

CULTURAL HERITAGE MANAGEMENT: PROJECT DELIVERY SYSTEM OF CONSERVATION PROJECTS

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Abstract. In general, cultural heritage projects are accepted as construction work. For this reason, traditional project management and delivery systems applied for construction projects are also applied for conservation projects. However, conservation projects are more of an activity of conserving and improving the existing structure than constructing, due to the existence of the structure subject to the project. This conservation activity, which should be done scientifically, also necessitates developing a management approach apart from that of an ordinary building, due to the values embodied in the cultural heritage. Understanding and defining these values are the cornerstones of conservation projects. So, what are the ways of planning a project delivery system that will respect the values defined for the cultural heritage? Seeking for possible answers to this question could support producing a higher quality process and result for cultural heritage conservation projects. Currently, it has been seen that the most common applied project delivery system for cultural heritage conservation is the traditional project delivery system. However, it is obvious that the issues arising from the characteristics of the conservation projects can not be solved by continuing within the traditional delivery systems. The aim of this paper is to show the necessity to develop a delivery system specific to conservation projects due to the basic characteristics of conservation projects. It is believed that a proposal for the project delivery system for conservation projects including features of conservation project facts will contribute to conduct and achieve conservation works with better quality.

Keywords: cultural heritage management, conservation project delivery, project management

MƏDƏNİ İRSİN İDARƏETMƏSİ: MÜHAFİZƏ LAYİHƏLƏRİNİN LAYİHƏLƏRİN TƏTBİQ SİSTEMİ

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Xülasə. Ümumiyyətlə, mədəni irs layihələri tikinti işləri kimi qəbul edilir. Bu səbəbdən tikinti layihələri üçün tətbiq edilən ənənəvi layihə idarəetmə və çatdırılma sistemləri konservasiya layihələri üçün də tətbiq edilir. Bununla belə, konservasiya layihələri layihəyə tabe olan strukturun mövcudluğuna görə tikintidən daha çox mövcud strukturun konservasiyası və təkmilləşdirilməsi fəaliyyətidir. Elmi şəkildə həyata keçirilməli olan bu mühafizə fəaliyyəti həm də mədəni irsdə təcəssüm olunan dəyərlərə görə adi binadan başqa bir idarəetmə yanaşmasının işlənilməsi zəruri edir. Bu dəyərləri başa düşmək və müəyyən etmək mühafizə layihələrinin təməl daşlarıdır. Bəs, mədəni irs üçün müəyyən edilmiş dəyərlərə hörmətlə yanaşacaq layihənin çatdırılması sisteminin planlaşdırılması yolları hansılardır? Bu suala mümkün cavabların axtarılması mədəni irsin mühafizəsi layihələri üçün daha keyfiyyətli proses və nəticə əldə etməyə kömək edə bilər. Hazırda məlum olmuşdur ki, mədəni irsin mühafizəsi üçün ən çox tətbiq olunan layihə çatdırılması sistemi ənənəvi layihələrin çatdırılması sistemidir. Bununla belə, təbii ki, konservasiya layihələrinin xüsusiyyətlərindən irəli gələn məsələləri ənənəvi çatdırılma sistemləri çərçivəsində davam etdirməklə həll etmək mümkün deyil. Bu sənədin məqsədi konservasiya layihələrinin əsas xüsusiyyətlərinə görə mühafizə layihələrinə xas olan çatdırılma sisteminin işlənilməsi zəruriliyini göstərməkdir. Ehtimal olunur ki, konservasiya layihələri üçün layihənin çatdırılması sistemi təklifi, o cümlədən mühafizə layihəsi faktlarının xüsusiyyətləri, konservasiya işlərinin daha keyfiyyətli aparılmasına və əldə olunmasına kömək edəcəkdir.

Açar sözlər: mədəni irsin idarə edilməsi, konservasiya layihəsinin çatdırılması, layihənin idarə edilməsi

Introduction. Cultural heritage management has different levels from region management to an object management. This paper is going to focus on cultural heritage management of monumental buildings. When the conservation projects carried out for the cultural heritage on a monumental scale are examined in a managerial context, it has been revealed that there are failing aspects in terms of project delivery systems.

The reasons for these disruptions have been identified and the idea of developing a project delivery system proposal has emerged to eliminate these disruptions. Although more cases studied for this research only Şeyh Süleyman Məşjid, Nuruosmaniye Mosque, Süleymaniye Mosque and Şerefiye Cistern, which are examples of monumental cultural heritage conservation projects examined in the managerial context, are selected to include in this article. In addition, because of constraints in literature, the results of the survey conducted with the technical personnel involved in such projects were also evaluated. Besides, conventional project delivery systems are evaluated as well to understand the motivation of necessary management.

With the findings of these evaluations, it has been discussed how a project delivery system can be carried out for conservation projects, considering the characteristics of the project delivery systems within the limits of this study.

Methods. It has been seen that it is very difficult to find direct references on the subject covered in this article. For this reason, studies directed to institutions that carry out monumental conservation projects and monumental *conservation* projects have been reviewed.

Among the theses prepared in the field of cultural heritage, Akar's doctoral thesis role of VGM in the protection of cultural heritage [1], Beşkonaklı's doctoral thesis works of the Directorate of National Palaces [2], Durukan's doctoral study is about the role of protection regional councils [3]. and they were very useful in understanding the KTB's relevance to the subject. The fieldwork conducted by Sert was used while preparing the survey for the identification of problems and problems [4]. Billur's doctoral study, on the other hand, showed an in-house perspective in determining the current situation based on direct observation, as an employee of the institution, in terms of the role of the Istanbul Directorate of Surveying and Monuments [5]. Coşkun's doctoral study is a very valuable study in terms of evaluating institutions from a historical perspective and then pointing out the problems [6].

The work of Jokilehto and Feilden contains managerial guiding principles for the implementation of the goals of the World Heritage Convention, the purpose of which is to provide recommendations for implementation [7]. Strike's book deals with the relationship between architecture and history [8]. The aim of the book is to promote quality improvement in such project implementations. Ferry's work focused on the managerial problems that arise at the beginning and throughout the existing building renovation projects [9].

The basic data of this study, together with the literature review, consists of examining the sample projects in the administrative context. Case studies are included to see the problems better, to identify the improvement issues and to contribute to the suggestions. Conservation projects completed in Turkey in the last ten years have been evaluated in terms of administrative processes. At this point it must be noted that the case studies included here have a geographical boundary. All cases are from Istanbul. On the other hand, in the field of conservation project management, where the number of academic studies is limited, the ideas of the people who carry out these projects and applications about the management processes are very valuable for this study. For this reason, the results of the current problem determination survey prepared with the participation of technical personnel working in the public and private sectors involved in conservation projects were utilized [10].

Results. An evaluation focused on the management approaches in the execution of conservation projects and especially on time and cost inputs was carried out. The time and cost graphs included in the explanations of these evaluations have been prepared linearly. Undoubtedly, as in every construction work, it is known that the time and cost graphs are not linear. However, due to the limitations of the data, the graphs were created on a single line. The brief results of each case study are as follows.

Şeyh Süleyman Məşjid Conservation Project. A single tender was made by the administration for the work in question, and the restoration process from 2013 to 2016 was carried out within the scope of this tender. The tender was made on 13.09.2013 and the contract was made with the contractor on 24.09.2013 for a price of 349.000.00 TL. While the restoration works were going on, the budget was increased by 121.11% due to the interventions that were different from the previous plans. With this budget increase, the total cost of the job was 771,673,90 TL. The work, which was planned to be completed within 450 days at the beginning of the project, took 1136 days to be completed, and there is a proportional increase in time and budget compared to the planned periods (Fig. 1).

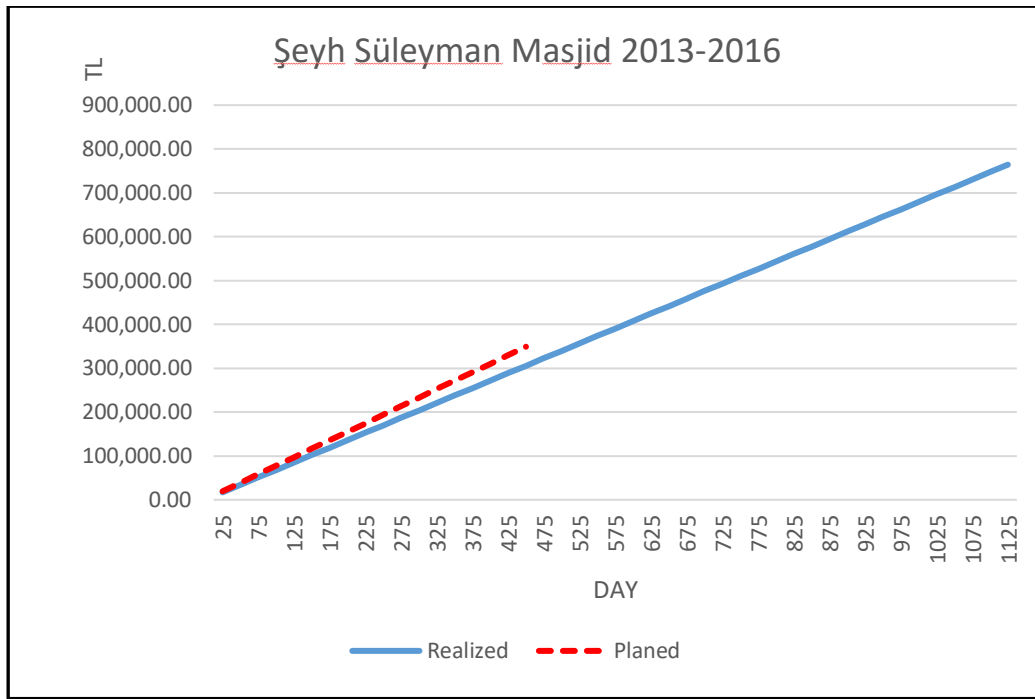


Figure 1. Şeyh Süleyman Məscid 2013-2016 Conservation Project Realized vs Planned Graph (TL-DAY)

Nuruosmaniye Mosque Conservation Project. Three different tenders were made for the building within the scope of the same conservation project. Here is the second tender held. This second tender was made on 13.07.2010 and a contract was signed with the contractor on 20.09.2010 for a price of 4,996,926.32 TL. The estimated time for the completion of the work was determined as 400 days. While the restoration works were in progress, the approximate cost prepared was not enough to complete the entire work. For this reason, 49.99% of the contract amount was increased. With this budget increase, the total cost of the job became 7,494,939.76 TL. As a result of the time extensions, the work was completed in 613 days in total as of the contract date. There is a difference of approximately 50% between the planned work and the actual work, both in terms of cost and time (Fig. 2).

Süleymaniye Mosque Conservation Project. Within the scope of this article, the second of the two tenders related to this business is discussed. The second tender, which was held after the liquidation of the first job, was held on 14.04.2009 and a contract was signed with the contractor for a price of 14.120.000,00 TL. Although the approximate cost prepared by the administration has doubled compared to the first tender, the time foreseen for the completion of the work was determined as 426 days in the first tender, while it was determined as 450 days in this tender. Restoration works could not be completed within the planned price in the second tender. For this reason, a 25.09% increase in budget was achieved. With this increase, the total contract price of the work became 17.663.009.66 TL. Within the scope of the work, five-time extensions were granted and as a result, the duration of the work reached (almost four times of planned) 1620 days (Fig. 3).

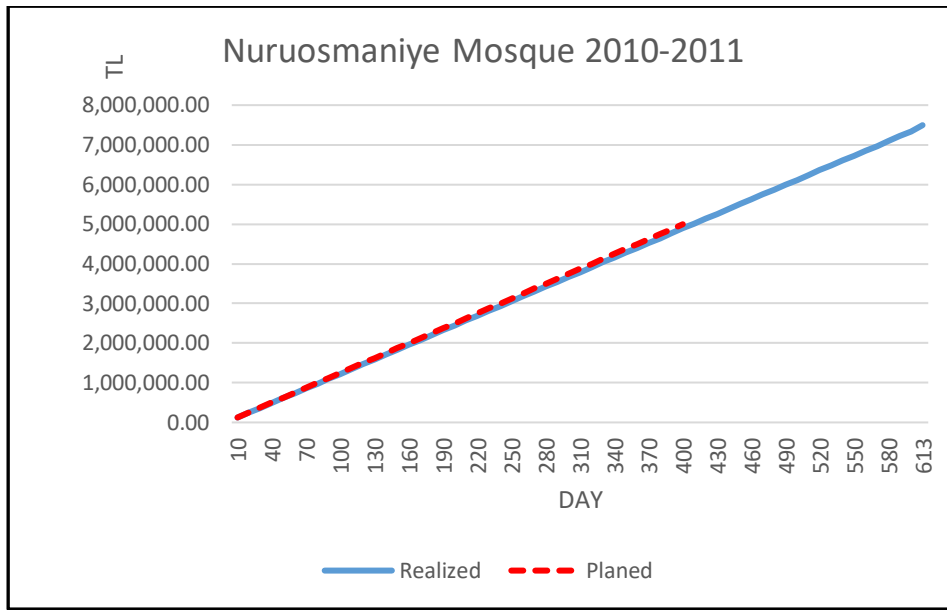


Figure 2. Nuruosmaniye Mosque 2010-2011 Conservation Project Realized vs Planed Graph (TL-DAY)

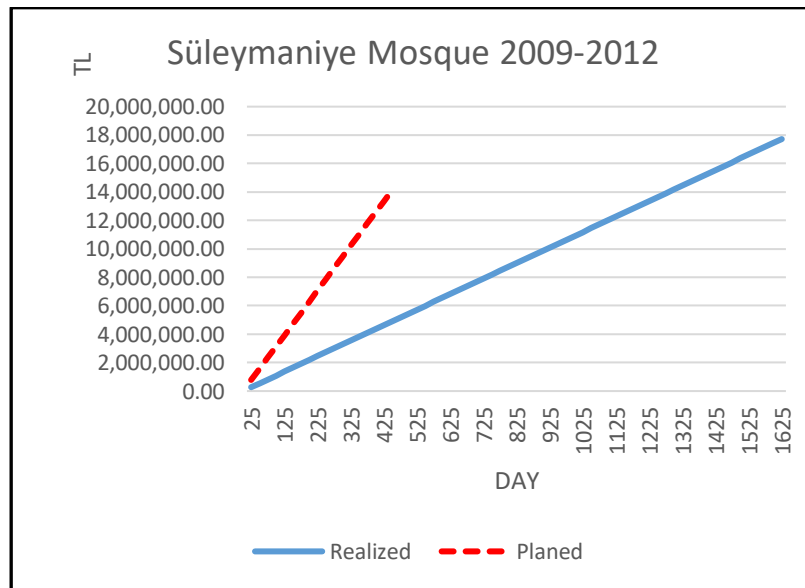


Figure 3. Süleymaniye Mosque 2009-2013 Conservation Project Realized vs Planed Graph (TL-DAY)

Şerefiye (Theodosius) Cistern Conservation Project. A single tender was made by the administration for the restoration of the cistern. As a result of the tender held on 19.06.2014, a contract was signed with the contractor on 07.08.2014. While the contract price is 5.988.000.00 TL, the duration of the work is foreseen as 420 days. While the implementation process was continuing, an increase of 49.64% was made to the contract price of the work, resulting in a total contract price of 8,960,443,20 TL. The work was completed 1045 days after the contract date, that is more than twice the planned time (Fig. 4).

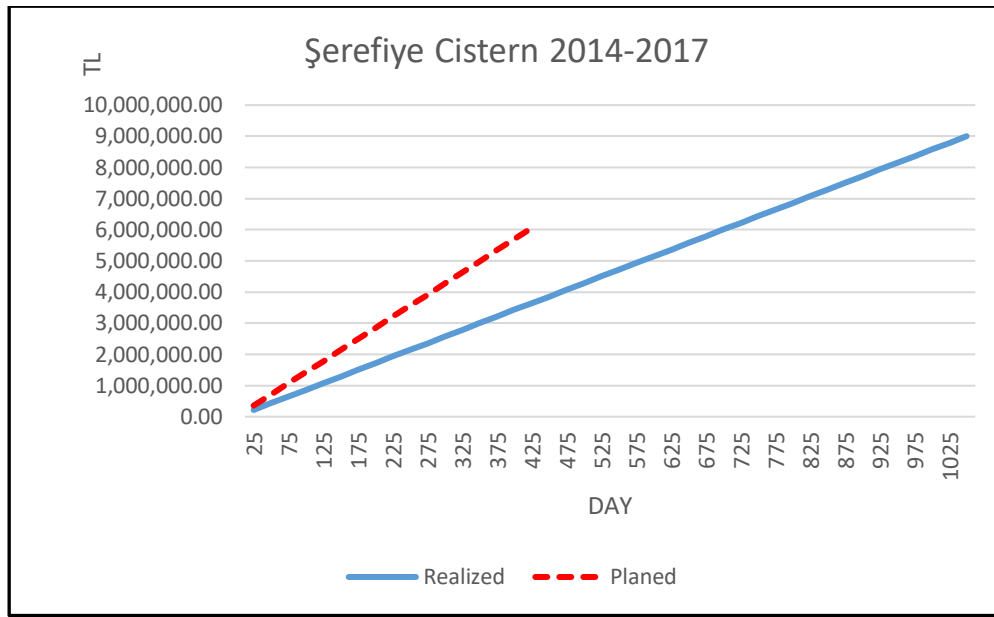


Figure 4. Şerefiye Cistern 2014-2017 Conservation Project Realized vs Planed Graph (TL-DAY)

Considering the budget and time graphs analyzed for the examples above, the incompatibility of planning and implementation is striking. To put it more clearly, it is seen that the planned process could not be realized. In order to understand the reasons for these, a survey was conducted with the technical personnel involved in conservation projects. Although this survey has very different outputs (Fig. 5), it is very important for this article to show that the architect who prepared the conservation project drawings, one of the key stakeholders of the project process, was excluded from the project during the implementation phase after the planning (Fig. 6). According to these results, it is important to ensure the continuity of the cultural heritage project.

Conservation projects are carried out in two phases, the management process of which has weakened ties with each other. The first stage includes the preparation of the survey, restitution and restoration/design project drawings and their approval by the official conservation/monument board. The second stage is the implementation after selecting the contractor with a tender based on the minimum cost with the project drawings obtained.

In the current situation, it is seen that conservation projects are designed like the traditional project delivery system in terms of delivery systems. It is in the form of obtaining the project drawings, tendering the work and then executing the implementation. Since it is considered as an ordinary construction project, it is underestimated that the conservation project's detailed designs should be prepared based on the determinations and diagnoses on the buildings. This situation is clearly seen in the results of the above-mentioned survey study [10]. Accordingly, the issue of documenting new data that will emerge in practice and developing applications according to this new situation is left entirely to the implementation stage. Unlike the traditional project delivery system, the revised project drawings to be prepared according to the new data emerging in the conservation practices must be approved by the official conservation/monument board in accordance with the legislation. Therefore, planning becomes dependent on implementation (Fig. 7). A revision made during the implementation needs to be submitted to the approval of the relevant official conservation/monument board, and a serious waste of time and resources arises in the project due to the repeated approval process for the work to continue in a healthy way [11].

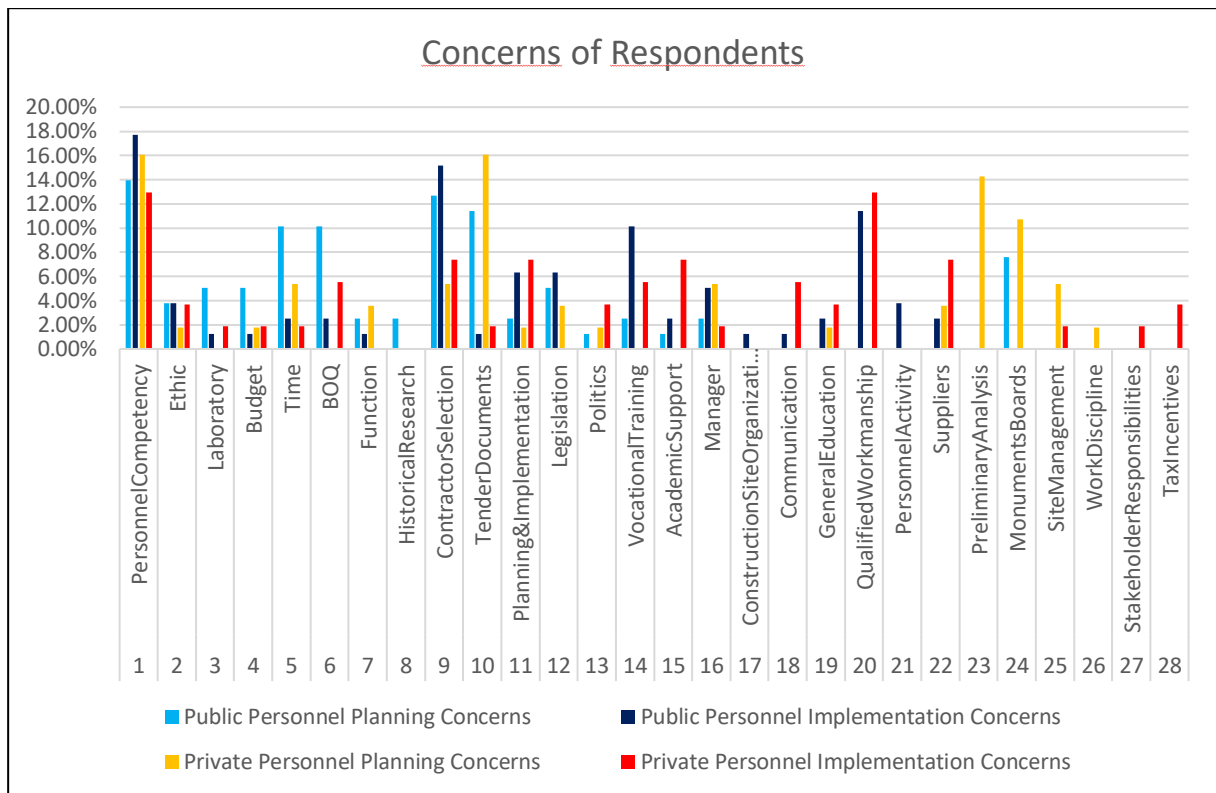


Figure 5. A general view of the outputs for open-ended questions of the survey

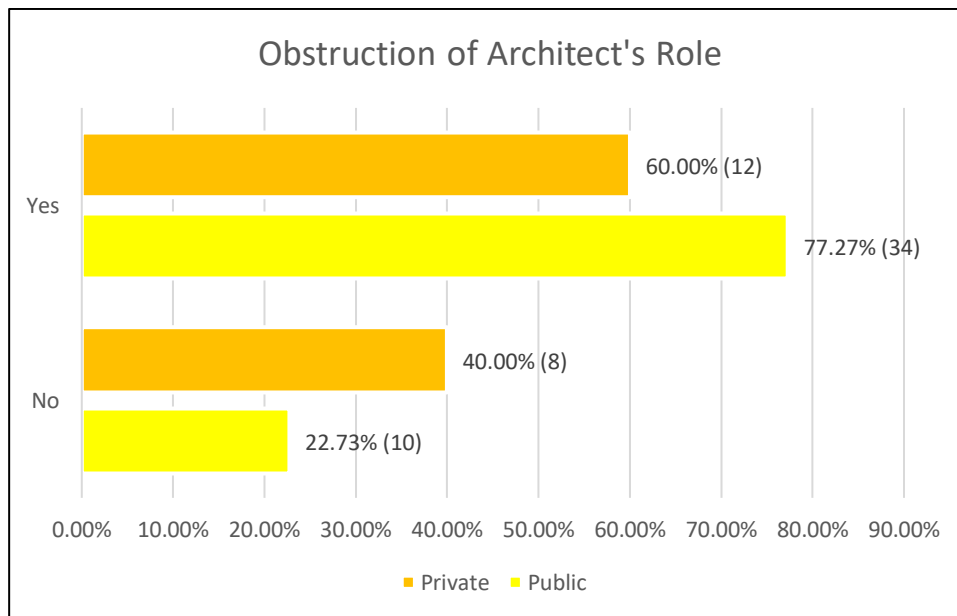


Figure 6. Inclusion of the transfer of project rights clause in the contracts

Conservation projects differ from construction works in terms of applicable national and international legal regulations, diversity and number of stakeholders involved. On the other hand, it is expected that the building, which is the subject of the conservation project, will also comply with the legislation valid for construction works [12]. It is expected that the cultural heritage buildings will be made suitable especially in terms of the regulation on the protection of buildings from fire and the building earthquake regulation. From these perspectives, it can easily be said that a cultural heritage project contains quite different features from a construction project. As it is also seen in managerial aspects of conservation projects.

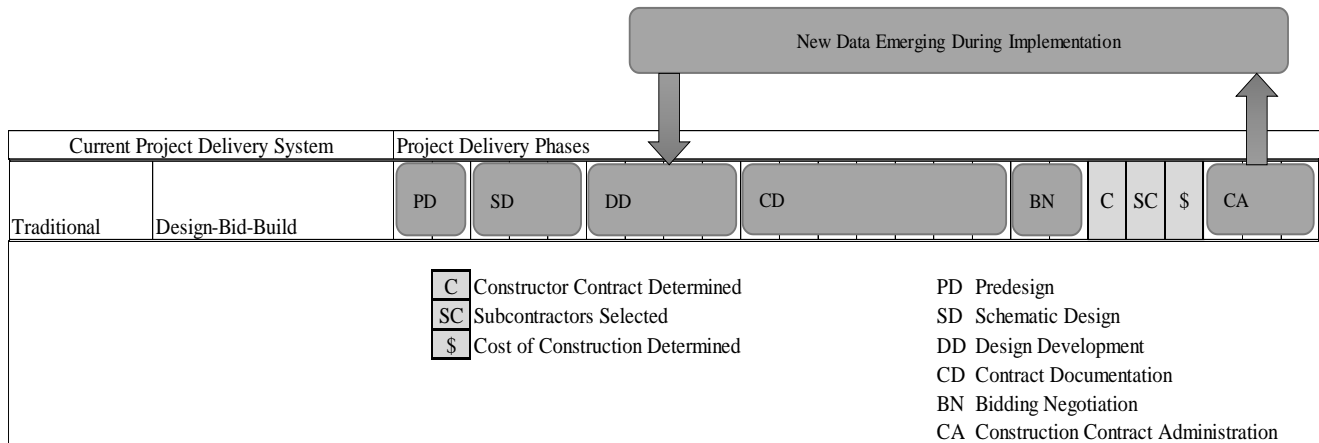


Figure 7. Current conservation projects delivery system

Since the buildings subject to conservation projects are still standing, they may contain hidden architectural elements, underground finds or structural problems that could not be predicted at the initial diagnosis stage. For this reason, there may be a need for resources to change the work plan, applications or budget during the implementation process [13]. Project management, contract and delivery systems, which are capable of adapting to the demands that may arise in such a situation, can realize the quality of the process and result without compromise. The phases and times of critical decisions of the project delivery systems are different from each other (Fig. 8). The project delivery system, which is the most used and compatible with the current conditions, is the Design-Bid-Build delivery system within the traditional group. In traditional delivery systems where team selection and Cost+Fixed Fee method are applied, the contractor contract is made before the detailed project is completed. In this way, the contractor is involved in the detailed project phase and the subcontractor selection process. In the construction management group, a manager must be determined at the beginning of the project. The tender and construction process takes place after the detailed project. In the Design-Build group, on the other hand, in the standard practice, the contractor contract is made at the beginning of the work, and the project design, tender and construction processes are carried out by the contractor. In cases where a design agent is used, the system gets closer to the traditional project delivery and it is possible to sign a contract with the contractor after detailed projects. The characteristics of the project delivery systems in terms of driving factors, cost determination and number of contracts can be seen in Fig. 9. In the traditional system based on competitive bidding, the cost is determined after the design. In the traditional system, which is divided into different sub-headings with the change of the driving factor, a single contract is made with the contractor. It is seen that risk is predominantly a driving factor in construction management delivery systems. Multiple contracts exist, except where the contractor is also the manager. In the Design-Build project delivery system, there is only one contract with a single organization. The cost is determined before or after the design depending on the type of the project. So here if we search for quality and running a risk driven project we need to discuss the delivery system of a conservation project.

Delivery type	Option	Project delivery phases										
Traditional	Design-bid-build	PD	SD	DD	CD	PR	C	SC	\$	CA		
	Negotiated select team	PD	SD	C	DD	CD	PR	SC	\$	CA		
	Cost plus fixed fee	PD	SD	C	DD	CD	PR	SC	CA			
Construction Management	CM-adviser	CM	PD	SD	DD	CD	PR	SC	\$	CA		
	CM-agent	CM	PD	SD	DD	CD	PR	SC	\$	CA		
	CM-constructor *		CM	PD	SD	DD	\$	CD-Pkg 1	SC	\$	CA	
							GMP	CD-Pkg 2	SC	\$	CA	
							CD-Pkg 3	SC	\$	CA		
Design-Build	Standard	C	SC	\$	PD	SD	DD	CD		CA		
	Bridging				PD	SD	DD	\$	C	SC	CD	CA

* Delivery shown with fast-track scheduling

\$ Cost of construction determined

C Constructor contract determined

SC Subcontractors selected

CM CM selected

PD Predesign

SD Schematic design

DD Design development

CD Contract documentation

BN Bidding/negotiation

CA Construction contract administration

Figure 8. Phases of project delivery systems and key decision times [14]

		Driving Factor					Construction Cost Determined	Number of Construction Contracts
		Cost	Quality	Time	Scope	Risk		
Traditional	Design-bid-build	■				□	After design	One
	Negotiated select team	□	■				After design	One
	Cost plus fixed fee				■		At completion	One
Construction Management	CM-adviser		□			■	N/A	Many
	CM-agent			□		■	At completion	Many
	CM-constructor	□		■		□	After design	One
Design-Build	Standard	□				■	Before design	One
	Bridging		□			■	After design	One

■ Primary driver

□ Secondary driver

Figure 9. Features of project delivery systems [14]

Discussion. According to the project delivery systems in the literature, it is noteworthy that there are successive work groups in each of them. On the other hand, in conservation projects, there is a cyclical situation arising from the new data that emerges with the initiation of interventions in the structure during the implementation phase. In other words, planning continues with implementation in conservation projects. As mentioned above, problems arise from the implementation of the Design-Bid-Build delivery system in conservation projects. It seems unlikely to get good results in a single contract-based, cost-driven delivery system, as conservation requires multi-disciplinary design. In addition, trying to apply the construction management project delivery system or the design-build project delivery system in conservation projects also creates problems. Therefore, a unique delivery system to be applied to conservation projects seems to be one of the answers. It has been seen that the project delivery system which is currently applied in conservation

projects, is the traditional project delivery system. However, it has been seen that the problems arising from the characteristics of the conservation projects cannot be solved by staying within the common delivery systems. Due to the cyclical nature of conservation projects, it is necessary to develop a delivery system specific to conservation project’s needs. For this, a delivery system can be developed in which the elements of construction management are included, although the traditional project delivery system is based on in order to comply with the existing environment (Fig. 10). This is based on cases from İstanbul, Türkiye. It might not be applicable worldwide. However it is obvious that a unique delivery system is needed for a conservation project. Within this proposed project delivery system, a project manager can be determined initially. After that, a contract can be made with the architect. In cases where the architect is not a conservation expert, clauses may be included in the specifications for the architectural service to be performed together with a conservation expert. Regardless of whether the architect is a conservation expert or not, the establishment of a scientific committee to be formed from different disciplines according to the requirements of the project will be beneficial in terms of the scientificity of the process. In order to ensure the continuity of the holistic and scientific approach, the scientific preservation committee is appointed from the beginning to the end of the work. After the main stakeholders of the project are established, planning can be continued with the analysis process following the preparation of the preliminary and the final design. The analysis process is expected to increase the data required for detailed project drawings prepared by the architect. When the analysis process is completed, a tender process that includes non-price elements can be initiated. The evaluation of the tender should be concluded by considering the values of the cultural heritage and the quality of the contractor's experience, team and organization. After the contractor contract is signed, the implementation process begins, and the architect should continue to provide detailed project preparation services throughout the implementation process. In this way, the detailed project is developed and completed according to the data revealed during the implementation process. With the completion of the work, the documentation is also completed.

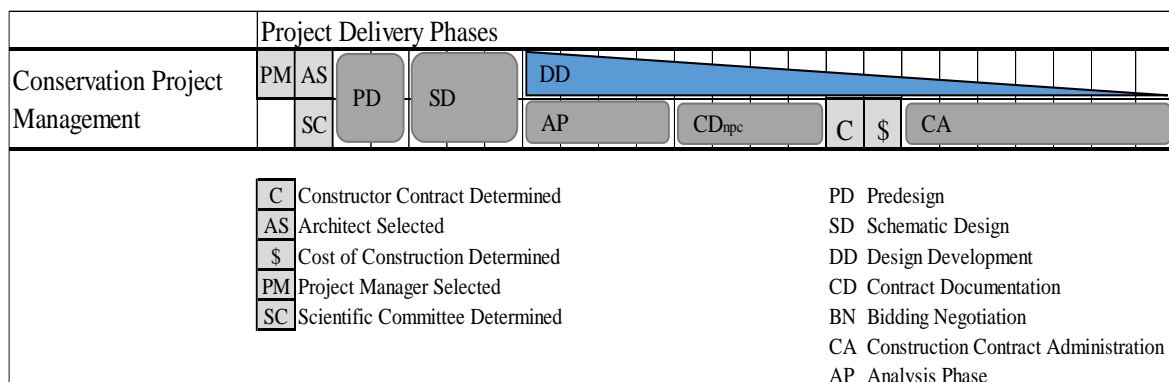


Figure 10. Conservation projects delivery system proposal

Conclusion. It can be said that there is an acceptance that if the project planning drawings contain every detail while the conservation projects are being implemented, an application without a problem will be made. However, as Alioğlu stated, basically, documentation, drawing and decision-making processes continue until the implementations in conservation projects are completed [15]. For this reason, it is necessary to look at conservation projects with a holistic management approach. The drawings made during the planning phase and the tender preparations based on these drawings will of course guide the implementation phase. However, it should be accepted that these drawings require updating as soon as the application works on the cultural heritage building begin. For this reason, it can be accepted that implementing a project delivery system in which detailed project drawings continue to be developed while the applications continue will make a significant contribution to the quality of the process and the result in conservation projects. As sites and monuments subject to a conservation project are unique, an inimitable approach could be delivered for the cases of architectural heritage of Garabag and East Zangesur to solve the problems of restoration, protection and reuse. The management of conservation projects should also be considered in terms of cultural heritage, and it should be the primary goal for scientific researchers to seek more qualified projects. It is hoped that

this study will be beneficial to academic researchers and professionals who are interested in conservation project management processes and prioritize quality.

Photos of Case Studies



Photo 1. Şeyh Süleyman Masjid (📷: Mustafa SARIKAYA)



Photo 2. Nuruosmaniye Mosque (📷 : Arild VAGEN)



Photo 3. Süleymaniye Mosque (📷 : Erkan KAMBEK)



Photo 4. Şerefiye (Theodosius) Cistern (📷 : Zeynep YILMAZTÜRK)

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