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## ARCHITECTURE OF ESSENCES: THE REVEALING ABSTRACTION OF THE TOBACCO LANDSCAPE

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### ABSTRACT

The architecture targeted by this study, born to shelter and allow the process of organic transformation of the harvested tobacco leaf, is unequivocally identified with a defined chronology and territory. The tobacco drying sheds of the Vega of Granada have shaped, for more than sixty years and until today, the landscape framework of a region that has historically played a decisive role in this large area that is home to a total of forty-one municipalities. Based on the scientific procedure that guides the systematic organisation of landscape studies, we establish a comparative analysis using the so-called *morphological method of synthesis*; a characteristic empirical practice that allows the enforcement of an inductive analytical procedure for an exact approximation to the landscape, to the time and to the permanence of form as an indispensable requirement of identity. As for the architecture of models and prototypes, we conclude with the architectural characterization of one of the three reference complexes in the province, constituted by one of the most representative models of industrial architecture that is configured on the basis of the essential or invariant in time and space. Geometry acquires prominence, and the material condition of the prototypes loses its relevance in benefit of the relationships that become important as formal configurators of the architectural process.

### KEYWORDS

Geometry; tobacco drying sheds; time; essence; prototype.

### 1. INTRODUCTION

From the encounter of the ideal concept of *abstraction* with the analysis of the industrial and vernacular architecture of tobacco, a new interpretation of architecture is born: architecture as a discipline close to the trinomial defined by form, place and time. One of the greatest aspects of the tobacco drying sheds in Granada is probably how very specific their architecture is, it is necessary to understand the purpose of their construction, different from that of any other building outside this particular industry. The exclusive function that they have to perform in their respective locations in a specific chronological period allows them to acquire properties that approach the constructive essence; they prove the integrity of the exercise of abstraction. The drying sheds do not require installations that are difficult to set up, nor functional programs, nor complex construction processes, nor delicate finishes or costly exterior finishes. They are only space, time, form and skin, built with the exclusive purpose of forming a space cut out of the landscape in which to generate certain environmental conditions.

They are architecture in its maximum degree of purity; and they are so because they were not erected seeking an aesthetic, ideological or sensorial purpose; they have a real, concrete, defined, timelessly admitted and applauded use (Norberg-Schulz 1975).

## 2. STATE OF THE ART. MIMESIS AND ABSTRACTION

When referring to questions about art, beauty and inspiration as well as the large heterogeneity of activities related to architecture, in the *Critique of Judgement* (Kant 1975) the following statement about the concepts of art and imagination can be found:

"Imagination is [...] another nature obtained from the matter which the real one provides, and art as the expression or capacity which is in possession of a "cipher language" through which the beautiful forms of nature communicate with humankind in a figurative way. (Kant 1975)."

This leads us to inquire into the relationship between the terms architecture, splendour and mimesis. Immanuel Kant, with absolute logical rigour, introduces an original but sometimes strict concept of beauty. He adopts a position of indisputable classical origin, since he is admitting that the aesthetic beauty is represented by natural beauty, acknowledging the concept of imitation. The beauty and practicality of what is made and constructed by humankind is only feasible through the imitation of nature. In other words: imitation, the artistic, the beautiful or practical and the natural are part of the same thought, of an extrapolated universal integrity, as a natural and inseparable relationship between the terms: architecture and mimesis.

The idea of aesthetic beauty being equivalent to natural beauty is immemorial, perceived by

countless civilizations which tried to imitate it. From the origins of humankind and the first artistic and architectural manifestations to the flourishing of the first civilizations, the externalisation of this feeling has been a constant, often inherited and revealed in the form of tangible aesthetic expressions in which the reflection of nature appears identified in cultural events as different as art, architecture and religious beliefs (Cotofleac 2009).

As for the concept of abstraction, we assume that it is not a fixed term of specific meaning. Its use implies conceptual variations according to the discipline, art or science that includes it in its structure, system or knowledge. However, the term has an immovable, enduring and common characteristic to any subject that makes use of it: it appeals to the essential, or rather, to the search for the essential.

The process of abstraction in architecture represents an inquiry into the essence. It is the search for what always remains in any architectural work, a search that is characterised by giving correct answers for what is permanent, invariable, and transcendent in architectural terms. The mental process of conceptualization of thought is present in any architectural process or activity, although with variable strength and intensity (Fig. 1).

When exploring the origins of the existing relationship between self-absorption and art, we have to go back to 1908, the date on which Wilhem Worringer published his doctoral thesis titled *Abstraktion und Einfühlung*. His thoughts and reflections were the starting point of the so-called abstract art in the field of artistic modernity. Worringer explains that through concentration, the object is isolated from the outside world, distancing it from all interdependence, thus approaching its true, immutable and basic value, and avoiding chaos and arbitrariness. The thought that seeks absence brings us closer to the most basic and pure essence of things. That is



Figure 1. Conceptual essence - material essence. The abstraction of a six-year-old boy when drawing the most elementary prototype of a tobacco drying shed, with the Sierra Nevada mountains in the background. Photo: authors 2015

to say, and according to his theory, that any essence tends to universality, a basic condition of aesthetic judgement. Likewise, it does not admit any kind of specific underlying conditions as it only pursues the valid as proof of truth. There is also another important particularity, already announced in the 18th century, but further developed at the end of the 19th century: the empathy or "Ein-fühlung," consisting of the sentimental process of subjective character where the form has the ability to arouse feelings on the observer through the active projection of a meaning of what is observed (Vischer 1873). All the concepts mentioned: mimesis, abstraction and empathy, refer to meanings that are clearly evident in the architecture of the tobacco drying sheds. Mimesis is present in the materiality of the construction, in the use of natural, local materials; the use of components that are in the immediate surroundings of the construction of each building. It is also manifested through the formal and spatial harmony; the similarity with neighbouring buildings, with tradition and the different indigenous architectural manifestations. Lastly, this imitation of nature can be seen in the very architectural

foundation of the element under analysis. The rational, logical and simple solution that Nature imposes in its evolution is identical to that which is manifested in the constructive spirit of these tobacco-drying factories. We thus link up with the concept of architectural abstraction, of constructive essence. The drying shed is a manifestation of what is necessary, of the minimum required in architecture to fulfil a specific function. In them there is only what is inexcusable, what is constructively unavoidable, what is indispensable from the material and technical point of view for the existence of architecture.

The empathy of such unique designs is only understandable if one delves deeper into social, cultural and historical questions. The exclusive architectural typology analysed, more than fulfilled its intended purpose, facilitated the development of the population and generated a notable economic improvement in the region; its external appearance was quickly accepted by its inhabitants who willingly accepted it and took it upon themselves to the point of becoming a formal symbol of the local architecture of a long and fruitful period.

### 3. METODOLOGY

One of the primary characteristics of the 20th century was the triumph of abstraction over mimesis, that is, of the intellectual operation equivalent to isolating being above copying nature. This means that we consider meditated reflection as a renewed method to generate forms, elevating Rationalism to the category of essential discipline used in architecture, art and, of course, general thought.

The conceptualization of reality represents the rational power and the most characteristic, synthetic and renovating intellectual and formal impulse of all the arts that developed throughout the 20th and 21st centuries. Faced with the corset imposed by mimesis, abstraction takes the path of confidence in progress, in the future, in rationality and in the innovative search for a new infinite and free space.

Basically, abstract thinking is understood as any mental operation that is equivalent to mentally separating or isolating a quality or characteristic that is impossible to carry out physically (Montaner, 1993). This means that any analytical procedure that requires the breakdown of a unitary whole into its basic components is equivalent to a search for synthetic reflection; or in other words, any thought that implies the isolation of an aptitude or quality, where we observe it on its own, separated from the subject from which it comes, in order to analyse it and consider it in its pure essence or notion.

Under these principles, an inductive method of investigation is proposed, applying a morphological procedure of synthesis on the chosen prototype, through which it is intended to demonstrate the meaning of essential architecture or zero architecture and its connotations with the topos or place and the different times that are handled in architecture: ontological, material, biological, collective, remembered or evoked.

### 4. DISCUSSION. INVARIANTS OF THE LANDSCAPE'S IDENTITY

In painting and in any other artistic discipline, all those works that participate in the essentiality and conceptual thinking are considered abstract, leaving behind any gesture that could bring them closer to the specific, the tangible and the contingent. When referring specifically to architecture, the starting point is very clear: architecture is attributed, above all, the capacity to organise, to propose a formal construction with an order that, although it may be complex, must be, in any case, recognizable by its *form* geometry and substantial *skin*.

It seems undeniable that the formal strength represents the most remarkable aspect of all the invariants that characterise the architectural model studied; it is the most evident feature when analysed from the point of view of perception. The clear, gestalt and loaded form of the shed, incites to study it from the power of its appearance, without the implication of other nuances or architectural additions that contaminate a specific and characteristic study (Schmarsow 1897).

A profound analysis on the physiognomy and appearance of a formally defined architectural object that has been infinitely repeated on a specific territory and in a specific time, entails the need to resort to the principles on which its architecture rests and which have been the pillars of its evolution. The formal realisation of the tobacco drying sheds is due to processes of optimization of means in the construction, purification of its figure and adaptation to a specific physical environment, which has determined its expansion without limit and the territorial conquest of a region that is recognised because of its architecture. The interpretation and ultimate understanding of these buildings, leads to the consideration of an elementary manifestation of industrial architecture (INC 1948).

It is an exclusive response and the natural consequence of the combination of

the trinomial: geometric optimization, geographical place and time. In the Vega of Granada there are three municipalities that are clear exponents of a very specific industrial architecture and with an equally defined local level, in which the tobacco drying sheds are the protagonists and they occupy the land in a forceful and explicit way, thanks to the perfect organisation and foresight established in the respective architectural projects. We are talking about El Chaparral, Fuensanta and Peñuelas. The projects of these three spots were drawn up by technicians of the National Institute of Colonisation, an organisation created in Spain in October 1939 which relied on the General Directorate of Colonisation and Rural Planning of the Ministry of Agriculture. They foresee the construction of prototypes of drying sheds in series. The creation of these three *Colonisation Villages* arose from the social and economic deprivation in the post Spanish Civil War period in the province of Granada, and they were conceived with the incorporation of drying sheds built with the most efficient construction techniques and materials of the time, just like the rest of the houses and equipment. When they were built, tobacco exploitation was predominant in the Vega to the extent where it was practically a monocrop, which explains that these new sites were focused on tobacco exploitation (Fig. 2).

## 5. RESULTS. THE CHAPARRAL PROTOTYPE AS A MODEL IN THE VEGA OF GRANADA

Mimesis or imitation of the natural is considered, in terms of aesthetics, as the essence of perfection and beauty in traditional art. In the restricted sphere of productive architecture, both the enhancement of simple and optimised forms and the consideration of functional efficiency are basic factors in the appreciation of any model of elementary industrial architecture, and in particular they are decisively manifested in the tobacco dryer; a clear example of the exercise of essentiality, abstraction and beauty in a hybrid architecture between industrialisation and landscape contextualisation. The formal forcefulness, its particular envelope, the interior spatiality of its apparent volume and the geometric and constructive simplicity of the roof constitute the fundamental characteristics for functional efficiency and constructive economy, in other words: the unalterable soul of these buildings. Through the recourse to the architectural repetition of this prototype of proven lucrative efficiency in a balanced and suitably proportioned project environment, the original productive unit for which it was conceived is materialised, constituting the genesis of

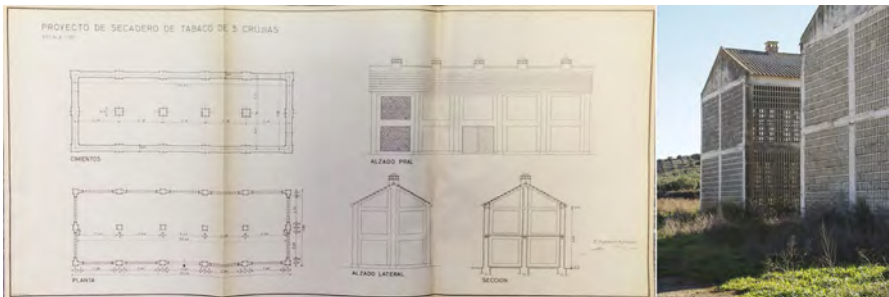


Figure 2. Plan of the prototypes of the "Torres de la Serna" tobacco drying sheds (1962. ACPAPAMA. INC Project. Photograph: Authors 2017)

the village of colonization del Chaparral; a harmonious architectural complex that configures a beautiful municipality based among other precepts on formal simplicity, rationality and the permanent presence of the human scale, both in the residential and in the productive sectors.

El Chaparral is located within the Guadalquivir Basin, around 6 km northeast from the city of Granada, at the junction with the Calicasas road, next to the A-44 highway, and its clear metropolitan vocation makes it distinguishable. This town, designed by the architect José García-Nieto Gascón and the engineer Enrique Sánchez Sanz (1957) following the instructions of the General Directorate of Colonization, consists of a residential core for workers with its corresponding agricultural dependencies -barns, corrals and sheds for machinery- and several administration buildings, a church, a school, housing for teachers and commercial premises for artisans. The construction of tobacco drying sheds is also envisaged. Given that the number of drying sheds to be built in this area of *national interest in Granada* was high, their location was planned respecting the recommended dimensions to guarantee air circulation and, therefore, the drying of a large number of plants (Sánchez 1962). As a consequence, standard projects were drawn up for groups of drying sheds that responded to the characteristics of the so-called Torres de la Serna model, promoted by the National Tobacco Cultivation and Fermentation Service, since this model recognised their adequate performance in terms of quality and quantity in the Granada area. The constructive guidelines follow the conditions contained in the manuals of the *Tobacco Handbook* published by the National Institute of Colonisation (1948). The general features of these models, which occupy an area of 7700 m<sup>2</sup>, represented by the group of the municipality of Albolote (Granada), are the following:

### 5.1. Constructive characterization. Type

The main systems and materials used in the construction are:

Foundations: Concrete masonry, with 150 kg concrete.

Structure: Brick masonry pillars with 1:6 cement mortar and double hollow brick partition walls with 1:6 cement mortar, which are finally replaced by reinforced concrete pillars also with concrete strapping at the top with four Ø 6mm rounds.

Envelope: completed with trusses to enclose the latticework, that in this case is made of mass produced precast concrete, although they are originally planned in brick masonry.

Roof: Flat tiles on wooden roof slats supported by a precast concrete reinforcement.

Doors: Metal sliding doors.

Interior blinds: Made of reeds to regulate ventilation and with a rope to roll them up.

Pavement: 150kg concrete in a 15cm layer and 1m wide external sidewalks.

Ventilation: Through the roof placing two chimneys with brick coping.

Plastering and whitewashing: Plastering with cement mortar 1:4 and lime whitewashing, both interior and exterior.

Hanging system: poplar logs supported on commercial reinforced concrete beams, calculated for an overload of 600 kg/m<sup>2</sup>.

(Fig. 3).

### 5.2. Architectural typology

The general modulation and the measures of 6.80 metres wide and 6.00 metres high are, based on experience, interesting constants to ensure proper ventilation when taking into account the high number of buildings and their proximity to each other. Other proportions are discarded due to the poor quality of the plant achieved after curing. Five divisory bays are established as the maximum number recommended for an optimal use of the space. The excessive



length of a shed is not advisable for practical purposes, nor is it to exceed the 1000 m3 of capacity estimated by the Service (Fig. 4).

### 5.3. Functionality and space optimization

The number of tobacco plants per useful m3 is 29 and the planting density per HA is from 12,000 to 15,900 plants, so the m3 that each shed requires will range from 448 to 548 so an average term of 500 m3 is opted for. The total number of drying sheds required when considering an average number of 14,711 plants per hectare - located in the range of 12,000 to 15,900 per hectare - is 20 five-bay

drying sheds, each with a capacity for 24,421 plants, a total of 488,420 plants assigned for the farm. The construction of the sheds is based on the economy of production, so it is designed to allow an alternative use as a shed for the long period in which it is not used as a drying facility. For this reason, it has a wide door for the passage of carts and materials in the central opening of the longitudinal façade of the building. The façade walls are built with latticework that allow only the flow of air to pass through and ventilate the structure. This model is replicated in the three farms mentioned above.

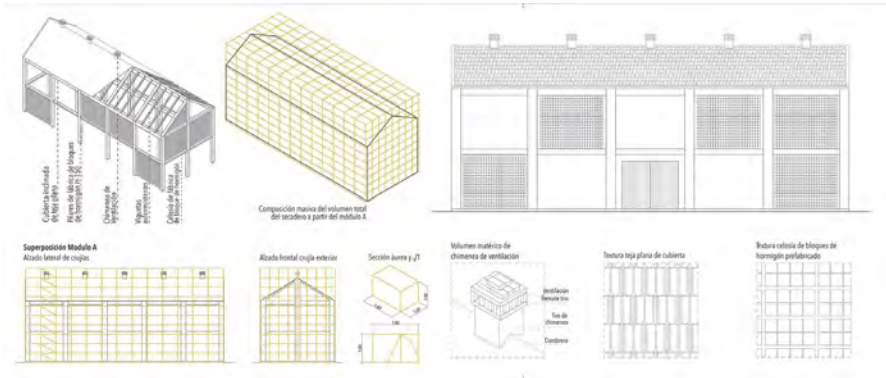


Figure 3. Formal and material analysis. Module type (Authors)



Figure 4. Analysis of implantation in the territory, El Chaparral complex, Granada (Author, 2017)

## 6. CONCLUSIONS

The revitalisation and implementation of a complete colonisation procedure in large extensions of the national landscape promoted a whole technical, agronomic, social and cultural infrastructure to transform the territory turning it into irrigation areas thanks to large-scale investments which cover from dams to irrigation ditches, from footpaths to railroad lines and from self-built and subsidised housing to colonisation settlements; it was an unprecedented boost that required a complex inter-ministerial coordination. (Junta de Andalucía ed. 2008).

The actions promoted for this purpose by the National Colonisation Institute can be understood today from new heritage horizons so that, together with the inheritance received from the settlements, it is important to consider the large infrastructures and associated public works, acting and conditioning the landscape and territory in an effort to modernise the rural conditions of the province.

Architecture provides a privileged view to fully understand these multidisciplinary actions that changed the physiognomy of many territories. In Granada, the architectural perspective invites reflection and admiration of both the layout and construction of these new towns, and the outstanding infrastructures -tobacco drying sheds- prepared for their exploitation.

The tobacco drying buildings thus constitute the living expression of industrial architecture in a specific historical period in Granada. They are configured not only as a construction linked to the cultivation or natural growth of the tobacco plant; its construction is linked to the transformation process known as curing and its architecture is permanently linked to the absolute concretion of functional and productive efficiency, with the formal purification and timelessness of the invariants of its constructive principles.

The new industrial models associated with this transformation process made us forget about the old industrial models related to other

crops -especially hemp and sugar- (Martínez-Ramos 2021), to be replaced in the industrial landscape of the Vega by single, unitary, small, simple and austere buildings. Their formal appearance refers to the essentiality of forms, spaces and materials and the design principles of their design, to abstraction. They are defined by a typology with a modular character and immediate serialisation that leads to a quick and cheap construction; properties that, together with the possibilities of adaptation in their condition of *prototype*, benefit from an enormous capacity for proliferation. They are a response in place and time through an architectural typology of modular character which is defined, characteristic, systematised, typified and designed for repetition, based on a clear, rational and replete form. In addition to its industrial, practical and austere character, the recognisable geometry gives it a timeless and topical sense that is an essential prerequisite for its identity. It also possesses qualities of vernacular architecture and construction, which, in addition to an evident historical empathy with the population, gives it meaning and justifies the identity of the model and its representativeness.

In this context, the contribution of the idea of swarm architecture feasible through the design of a perfect model for its expansion (García Nofuentes 2017, 549-553) and whose development took place between the 1950s and 1960s is an important contribution to the concept and reality characteristic of 20th century Granada, of a controlled dispersion, accompanied by an apparent plurality, which gives prominence to the concept of seriality inherent to the defended prototypes.

In short, the tobacco dryer represents a paradigmatic architectural model that contributes its own identity to the cultural landscape that characterises the Vega of Granada. The tangible experience of its implantation in this territory gives it the iconic value of a timeless architectural invariant that is particular to this province and deserves to be the object of reflection in the heritage context.

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