

Transmitting Malta's legacy of forts and fortifications through the reuse of an abandoned 16th Century warehouse.

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1 Introduction and context

The new Fortifications Interpretation Centre is the new use assigned to the 16th century Hospitaller warehouse in Valletta. The project started out at a time when the main fortifications in Malta, namely those of Valletta, Birgu, Mdina and Cittadella (Gozo) started to be restored under the partly financed European Regional Development Fund (Operational Programme I) by the Restoration Directorate within the Ministry for Resources and Rural Affairs. The Fortress Builders FIC was a €2,100,000 project undertaken by the same Restoration Directorate and also granted European Union part funding under the same ERDF programme, with a co-funding rate of 85% EU Funds and 15% National Funds.

The building was chosen largely for its vast interior spaces and its location which provides direct access to Valletta's ramparts. The need to transmit to the public that which is Malta's patrimony of forts and fortifications was met through the rehabilitation of an unused and abandoned building. The centre is hosted in St. Mark's Street, Valletta on one of the main entry routes into the city providing direct access to Valletta's ramparts. Its vicinity to St. Andrew's Bastion places it on an important access route into Valletta and more over, provides direct immediate access to Valletta's main bastioned enceinte, providing excellent panoramic views of the fortifications inside Marsamxett Harbour, namely Fort Manoel, Fort Tigné and the sea walls along the northern flank of the city itself. The building is a 16th century warehouse adjoining St. Andrew's Bastion located next to the Marsamxett Gate (no longer standing) which is one of the three main gateways into Valletta. It was built for the storage of merchandise off-loaded from the ships and other vessels berthed in Marsamxett harbour. Its location close to the Falconeria (a building that was used as reserve armoury from the mid-1700s onwards) also suggests some form of military use.

The project involved reconstruction works, alteration works, new construction works, interior and exterior restoration works of the masonry building fabric (both walls and floors), restoration of original timber apertures, the installation of new timber apertures, finishing works, the introduction of power generating photovoltaic cells, rainwater collection and reuse, restoration and reuse of original passive ventilation systems, furnishing works, exhibition design and exhibition content formulation – panels, physical models and virtual representations.



Figure 1 (left): location plan and Figure 2 (right): section and elevation of the building

2 The building before intervention

Prior to the commencement of the project the building existed as three separate floors that were not physically connected; it was largely in a derelict state with the three floors in varying degrees of neglect and deterioration. The ground floor consisted of two independent halls roofed with ribbed arches and masonry roof slabs. The first hall was located 0.60m below street level whilst the second hall was located 1.20m above the first hall. These were both being used for storage purposes and the second hall was exhibiting water infiltration problems. Given the nature of their uses, these halls had not been vastly modified over time. A small concrete platform was added in the first hall whilst part of the floor in the second hall was removed and re-roofed with Rolled Steel Joists and concrete in order to roof the basement. The second hall contained four wells which were accessible from the basement below by means of taps at floor level. The basement was full of debris as were the wells.

The first floor halls were accessible through the Biagio Steps (outside the building site) through a recently (circa 1960s) concrete one-storey accretion. These halls served as examination halls until fairly recently and the concrete accretion provided sanitary facilities to these examination halls. These were found to be in a state of disrepair with the sanitary facilities inoperable. The halls are large and barrel vaulted. Due to their use, services including lighting and power had been introduced to the halls and trenching of the walls was substantially present. The terrace outside these halls was overgrown with vegetation as was the exposed rock face and the side of the public stairs. An assessment of the rock face also indicated the possibility of the displacement of boulders from the rock face. The second floor was missing except for the free standing pillars on the front elevation that used to frame the windows. The floor was uneven and overgrown with debris and vegetation. Additionally a squatter was present at this level. The adjoining bastion terrace – St. Andrew's Bastion was similarly overgrown with vegetation and contained various levels of floor finishes.

Generally, the condition of the masonry fabric differed externally from the internal situation. Internal areas were exhibiting mild powdering and flaking of lime wash layers and paint. Externally, the stone was heavily weathered with large areas of disintegrated stone, honeycombing, exfoliation, flaking, powdering and back weathering. At ground floor level a past attempt to replace the more deteriorated stonework had been undertaken some years ago but the intervention had not been completed and was aesthetically unpleasant. Given the open nature of the second floor, water infiltration through this level and to the levels below was a serious problem. A crack down the corner of the building indicated movement/settlement in the area, as did the fact that parts of the façade were out of plumb and out of line. The apertures were not maintained and in a poor condition with wet rot widely spread in localised sections of the timber.

The building is particular in that its front and back facades are not on the same level thus placing the back part of the building underground. The front elevation on St. Mark's Street is some 11m below the back façade which is on Melita Street above. This configuration, with neighbouring property above the back part of the building puts the building in a disadvantaged position especially in terms of water infiltration. To this end, a wall and floor stone carved canal system was discovered in the two ground floor halls dating back to the knight's period. This system is directly linked to a natural passive ventilation system that exists in the halls. Each of the two halls at ground floor contains a stone carved ventilation shaft in the back wall that is linked to the hall above and further up to Melita Street, allowing for natural ventilation to occur through a tunneling effect. These two original systems – the stone carved water canals and the stone carved ventilation shafts – illustrate a technological intervention that is a rare find in historical buildings today giving it a specific slant in terms of added heritage value.

3 The architectural project

The fundamental goal of this project was to create a Fortifications Interpretation Centre by means of conservation through re-use of the Biagio ex-examination hall. The Fortifications Interpretation Centre is dedicated specifically to communicating and exhibiting the history and significance of Malta's military architecture heritage. It is a cross between a museum, an information point and a resource centre. As with any project involving the re-use of historical buildings the delicate balance of conservation versus restoration inevitably comes into play. It is commonly understood that the exclusive conservation through complete retention of all that was original in the historic building is not conducive to re-use. Simultaneously, uncalculated interventions, directly answering every need that the new use may require will quickly kill the spirit of a given historical building. Here one may recognise the importance for critical restoration where each and every given change or adaptation is carefully measured within the overall intervention process and weighed against other available alternatives.

In many ways, the Biagio ex-examination hall presented a blank canvas with which to shape out the new fortifications centre, seemingly effortlessly. The building had the possibility of comprising some 1,200 m² of exhibition space over three floors. Historical research involved tracing 18th and 19th century plans of the building to establish its evolution, and compilation of early photographs. Besides the four halls at ground and first floor, which were still intact, the second floor was missing. This level had been demolished during the Second World War and only the front pilasters that had framed the façade's windows survived. Several photographs of the original building were available and these showed the second floor still intact with details on course heights and arches above the windows, fundamental to establish the configuration of the missing upper floor. The interpretation of the façade's coat of arms additionally shed light on the time period during which this building was constructed. It was decided that the second floor would be constructed retaining all original facade details. Conversely, the reconstruction of the roofing structure of this second floor was adapted to the new space that was desired at this level. Rather than timber beams and masonry roof slabs, pre-cast concrete planks were introduced and used to roof the large 500m² hall at second floor.



Figure 3 (left): the façade on St. Mark's Street before restoration and Figure 4 (right): after restoration

The project was divided in two main phases, that dealing with the restoration and civil works and that with the finishing and furnishing of the building. The first phase was carried out in the months between the end of 2009 and February 2011. The second phase was started in December 2011, and completed in July 2012. The civil and restoration works saw the reconstruction of the second floor, the connection between the two halls at ground floor and the new construction of a new block, adjacent to the historical building that would connect the three levels together. Directly following this stage, the restoration of the exterior masonry fabric was undertaken. The stone was cleaned from surface debris with nylon brushes and vegetation removed following the use of an approved biocide/herbicide. The cement present was carefully removed using handheld tools and paying special attention to the stone underneath. The joints which were unsound or composed of unsuitable materials like cement were raked out and re-pointed using a mix based on hydraulic lime. Where stones were heavily deteriorated or missing, these were replaced with new stone of the same type retaining all original course heights. Stones which were damaged but still intact were repaired using plastic repair techniques using lime based mixes.

This phase of the project led on to the next phase that included the conservation/restoration of the interior masonry walls, floors and ceilings that constituted the halls at ground and first floor, using the same conservation techniques that had been adopted outside. The underlying basement which was predominantly rock hewn exhibited many fissures and these were grouted with compatible hydraulic lime mixes. The basement's ceiling was composed of steel beams and cast insitu concrete. These beams were heavily corroded and holes were present in the beam's web. Moreover, the concrete was spalling with substantial parts falling off revealing the rusting reinforcement. The concrete was cleaned, treated and repaired retaining the same corrugated profile that had been created in its inception through the formwork used. The steel beams were also cleaned and treated followed by proprietary steel protective paint. The structural integrity of the beams was restored through the introduction of new galvanised steel brackets which were mounted beneath the compromised heads of the beams.

The passing of services was the next challenging part of the project. Though this was easy in the new build areas, this was not as straightforward in the historical building. Among other reasons, all sanitary facilities were placed in the newly built annexe adjacent to the historical facade, eliminating the need for heavy chasing in the old building. Similarly the lifts were treated in the same way. This left the basic services of power, lighting and low voltage supply that needed to be provided in the halls. Due to the previous use (examination halls) of the two first floor halls that required services namely light and power, several trenches were found on site. It was decided to re-use these already existing chases and to pass the new services through them. In the more challenging ground floor halls, surface mounted conduits were opted for. These would later be concealed by wall panels that form part of the exhibition displays.

During the creation of a physical connection between the two halls at ground floor and the second hall with the annexe building, the removal of one masonry ribbed arch was required together with their supported masonry roof slabs. This was considered essential for the development of the experiential route that the centre was going to afford. This intervention was transformed into an opportunity for bringing more natural light to the darker part of the halls at the back.

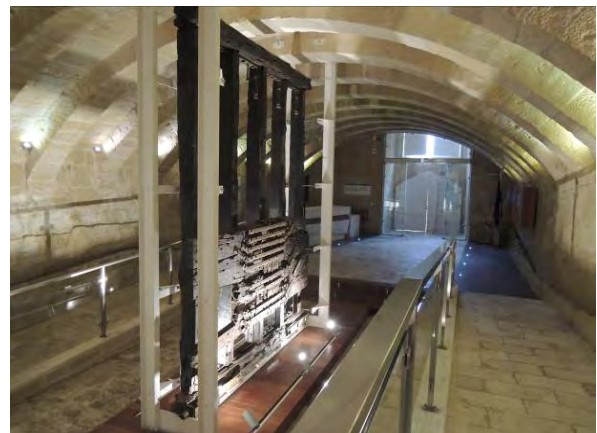


Figure 5 (left): hall at ground floor before restoration and Figure 6 (right): after restoration

A particular effort was dedicated to making the centre fully accessible. The main hurdle was at ground floor starting with a change in level of 0.60m between the street and the main entrance. The second hurdle was the change in level of 1.2m between the first and second hall. These hurdles were overcome by installing an entrance platform in the first hall that would take the visitor into the hall level with the street. One ramp then takes the visitor down to the hall level while another ramp takes the visitor up to the second hall level, thus interconnecting the spaces seamlessly. All ramps were designed as per regulations in terms of their inclination. This intervention of platform and ramps was easily affordable in the hall whose floor was not original but composed of terrazzo tiles. The two halls at second floor were already at the same level allowing universal access. The newly built annexe block was used in order to connect the three levels and thus its floor slabs were built at these strategic levels.

The insertion of air-conditioning units in the historical halls was considered to be unwarranted. The halls have excellent insulation properties stemming from the over large thick walls. Instead the investment was made in double glazing in the apertures as well as reusing already existing ventilation systems. The

ventilation shafts were found to be blocked up at second floor. These were cleaned up and restored. Mechanical fans were inserted into these shafts in order to magnify the ventilation properties and ventilate the back parts of the halls which are located beneath road level due to the change in level between the front and back facades. Additionally, ceiling fans were installed to the barrel vaults at second floor which assist in the ventilation process. Other ecological design factors included the installation of PV panels on the newly constructed second floor roof, and rainwater collection and reuse.

The remaining finishing works were less demanding, allowing the centre to develop within and around the existing historical building resulting in a visitor route starting at ground floor on St. Mark's street and ending on the bastion terrace at second floor. The main entrance allows the visitor to appreciate the main exhibit in the first hall at ground floor – the recently restored original Valletta City Gate timber drawbridge. This is at a critical time, when the fortifications of Valletta are being restored and at the same time as the refashioning of the actual City Gate in Valletta. The visitor is then invited to an audiovisual introductory video that conveys the rest of the centre's aspects. The target audience is universal from the scholar to school children with a designated children's workshop area in the second hall at ground floor. This hall contains a large table top touch screen uploaded with child-friendly educational software, puzzles and question-and-answer games designed to stimulate the children's' interest and curiosity. The two halls at first floor are dedicated to a chronological sequence of the most importance forts and fortifications starting with the Bronze Age, Punic/Roman, Medieval, and then goes on to the Hospitaller and British periods. The exhibition is presented through various media, mainly stimulating visuals on wall panels, physical original representations in the form of models of the various fortresses, videos and interactive touch screens simulating virtual tours and viewpoints. Through these media, the visitor is invited to assimilate the information on the original configuration of the fortifications while creating an individual interpretation on the processes that occurred between that time and the present day. The centre includes a library and documentation centre on the second floor. This library is designed to house a specialized collection of books, journals, and digital records related to all matters concerning the history and development of fortifications from a multidisciplinary subject perspective. The library is intended to serve as a repository of books, maps and documents, as well as digital information and data encompassing a range of subjects and formats related to all the various aspects military architecture and fortification - history, military history, architecture, building methods and techniques, restoration and conservation, and melitensia.



Figure 7 (left): hall at first floor before restoration and Figure 8 (right): after restoration

The Centre also has a dedicated lecture theatre designed to accommodate 50 visitors. Specially produced feature presentations will be projected here introducing audiences to the various aspects of the subject. The lecture hall will also be used to host an ongoing programme of lectures on all aspects related to the study of military architecture and the conservation of fortifications. A small souvenir shop complements the centre with a small outlet at second floor. The tour culminates on St. Andrew's Bastion which houses a small cafeteria/kiosk and affords spectacular views of the fortifications from the restored/rebuilt banquette. A public lift which functions separately from the centre was inserted into the newly built annexe block. This allows the public to avoid taking the Biaigo Steps to access Melita Street from St Marks' Street by taking the lift. The lobby to the lift also serves as a mini exhibition intended to attract the public to visiting the centre.

All works were completed in July 2012.



Figure 9 (left): exhibition hall at first floor and Figure 10 (right): the library

4 The Centre's standpoint

The project is considered an important milestone in the creation of a national awareness of the military architecture heritage of the Maltese islands. To date, very little attention was paid to this aspect of Malta's built-up heritage. The project will therefore serve to increase public awareness about the extent and nature of Malta's fortifications and instil a greater appreciation for the importance and uniqueness of the fortifications. As a conservation project, it will serve as a model of what can be achieved in the re-use of old and forgotten buildings and reveal the inherent potential that such seemingly unassuming structures can have and how these buildings can be made to function productively within the modern urban context, creatively but without losing any of their intrinsic qualities. The project will serve to provide another tourist attraction and expose foreign visitors to an important aspect of Malta's history and architecture that would otherwise not be available to them. It will also serve to direct visitors to the various fortified sites, thereby opening up those areas of the Maltese islands that would not normally be visited by tourists. The dissemination of knowledge to students at all levels of the educational spectrum will serve as a reference point for research and study. Indeed a special investment has been to give the centre such an educational dimension with the inclusion of a specialized library and a lecture hall to host ongoing programmes of free public lectures by resident and visiting scholars and researchers. The project will also serve to underline the European roots and links of Malta's rich history and cultural identity, largely through the expression of its military architecture and fortifications, which were designed and built by leading military experts and engineers brought over from Europe. It will show that in terms of its military architecture, the Maltese Islands were a microcosm of European ideas and technology.