

## **Palacete do Lima Design Rehabilitation. The Archeological Case of the Hydraulic Mosaic**

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### **Abstract**

This text aims to discuss the partial rehabilitation of a 19<sup>th</sup> century building, Palacete do Lima, in Porto within the framework of cultural heritage's preservation through architecture. In this case, it is addressed the existence of a hydraulic mosaic floor that was discovered during the rehabilitation's process and that influenced the decisions that have been made. In effect at previous moments of intervention in the Palacete the mosaic was hidden and later recovered.

This text's reflections intend also to stress that the design solutions were as less intrusive as possible in order to not compromise future and deeper interventions that are foreseen to be undertaken.

**Keywords:** Architecture, Rehabilitation, Cultural Heritage.

### **The Building**

The Palacete do Lima, built in the second half of the 19<sup>th</sup> century, on Rua de Costa Cabral, is one of many examples of urban palaces created by emigrants that had recently arrived from Brazil and settled in the city of Porto in this period.

It is a classic building, with four fronts, two floors, and a symmetrical plan. Easily identified as a bourgeois housing building in liberal Porto, it is located on the street side, despite the extensive land where it is inserted. <sup>1</sup>

Even though its architectural and decorative elements and its spatial organization evoke classical architecture - the symmetry of spaces, high and plastered decorated ceilings, carved stonework involving wooden doors and windows with a great profusion of arabesques - the architectural expression of the palace, in the façades that relate to the large garden have a different character from other palatial buildings of that time: a covered and closed balcony - a marquee - that surround the building on three sides and work as a second skin of the neoclassical building.

This marquee was built with a light structure, with partition walls covered with sheet metal on the outside and pillars in cast iron, cutting edge technology at the time <sup>2</sup>. It has a formal expression and a construction system profoundly different from the core of the building, built with granite. It's a gallery that surrounds the mansion, a balcony with tropical characteristics, although closed, probably for climatic reasons, in which all spans of existing compartments on the first floor are protected by the second row of windows, filtering the light and creating sun protection. It is unknown whether it was built at the same time or years later, but in either case, the personality of the person who had it created is revealed (Fig. 1).



Fig. 1. Exterior facade of the Palace built with a light structure. Source: © ITS Ivo Tavares Studio

This building, which was designed for housing, has been used since 1927 as the headquarters of a sports club of recognized importance - the Académico Futebol Clube - and has kept most of its original features on the main floor, although it needs in-depth maintenance and restoration.

On the ground floor where, among other uses, the club bar has been installed for some decades, its most pronounced state of degradation was visible, caused by intensive use, lack of maintenance of the infrastructures and also by the accelerated wear of the coverings that were applied meanwhile, which made remodeling the bar indispensable (Fig. 2).



Fig. 2. Cross section of the Palace. Source: Impare Arquitectura

The urgency of these works and the forecast that, in the long term, the mansion will be subjected to more profound rehabilitation work, dictated a design solution that was intended to be less intrusive in order not to compromise future and deeply interventions.

### **The Project**

As a spatial and organization solution for the bar program, the counter and the service area were moved to a more reserved location and the main room was maintained, which, together with a new room (where the services

were previously located), guaranteed a privileged relationship between the table area and the exterior and therefore natural lighting (Fig. 3).

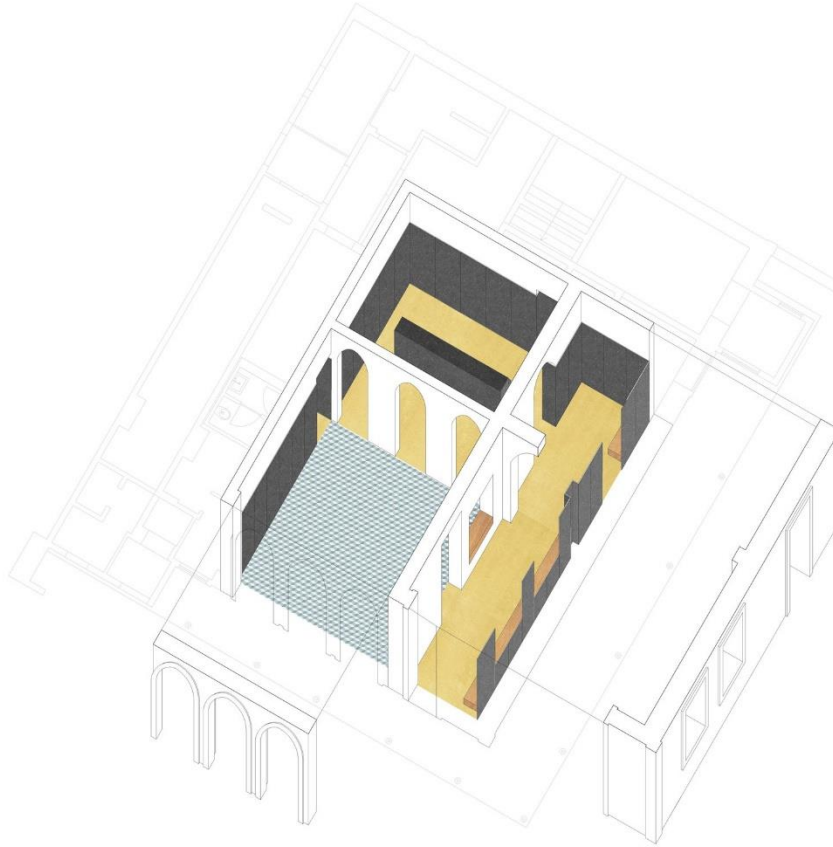


Fig. 3. Axonometry of the bar – project. Source: Impare Arquitectura

From a constructive point of view, it was applied a new floor and a new system of panels on the walls that covered infrastructures and the different and dissonant existing coatings - plasters of various textures and colours, multiple types of tile, wooden panelling, and stone coverings. There were new coating layers, added to the existing ones, postponing, once again, the necessary in-depth rehabilitation work.

As the works progressed, we were faced with the need to remove a part of the floor that was disaggregated and that did not allow, therefore, the laying of the new floor. Its removal left visible another floor that was underneath, composed of hydraulic mosaics, apparently, in a reasonable condition. Thus, it was proposed on-site, the total removal of the pavement

that was covering it to see in what conditions the hydraulic mosaic was. It was a kind of archaeological work that tried to maintain, without damaging, the trace elements that were found in that layer that was hidden for decades. Its good condition was confirmed, despite some occasional gaps and two more damaged areas, between one to two square meters, where mosaics no longer existed (Fig. 4).



Fig. 4. Faulty hydraulic mosaic floor. Source: © ITS Ivo Tavares Studio

The hydraulic mosaic is a floor covering material, produced by hand, with polychrome decoration incorporated in the mass, which was presented at the Universal Exhibition in Paris, 1867<sup>3</sup>, as an alternative product to the ceramic tile, as it does not need to be baked. Its manufacturing process requires a metallic cast that shapes it - usually square, but that can be rectangular, hexagonal, octagonal, or other - with channels for the separation of the different colours and motifs that compose it. The space between the channels is filled with a thin layer of powdered cement with different pigments and a layer of mortar that forms the base. It is then pressed, dried slightly for a few hours in order to be manipulated and submerged in water, so that the process of "curing" the material occurs, with no drying and hardening at high temperatures, as with clays.<sup>4</sup>

We tried to evaluate, with a manufacturer of this type of mosaic, the possibility of producing some pieces to replace the degraded tiles and to fill the areas without mosaic, but it was found that the size of these mosaics was not compatible with the existing ones, being economically unfeasible the execution of new cast, for the production of the small number of necessary mosaics.

The removal of the ceramic floor that was applied a few years ago on the oldest floor also revealed the existence of two other types of flooring in other compartments: a baked clay tile of about 30x30cm and 4 cm thick, very irregular and disaggregated, without conditions to be maintained and a floor in schist stone, with plates of considerable dimensions (some 1.5m wide), of irregular surface and without any finishing, resting directly on the dirt. This floor certainly was the original floor, of what may have been a service space, supporting a dining room that is supposed to have existed on this floor, during its use as a house. As this floor also did not have the conditions to be maintained, it was removed and kept for possible future applications.

Having analyzed the various possibilities that these discoveries brought, we opted for the maintenance and integral treatment of the existing floor in hydraulic mosaic and the filling of the other areas, with a cementitious mortar

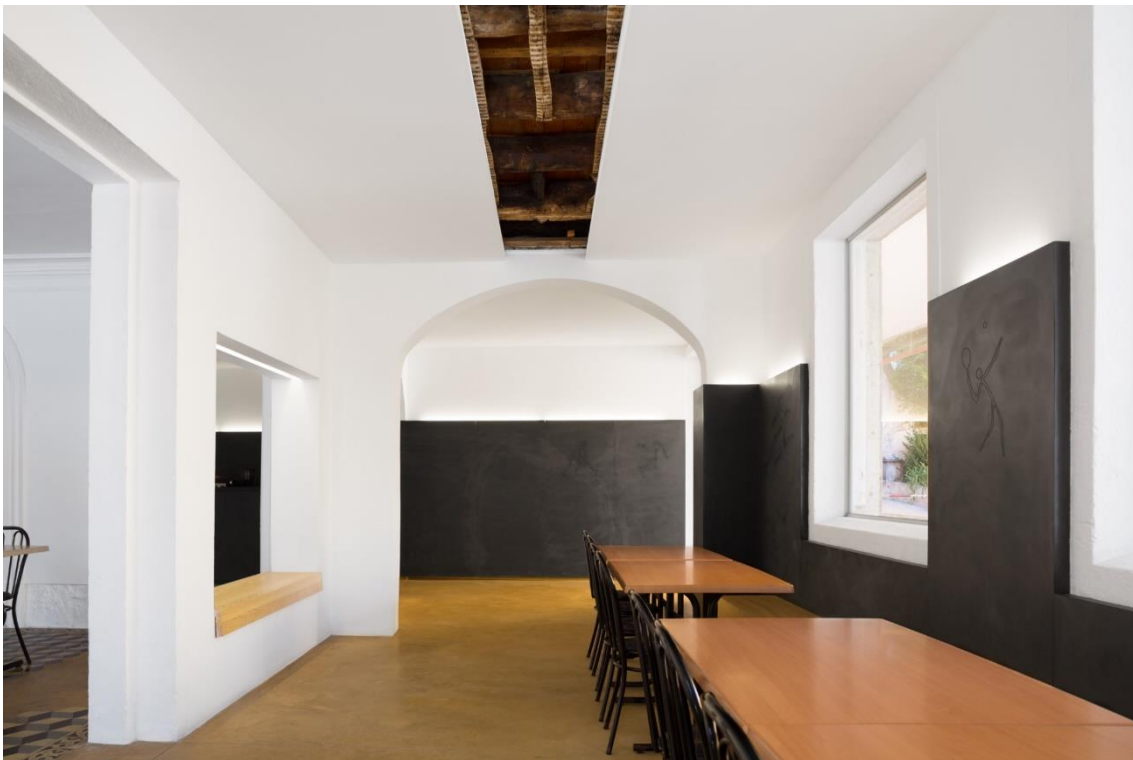
of yellow pigment, the tonality with more expression in the composition of the existing mosaics (Fig. 5).



Fig. 5. Plaster with yellow pigment for filling the mosaic flaws. Source: © ITS Ivo Tavares Studio

Thus, a timestamp was registered, without compromising future interventions.

Regarding the remaining necessary rehabilitation works, a coating with natural wood fibre panels was applied to the walls, a solution that allowed the passage of infrastructure without structurally damaging the existing walls and creating artificial lighting through a beam of light in its upper part, which evenly illuminates all compartments. The ceilings in the main room were kept in plaster, which was in an acceptable state of repair and the rest were remade, leaving visible in one of the rooms, the testimony of an unfortunate episode in the building - a partial fire in 1982, which left marks on the wooden structure of the ceiling (Fig. 6).



**Fig. 6.** Evidence of the fire on the ceiling. Source: © ITS Ivo Tavares Studio

The rehabilitation or remodeling works in existing spaces are entirely different from a project made "from scratch". This type of work that becomes denser and more substantive, carries with it a history that is revealed by the successive layers. In Palacete do Lima, these layers are not only layers of matter, they are also evidence of the consecutive transformations to which the building was subjected (Fig. 7).





Fig. 7. Final solution: the coexistence of different times. Source: © ITS Ivo Tavares Studio

## NOTES

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