative table.

Source: Drawing by author.

This acculturation, as a symbolic incorporation, becomes more evident when we witness the objective standardisation of certain solutions, and above all, in the less common integration of iconographic or decorative complements in the execution of these popular variants. Therefore, concluding the importance of the culture of the bread cycle in communities, regardless of the authenticity/antiquity of the buildings associated with it.

The speculative granary: Between territorial reference and technological obsolescence

Whether on the coastal fringe or on the mountain headlands, within the urban core or in cultivation areas, the granary constitutes a differentiated element, which contributes to the formation of a specific cultural landscape. In its physical dimension it coincides with a specific geographic region, in abstract terms it represents the dynamics of a lasting rural matrix that extended beyond industrial transformation, perpetuating a technological anachronism very characteristic of Portuguese architectural reality (Ordem dos Arquitectos, 2004).

Granaries both punctuate the streets of the most traditional villages and coexist under the busiest highways, constituting a transversal element in the most recent territorial transformations. This generic identity is determined by programmatic specificity and results from the secular consolidation of the associated subsistence activity. Critically, this finding inevitably refers to a territory where the modernisation of agriculture was late or non-existent (Domingues, 2012).

There is a clear tendency, in the most isolated places and in less populated and dispersed villages, for the construction of granaries to be concentrated in larger community groups with great morpho-typological systematisation. This contrast, considering the residuality and irregularity of the nearest residential areas, gives them greater landscape dominance.

Even though they are technologically more archaic, they tend to have greater heritage value, with administrative recognition at local and national level.

Espigueiros, in this context, is understood as a particular autonomous nucleus, with independent structure. Located around the perimeter of a threshing floor, or several, they have clear alignments, generally transversal to the exposure of the prevailing winds, as in the case of Castelo do Lindoso, arranged in parallel rows. In other cases, as in the ones we could observe in the villages of Parada do Lindoso or even in Soajo, they are assumed to be perpendicular to the threshing floor, more regularised, and have a cruciform arrangement, involving it on all its sides. Finally, as in the case of the Eira Comunitária de Porreiras, in Paredes de Coura municipality, they are dispersed and isolated, always oriented in the same direction, West-East, flanking the smaller side of more irregular threshing floors, formalised in roughly levelled granite outcrops, forming groups with small gabled porches, called tulhas, which would alternately serve as shelters for livestock, covered for implements and covered in transition for the already threshed grain.

Circumscribed around the most populous and dense centres, granaries appear associated with residential complexes, generally one for each street, and due to the lack of space and better exposure to climatic elements, they are located along the perimeter of the property, precisely on the public domain.

In places where fence walls acquire great urban expression, consubstantiating narrow streets with broken geometry, embedded in the building fabric, granaries constitute occasional appearances of great constancy in the urban environment. They generally indicate the primary agricultural production properties, which stratified the clusters before the more recent cadastral fragmentations, encouraged

Figure 4.6 Date inscription on brick granary; Menstrestido, Vila Nova de Cerveira.

Source: Photograph by author.

by the appreciation of buildable soil and the devaluation of cultivated areas, inevitably consecrated by current territorial planning instruments.

Its overlap with the plot's enclosure elements suppresses one of its most characteristic typological elements: the feet. In this way, they are elevated over the lintels of the gates, or over the walls facing the street. Within this logic, they differ greatly from the opaque and irregular wall technologies of Alto Minho region, which constitutes a unique characteristic in the serial vision itineraries of rural settlements.

Regional variations arise from the ability of local communities to adapt to the means of execution. Despite the definition of a common compositional matrix of great territorial transversality, granaries demonstrate compatibility with a systematisation of components adapted to the available resources, material and human.

Figure 4.7 Granary placed over the property wall; Mentrestido, Vila Nova de Cerveira.

Source: Photograph by author.

The construction tradition of a given place, in a more limited territorial circumscription, produces consistent variations, which reciprocally also characterise its locations. Its relationship with the context in a micro-scale interpretation thus refers to a technological sub-specification, which, admitting many exceptions, manifests very coherent trends, with localised exponents of great cultural correlation.

The perpetuation of this typology is irremediably dependent on the regular production of corn on a small scale. Like other vernacular typologies, the economic changes that took place in the second half of the 20th century promoted its

Figure 4.8 Granary in an urban context, Vila Nova de Cerveira.

Source: Photograph by author.

progressive disappearance, given the suppression of its original programmatic need (Duarte Carlos et al. 2015).

However, more recent years have suggested the possibility of programmatic preservation, which, although residual, demonstrates a territorial dilution that could enhance the granary's typological survival. As expressed in the technological characterisation carried out, it can be deduced that the technical evolution of the granary is associated with the process of acculturation of the materials used, disruptive in its introduction and systematic in its repetition. A living constructive culture presupposes a permanent response to the needs that give it its purpose, in light of the technical conditions stabilised in a given context (Frey and Bouchain, 2013).

Much more interesting than the replicas, devoid of their original use, that decorate the public spaces of suburban homes in the region (in large quantities), will certainly be the examples of altered technology, with the indiscriminate incorporation of non-traditional resources, which seem to give this typology a consistent path for its formal evolution and its persistence as a characterising element of the built landscape of northern Portugal.

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