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THE SINGULAR APPLICATION OF THE MODULOR TO THE OLIVEIRA DO HOSPITAL POUSADA

Teresa Belo Rodeia,¹ João Miguel Couto Duarte²

Introduction

The aim of this paper is to achieve a full understanding of the significance of the application of the Modulor, the system of proportions codified by Le Corbusier (1887-1965) that was published in 1950³ (Le Corbusier, 1954), to the design for the Oliveira do Hospital Pousada⁴, conceived by the architect Manuel Mendes Tainha (1922-2012).

Manuel Tainha was born in Paço de Arcos, Portugal, having graduated in Architecture in 1950. He was one of the protagonists of the revision of the Modern Movement that characterised Portuguese architecture in the 1950s. The pousada, located in the central interior of Portugal, designed between 1954 and 1960 and built between 1968 and 1972, remains a reference in the work of the architect and Portuguese architecture of the latter half of the 20th century.⁵

The Research

The Oliveira do Hospital Pousada – between Modernist renewal and a return to the vernacular

The Oliveira do Hospital Pousada is set amongst the existing pine trees in a location on the hang where the slope is more pronounced, allowing for a view over the nearby valley and providing a vista over the further landscape, which is characterised by the Serra da Estrela mountains. To whom arrives, the pousada emerges almost as a domestic structure, composed of volumes with clearly defined limits built in granite masonry that is perforated in places (Fig. 1); to its surroundings, it asserts itself through the singular schist columns, which are structural, and the concrete volume of the balconies of the rooms which rest on said columns (Fig. 2).

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³ Following publication of *Le Modulor: essai sur une mesure harmonique à l'échelle humaine applicable universellement à l'architecture et à la mécanique* (The Modulor. A harmonious measure to the human scale universally applicable to architecture and mechanics), Le Corbusier published in 1955 *Modulor 2 (La parole est aux usagers) Suite de «Le Modulor 1948 (Modulor 2 (Let the User Speak Next); Continuation of The Modulor 1948)* (Le Corbusier 2000).

⁴ A *pousada* is a Portuguese luxury hotel mostly housed in historic castles and palaces or similar buildings. For a more complete understanding of the definition and realisation of the pousada network in Portugal, see Lobo (2006).

⁵ On the process of the design and construction of the pousada, see Rodeia (2017).



Fig. 1. Oliveira do Hospital Pousada, Northwest façade. Photo by the authors, 2012



Fig. 2. Oliveira do Hospital Pousada, Southeast façade. Photo by João Belo Rodeia, 1995

The pousada emphasises its own particular bond with its location; it highlights the revision of the Modern Movement experience proceeding from a return to the vernacular culture; and accentuates the permanent rediscovery of the landscape made possible by its spaces, at once the initial challenge and the final purpose of the design project.

The design for the pousada was to constitute a definitive moment for the way Tainha carried out his work, as was indeed confirmed in subsequent works – it is a work rooted in the conviction that architecture must construct places, rooted in the desire to elaborate complex spatial universes and to weave relationships with the surroundings, and also rooted in the care put into the manipulation of light and the materials and the design of the details; it is, also, always a work entrenched in a long process of reflection on architecture, beginning with the architecture of its time, but also that of the past, the vernacular, the monastic.

A singular reception for the Modulor

The place that geometry held in the make-up of Manuel Tainha's design thought cannot be dissociated from the place held by the drawing, as the drawing was decisive to the way Tainha understood the world and, thus, sustained the creation of architectural objects. Geometry was above all the base from which he launched his thought and to which he always returned, whenever the drawing lost sight of the thought, which was frequently the case, as he himself admitted on several occasions. Reflecting on the drawing in an interview given in 2001, Tainha identified the process of configuration of the architectural object as “the sovereign domain of geometry”⁶ (Bagulho 2006: 69).

In the pousada, geometry emerges as the relational guarantor of its various constitutive elements. Geometry not only manifests itself as the structuring scheme for the space and the configurations that make up the space, but also as a planimetric modular system and through the adoption of an archetypal form, in this case the cloister. The bond is manifest between the underlying geometries for the pousada and the building systems employed – continuous granite masonry and schist columns, on the one hand; and pillars, beams and reinforced concrete slabs, on the other. To the affirmation of the rule through the reinforced concrete structure, a clear expression of the Modern, even if it was in a process of revision, corresponds the subversion thereof by means of the local granite walls, a nod to the vernacular which had just begun to be revisited at the time, defining a system of alignments and deviations that is at the very basis of a game of deliberate complexity which can only be confirmed to be fitting through first-hand experience of the work.

One singular aspect is, however, particularly worthy of mention: the adoption of the Modulor in defining the proportions of the window and door spans that were to be opened in the granite walls (Fig. 3). This is an almost imperceptible singularity that reveals itself to be all the more significant because Tainha affirmed, in the descriptive report accompanying one of the design phases, which was delivered in 1956, that the

⁶ Translation by the authors from the original Portuguese.

small-sized span obtained by means of perforation of the granite walls should be “governed by the power of traction of the granite” (Tainha, 1956: 3, our trans.). Furthermore, the use of the Modulo would seem to deviate from the desire to achieve a bond to the location and the desire for a certain revision of the Modern Movement, which marked the pousada’s design.



Fig. 3. Oliveira do Hospital Pousada, windows on the Southwest façade. Photo by João Belo Rodeia, 1995

The employment of the Modulo is revealed in a sketch and then confirmed by the dimensions of the spans in the final technical drawings. Checking the built work itself confirms this. In the sketch (Fig. 4), Tainha drew a grid, placing in the origins of the respective columns and rows the dimensions resulting from the conjugation of the red series with the blue series as defined by Le Corbusier⁷: 27; 43; 70; 86; 113; 140; 183. They are the dimensions presented in fig. 26 of Le Corbusier’s book (Le Corbusier 2000: 67), whereby the author was of the opinion that said dimensions “can be described as being characteristically related to the human stature” (Le Corbusier 2000: 65). The height and width of the pousada spans were determined by that grid, either by adopting the aforementioned dimensions directly or conjugating them and thus obtaining new dimensions.

⁷ The Modulo consist of two Fibonacci sequences: the first of these, the red sequence, is generated from the height of the belly button (113 cm) and the height of a man (183 cm); the second one, the blue sequence, is generated from the size of a man with one arm raised (225 cm) and the dimension resulting from subtraction of the golden ratio (140 cm).

In addition to adoption of the Modulor, a study of the design process confirms that Tainha's approximation to Le Corbusier went even further (Rodeia, 2017), as scrutiny reveals that he went as far as proposing a set of rooms that were organised over two levels – a lower level that included the living space and an upper mezzanine level containing the sleeping space, whereby some of the dimensions of these rooms were determined using the Modulor. This is evidently an adoption of the solution proposed in the most iconic of the various apartment models for the recently completed Unité d'habitation in Marseille, which was designed and built between 1945 and 1952.

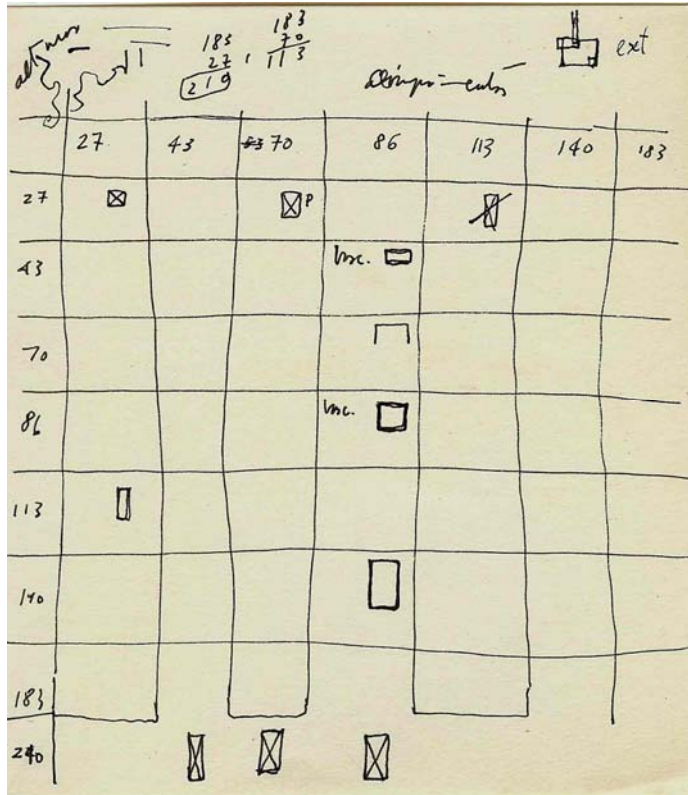


Fig. 4. Sketch. Manuel Tainha, 1956. Ink on paper. 114 x 131 mm. Manuel Tainha Fonds, Art Library and Archives, Calouste Gulbenkian Foundation

The adoption of the Modulor in the Oliveira do Hospital Pousada is a questioning act. Tainha never mentioned it in his subsequent reflection on the work. Indeed, Le Corbusier does not seem to have been amongst his preferred intellectual kinships. But there is nothing contradictory in that; there is no paradox to be found here. The use of the Modulor was motivated by a demand for order, order that is the domain of geometry and, therefore, of mathematics, under which was a desire for rigour and harmony. And it is an order which, by proceeding from the human scale, guarantees – as it creates – a bond between Man and the designed spaces, which was of decisive significance for Tainha. Perhaps one should identify in that desire for rigour and

harmony made possible by a humanised geometric order an unsuspected attunement between Tainha and Le Corbusier.

Conclusion

For Manuel Tainha, the Modulor enabled control of a number of window spans that were to be of various dimensions, conferring upon them a unity that allowed for the desired diversity. The Modulor conferred an order upon them. But the adoption of the Modulor was more than just instrumental. Considering the way in which the Modulor system aspired to improve the quality of architecture, instead of merely adding to it in terms of quantity, applying it was revelatory of the place geometry held for Tainha in the creation of the emotions that all architecture should arouse. And, at all times through the necessary mastery of the drawing. After all, “knowing how to draw means precisely knowing how to see and represent things in their positional relations in the space, in a kind of geometry of quality that is particular to architecture” (Tainha 2002: 6).

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