MEDAWAR 479 REHABILITATION:
THE BLUE HOUSE

Restoration of a heritage building affected by the August 4, 2020 Beirut Blast.

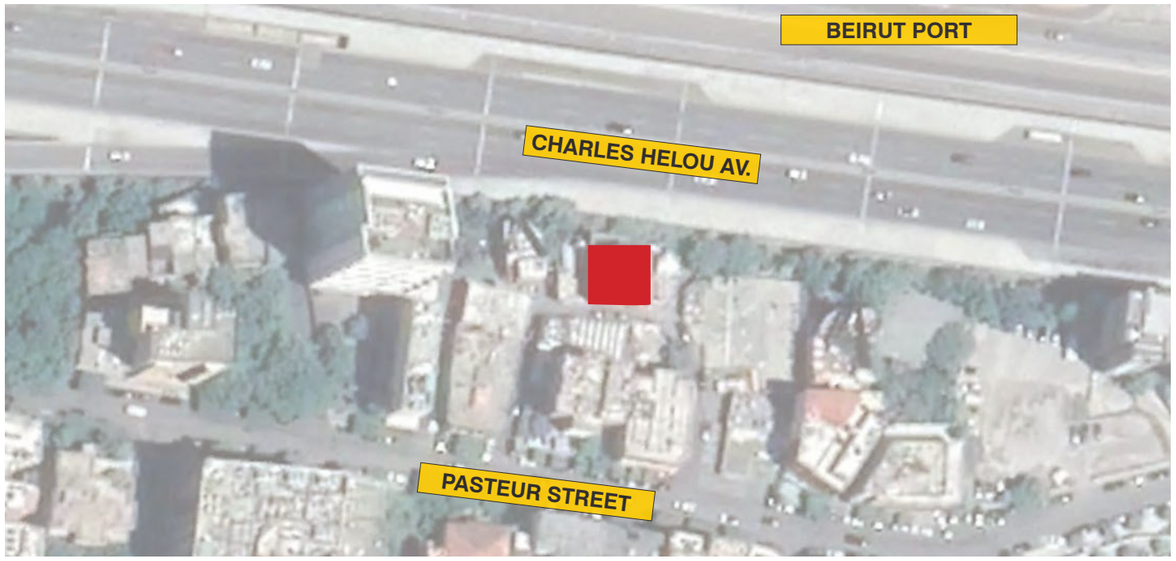
مبـادرة بيـروت للتـراث
BEIRUT HERITAGE INITIATIVE

November 2021 - September 2022

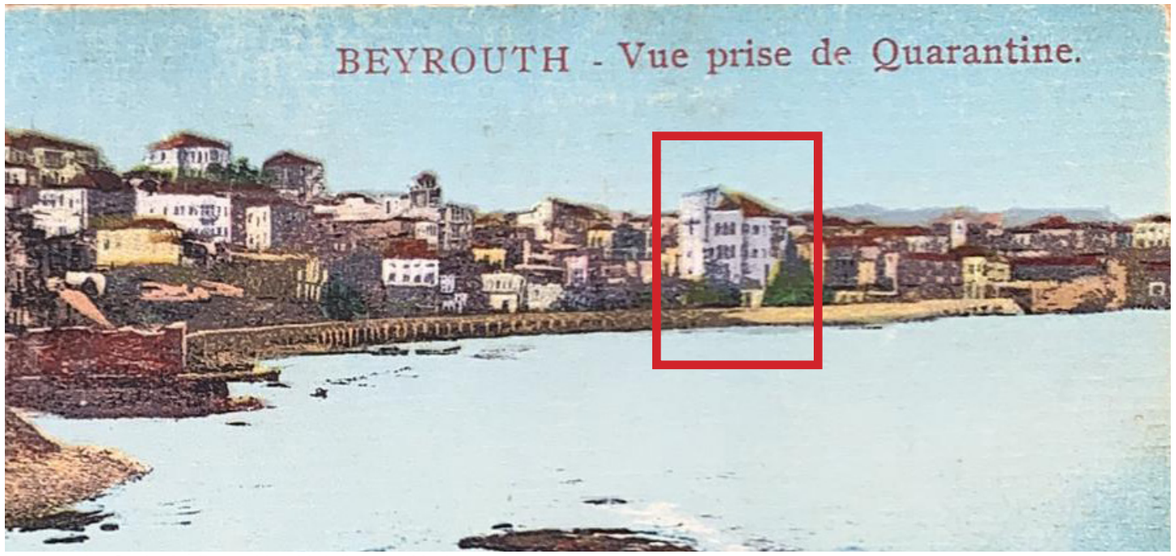
OVERVIEW

The devastating explosion in the port of Beirut on August 4, 2020 hit many neighborhoods in the Lebanese capital, in particular those of Medawar, Mar Mikhael, Gemmayzeh, Karantina, Achrafieh and Geitawi / Rmeil. The devastated neighborhoods developed after 1840, paralleling the expansion of the port of Beirut towards the east; these neighborhoods include the largest concentration of remaining heritage buildings in the capital.

A building that once stood by the sea has been nominated for a grant by *Honor Frost Foundation (HFF)* to the *Beirut Heritage Initiative (BHI)*, for its renovation. As the *HFF*'s mission focuses on maritime archeology in the Mediterranean region, the proposed building, **Medawar 479**, was part of an integrated residential stretch of waterfront along the bay of Saint-André (which will later become the third basin of the port of Beirut) between the years 1860-1920.



The Blue House Location Map, *Google Earth*



View on the St. André Bay, with a hightlight on Medawar 479, *Websource*

Map of Beirut, 1936, *The Hebrew University of Jerusalem & The National University Library*

The Medawar neighbourhood in the 1920's, *Beirut Heritage*

HISTORY OF THE MEDAWAR NEIGHBORHOOD

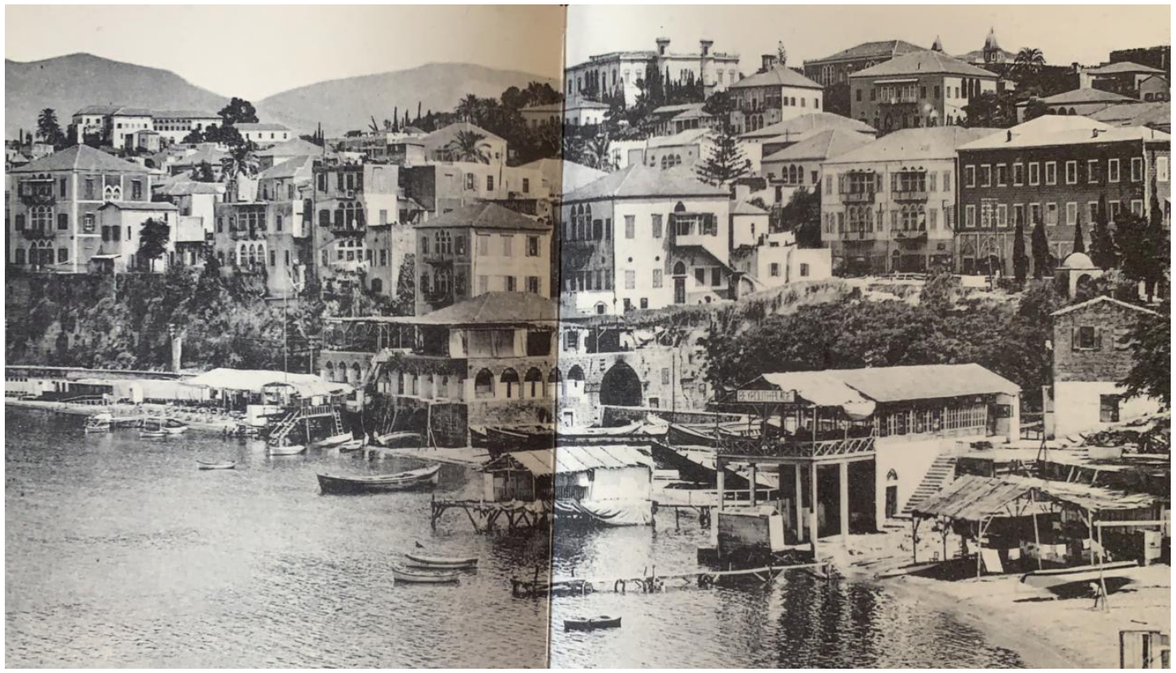
At the beginning of the 19th century, Beirut was a fortified city of five thousand inhabitants. In 1832, during the Egyptian occupation, the port was enlarged and a lazaretto was created north of the city (the Quarantine, *Karantina*). This gives Beirut primacy over the vilayets of Saida and Tripoli, whose commercial role was previously predominant in the Levant.

In 1848 the city walls were pulled down and the commercial center was concentrated in the old town, while the southern and eastern suburbs developed along the historic roads of Saida (via Basta) and Tripoli (via Gemmayzeh). The construction of the Beirut-Rayak railway network and the Mar-Mikhael station on the edge of the port has stimulated the urbanization of the eastern suburbs: the coastal areas of Saifi and Medawar around the port, the hills of Achrafieh and Rmeil. These new districts were populated from 1860 with residential buildings in the Mediterranean style characterized by their cubic volume of 2 or 3 floors, topped with a pyramidal roof made of Marseille tiles. The north facade of the house has a central bay opening with 3 arches mounted on Carrara marble columns and a projecting balcony in thin Carrara slabs.

During the civil war (1975-1990), the districts of Gemmayzeh and Medawar were strongly affected but were never abandoned by their inhabitants. Their inhabitants included the lower to middle bourgeoisie and the industrial classes, including a large Armenian population that arrived after 1915.

In the 2000s, the Gemmayzeh-Mar Mikhael axis experienced unplanned organic development, with the proliferation of restaurants and bars and the influx of a cosmopolitan community of artists, architects, designers, artisans and gallery owners. This economic and cultural activity coexisted with traditional trades and small businesses. The historical fabric of Gemmayzeh and Mar Mikhael is distinguished by their urban homogeneity and a relatively contained progression of gentrification.

The building proposed by Beirut Heritage Initiative housed residential and commercial institutions before the explosion.



The Rmeil-Medawar neighborhood, 1920, *Beyrouth, Notre Mémoire*

ABOUT MEDAWAR 479 - THE BLUE HOUSE

Over the past decade, Medawar 479 has been recognized by passers-by for its bright blue color, making it a landmark of Beirut's coastal avenue.
Unfortunately, on August 4, 2020, this 1890s central hall house was deeply affected by the impact of the explosion, due to its proximity to the port of Beirut and being one of the closest buildings to the epicenter of the explosion. After an in-depth study conducted by the *Directorate General of Antiquities (DGA)*, the *Beirut Built Heritage Rescue 2020 (BBHR20)* and the architect-restorer Joe Kallas, the Blue House has revealed treasures hidden from view, such as historical murals and a set of previously capped triple arches.

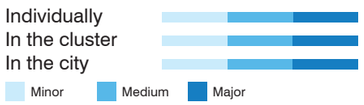
Medawar 479 has the typology of the typical Beirut house: a central hall plan on three levels, surmounted by a pyramidal roof made of Marseille tiles. The north façade of the building, facing the port, has a central span opening with 3 arches, mounted on Carrara marble columns and a projecting balcony in thin Carrara slabs. The vertical structure of the building is composed of local sandstone walls, covered with lime plaster, while the horizontal structure is composed of *Qotrani* wooden beams and floors, topped with Carrara marble tiles, *Furni* (limestone), ceramic and terrazzo.

Medawar 479, before the blast, *D. Mrad*

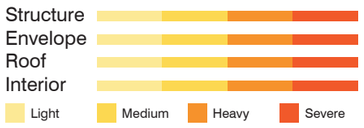
After the blast, *D. Mrad*

Until the late 20th century, all three floors of Medawar 479 were used for residential purposes, unlike most houses in the area, which had a commercial ground floor and residential upper floors. An analysis made during the renovation process shows us that the building was designed for residential purposes, with the discovery of a vaulted room on the ground floor and first floor, which served as a kitchen during the Ottoman era.

Importance of the building:



Damage Assessment:



Neighbourhood map, *BHI* Medawar 479 Heritage buildings Modern buildings

The three floors are architecturally different, with a simple, rustic design used on the first two floors (rented floors), and a more elaborate design on the top floor (floor inhabited by the owners).
During the renovation, which began in November 2021, materials found on site were reused and craftsmen were employed to bring back the identity of the building, while keeping the original materials and techniques.

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The Structure

As mentioned earlier, the structure of the building is made up of sandstone walls. During the renovation, and with the removal of the recently added cement plaster, a high level of limestone was discovered. The discontinuity between limestone and sandstone suggests that an ancient vernacular structure existed on the land before the house was built.
The horizontal structure of the building is made up of *Qotrani* wooden beams and planks, supported by steel beams which reinforce the whole structure.

The Triple Arches

The Beiruti houses are known for their triple vaulted bay on their northern facade, overlooking the shore. Prior to the explosion, Medawar 479 was thought to have two sets of triple arcades (on the ground floor and first floor), and a bay on the second floor. Under the impact of the blast, the central span collapsed on the upper floors, leaving a gaping hole. During the restoration, the sandstone found on site was collected and assembled on the ground, in a method similar to a puzzle. When assembling the sandstone blocks of the second floor, it is discovered that the original design of the central span was vaulted and transformed into a rectangular shape during the 20th century. The original facade design has been brought back to reflect the authenticity of the original structure.

The Carpentry

The openings (windows, doors, shutters and oculus) have been renovated or rebuilt in Qotrani wood (Cedrus Libani), using archives to recreate the original design. As for the triple arcades, they are decorated with an interlocking system of Qotrani glass and wood carved in a geometric and circular pattern.

The Wall Paintings

Murals were discovered in parts of the house during the assessment period, covered with a layer of cement plaster and paint. The original colors of the walls vary between light blue and dark blue, and have a stenciled design, consisting of a geometric pattern on the corners of the wall, connected by an outline. Unfortunately, with the existing cement blast and plaster, most of the paintings could not be saved. The team was able to save walls in the central hall on the first and second floors, which are now restored and preserved.

Timeline of the works

Assessment of the structural damages, and repair using dowel bars, stitching and fibre mesh.

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Start of the plastering process, using several coat of lime plaster.

Assembly of the sandstone pieces to reconstitute the triple arches that collapsed on the first and second floor.

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Reconstruction of the triple arches on the two levels, with new marble columns and slabs, and newly carved limestone corbels.

Roof Reconstruction: using Qotrani wooden beams, and red tiles from Marseille.

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Carpentry restoration, using Qotrani wood for the openings, and reprising the original designs.

Finishes: Restoration of the historical wall paints, Carrara and Cemento tiling, and other elements.

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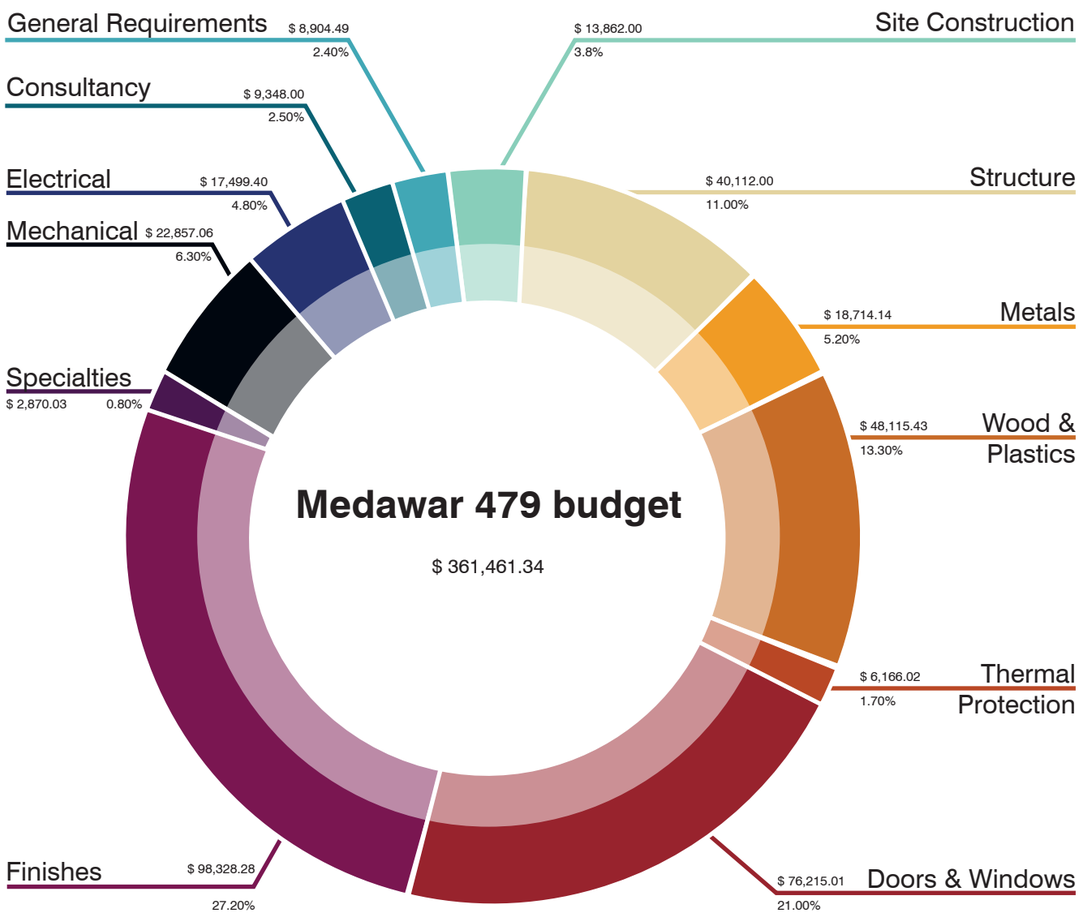
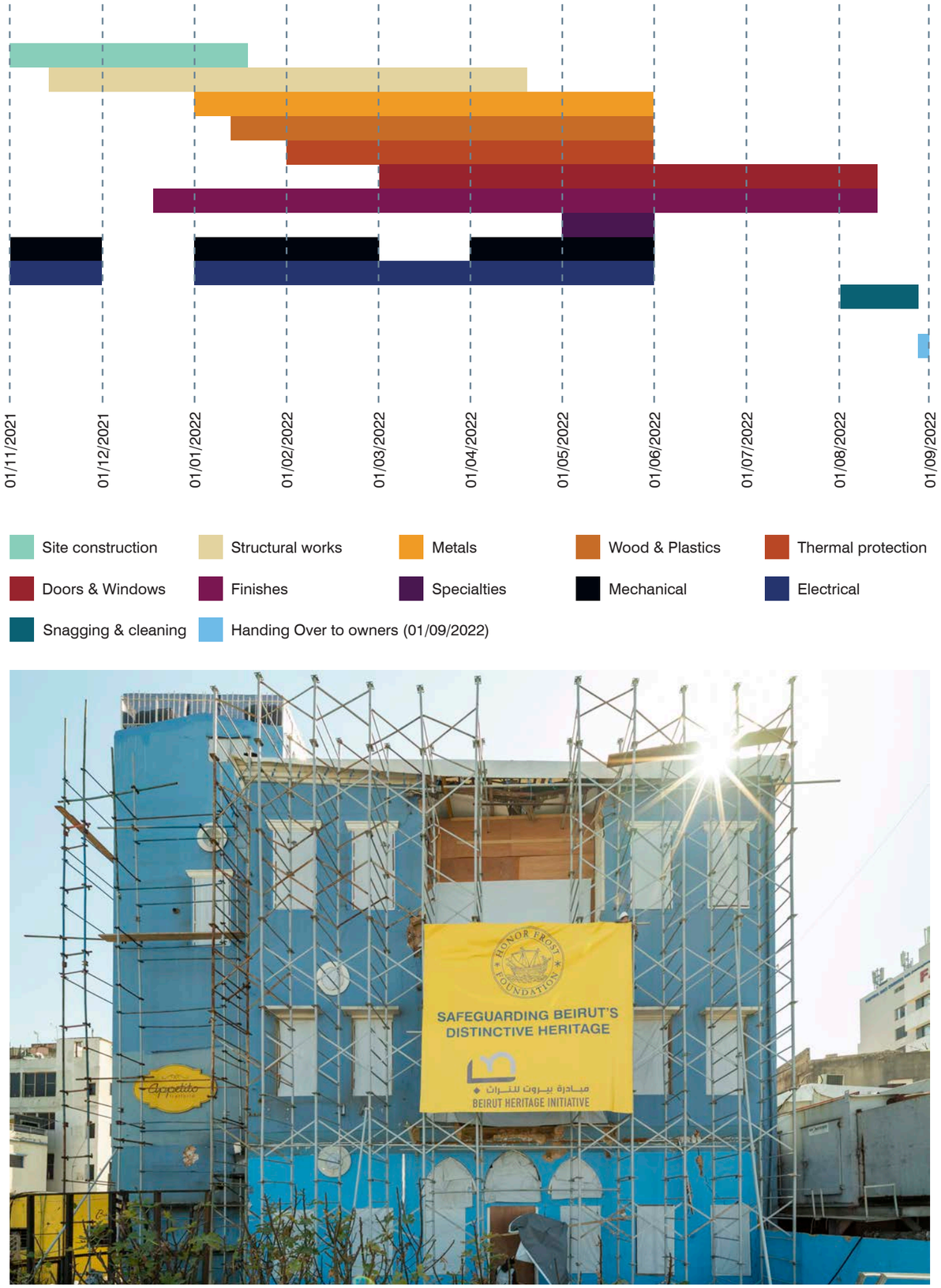
Start of the works:

In November 2021, *Beirut Heritage Initiative* started the works on Medawar 479, with Joe Kallas *(BBHR20)* and *Distruct Solutions* as consultants, and *Awaida Contracting and Engineering (ACE)* as the contractor, and with the generour contribution of the *Honor Frost Foundation (HFF)*.



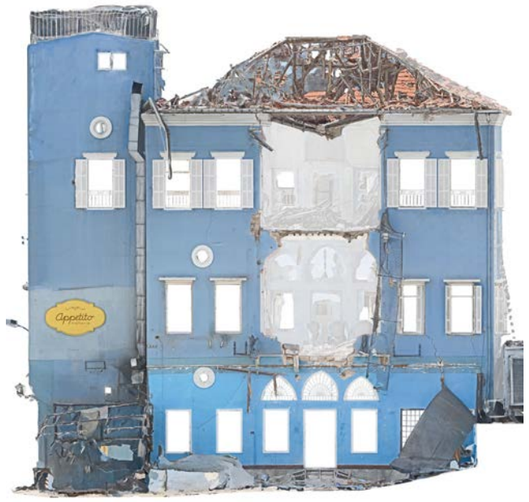
The *BHI* team followed up the restoration works with daily visits, constant contact with the consultant, contractor, owners and the *Honor Frost Foundation*.
The budget spent on the renovation of Medawar 479 amounts to $ 352,113.34 with an additional USD $ 9,348 as consultancy fees (Total 361,461.34).
The renovation lasted 10 months (November 2021 - September 2022).

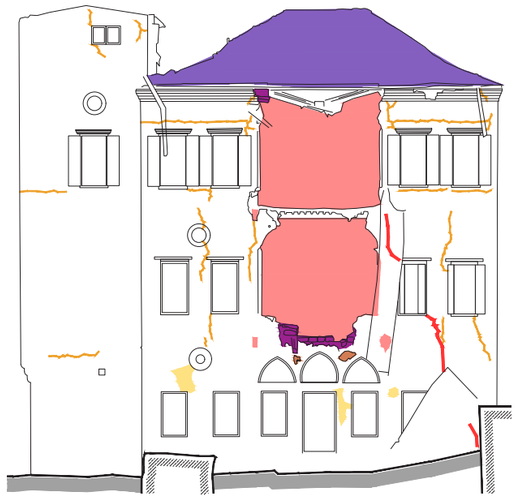
Medawar 479: Project Timeline



Structural Consolidation

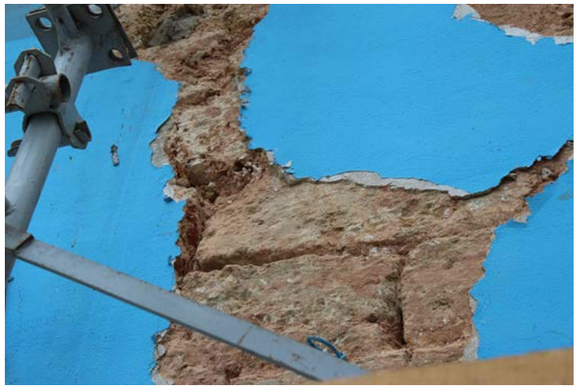
The North façade was severely damaged by the blast, which led to its partial collapse on the first and second floors, and out of plane walls. To restore it back to its original state, the former had to be completely rebuilt, using the original sandstones and lime based mortar used in the traditional building techniques. The whole structure was also enhanced using Structural Plastering.





North façade damage phorogrametry and assessment, *J. Kallas (BBHR20)*

Collapse | Detachment | Fracture | Cracks | Collapsing structure | Loose stones



Damaged plaster and sandstone cracks, *J. Chalfoun*

Manual removal of the plaster, *Y. El-Majzoub*

Wall stitching using stainless steel bars, *Y. El-Majzoub*

Wall to wall connection, using dowel bars, *J. Chalfoun*

Laying the fibre mesh on exterior and interior sandstone walls, *J. Chalfoun*

First coat of lime plaster, *Y. El-Majzoub*

Second coat of lime plaster (rough finishes), *Y. El-Majzoub*

Third coat of lime plaster (smooth finishes), *Y. El-Mjazoub*

Third coat of lime plaster (smooth finishes), *J. Chalfoun*

Triple Arches Reconstruction

Sorting of the elements found on site, *Y. El-Majzoub*

Carving the limestone corbels, *Y. El-Majzoub*

Preparation of the Carrara Marble columns, *Y. El-Majzoub*

Installation of the Carrara Marble balconies, *Y. El-Majzoub*

Reconstruction of the sandstone arches, *Y. El-Majzoub*

Pitched roof reconstruction:

Assessment of the existing wooden structure, *Y. Majzoub*

Preparation for the construction of the new roof, *Y. El-Majzoub*

Installation of the wooden rafters and beams, *J. Chalfoun*

Installation of the red tiles, *J. Chalfoun*

The pitched roof, *J. Chalfoun*

Carpentry:

Preparation of the existing elements, *J. Chalfoun*

Installation of the wooden frames, *Y. El-Majzoub*

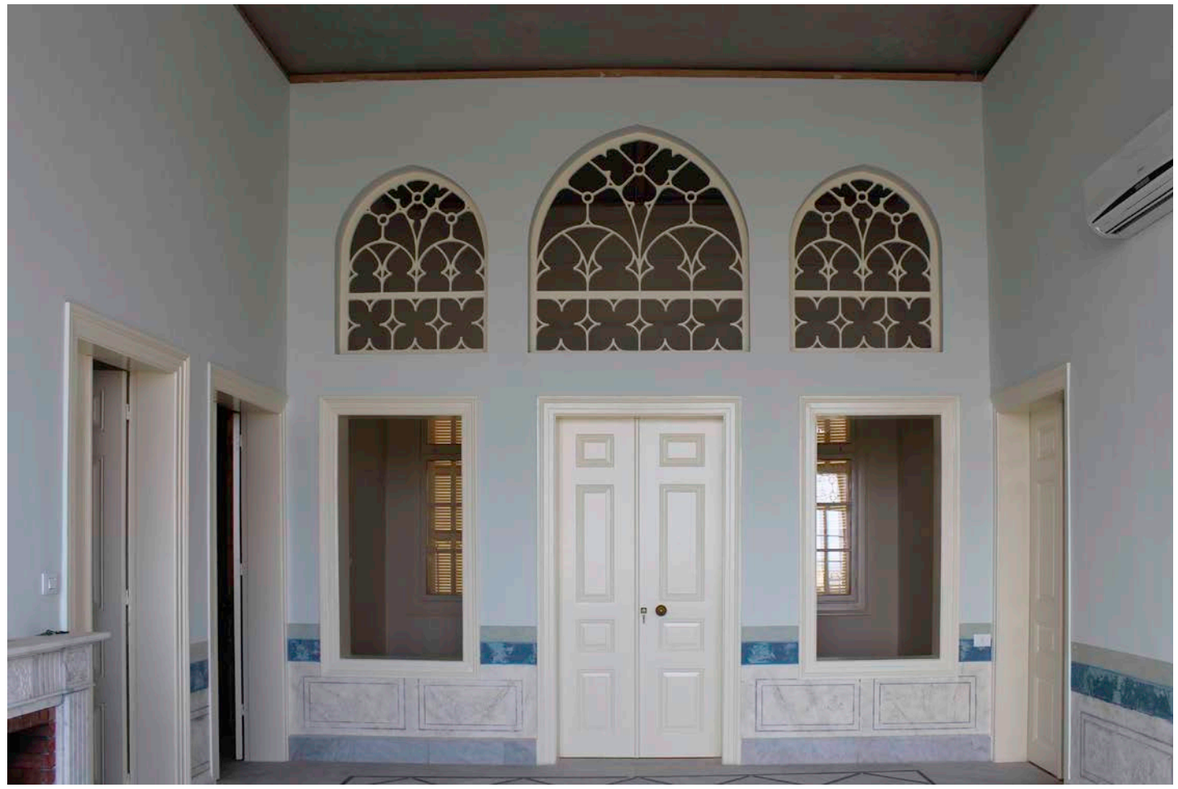
The wooden triple arches, *J. Chalfoun*

Occuli installation, *J. Chalfoun*

Wooden windows, *J. Chalfoun*

The Wall paintings:

The historical wall paintings, *J. Chalfoun*



Restoration of the historical wall paintings, *Y. Dagher*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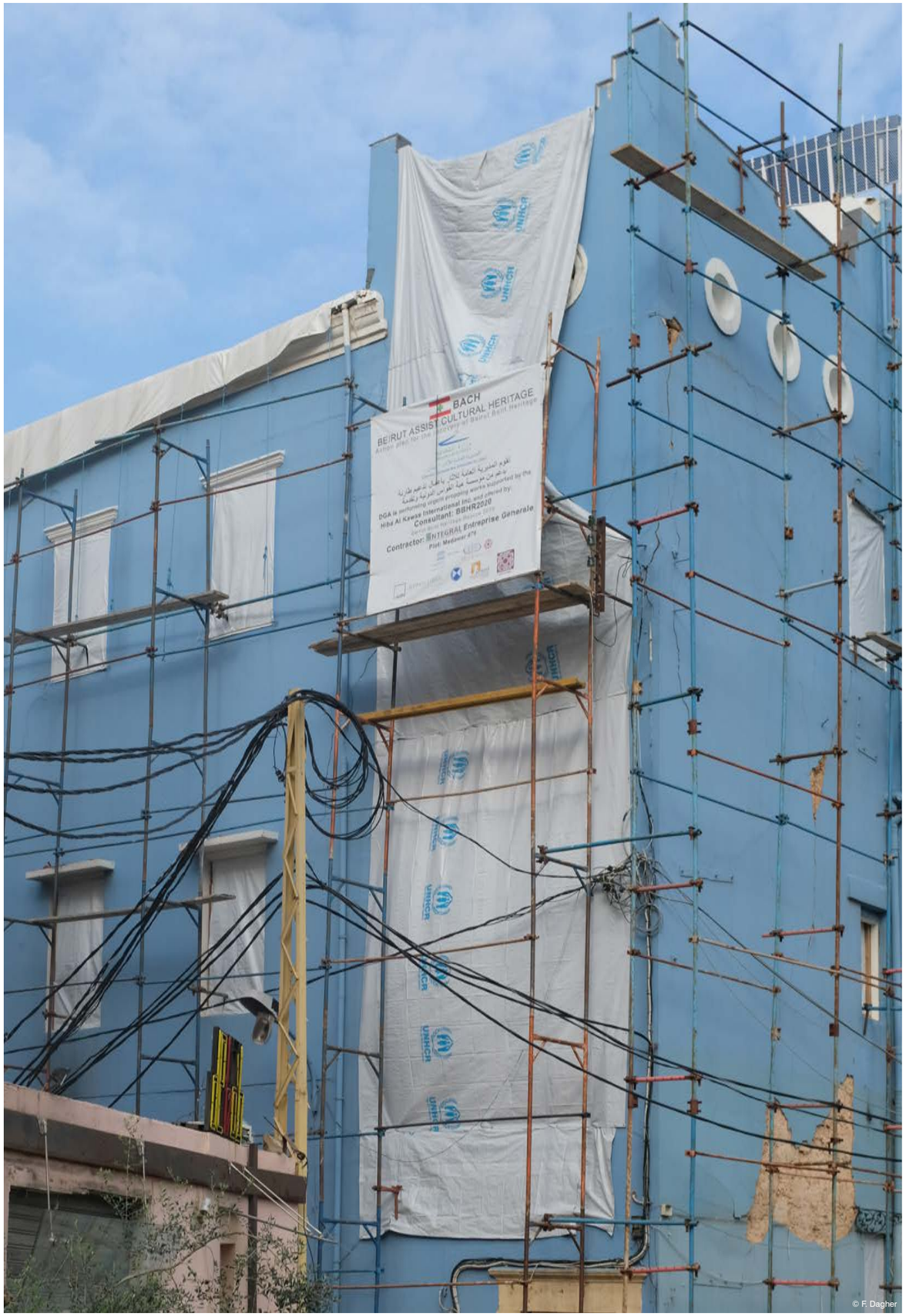

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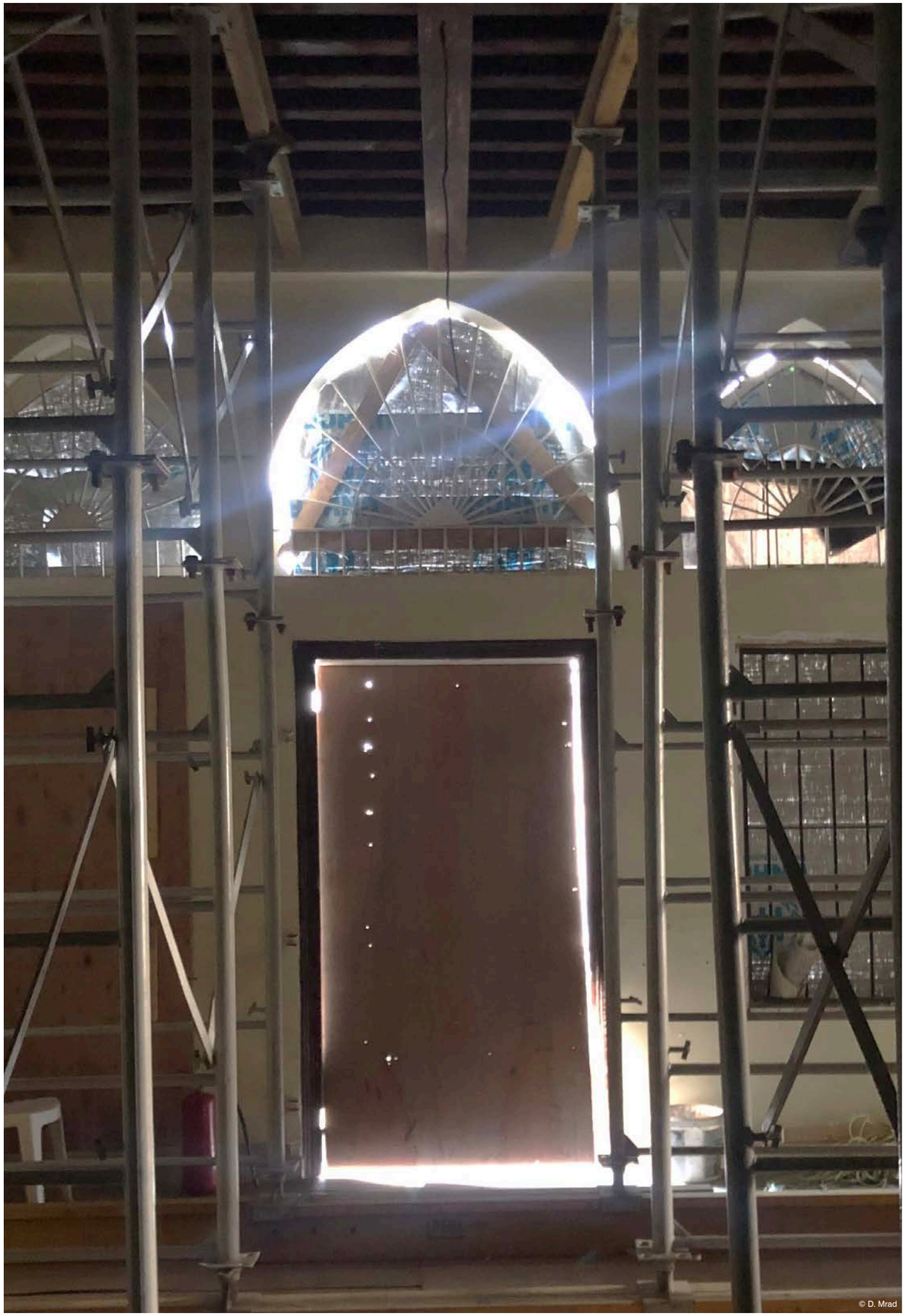
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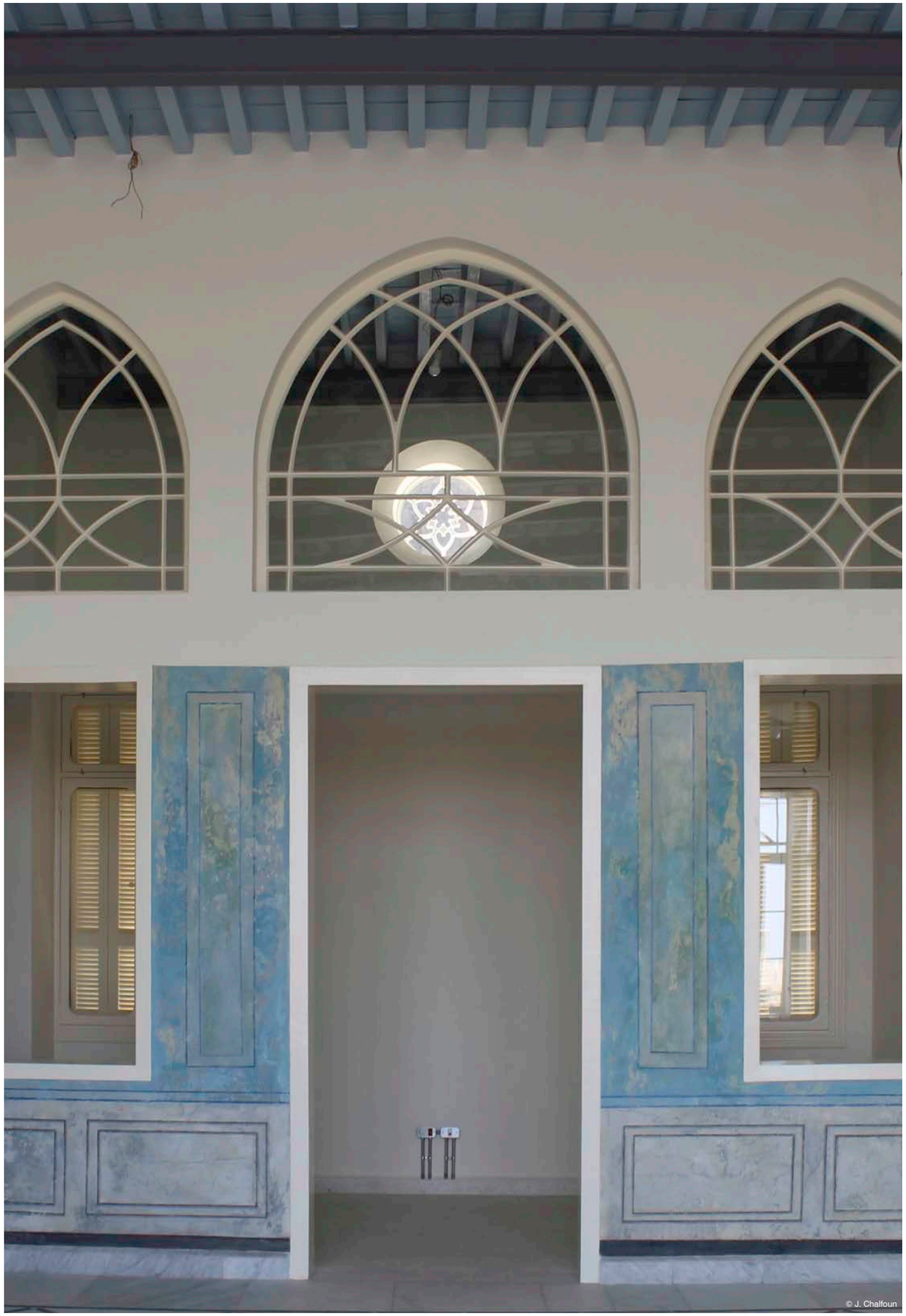
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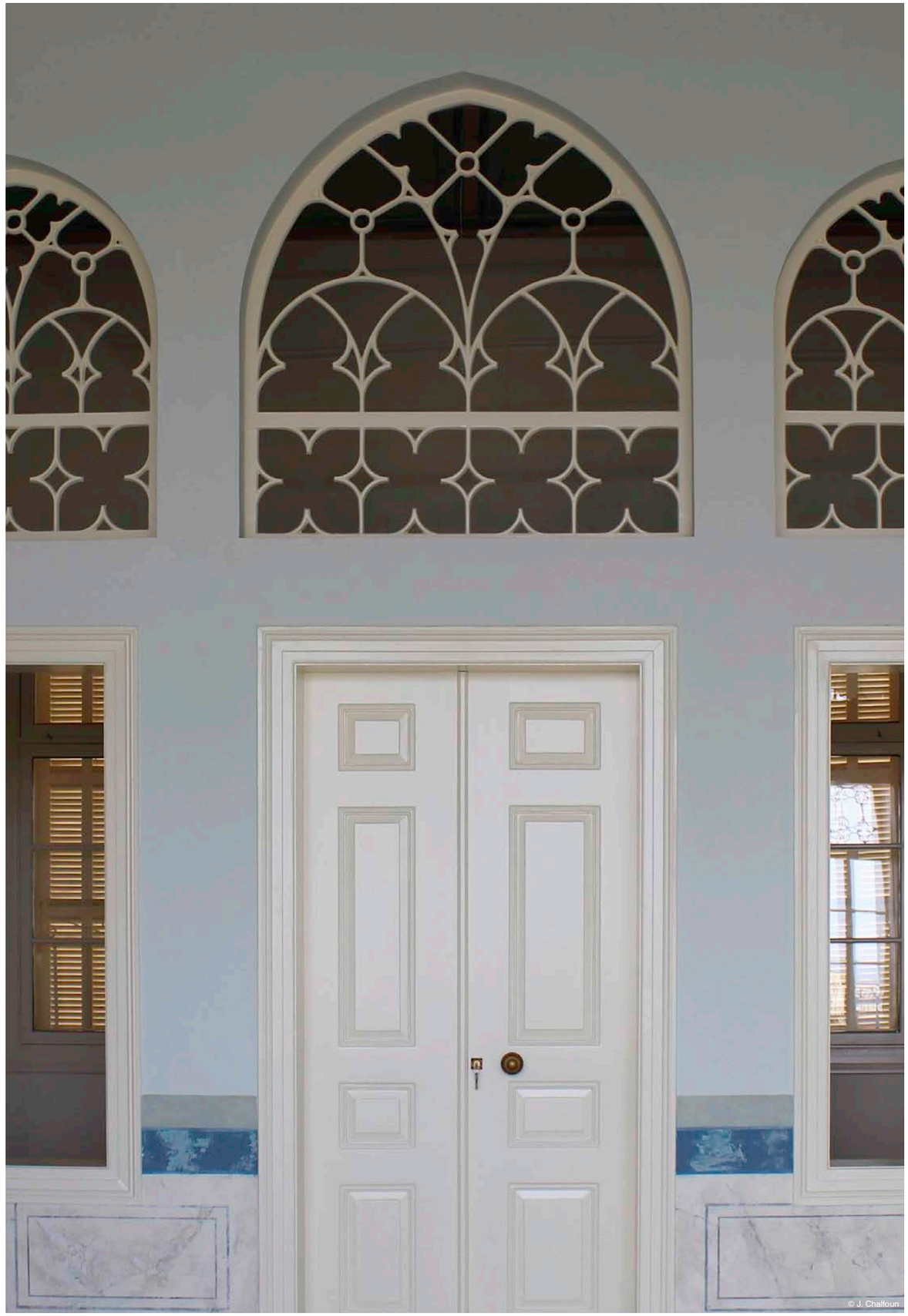
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