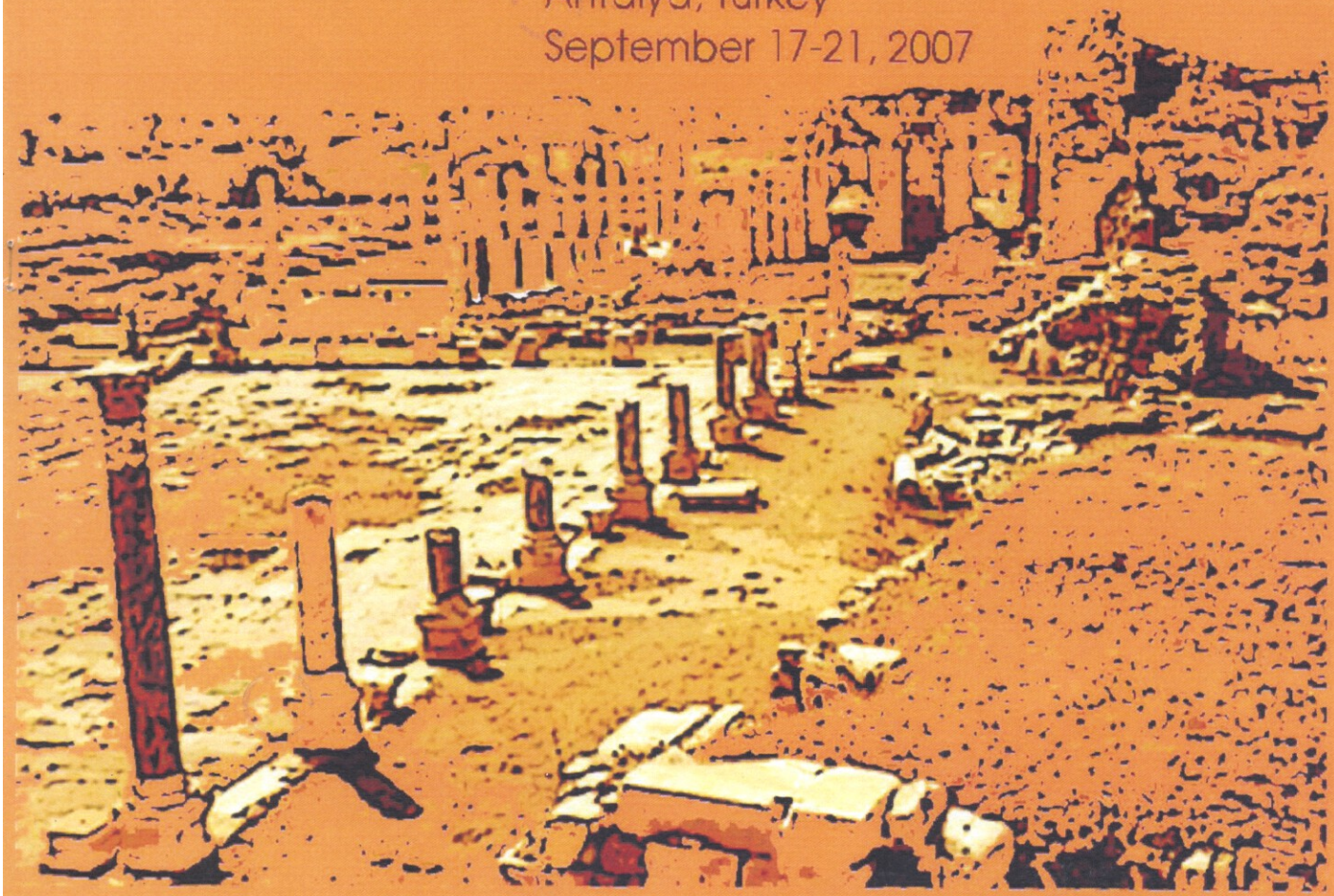
SHH07

STUDIES on HISTORICAL HERITAGE

Proceedings of the International Symposium

Antalya, Turkey
September 17-21, 2007



Edited by Görün ARUN

Organized by
YILDIZ TECHNICAL UNIVERSITY
RESEARCH CENTER for PRESERVATION of
HISTORICAL HERITAGE
TA-MİR

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TRANSFORMATIONS THROUGH HISTORY: THE MARKOU WATERMILL IN VERIA (GREECE) AND ITS CONVERSION TO BYZANTINE MUSEUM

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ABSTRACT

This paper is focused on the methodology adopted at the conservation project for the conversion of a watermill to a museum. The different stages of the project are presented with emphasis to the historic documentation. This documentation was critical during the whole process of the planning in the effort to succeed a balance between the old fabric and the new use. The different parameters of the building and its environment and their connection to planning decisions are presented, in an endeavor to show that by highlighting the values of a historic building and its surroundings, as defined through the historic documentation, interesting solutions can be achieved from the preservation and the architectural point of view.

1. INTRODUCTION

Adaptation of historic buildings to new uses is a necessary procedure for their preservation in time. Different approaches are observed at an international level, relevant to the alterations made for their reuse. The complete respect to the fabric with minimum alterations on one hand and facadism on the other, define the borders between which these approaches are fluctuated.

Detailed documentation of the building and its history is the necessary procedure in order to define the values of the building and determine the possibilities of alterations. Especially history, when dealing with buildings without obvious significance, is proved a precious methodological tool during the whole process of the conservation project. This procedure is described through a case study which regards the conversion of a watermill to Byzantine museum.

2. CREATION OF BYZANTINE MUSEUM IN VERIA

Veria is the capital city of the Prefecture of Imathia, which is located in the northern borders of Greece. Possessing a strategic position on the axis of Egnatia road, very close to ancient Aege (Vergina), the first capital of the Macedonian Kingdom, it appeared in historical texts first in the 5th century BC, it grew rapidly and kept its importance through time. The material evidence of its past is rich, and especially of the Byzantine period. A large collection of mosaics, dated mainly from the 5th century AD, a well known collection of approximately 500 Byzantine icons, sculpture from different periods, ceramics, religious books and metal-works, as well as 45 churches with frescos, the oldest dated from the 11th century, reveal the level of civilization developed.

Ministry of Culture, in order to highlight the rich heritage of the period, decided to create a Byzantine museum in the city. The conversion and reuse of the abandoned watermill of Markou appeared to be a privileged choice. Its position, at the borders of the old city and very close to the centre of the town, its size and space, convenient for a museum use on one hand, the opportunity for the preservation of an industrial building, through a new use, on the other, were these privileges and the reasons for this choice.

It is worth mentioning that Veria, by the end of 19th century, developed a strong industry exploiting the power of the waters of the river Tripotamos and of a torrent that determined the west and southeast borders of the old town. Previously, water-driven pre-industrial installations were operating across them. A number of pre-industrial and industrial buildings are now abandoned, others in fairly good condition and others in ruins. In the last decades, there is a concern of the State and the Local Authorities on their protection and reuse.

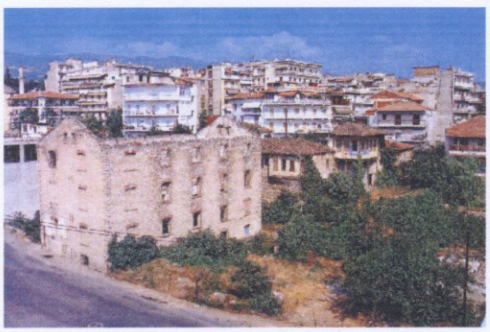

Figure 1. The watermill before the restoration works

Figure 2. The internal space before the restoration works

3. METHODOLOGY OF CONSERVATION PLAN

The image of the building in 1991, when the conservation plan started, was disappointing (Figure: 1). It was burnt in 1981 and what were left from it were the external walls and a metal construction of columns and beams, badly distorted.

Therefore, the range of choices for its conversion and reuse was large, as the authentic structure was deeply injured.

In order to understand and define the values of the building, necessary procedure for the conservation plan, a research was carried out where varied factors were examined with emphasis to historic analysis. Within this frame, it was examined the ownership and the owners themselves, the architectural plans the possible engineers involved, and the resemblance to other buildings of the period, the construction and possible information about the constructor, the origins of the building materials and the equipment and the importance of the building in the area concerning its function, its construction and possible renovations. Furthermore, research was carried out about its current state of preservation, the foundation soil and the characteristics of the environmental space. The results of this research determined the decisions and the scheme of the conservation plan.

4. HISTORICAL AND ARCHITECTURAL ANALYSIS

The initial owner of the mill was Stergios Markou, a doctor, with strong connections abroad. A land owner, also, he built the mill in order to grind the wheat he collected from the tithe. He, himself, was not much involved with its function, as he became very soon the mayor of the town. After his death, the mill passed to his descendants who operated it until the 1960s, when it was abandoned. In 1980s, Ministry of Culture expropriated the building in order to convert it to the Byzantine museum.

The construction of the building started in 1908 and was completed in 1911. All its equipment was imported from abroad and was working with water-power. In that period, it was the first time that cylinders, instead of millstones, were used in the area for grinding, an innovation that gave possibilities for the production of different types of flour. The region of range of the mill was large.

It was a four-storey building, at a rectangular ground plan. The architectural drawings were owed to two German engineers who visited the area for this purpose. The whole construction was of a high quality, by stonewalls and timber floors and roof, plain, with minimal decorative elements, where the traditional patterns were followed with some additions, typical to the industrial buildings of the period. These additions were the use of bricks at the arches, the carefully carved corner-stones and the metal windows and doors. Moreover, it was the first time in the broader area that iron was used as a building material. An iron construction of columns and beams was positioned in the middle, across the long side of the rectangular ground plan, in order to support, together with the stone walls, the timber beams of the floors. Rings of iron plates, embedded in the stone walls, were used for tightening the walls, while iron plates connected the timber beams to the iron rings. Finally, iron plates were used to form the lintels of the openings. The iron and the timber elements of the structure were imported from

Europe. A comparative study to flour mills in Greece and abroad showed many similarities and influences.

The constructor was a moving "compania" of technicians with various skills, who built many buildings in the area, coming from Lehovo, a mountainous village in west Macedonia.

Concerning the environmental space, behind the mill, parts of the walls of the fortification of the town, including a tower, are preserved and on top old houses and a mosque, all dating from the 19th century. At the east corner of its ground another building is preserved, where taxes was paid to enter the town. Behind the walls parts of the old town are preserved in good condition. At the mill's south side, the waters of the torrent that provided movement to the industrial installations developed across it are nowadays conveyed underground at the borders of the town and a road was constructed at its position. This road has an inclination that gives a hypsometrical difference of approximately 4m at the two edges of the ground of the mill.

5. STATE OF PRESERVATION

Due to the fire of 1981, all timber work was demolished and the iron construction was badly distorted, causing serious cracks to the two narrow walls to which it was connected with. In 1993, when the conservation project started, the condition of the mill was still stable, though exposed to adverse weather conditions. This fact proved a very good quality of structure. However, research works on site and in the laboratory were carried out to get further information about the condition of the fabric and the foundation soil. Borings at a depth of approximately 15m proved that the soil was of porous rock and that there were not underground waters. Test trial sections on the ground, next to the foundations showed that they were built with iron stones, a solid construction, their depth varied, to reach the rock, and a solid mortar was used at the bottom where they were seated. Core drilling and mechanical tests in the laboratory, together with hammer tests and mortar analysis gave information about the mechanical properties of masonries. All the information gathered and examined was very encouraging for the whole condition of the existing fabric.

Though the internal space was demolished by the fire, traces on the walls and the distorted iron element, together with old photographs, gave evidence about its initial form and construction (Figure: 2). This evidence made possible reliable reconstruction drawings, valuable to the conservation plan for its restoration and reuse.

6. VALUES AND CONSERVATION PROJECT

Historic documentation proved that the building was unique in the area. The introduction of iron as a building material was an innovation, as well as some of the construction details. Innovating was also its equipment that gave many possibilities at the production of flour. The whole quality of the structure was

exceptional. The collaboration with foreign engineers, as well as the import of building materials and equipment was not a usual practice in the area. The mill played an important role in a wide geographical area. Furthermore, its owner was a public person and the "compania" known at the time for the number of buildings they built in a large region. Finally, the building is located in an area where different aspects of the history of the city are revealed.

The values of the building, together with the reliable reconstruction drawings, lead to the decision to rebuild the carrying system of the construction, in simpler form and details, so that at short distance the contemporary of the construction is distinguished (Figure: 3). In that way the material evidence of the innovating technology of the period is preserved and highlighted. Small parts of the original iron construction are displayed at the courtyard of the museum.

Figure 3 Reconstruction of metal carrying system, timber floors and roof

Figure 4 The construction of a basement in the mill

The equipment of the mill was all destroyed by the fire. The only evidence by its operation by using hydro-power was a detail on the wall that shows the entrance of the pivot that gave movement to the machines. This detail was preserved and is displayed.

The internal space was left plain, as used to be, taking the use of exhibition areas. Moreover, this choice permits the audiences to get to know the museum contents and the building itself. Timber beams were reconstructed in the same size and position, while double timber floors were used, placing shock-absorbing materials and installations in between. New windows were also made in the same form and materials, but double panes were used for heat insulation reasons.

The information about the structure of the roof was not adequate. Therefore, a timber roof was built in modern form and technology. Similarly, the position and geometry of the staircase was not clarified. A modern staircase was designed in relation to an elevator that was introduced. Generally, all new additions were designed in modern forms to be distinguished from the original form and structure of the building.

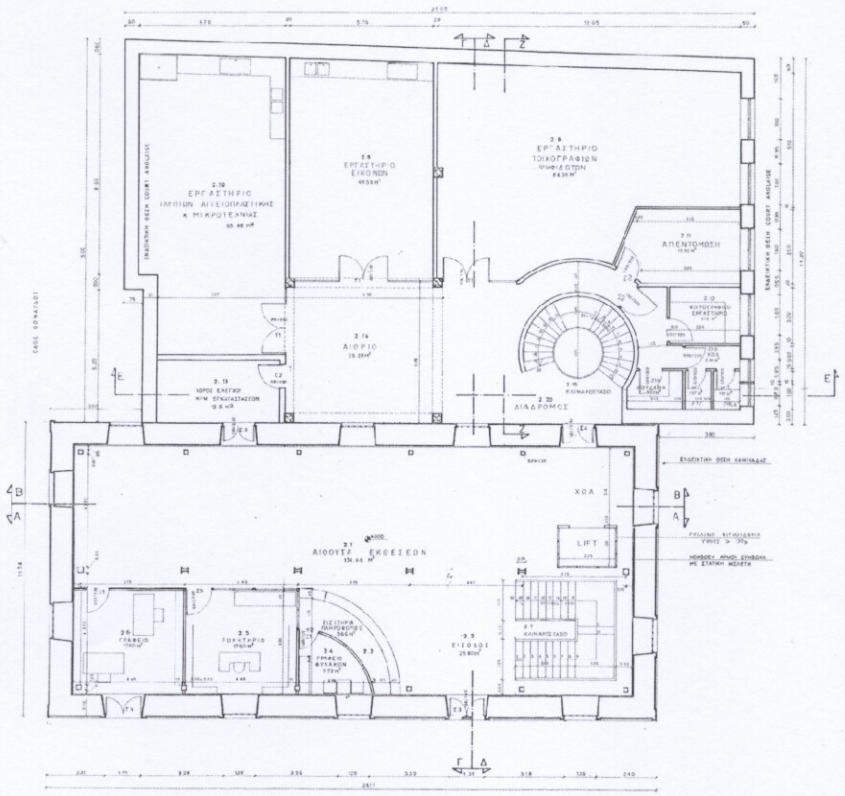

Figure 5 Ground plan

The size of the mill was not enough to house the additional functions of a museum, such as laboratories, training rooms, storerooms, offices, boilers, etc. To face this necessity, the building was extended to new constructions. Taking advantage of the inclination of the ground, a new building was inserted on a level with the ground, invisible from the road side due to this inclination, with a two-storey basement (Figure: 5). This building was built in touch with the mill at the position of two later storehouses of minor importance. The visible part of the façade at this level was kept visible by positioning a covered atrium. The laboratories were located at the ground level of the extension. The visitors, through windows of the mill, have the image of the laboratories. A basement was also added under the mill for multiple uses, such as, temporal exhibitions and training programs. The construction of these extensions was based on advanced technology (Figure: 4), to ensure the safeguard of the old building and to be clearly differentiated from the old construction. Finally an external staircase was added to the mill for security reasons. This staircase, as well as the roof of the atrium, the only actually visible parts of the extensions, was constructed by iron and glass to match the building materials of the mill (Figure: 7). Furthermore, the use of glass permitted the view of the city walls at this position, behind it. The

whole idea at the design of the extensions was to be as unobtrusive as possible, so that not only the industrial building but the whole site are not disturbed.

Figure 6 The transformed mill to a museum

Figure 7 The external staircases and the roof of the atrium

Figure 8 Ground floor, after the restoration works

7. EXHIBITION AREAS

The internal space of the mill, after the restoration works, was imposing (Figure: 8). Therefore, the exhibition design had additional difficulties. It should respond to the demands of a museum exhibition where the focus is on the exhibits, to the display of the building itself as a reminder of the later history of the city and to the museology study, which entailed the division of the space. The aim of the plan was to get on a balance with different levels of view. The exhibits should gather the concentration of the visitor, so planning should focus on them, highlighting their importance and the scenario of the museology study. At a second level, the visitor should have the image of the internal space of the old factory, after its restoration. Therefore, all the constructions for the division of the space should have the minimal dimensions to correspond to their role. At a third level, the constructions themselves and all exhibition equipment should be elegant, equivalent to the qualities of the building and the excellent art of the exhibits.

Within this frame, all the partitions were plain, following clear geometrical forms, creating slots between them to leave fragmentary views, at a limited

number, the necessary one to define units, with maximum height 2,20m. Double face icons were supported by simple metal stands, while show cases have minimal dimensions and simple forms. In addition, a glass corridor was positioned over a part of a mosaic to permit its view. Glass, iron, mortar or smooth plasters were used to fit to the building materials of the museum (Figures: 9, 10). The final result, according to public and experts opinion was quite successful, accomplishing the aims of the architectural plans [1].

Figure 9 Exhibition area

Figure 10 Exhibition area

8. CONCLUSIONS

The values of the mill of Markou, as it was preserved after the fire, were not obvious. Therefore, a conservation project for its reuse, without the detailed and systematic historic documentation, could lead to quite different decisions and part of its meanings could be lost forever. The creation of a new building within it, irrelevant to its initial form and construction and the preservation only of the facades, a common practice when dealing with historic buildings of the late periods, could lead to attractive solutions, solutions however that wouldn't make the internal space differ from that in a contemporary construction. It was proved that history was a strong tool for transforming the historic building to accommodate its new use and a means of inspiration for the creation of a different space, where past and present live together in harmony.

REFERENCES

1. The project was awarded by Europa Nostra with a diploma: "for the careful structural research and restoration of the shell of the "Markou" Watermill and for an imaginative conservation plan securing its future as the Byzantine Museum of the city of Veria"