

# Project Management in Conservation and Restoration of Historic Buildings

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**Abstract** – Project management is the application of planning, organizing, directing, coordinating and controlling by using project resources to meet the requirements of a project and achieve the project goal and objectives.

Project management process is well understood, however the concept of project management for architectural heritage projects is different because of uniqueness of every project. When we deal with architectural heritage, historic buildings etc., we need to spend more time and resources to understand what we have and to access its physical condition.

This article aims to introduce the special issue of project management in conservation and restoration of historic buildings and identify the principles and activities by evaluating a case study of Darussafaka high school which is the first public school of the Ottoman empire period.

**Keywords** - project management, conservation, restoration, historic building, architectural heritage, construction sector.

## 1. Introduction

Nowadays, companies in the construction sector in Turkey are aware of the importance of project management and its benefits such as effective resource utilization, lower costs, increased

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productivity, increased customer and stakeholder satisfaction, and increasing competitive advantage in the sector; therefore, companies are either organizationally restructured in line with the concept of project management or they get support from companies specialized in project management.

Although it is obvious that the implementation of project management in conservation and restoration of historic buildings, is much more important when considering its benefits, unfortunately there are very few examples. In the management of these projects, depending on the uniqueness of each project as well as the uncertainty of the circumstances such as physical condition, construction process, time and cost analyses etc., the project management processes and phases to be monitored may differ due to the difficulties in planning and in controlling of the project process developing against the plan.

For this reason, in this study, the research question is determined as below.

RQ: Whether the project management can be applied in conservation and restoration projects of historical buildings or not?

In order to answer the research question the project management principles, activities and phases in conservation and restoration projects of historic buildings were examined through a case study of Darussafaka High School and the general principles, the process, achievements and lessons have been tried to be revealed.

## 2. Method

First, a general literature review examining the concept of project management in conservation and restoration of historical buildings, activities and phases have been carried out. As a result of literature review, very limited findings were obtained and explained in theoretical framework section.

Second, the project management phases in conservation and restoration projects of historic buildings described in theoretical framework section have been assessed phase by phase through the case study of Darussafaka High School in the findings

section. The assessments were made by interviewing with project team and the general principles, achievements and lessons have been tried to be revealed.

Third, the assessments and the general principles were discussed depending on the research question in the discussion section and the research question was answered in the conclusions section.

### 3. Theoretical framework

Project Management Institute, Inc. (PMI) defines project management as "the application of knowledge, skills, tools and techniques to a broad range of activities in order to meet the requirements of a particular project" [1].

The project management process is defined in five basic phases [1], [2].

*Initiating* - Defining the project goal and objectives, success criterion, creating a list of assumptions, risks, obstacles

*Planning* - Defining the project plan and scope, definition time and cost estimation, budget, resource requirements

*Executing* - Distribution of resources to tasks, definition of project team, responsibilities and organization

*Monitoring and Controlling* - Establishment of reporting system, controlling of project process, revision of project plans

*Closing* - Making a general assessment about success of the project after completion of the project and approval of client, learned lessons etc., preparation of all project documents

In the contemporary project management world, the "project management process" is well understood. However, the concept of project management for architectural heritage projects is different because of uniqueness of every project. When we deal with architectural heritage, historic buildings etc., we need to spend more time and resources to understand what we have and to access its physical condition. Also, part of our job is to understand and preserve "values". We need to lighten values and the physical resources they are associated with if we are going to protect them for the benefit of the next generations [3].

Besides the project manager's experience in this area, the experience in the conservation and restoration projects of historic buildings and the understanding of the fact that a part of the job is the conservation of the values are very important. One of the project objectives at the first phase (initiating phase) and the basic success criterion should be this. In this respect, the project manager is the person who will integrate all stakeholders into the project process and persuade them to this value.

This is the most fundamental principle in the implementation of project management in conservation and restoration projects of historic buildings.

In general, the restoration of historic buildings and the phases of the conservation period are defined as follows [3].

*Initiation*

*Assessment*

*Options*

*Project Development*

*Implementation*

*Operation*

*Initiation* - It is necessary to define the project goal and objectives, to include all the stakeholders in the process and to provide the same understanding of what needs to be done, to achieve the project goal and objectives and to express the project well. It will also be necessary to decide on the time, cost and labor to be allocated to the project assessment, research etc. If a project manager has not been appointed yet, a decision maker on behalf of the client will make the decision.

*Assessment* - A project manager will be appointed to the project and a team will be set up to undertake the work that needs to be done to understand the cultural location. It is important to assess especially the meaning of the place, the physical state of the resources and the management system. It will be possible to take the accurate conservation decision by generating conservation options and to establish the accurate site management with the exact interpretation and assessment of the data coming from the researches. The project manager will decide time, cost and labor required to study the estimations and feasibility reports of the different conservation options.

*Options* - Everybody agrees with what they will conserve for what reason and has a clear definition of the physical conditions of the location. Different conservation options are carefully examined, including cost and time estimations, each option is assessed with conservation approach, limitations, technical difficulties, advantages, disadvantages, etc., and the best option is selected.

*Project Development* - After the project becomes clear, the drawings, technical specifications, detailed budget plans, work programmes and other official documents required for the conservation project, will be prepared by professionals such as architects, engineers, conservators, researchers, creators, quality engineers etc. These documents are generally used for receiving proposals, work programmes, etc., from contractors at the tender

process or in search of financial resources for the project.

*Implementation* - Work programmes established within the scope of all previous researches, examinations, tests, plans etc., are implemented. The project process is constantly controlled, the project plans are reviewed and revised where necessary. Time and budget revisions are made, the related units are informed with the reports and approval is received.

*Operation* - All warranties are implemented, maintenance instructions and schedule are prepared, the personnel are trained, the project is recorded and archived. A general assessment of the project is made, the achievements, the lessons learned are described by a final report and it is shared with the relevant persons. Depending on the property of the structure, a property manager is assigned for maintenance work.

In the next section, these phases will be assessed through a case study of conservation and restoration project of Darussafaka High School, which is the first public school of the Ottoman empire period and after 120 years of use, was exposed to a rapid collapse when abandoned for about 20 years and is a major piece of architectural heritage, and the principles of the project management and process will be revealed.

#### 4. Findings

##### *Case Study: Darussafaka High School*

Within the scope of the case study, the project management phases in conservation and restoration projects of historic buildings described in the previous section, will be assessed phase by phase through the case study of Darussafaka High School. The assessments were made by interviewing the project team.

*In the initiation phase*, the objectives of the project have been defined as restoration of Darussafaka High School which is one of the most important touchstones of Turkish education history and has a special position, in particular, among the high school education institutions and was exposed to a rapid collapse by staying empty for many years, and bringing this important structure back to life.

In order to have better understanding of the project, professionals who will take part in the team in other phases as well, such as architects, engineers, restoration specialists, art historians, architectural historians, etc., have been included in the process. It is seen that a project manager has not yet been assigned to the project, but a project team in Istanbul Special Provincial Administration makes the decisions about the time, cost and labor to be allocated for the project assessment, research etc.

*At the assessment phase*, a team was set up to start the study for understanding the cultural location, and the studies were carried out to assess in particular the meaning of the place and the physical conditions of the resources. Some of the findings obtained in these studies are summarized below.

The Darussafaka High School [Figure 1.], which is the first public school of the Ottoman Empire period, was founded in 1863 by the "Cemiyet-i Tedrisiye-i Islamiye", which was one of the first examples of civil organizations of the period, in order to train well educated young generations [4].

Darussafaka High School, which is one of the most important touchstones of Turkish education history and has a special position, in particular, among high school education institutions, was founded on 30th March 1863 with the edict of the Ottoman Sultan Abdulaziz. Although it was founded with the support of the sultan, it could be opened on 28th June 1873, exactly ten years later, due to the difficulties the country had. At this school designated with special status with the meaning of "compassion dorm" and educating in foreign language with free boarding, it is aimed to educate orphan and poor children among the winners of the entrance examination. Turkey's most famous names in the world of business, art, medicine, engineering and politics are graduates of Darussafaka High School which is 144 years of age.



Figure 1. Darussafaka High School [5]

Darussafaka High School is the first of the school buildings which are designed as a complete educational complex, having the physical facilities far beyond its own era and with the size over the needs considering the period it was built, in contemplation of the education of both girl and boy students together. It was designed by Italian architect Barironi and the drawing was made by Ohannes Kalfa. The school was built on a large plot in Istanbul Fatih region, on a hill overlooking Istanbul. Despite the war, earthquake and fire encountered over time, the structure was always used as a school building for 120 years. However, since the physical facilities of the existing

structure become insufficient over time, in 1994, the school left its original and cultural heritage value structure and moved to Istanbul Maslak region. The school building stayed empty between 1994 and 2011, exposed to a rapid collapse when it was abandoned to its own fate, the roof collapsed to a large extent, mezzanine tiling were ruined because they were made of wood, and some demolishing occurred on floor tiling.

Architectural formation of the school; plan and façade features are summarized below.

The stairs and the mezzanine tiling of the building, of which the outer shell is masonry, are wood.

The building, which has a symmetrical plan, is four-storey and it has a courtyard in its centre without a roof on top. The symmetrical sections on either side of the inner courtyard are designed to serve girls and boys. It is understood from this architectural plan that it is designed to receive equal numbers of boy and girl students in the school [Figure 2.].

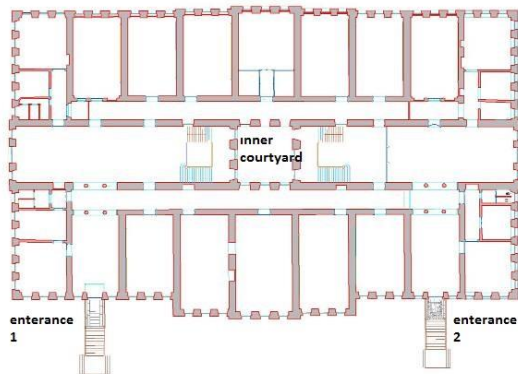


Figure 2. Darussafaka High School entrance floor survey plan [5]

Since the structure was known on the area where there were monasteries and cisterns feeding them in Byzantine period, it was never considered to build a basement. The structure which is in rectangular form has dimensions of 67.6 x 38.6 m and the one-storey footprint is 2613 m<sup>2</sup>. Four monolithic marble columns with diameter of 1 m which take place in its foyer are meeting those coming inside and adding a very impressive look to the main entrance.

Rooms are taking place on both sides of the large corridor that goes along between the foyer in the entrance and the stairs. The floors and rooms are classified according to classrooms, dormitories and management services. On the first floor there were middle and high school classes and administration, teachers' room, counting rooms, chemistry and zoology laboratories and botanical laboratory and mineralogy museum which are the only ones in Turkey in the period of use, physics, mathematics, painting and handicraft classrooms, masjid,

infirmary and a rather large library and theatre hall, on the top floor, of which the layout is different from the other floors, there were the dormitories having large spaces in which the wooden columns were located [4].

In the facade form, which resembles Ottoman junior high school buildings, the symmetrical arrangement is effectively drawing the attention. It can be seen that the outbuilding in the middle section of the plan facilitates movement to monotonous facade of the building. The facade which is 67.6 m long, has facilitated movement to the entire facade by outbuilding made in the plan and the break of the flat wall effect. In the 19th century, the Embassy buildings built especially in Istanbul Galata district resemble in terms of facade features. It lies behind this resemblance, that almost all those planning the 19th century official buildings are European architects. Rustic stonework is applied on the horizontal plane on the lower two-storey facades, and on the vertical plane on the corners of the structure. The upper floors are separated from each other by thick floor joists. Sequenced windows taking place on the floors are quite large in size and add a lot of spaciousness to the interior space. Numerous windows taking place on the facades remain within the plaster layout made on each floor and will not disturb the viewers. This situation is important in terms of the expression of architect's professionalism in design [Figure 3. and Image 1.].



Figure 3. Main entrance facade survey [5]



Image 1. General view of the south façade [6]

Conservation options have been generated with full interpretation and assessment of the data coming from the researches, different conservation options have been carefully examined, the decision has been taken for conservation of especially the details expressing the project value, etc., and the necessary assessments were made.

Site management has also been decided in connection with the selected conservation option. Although there is no project manager officially in the project, it can be seen that a field manager who takes place in the project team that manages the project at Istanbul Special Provincial Administration and has experience in conservation and restoration projects, had partly undertaken this task. Also for the feasibility reports, time and cost estimations to be prepared in this phase, this team has given the approval. The *phases of assessment and options* are nested in the case study of Darussafaka High School.

*In the project development phase*, the drawings, technical specifications, detailed budget plans, work programmes and other official documents required for conservation and restoration project, have been prepared by professionals such as architects, engineers, conservators, researchers, designers, creators, landscape architects, quality engineers etc. The proposals, work programmes, etc., have been received from contractors through these documents.

As mentioned below, the feasibility studies had been carried out previously but the calculated high costs prevented the investment in conservation and restoration project and also due to the changing ownership situation, the building stayed empty for many years. In 1994, when Darussafaka high school moved to the new campus in Istanbul Maslak region, 120 year old building in Istanbul Fatih region, was abandoned and assigned to Ziraat Bank. Ziraat Bank planned to establish a "Banking High School" here, but since the feasibility came out as restoration of historic building is higher than building a new structure, this project could not be accomplished. The school buildings stayed empty for many years, used as an archive warehouse of the bank for some time, and afterwards assigned to National Estate. The National Estate Office could neither utilize this historic building, which has a usage area of approximately 10500 m<sup>2</sup>, since its repair and restoration requires high cost. Then the historic building was donated to Treasury Department in 2006. In 2007, the land and the buildings were assigned to the Ministry of National Education by the Treasury Department. Since the Ministry of National Education did not have the sufficient budget, it was decided that it would be brought to life through another civil organization which was the system for establishing the school. The Ministry of National Education has assigned it to Ilim Yayma Cemiyeti for the purpose of opening a school.

In Turkey, a credit loan is given in 2 major topics for conservation, maintenance and repair of historic building. However, since the structure is now under the auspices of the Ministry of National

Education, it was set off on a quest for the project to be prepared as free of charge and reached an agreement with Bimtas A.S of Istanbul Metropolitan Municipality. The surveying, restitution and restoration projects which are projects of Darussafaka High School, are prepared by Bimtas A.S. in 2009 under the scope of "grant". Firstly, application was made to the Istanbul Conservation Board with a short report and picture album for the registration of Darussafaka's historic school building as a historic structure which needs to be conserved. Projects of historic buildings are subject to the permission of the conservation board affiliated to the Ministry of Culture. Surveying, restitution and restoration projects are called as triad project, and an architectural project report including the history of art, refunctioning, use of materials and similar subjects, takes place in the appendix of each project. Since the surveying for structure of a historic building of about 10500 m<sup>2</sup> requires a very large technical teamwork and time, solutions were sought in order to shorten this period. The technical team of 10 people in total prepared the survey project in 4 months and submitted it to the conservation board for approval.

Since the control and approval process of the survey project lasted about 6 months, restitution and restoration projects were prepared during this process. The restitution project, in other words the project design of the initial status of the structure when it was built based on historical researches, took about 3 months. In this period at the same time, art history, oral history and archive research were also made. In the preparation phase of the restoration project, the meetings with the civil organization (Ilim Yayma Cemiyeti) were held and the needs of the imam hatip high school which will be refunctioned, were determined. Since it brings a great advantage that the engineers in different disciplines take place at the company that undertakes the project, the engineering projects have also been prepared by Bimtas A.S. The fact that architects and engineers worked together, has shortened the project production process very much, and made information exchange strong.

Following the approval process of the projects at the conservation board, the approximate cost of construction was prepared in a short period of 1 month. Three persons from the technical team which is assigned in the project prepared the cost file and delivered it to the Istanbul Special Provincial Administration. The Special Provincial Administration affiliated to the Governorship of Istanbul initiated the implementation phase of the conservation and restoration project of the Darussafaka High School, by opening a

construction tender by means of being held under the responsibility of a private company.

Unpredictable problems had arisen *in the implementation phase*, for example, the previous reinforcements were found to be inadequate, the whole building was suspended and stone pillars were appended. A temporary space cage roof system was built in order to protect the structure during the restoration process. The team has continuously assessed the process with interim assessments and recorded them in writing. While the process was continuing, meetings were made with an architect representing the user and assessments were made on usage.

Such situations have caused time extension and cost increase. The project team in Istanbul Special Provincial Administration has reported all these decisions and their justifications to the governor. Approval has been requested for the duration and, in particular, for the cost increase, but this has taken time for board approvals. For example, the projects were prepared in 2009 and investment decision was taken, the tender process started in 2012, the implementation started in November 2013 and the project, planned to be completed in 2015, could be opened in September 2017 with a time extension of 2 years.

The school, of which the restoration and conservation project was actualized under the management of a project team in Istanbul Special Provincial Administration, opened in September 2017.

The *operation phase* could not be assessed because the school has opened recently and there was no data yet. However, it was said that the preparations for the implementation of the warranties, maintenance instructions, etc., were made; the project was recorded and archived. A general assessment of the project has been made, for example, the examples of reinforcement and the construction of temporary space roof cage which were given about the difficulties encountered during the implementation, are expressed as lessons learned from the project.

## 5. Discussion

### 5.1 Understanding the value of the project

In conservation and restoration projects, it is extremely important to understand especially the value of the project being as an architectural cultural heritage. In this respect, it is necessary for the project manager to have experience in conservation and restoration projects of historic buildings and understanding of the fact that a part of job is the conservation of the value. Conservation of

the value is one of the project goal and objectives within the scope of architectural cultural heritage and is the basic success criterion. This objective will provide communication and synergy that will keep all stakeholders together in the solution of all kinds of problems.

### 5.2 The role of project manager

Project manager is the person who will integrate all stakeholders into the project process and persuade them to this value. For example, in case of high costs coming out after the feasibility studies or for the extension time and cost increases occurred during the implementation, the project manager will persuade the investor and other stakeholders with the necessary explanations. Studies had been done also before for the restoration of Darussafaka High School, however, the high costs calculated in the feasibility studies were given as justification and the restoration project could not be accomplished and the historic building stayed empty for many years. In this respect, the project manager's role in such projects is very important.

### 5.3 The importance of project management

Project management is important for organizing, planning, controlling the project, identifying and clearing issues, managing risks and changes, managing integration and using knowledge. As mentioned in the case study, an official project manager did not work in the project and the team had managed the project. This team has taken the necessary decisions in every phase and has recorded these decisions and justifications. As understood from the interviews made with project team in Istanbul Special Provincial Administration, there was a field manager who had undertaken the position of project manager, especially during the implementation phase, who also has experience in conservation and restoration of historic buildings. Field manager had an active role in the implementation process. However, since there is no project manager, the management of the anticipated and unpredictable risks could not be done during the project process, and due to this situation, time extension and cost increases other than planned have been realized.

### 5.4 The ownership situation

In Turkey, the ownership situation is also an important matter in conservation and restoration projects of historic buildings. As also mentioned in the case study, the project became feasible after the property was assigned to the Treasury Department

and the right to use was remained within the Ministry of National Education, as the property was assigned to the Treasury Department, the other institutions of the state have prepared situations such as grants, etc., as well as the necessary drawings, documents etc., for the implementation. In addition, although approval of the board was delayed in obtaining the approval for time extension and cost increases in the implementation phase, it was seen that conveniences were provided because of ownership situation as it was its own institution of the state.

## 6. Conclusions

In response to the research question which is whether the project management can be applied in these projects or not, project management is a difficult concept to implement in this area due to uniqueness of architectural cultural heritage, restoration and conservation projects, unpredictable physical conditions, construction process etc. However, the implementation of the project management in this area is possible with the facts that, in particular, the project manager is experienced in this area, knows the value of the architectural heritage project, is able to persuade all stakeholders in this regard, knows what needs to be done at each phase of the process; time management, budget updating, risk management, resource management etc., are carried out in the right phases.

By the increase of similar examples in conservation and restoration projects of historic buildings and examination of these examples, the benefits of implementation of project management in this area will be more clearly expressed.

## References

- [1]. Project Management Institute (PMI). Available at: <https://www.pmi.org/about/learn-about-pmi/what-is-project-management>. [accessed: 10 December 2018].
- [2]. Basok, N. & Degirmen, G.C. (2014). Project Management, *Nobel Academic Publishing*, vol. 1010, 3-4.
- [3]. Leblanc, F. (2006). The Built Heritage Conservation Process. Available at: [http://ip51.icomos.org/~fleblanc/publications/pub\\_2007\\_conservation\\_process.html](http://ip51.icomos.org/~fleblanc/publications/pub_2007_conservation_process.html) [accessed: 15 December 2018].
- [4]. Darussafaka History 1863-1998, Darussafaka Society Publication, 58-62.
- [5]. Bimtaş A.Ş. (2009). Boğazici Peyzaj İnşaat Müşavirlik Teknik Hizmetleri San. Tic. A.Ş.
- [6]. Benli, G. (2014). Tarihi Haritalar Üzerinde Fatih Draman'daki Darüşşafaka Okul Binaları, *Darüşşafaka Cemiyeti Dergisi*, 2014(10), 1-16.