IMPORTANCE OF CONDITION SURVEY AND REPORT OF BUILT CULTURAL HERITAGE: DÜZCE (HEREKE) BATH

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ABSTRACT

IMPORTANCE OF CONDITION SURVEY AND REPORT OF BUILT CULTURAL HERITAGE: DÜZCE (HEREKE) BATH

In historic buildings conservation works, proper intervention decisions are taken by the correct analysis and evaluation of the present situation of the building. The European Committee for Standardization (CEN) has started a standardization studies in the protection of cultural heritage. One of the important developed standard is the “Condition Survey and Report of Built Cultural Heritage” that accepted in 2012. Turkish Standards Institution has adopted the “condition survey and report of built cultural heritage" as a local standard to be used in the conservation work of historic building in Turkey. Hence, all institutions have to comply with the standards for conservation work carried out in Turkey. This standard specifies how the present condition of cultural heritage will be evaluated, documented, recorded and reported. It is applied the determination of the need for maintenance measures and identification of detailed principles of conservation. The aim of this thesis was to use standard on a case study. The chosen case was Düzce Bath in İzmir.

The study began by visual observation at the site. During the survey of the study, digital camera, flashlight and steel meter were used in the necessary places. Work has to be started from mostly collapsed walls, arches and domes that affect the stability of the building severely.

In the condition report of the Düzce bath, damages were determined, classified and recommendations were proposed. Although most of the damages (deterioration) are structural failures that need to be urgent intervention, some serious material deteriorations are also observed. Microbiological colonizations, black and white deposition and efflorescenses have been determined on the materials and horasan plasters. The interventions to be done to the horasan plasters are cleaning and consolidation. The original horasan plaster should not be scraped and a new plaster should not be applied.

ÖZET

KÜLTÜREL MİRASIN DURUM İNCELEMESİ VE RAPORUNUN ÖNEMİ: DÜZCE (HEREKE) HAMAMI

Tarihi yapıların korunması çalışmalarında doğru müdahale kararları, yapının mevcut durumunun doğru analiz edilip değerlendirilmesi ve bu değerlendirmeye bağlı olarak yapılacak çalışmaların belirlenmesi ile verilebilir. Avrupa Standardizasyon Komitesi (CEN), kültürel mirası koruma çalışmalarında kullanılmak üzere standardizasyon oluşturma çalışmalarına başlamıştır. Geliştirilen standartlardan birisi, 2012 yılında kabul edilen "Kültürel Miras Yapılarının Mevcut Durumunun İncelenmesi ve Raporlanması" dır. Türk Standartları Enstitüsü, bu standartı tarihi yapıların korunması çalışmalarında kullanılacak bir standart olarak kabul etmiştir. Dolayısıyla tüm kurumlar, Türkiye'de yapılan koruma çalışmalarında bu standarta uymak zorundadır. Bu standart, kültürel mirasın mevcut durumunun nasıl değerlendirileceğini, belgeleneceğini, kaydedileceğini ve rapor edileceğini tanımlamaktadır. Standart, ihtiyaçların ve korumanın esaslarının belirlenmesi çalışmalarında uygulanmaktadır. Bu tezin amacı bir örnek çalışması üzerinde standartı kullanmaktır. Seçilen örnek İzmir'de Düzce Hamamı'dır.

Çalışma yapıda görsel gözlem ile başlatılmıştır. Çalışmada gerekli yerlerde dijital kamera, çelik metre ve aydınlatma cihazları kullanılmıştır. Çalışma, binanın stabilitesini ciddi biçimde etkileyen yıkılmış duvarlar, kemerler ve kubbelerden başlamıştır.

Düzce Hamamı'nın durum raporunda hasar tespiti ve sınıflandırılması yapılmış ve önerilerde bulunulmuştur. Hasarların çoğunun acil müdahale edilmesi gereken yapısal bozulmalar olmasına rağmen, bazı ciddi malzeme bozulmaları da gözlenmektedir. Malzemelerde ve horasan sıvalarda mikrobiyolojik kolonizasyonlar, siyah ve beyaz tortular ve çiçeklenmeler tespit edilmiştir. Horasan sıvalarına yapılacak müdahaleler temizleme ve sağlamlaştırma işlemidir. Orijinal horasan sıva kazınmamalı ve yeni bir sıva uygulanmamalıdır.

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CHAPTER 1

INTRODUCTION

Historical buildings and monuments that have artistic, historic and socio-cultural values are one of the greatest assets of cultural heritage and humanity. It is our duty to protect them and pass them on to future generations. The most basic approach in conservation of heritage is that preservation must be proper and sustainable. The preservation studies of the cultural heritage should include historical and monumental documentation, measures, protection, maintenance and intervention decisions (Douglas-Jones et al., 2016).

Cultural heritage exhibits different conservation problems depending on their structural and material characteristics, climatic conditions and problems originating from previous interventions. In order to identify these problems and to propose protection decisions, studies should be carried out in accordance with scientific standards.

In 2001, the European Committee for Standardization (CEN) initiated standardization studies for the use of working methods in accordance with scientific standards in the protection of cultural heritage. One of the developed standard is the "Condition Survey and Report of Built Cultural Heritage" that accepted in 2012.

This standard specifies how the present condition of cultural heritage will be evaluated, documented, recorded and reported. The standard includes the assessment of cultural heritage with simple measures when necessary. This standard is important because of the following purposes. They are;

- determination of the need for maintenance measures,
- identification of detailed principles of conservation;
- providing comparative data while conducting a case study of a building group or area
- decision-making, planning, implementation and protection of tangible heritage

In addition to these, condition report is the prerequisite for some standards about conservation. One of the conditions that require the preparation of the condition report is the microclimate of the building. The indoor climate, which may lead to deterioration,

can cause significant damage to the building. Assessment of the present condition is needed to reduce greenhouse gas emissions and improve the energy performance of the buildings (EN 15759-2, 2015).

If a new heating system is to be applied in historical buildings, a condition report should also be prepared. The development of the new system is related to the microclimate of the building. Hence the present condition of the building should be assessed (EN 15759-1, 2011).

The present condition should also be recorded for immovable cultural heritage in built cultural heritage. They may need to be replaced during the sales process. Therefore, a condition report is required for their packaging and transportation process (TS EN 15946, 2012).

It is also necessary to prepare the condition report before samples are collected for the material analysis. Sampling standard defines the method and criteria of sample taking, and the documentation and transportation of the samples (EN 16085, 2012).

There is a European standard for the analysis of stones used in historical buildings. The aim of this standard is to characterize both sound and deteriorated stones by proper analytical techniques. It includes methods for determining the mineralogical, micro structural, physical, chemical and mechanical properties of the stones used in the buildings. The type of stone used, the deterioration mechanisms and the state of preservation are determined by the analysis. Before analysing natural stones, it is necessary to prepare the condition report of the building (TS EN 16515, 2015).

In this section, scope of the use of study, problem definition and aim of the study, method and limits of the study are briefly mentioned.

1.1. Scope of the Study

Conservation problems of cultural heritages can vary depending on the material characteristics, type and intensity of deterioration observed on materials, the climatic conditions and the previous interventions. The methods to be followed in conservation study must be scientific and interdisciplinary.

The European Commission for Standardization (CEN/TC346) has been developing the standards in conservation of cultural heritage since 2001. These are the definitions and terminology used in the protection of cultural heritage, present condition

of cultural heritage, and identification of material deterioration and tests to be carried out for choosing new materials in protection. The standards have been developed for conservation architects, planners, art historians, engineers and all related disciplines.

Condition survey and report of built cultural heritage is one of the important standards to be used in the conservation work of historic building. This European Standard provides guidelines for a condition survey of built cultural heritage. It states how the condition of the built cultural heritage should be assessed, documented, recorded and reported. In this thesis, condition survey report of Düzce (Hereke) Bath was prepared in accordance with the European Standard.

1.2. Problem Definition and Aim of the Study

Turkish Standards Institution has adopted the “Condition Survey and Report of Built Cultural Heritage" as a local standard to be used in the conservation work of historic buildings in Turkey. Hence, all institutions (Ministry of Culture, General Directorate of Foundations, General Directorate of Highways, municipalities and governorships and other institutions carrying out restoration work) have to comply with the standards for conservation work. Although the use of this standard is mandatory in the conservation works in Turkey, it is yet to be employed. The aim of the study was to present the use of this standard in the conservation work of the built cultural heritage. The chosen case was historic Düzce Bath (İzmir). Düzce Bath is one of the Ottoman baths in İzmir and has not had any intervention for protection. Preparation of condition assessment report of the Düzce Bath was also intended to serve as an example for conservation works of other similar baths of the Ottoman period.

1.3. Limits and Method of the Study

The study was started in August 2016 and based on visual on-site observation. Before visiting the Düzce Bath, written sources about the Ottoman Period baths were investigated. Information was gathered about the traces and missing elements of the structure. During the survey of the study, photographs were taken with digital camera, and flashlight was used for seeing dark areas clearly. The necessary places were

measured with steel meter. Visual observation was started from the exterior of the bath, followed by the observation of the interior. All deteriorations were recorded for each component of the building. The deterioration terms were looked up from ICOMOS Illustrated Glossary on Stone Deterioration Patterns, Monuments and Sites. They should be preferred in all conservation studies in order to ensure linguistic consistency. The condition report is prepared by drawings with photographs and explanations. The object information, general information, building component and its description, condition description, symptoms, condition class, recommended measure, recommendation class, risk assessment and urgency class were noted in the documentation. The condition report includes reports, table and drawings with photographs. The report, including the table, was prepared using MS Office Word 2007. The drawings are two-dimensional and were generated digitally with Autodesk Autocad 2014 program and edited with Adobe Photoshop CS5 program. In this study, simple measurements related to proposing the source of deterioration were not carried out.

CHAPTER 2

SCOPE OF CONDITION ASSESSMENT REPORT AND ITS IMPORTANCE IN CONSERVATION WORKS

Historical buildings are generally constructed out of masonry materials and degraded under various physical, chemical and biological influences over time. In the conservation work, identifying the reasons of the deterioration and the analysis of the cultural values of the historic building are necessary. Even if the same deteriorations are determined in historical buildings, it is not possible to propose general rules and models that can be applied to any case (Feilden, 1982).

Conservation work on historic buildings can be done in four different ways: conservation, restoration, repair or reconstruction. Whichever way is appropriate, firstly the present condition of historical structure should be evaluated. Assessment of the present condition of the building constitutes the main part of conservation works and intervention decisions (National Park Service, 2010; Vatan, 2012).

Assessment of the present condition employs a holistic approach, which provides an understanding on how the building was constructed, used, maintained as well as on the various factors that affect the condition of the material. The condition assessment is the management tool of the conservation work. Conservation plans are developed according to the results obtained from the condition assessment. If this step is not done correctly, all the interventions that need to be done will not be adequately identified. In addition, if the causes of deterioration cannot be determined correctly, the continuity of the protection will not be ensured and the deterioration observed on the building will accelerate.

Historical heritage preservation is combination of scientific, architectural, historical, structural and cultural information and should be formed according to condition assessment (EN 16096, 2012).

Condition assessment studies are carried out via the necessary tools for site survey. The main tools include stairs, meters, cameras, lighting elements, plastic bags for taking samples, etc.. Dictionaries or visualized guides will assist in determining the

historical building materials, and preliminarily research must be done before going to the site. A preliminary survey of the historic structure may provide valuable information specific to the area, such as the date of the additions or other changes (National Park Service, 2010).

Condition assessment based on visual observation should be the first step, in which the whole structure must be evaluated and work must be started from the exterior of the building. Problems should be noted and photographed, as these records will prove useful for both the observer and those who will work in the future (National Park Service, 2010).

The condition assessment should be done before and after any damage. Before damage, it is necessary to identify potential risks and conduct a safety assessment. After the damage, it should be done to determine the damage condition. Both cases have the same process but the results are different. The pre-damage condition assessment is a damage-based assessment. On the other hand, the post-damage condition assessment is based on the "degree of damage" (EN 16096, 2012). Intervention decisions carried out on the buildings are taken considering these results.

The condition assessment process includes two steps. The first one is the observation and the second is the report which aims to document the data obtained from the observation and the evaluation. Observation may require a detailed analysis.

Damage assessment based on by visual inspection is the quantitative and qualitative evaluation that can be carried out in a short time and can be applied to a large number of buildings. If necessary, simple laboratory analysis may include. Where visual observation is inadequate, detailed analysis may be required. Compared to visual observation, detailed analysis can be applied to fewer units.

Evaluation based on visual observation should start from the exterior of the building. The person or people who performing the inspections in historical buildings should have detailed information about the history of the buildings, geometric typology, information of old interventions, construction techniques as well as damages and used materials (Vatan, 2012). In the evaluation after any damage, intervention decisions can be made for the safety of the building if cracks have progress. On the other hand, the identification of potential risks and the pre-damage safety assessment require more information. The information includes damage status and physical condition, structural and geometric typology, load assessment tables and all structural elements, topography,

location and weaknesses in the earthquake zone - potential risk guidelines. Before making the decision, the inspector should compare each new condition during the inspection with the old condition (EN 16096, 2012). Safety must be provided during the collection of information. Climbing stairs, roofs and old electrical wiring should not have a threat (National Park Service, 2010).

Detailed analysis based on assessment is not always necessary. In some cases, when visual observation is not feasible, more detailed measurements, mechanical, physical and chemical tests are carried and specialists and special techniques are required to make these tests. At the same time, more time and money is required. For this reason it can be applied in a limited number of buildings (EN 16096, 2012).

The condition assessment report should be prepared for the purpose of defining, evaluating, preserving and improving the present condition of the building and the surrounding area. The elements, materials, structural system and components of the building, interior and exterior finish elements, architectural embellishments and features should be explained in detail. The prepared report should be in an archive where it can be easily accessed by the public (ICOMOS, 1999).

The condition assessment report can be an independent document or a report containing historical features. There are some important points to note when preparing these reports. In the condition assessment report, the whole of the historic building should be completed with all detailed and possible records, the information from cultural and natural heritage conservation board such as previous restoration project. The observation should include empty spaces such as covering plates for electrical lines, registered coatings and access panels, roof, attic, basement and under floor spaces. Thus, the report can be used to find solutions to the identified problems.

The next diagnosis should include the safety aspects and the causes and consequences of damage. Assessment of the structural stability of the building is crucial in order to be ready for building against human-induced damage and natural disasters. It is difficult to make a precise risk assessment for masonry buildings. The technical codes and guidelines for new buildings are not available for historic buildings (Binda & Saisi, 2005).

Safety assessment should be based on quantitative and qualitative knowledge. Quantitative information requires specialists and more complex methods that require time and much budget. These techniques are the last steps of measurement and are the

techniques used in a limited number of historical buildings. For this reason, using simpler methods is important in terms of being the first step in evaluation (Roca, 2007).

In the condition report, any limitations should be clearly indicated and then referenced in the report. The recommendations based on the structural stability and the preservation methods and materials used in the intervention must be clear.

In order to long-term preservation, a one-stage case assessment report should be prepared. Condition report should be well organized and understandable, providing the necessary information such as protection-planning documents (historical building report, management plan, protection project development and implementation report, work cost estimates and funding plan) (Georgia Department of Natural Resources, 2008).

A comprehensive condition assessment report should contain the essential informations (Table 2.1) (EN 16096, 2012; Georgia Department of Natural Resources, 2008). In the following section, the content of the standard is summarized.

Table.2.1. Content of Condition Assessment

GENERAL INFORMATIONS	Introductory information -property identification -address -ownership -listing on historic registries -historic names -brief summary of the property's history -description of its existing setting -current use of the property -proposed adaptive uses (if known) -a summary of the methods used to create the report, etc.
PRESENT CONDITION OF BUILDING	Summary description of the building's existing condition This description should provide a general overview of the current condition of the building.
EXTERIOR OF BUILDING	Description of the individual exterior material components

(Cont. on next page)

Table.2.1. Content of Condition Assessment (Cont.)

INTERIOR OF BUILDING	Room-by-room descriptions, including interior features, finishes floors, walls, ceilings, doors, windows, trim, fireplaces, stairs, and other architectural features.
BUILDING SYSTEMS	Summary description and evaluation of the building systems: electrical, plumbing, HVAC, fire protection, etc.
CONDITION DESCRIPTION	Identification and evaluation of the deteriorations. Descriptions should include location and extent of problem areas and associated photograph.
PROBLEMS WITH REPAIR AND REPLACEMENT	An evaluation of the problems associated with the repair or replacement of the identified deteriorated areas and historic materials.
RECORDED PRESENT CONDITION INFORMATIONS	Including: recorded site plans, floor plans and elevations, photo-documentation, and existing conditions detail photo-documentation.
COMPLEMENTARY INFORMATION AS APPLICABLE / AVAILABLE (DEPENDS ON REQUEST)	Supplementary information including (as requested, and available): cost estimates, technical reports, accessibility assessment , building code issues evaluation, archaeological investigation reports, etc.
RECOMMENDATIONS / CONCLUSION	Recommendations for the appropriate treatment of deteriorated historic elements.

Condition survey and report of built cultural heritage (EN 16096)

The standart titled Condition survey and report of built cultural heritage **(**EN 16096) was prepared by the CEN / TC 346 'Cultural Heritage Protection' Technical Committee in 2012. This standard can be applied to all cultural heritage structures can be applied to all built cultural heritage such as buildings, ruins, bridges and other standing structures, except archaeological sites and landscapes. Standard can be used for determination of protection measure and necessary intervention, damage measurement, description of the requirements and the detailed technical specifications required, and to provide combined methods to obtain comparative data for a building

group or similar structures in the area (EN 16096, 2012). Turkey is one of the countries that accepted this standard.

This European Standard is a guideline for the assessment of the condition in cultural heritage preservation and specifies how the condition of the cultural heritage will be assessed, documented, recorded and reported. According to this standard, evaluation must be based on visual observation. This observation may include simple measurements when necessary. The report should include collected information with visual observation of the structure of the cultural heritage. The aim of observation and inspection is to assess, document and record the condition of the work. Any changes to the requirements of the standard must be clearly indicated in the report. According to observation and inspection, planning; property and cultural heritage information; condition recording; risk assessment and recommendations; summary and condition report are made. These stages are mentioned below (EN 16096, 2012).

Planning is the preparation step. In the planning, the scope of the work, the resource requirement, required tools, the registration form, the information about the building should be determined. In addition, the persons or institutions to be contacted during the preparation step should also be investigated. In the building complexes, the structures involved in the study should be identified and specific structural characteristics should be investigated. If the building is in ruins, the aim should be to protect its present condition.

At site, safety must be first and precautions be taken. Experts should have knowledge of traditional materials, construction techniques and damage processes in the building. In the building complexes, study should be carried out by a team of specialists in different fields of conservation. In addition, if it is necessary to carry out the work done in a single building further, a team of specialists (archaeologists, architects, historian, engineers, researchers) should be identified before work and professional advice should be taken from the team (EN 16096, 2012).

The second phase of the work is the collection of legal information about the building. These include the name and address of the region in which the building is located, GIS information, position, address, the owner of the building and the person or persons responsible for the protection status, statutory information and values. A brief general description of the building including the architectural and structural types, the components (construction, materials and finishing elements) must be listed and

identified. Then, the information about environment, climate, geological conditions in which the building is located should be given. At this stage, there are some resources and management information recommended for examination (EN 16096, 2012). They are;

- Photographs from archives,
- Cadastral and land records,
- Cultural heritage databases and management information,
- Original drawings, subsequent additions and modifications
- Previous interventions and protection plans
- Summary of functional and structural changes
- Examination of reports and regulations by national or regional guidelines,
- Electrical, fire, cable documentation

The third part of the work is the recording of the present condition by observation and questioning. At this stage, it can be seen whether the research done during the work is sufficient. If the assessment requires more comprehensive information, this should be indicated as a recommendation in the report.

The structure should not be damaged in the examination of the condition. If it is necessary to remove some building elements in order to detect a problem, the building owner should give permission for it. This work should be done with the approval of the authorities and carried only by experts. All rooms of the building must be included in the present assessment. Unreachable places or security risks should be noted in the report. All damages must be recorded except for normal wear. These evaluations are necessary for each member of the building. Each element must have a condition class according to their condition, their condition must be documented, photographed, and / or sketched (EN 16096, 2012).

There are also other records that need to be recorded in the condition report. These include; who conducted the work, the position of the person, the names of the client and the commissioner, the time of study, tools and methods used, scaffolding, elevator, contact information of persons, inspection date, report date, weather conditions on survey date, sections that do not have access, reliability of collected data and photographic documentation (EN 16096, 2012).

In this stage, for each element, short descriptions of the conditions, symptoms, type and grade of damage, and joint details of components to be recorded. When classifying the conditions of the elements, a general evaluation should be made of all the indications and classification should be done according to the evaluation. The classes are;

- no symptoms (CC0),
- minor symptoms (CC1),
- moderate symptoms (CC2)
- major symptoms (CC3).

All symptoms should be noted and classified from the greatest one to the smallest one. The methodology should be specified and reference sources should be included in the report (EN 16096, 2012).

The other important part is the identification of the risk assessments and recommendations. Risk assessment is necessary to make every element / component, like condition assessment. it is necessary to make for every element and components. The risk assesments are important for determining the protection work. The following considerations should be taken in risk assessment (EN 16096, 2012). They are;

a) probable cause of the condition;

b) external actions affecting the component(s) and components assessed as probable cause(s) of damage;

c) expected variations in external actions;

d) probable consequence(s) due to the recorded condition (bearing capacity, fire safety, seismic vulnerability, etc.).

e) probability that, or the speed at which, the consequence and further deterioration will occur;

f) need for additional investigations;

g) probability that further investigation will reveal hidden damage and the consequence of this damage

h) probable effect on and for historic significance;

i) relationships between the component(s) and other elements;

j) other external and environmental factors which may significantly *affect* conditions and their probability (flood, fire, seismic activity, landslide etc;);

k) urgency of measures.

Measure priority specifies the order of intervention and is referred to as "emergency risk classification ". It can be classified as;

- long-term measure (UC0),
- intermediate term measure (UC1),
- short term measure (UC2),
- urgent and immediate measure (UC3).

Measures must be taken with regard to the estimated cost and timeliness for execution (EN 16096, 2012).

Recommendations should be based on measures and risk assessments. Recommendations that can be given in the condition report are maintenance, preventive measures and simple repairs. For more, condition report is not enough. When a major symptom or damage is detected a diagnostic study is required.

The condition assessment is based on components and a holistic approach is needed in a large-scale survey. Recommendations should also be classified as conditions and risks (EN 16096, 2012). They are;

- observation, (RC 0),
- maintenance / preventive conservation (RC 1),
- moderate repairs and further investigation (RC 2),
- major intervention based on diagnosis (RC 3)

In the report, structural and load bearing elements, roof and building elements are more critical elements than other components. The evaluation of these elements is important for general recommendations like other elements. Other elements also have different grades in their own according to their degree of influence on the state of the structure (EN 16096, 2012).

Condition report is important in conservation works to specify measures necessary to preserve structures in an appropriate condition and ensure that the maintenance required to keep them at this level is well defined. It should be first step to develop plans and measures needed to keep built cultural heritage in a stable well-maintained condition.

Turkey is the member which is bound to comply with the standards of CEN. CEN published two standards about condition recording and report for conservation of cultural property. They are EN 16095 "Conservation of cultural property - Condition recording for movable cultural heritage" and EN 16096 "Conservation of cultural property - Condition survey and report of built cultural heritage". In architectural restoration, EN 16096 "Conservation of cultural property - Condition survey and report of built cultural heritage" standard is essential. Also preparation of condition report is prerequisite for some standards about conservation of cultural property. They are;

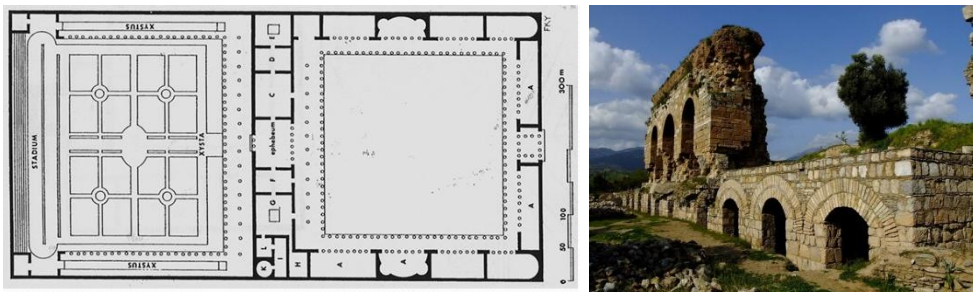
- **EN 15759-2, 2015** Conservation of Cultural Heritage - Indoor Climate, Part 2: Ventialtion to Project Heritage Buildings and collections (EN 15759-2, 2015),
- **EN 15759-1, 2011** Conservation of cultural property - Indoor climate - Part 1: Guidelines for heating churches, chapels and other places of worship (EN 15759-1, 2011),
- **TS EN 15946, 2012** Conservation of cultural property - Packing principles for transport (TS EN 15946, 2012),
- **EN 16085, 2012** Conservation of Cultural property - Methodology for sampling from materials of cultural property (EN 16085, 2012),
- **TS EN 16515, 2015** Conservation of Cultural Heritage - Guidelines to characterize natural stone used in cultural heritage (EN 16515, 2015).

CHAPTER 3

GENERAL FEATURES OF BATHS

Baths are civil architecture works which were built for the cleansing necessities of people (Arseven, 1956). They went through the historical development process and have different characteristics according to the periods. The baths were used in the Ancient Greek and the Hellenistic Period, the Roman Period, the Byzantine Period, the Early Islamic Period, the Anatolian Seljuk and Emirates Period, and the Ottoman Period. Historical development of baths was briefly mentioned with their general features below, and general informations about the study case Düzce (Hereke) Bath were presented after this part.

During the Ancient Greek period, the baths were located in the "gymnasium" (Figure 3.1). Gymnasiums were characteristic Greek buildings that including sports halls, military, art, physical education areas, and libraries (Vitrivius, 1960).



A. B.

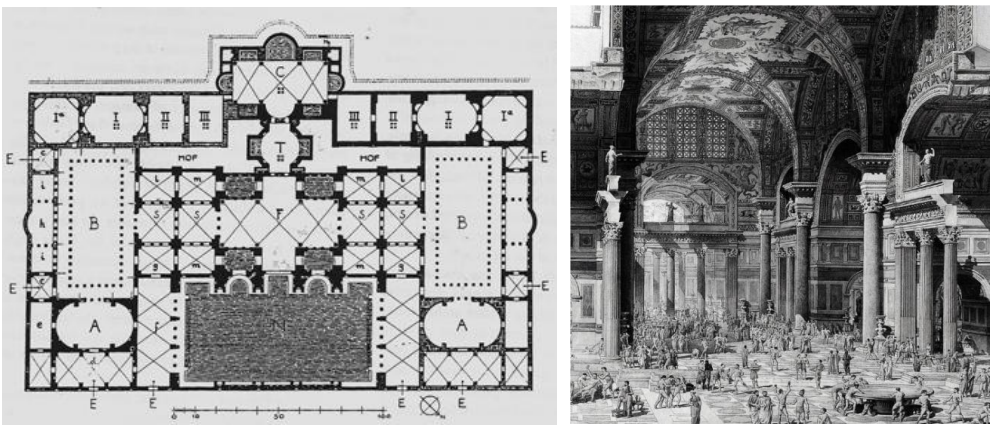
Figure 3.1.A.Gymnasium plan with palaesetra and surrounding rooms (Source: Yegül, 1992)
B.Tralleis ancient city Gymnasium (Source: Aydın İl Kültür ve Turizm Müdürlüğü)

In the Hellenistic period, all gymnasiums had hot water. The baths became more popular than Ancient Greek baths, because the hydrotherapy became widespread. In the most common Hellenistic period bath plan type, the square and rectangular units were located around the central organic space which was called "tholos". Tholos was the hot water room of bath (Figure 3.2) (Ginouves, 1962).

A. B.

Figure 3.2.A.Typical Hellenistic Bath Plan, Gortys Bath (Source: Ginouves, 1962)
B.Gortys Bath (Source: Eastland, 2013)

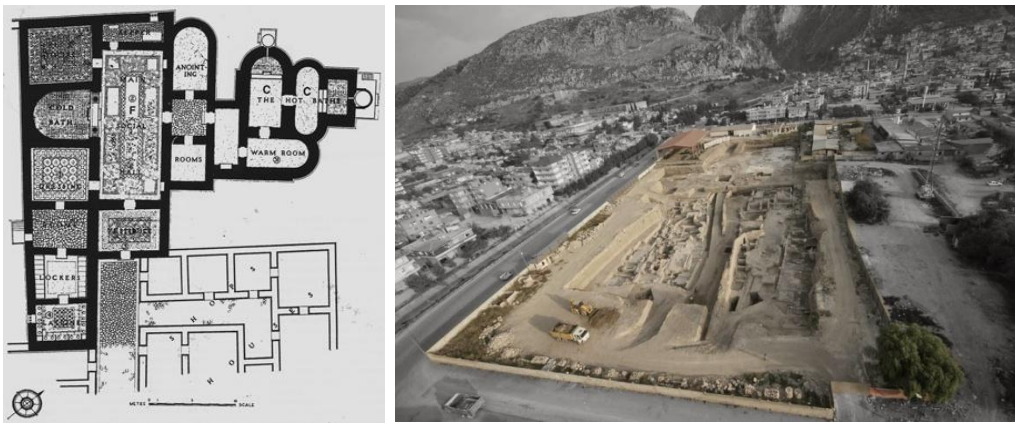
The Roman baths (Figure 3.3) included the library, hall, meeting and conference rooms, courtyards, gardens and gymnasiums except for the baths (Kuban, 2004). In the Roman period, the functions of the baths were varied. The baths were used for amusements, chatting, listening, discussion and conversation (Wheeler, 2004).



A. B.

Figure 3.3.A.Typical Roman Bath Plan, Diocletian Bath (Source: Yegül, 1992)
B.Diocletian Bath (Source: Seyrig, 1937)

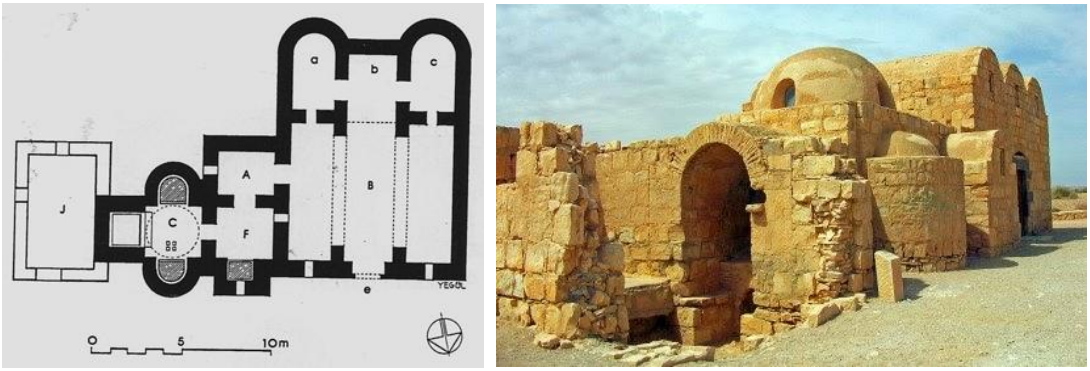
In the baths of the Byzantine period (Figure 3.4), unlike Roman baths, large open courtyards were not seen. They had the effect of being close to the center of Christianity (Say, 2007). Similar to the Roman baths, they were used as the meeting places where the entertainment was arranged, the food was defeated, social and political debates were held (Necipoğlu, 1999).



A. B.

Figure 3.4.A.Typical Byzantine Bath Plan, Antakya Bath (Source: Yegül, 1992)
B.Antakya Bath (Source: Karaca, 2015)

The tradition of the baths in Roman and Byzantine Period continued with the addition of importance of the cleanliness rule of religion during the Early Islamic Period (Figure 3.5). The heating system and service spaces in these baths are the continuation of previous bath's tradition (Ülgen, 1950; Grabar, 1998).

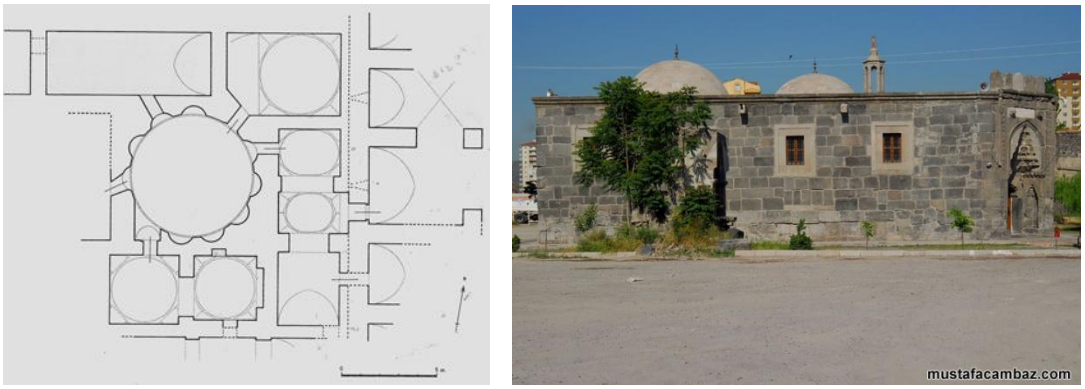


A. B.

Figure 3.5.A.Typical Early Islamic Bath Plan (Source: Yegül, 1992)
B. Kusayr Amra Bath - Hunting Mansion, Syria (Source: wikimedia.org)

In the Anatolian Seljuk and Emirates periods, the baths were classified in two classes according to their uses. The first one is the public baths for the public use. The second one is the private baths which is in the garden of the house; smaller than the public baths and belongs to the limited number of users (Önge, 1995). Many small baths (Figure 3.6) were built during the period of Emirates (Ertuğrul, 2009). During the Seljuk period, besides the private and the public baths, the baths could be built in

caravanserais. These baths were built either on the right side of the entrances of caravanserais, or near by the caravanserais (Eyice, 1997).



A. B.

Figure 3.6.A.Typical Anatolian Seljuk and Emerates Period Bath Plan (Source: Önge, 1995)
B. Kayseri Kölük Bath (Source: Cambaz, 2012)

In the Ottoman period, bath usage was classified into two groups according to genders. They were double bath and single bath. The single baths were for men and they were open to women on certain hours in the day (Önge, 1995). The double baths were called twin baths which were made up of two adjoining baths as female bath and a male bath (Arseven, 1956).

The plan order of the Anatolian Seljuk and Emerates Period (Figure 3.6) and the Ottoman period are similar. They include *Soyunmalık*, *Sıcaklık*, *Aralık*, *Ilıklık*, *Halvet*s and iwans connected with *Sıcaklık* (Figure 3.7).

In the Ottoman baths, *Soyunmalık* is covered with the large dome and the fountain, which called "*şadırvan*", can be in the middle of the space. *Soyunmalık* is the largest volume in Turkish baths and it is generally around the total volume of other spaces of bath (Önge, 1976). *Ilıklık* is the transition space between *Soyunmalık* and *Sıcaklık*. It can include the toilet, cleaning cell (*tıraşlık*), the stool, the niche, and the fountain. *Aralık* is the other transition space and it can be found in some baths. *Sıcaklık* has *Halvet* spaces at the corners, *iwans/eyvans* on the axes, and *"göbek taşı*" in the middle of the space in general. *Sıcaklık* and *Halvet*s are covered with dome and the iwans are usually covered with vaults (Eyice, 1997).

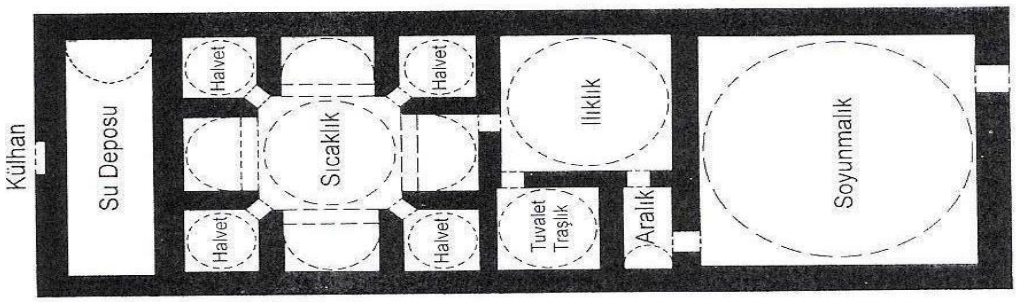


Figure 3.7. Units of the Ottoman Baths
(Source: Saraç, 2012)

Ottoman baths are classified according to the public usage and *Sıcaklık* space. According to publicity, classes of the baths are the public bath, the private bath and the complex (*külliye*) bath. The public baths are also called "general baths" and they are open to the public. Private baths are beside the mansions. They are for the use of fewer people and smaller than public baths. In smaller settlements, there is a bathing place called "*Gusülhane*" (Kuban, 1977; Eyice, 1997). The complex baths are in the complex and they are usually for the use of madrasah students.

When the plan typologies of Ottoman baths are examined according to *Sıcaklık*, they classified in six classes. In the first bath typology (Figure 3.8, A), *Sıcaklık* has axiel *eywans/iwans* and corner *Halvet*s, like the Turkish baths in Anatolia. In the second bath typology (Figure 3.8, B), *Sıcaklık* is in star-shaped. In this bath typology, vaulted niches are designed around the polygonal *Sıcaklık* sofas and this bath type is usually used in thermal baths. In the third bath typology (Figure 3.8, C), *Sıcaklık* is in square-planned and the *Halvet*s are designed on two or three sides. In the fourth bath typology (Figure 3.8, D), *Sıcaklık* is covered by rhe number of domes. Baths in this type are not very common. The fifth bath typology (Figure 3.8, E) is the common type of bath. In this bath typology, the rectangular *Sıcaklık* is covered with dome. There are two *Halvet*s on the either side of the *Sıcaklık*, and these *Halvet*s are covered with dome. The sixth bath typology (Figure 3.8, F) has a plan layout seen in private baths. *Sıcaklık*, *Ilıklık* and *Halvet*s are of the same size and they are interconnected (Eyice, 1997).

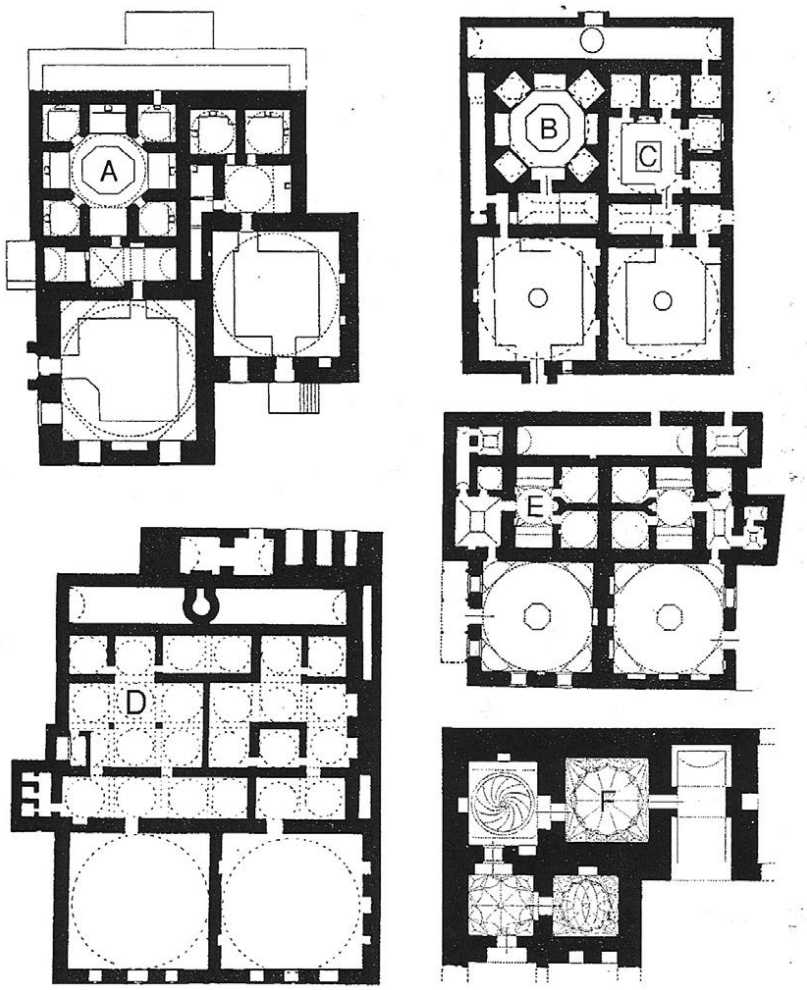


Figure 3.8. Classification of Turkish Bath according to *Sıcaklık*
(Source: Eyice, 1997)

Walls of the Ottoman baths were built with the masonry construction system. But, the use of the materials may vary among themselves. The most frequently used building materials in Ottoman baths are rubble stone, coarse stone, recycled stone, brick, wood and lime mortar. In addition to these materials, timber beams at certain heights and tiles in the upper cover were used (Önge, 1978).

Transition elements in Ottoman period baths; squinch, pendentive, plane triangle and prismatic triangle, and the building materials are brick and mortar. In the knitting techniques, large joints were formed horizontally. In cases where the transition element is a pendentive or a plane triangle, there is a drum between the dome and the transition element. In this drum 3-4 cm brick and joint materials are covered with plaster and no plaster is used on the outside. There are two or three rows of brick knits between the inner drum and the dome roof (Böke et al., 2013).

The common covering elements in the Ottoman period baths are domes and

vaults made of brick. The dome is the covering element of *Soyunmalık*, *Ilıklık*, *Sıcaklık*, and *Halvet*s. In the construction of the dome, a dome with a thickness of 35 - 45 cm was used and a braid technique was used in radial alignment with respect to the center. Another superstructure element vault, generally used as a side element of *Ilıklık* and *Sıcaklık* spaces, or as a covering element for small rectangular spaces such as a water reservoir, was made of brick and mortar. It was classified as barrel vault and mirror vault (Önge, 1978).

In the center of the dome, on the keystone or a few rows of orbits around it, oculis (Figure 3.9) or brick small light dome have oculis were built for lighting. Oculi consists of generally hexagonal glass in terracotta pipes (Reyhan, 2004; Saraç, 2012).

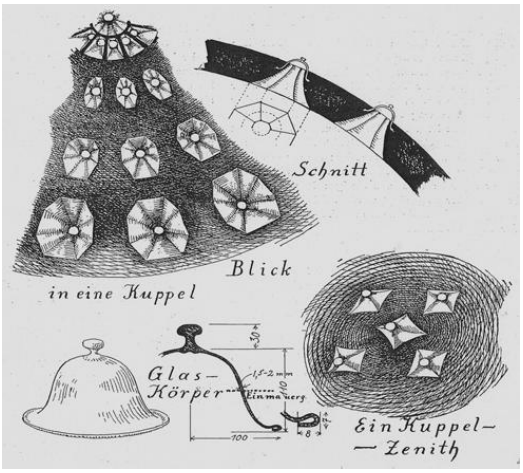


Figure 3.9.Oculis
(Source: Klinghardt, 1927)

As the plaster, on the inner and outer surfaces horasan or lime plaster were used. On the dome and the vaults, horasan plaster were used and no plaster used on the outer walls. Terracotta pipes were used in water, heating and lighting systems (Önge, 1978).

For heating the Ottoman baths, the furnace burning fire is called "*külhan*". It is in the form of a circle kiln and there is a pit of copper on it. The inside of *külhan* is inclined and the level of the floor is below the floor of the bath. The side walls of the *külhan* have horizontal slits extending to the so-called "hypocaust". There is a pipe placed under the plaster, called "*tüteklik*", which allows the air to leave from hypocaust and heat up the interiors. The copper boiler used for heating the water is connected to the hot water storage and this hot water storage is covered with the vault. The level of the copper boiler is higher than in the cold water reservoir (Ülgen, 1950). The

installation system which transports the water from the water reservoir contains soil pipes in the main pipes and lead pipes in the thin pipes. In addition, there is a steam window 2 to 2.5 cm above the temperature limit for use in repairs (Saraç, 2012).

3.1. General Features of Düzce (Hereke) Bath

Düzce Village is located in 6 kilometer distance at Seferihisar district in İzmir (Figure 3.10). In Düzce Village, Düzce (Hereke) Bath; Kasım Çelebi Mosque; and Kasım Çelebi Madrasah, which are values of Ottoman Period, are located. Düzce Village, with Kasım Çelebi Madrasah (Figure 3.11), made Seferihisar science and cultural center in 14th, 15th, and 16th centuries (T.C. Seferihisar District Governorship). Düzce Bath is the value of village which must be protected. It is in Köyiçi, west of village. Although bath has not inscription, its period of built is accepted as 16th century according to its plan and architectural characteristics (Reyhan, 2011). These architectural characteristics are squinches' being transition elements of great dome; windows' and top windows' being in *Soyunmalık,* and main space *Sıcaklık's* being covered with dome and *eyvans*/*iwans'* beingcovered with barrel vaults (Önge, 1995; Çakmak, 2002). Plan characteristics, construction technique and architectural characteristics of Düzce Bath were explained below.

Figure 3.10. Düzce Village Location (Source: Google Maps)


Figure 3.11. Kasım Çelebi Madrasah

3.1.1. Plan Characteristics of Düzce Bath

Düzce bath is the rectangular-planned bath which includes entrance space

Soyunmalık; main space *Sıcaklık*; *Sıcaklık*'s units two *Halvet*s; Cleaning Cell (*tıraşlık*); water reservoir; and spaces have no access; *külhan*, hypocaust and cistern (Figure 3.12). Bath has no *Ilıklık* space. *Soyunmalık* is the entrance space of bath and has the entrance door, the transition door to *Sıcaklık*, three windows and two top windows. Lowered pointed archs are on the doors, the windows and the transition elements squinches, and compose niches with the squinches and the walls. Above niches, plane triangles provide the transition to the dome. *Sıcaklık* has rectangular form with axiel iwans. Cleaning Cell and two *Halvet*s were located around *Sıcaklık* on east, south east and south west. Cleaning Cell seems like added unit to rectangular mass and has north window. Superstructures of *Sıcaklık,* Cleaning Cell and *Halvets* are domes. Barrel vaults are superstructure of *iwans*. Water reservoir has long rectangular shape and located near south east and south west *Halvet*s. Water reservoir has the arch on the east. On north wall of water reservoir, two windows are located. Superstructure of water reservoir is barrel vault. On the south of bath, rectangular cistern is located and it is connected with water reservoir.

Bath's exterior dimensions are 9,25 x 19,80 meters rectangular and 3,00 x 3,77 meters additional unit on middle of south wall. Interior dimensions are in *Soyunmalık* 7,80 x 8.55 meters; in *Sıcaklık* 3,77 x 7,80 meters; in south east and south west *Halvet*s 3,05 x 3,55 meters both; in Cleaning Cell 2,77 x 2,25 meters. Cistern's exterior dimensions are 2,75 x 3, 77 meters and interior dimensions are 1,35 x 3,25 meters (Reyhan, 2004).

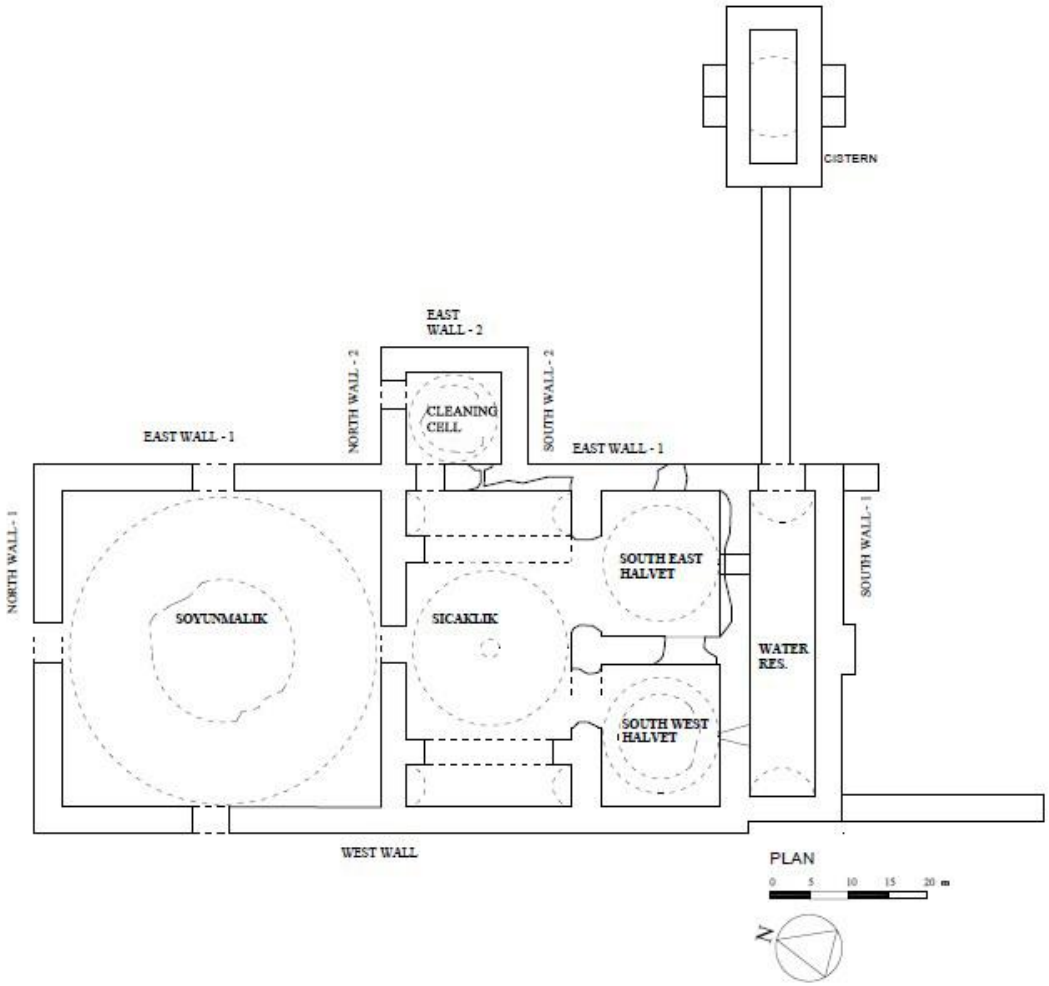


Figure 3.12. Düzce (Hereke) Bath Plan

When the bath is evaluated according to its plan type, it is in "central *Sıcaklık* that covered with dome and have two *Halvet*s" class (Figure 3.13, E).

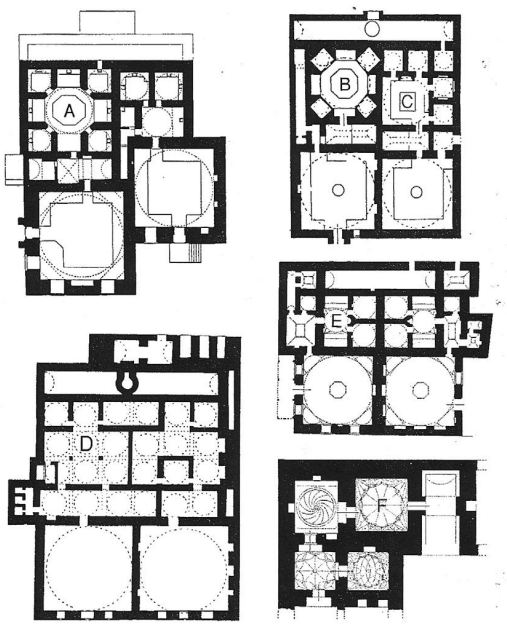


Figure 3.13. Classification of Ottoman Baths according to *Sıcaklık*
(Source: Eyice, 1997)

3.1.2. Construction Technique and Architectural Characteristics of Düzce Bath

Düzce Bath's stone masonry walls has constructed through bonding technique with rubble stone and brick components in lime mortar (Figure 3.14), except west wall of bath and east wall of Cleaning Cell (Figure 3.15). They were constructed with bonding technique with rubble stone and brick which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints. Roughly cut stones were used on the right and left edges of exterior walls. In *Soyunmalık* space, timber beams were used above doors and windows. On these windows and entrance door four rows brick bond were used as ornament. Horizontal rows ornamented brick bonding were seen around east window in *Soyunmalık*; horizontal and vertical rows ornamented brick bonding were seen around entrance door and north window. Around top windows and exterior corners of drum, two - three rows brick cornices were seen. On the corners of drum, brick and lime mortar muqarnas' were seen.

Figure 3.14. East facade of Düzce Bath

Figure 3.15. Perspective of Düzce Bath

Superstructures of spaces, domes, were constructed brick and lime mortar, like the other Ottoman baths (Böke et al., 2013). These domes are different from each other according to size, height and transition system to superstructure. Main space *Sıcaklık* dome height is 1.70 meters, width is 3.50 meters and thickness is 0.38 meter. Transition to this dome was provided with brick - lime mortar pendentives. When this dome

comparated with other Ottoman Baths, it has least thickness in *Sıcaklık* domes (Reyhan, 2011). Likewise, *Halvet*s' domes have different sizes. Two collapsed dome have 2,05 and 2.95 meter sizes. Current dome has 2,90 meter height, 1,20 meter width. These three domes have 0,37 meter thicknesses and this thickness is thinnest in the other baths in İzmir (Reyhan, 2011). Entrance space *Soyunmalık* dome has 3,15 meters height, 7,25 meters width and 0,6 meter thickness. Transition elements to dome are brick - lime mortar squinches and triangle planes. Beginning of dome, two rows rick were used. Alhtough, *Soyunmalık* dome is the biggest dome in Düzce Bath, when it was comparated other Ottoman baths in city, it is the smallest, the lowest and the thinnest dome (Reyhan, 2011).

When the plasters used in the bath were examined, it was seen that horasan plaster and lime plaster were used. On the walls of the *Soyunmalık* (Figure 3.16), two layers of horizontally plaster were used up to 150 centimeters in height, about one centimeter thickness. A thin layer of red plaster was applied on the horasan plaster as finishing layer. After a height of 150 centimeters, horasan plaster continued to a thickness of about one centimeter until the dome edge. A layer of lime plaster was used on a thickness of about one and half centimeters, and a second layer of lime plaster was applied on top of it to a thickness of six millimeters (Uğurlu, 2005).

Figure 3.16.Walls of *Soyunmalık*

In the *Sıcaklık* space (Figure 3.17), as in the *Soyunmalık* space, horasan plaster was used at a height of 20 centimeters up to 150 centimeters from the floor, and

finishing layer was formed with a thin red plaster. In the *Sıcaklık* space, unlike the *Soyunmalık* space, the horasan plasters were applied as a single layer. Eight millimeters of horasan plaster was used as the first layer above 150 centimeters from the ground. Horasan plaster was used as the second layer 14 centimeters thick and lime plaster was used as the upper layer in the thickness of seven millimeters (Uğurlu, 2005).

Figure 3.17. *Sıcaklık* space of Düzce Bath

Halvet walls (Figure 3.18) are covered with horasan plaster with a height of 150 centimeters, first one centimeter thick horasan plaster with an eight millimeter thickness, and horasan plaster with a thickness of half centimeter as the top layer. As the lowest layer, from the current centimeter of 150 centimeters, horasan plaster of 1.3 centimeter thickness, horasan plaster of four millimeter thickness were used and lime plaster of half centimeter thickness were used as the top layer (Böke et al., 2004).

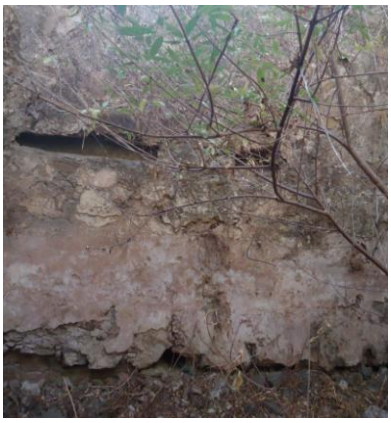


Figure 3.18. *Halvet* walls of Düzce Bath

3.1.3. Lighting, Water and Heating System in Düzce Bath

The domes and barrel vaults of bath have the lighting elements which were called oculis in terracotta pipes. The main space *Sıcaklık* has a top skylight of 10 to 15 centimeters from the central oculi (Reyhan, 2004). Around the first orbit, the fourth, second, and third orbits have eight sequential oculis (Figure 3.19). Bath's South East Halvet dome includes five oculis in the first orbit around the central oculis. In the bath, the lighting on the dome was also provided with a mutual position of the top windows in the *Soyunmalık* (Figure 3.20).

Figure 3.19.Düzce Bath *Sıcaklık* dome and oculis

Figure 3.20.Düzce Bath *Soyunmalık* dome top window

Cistern is located on the east of the bath as a water source and it is connected to water reservoir by canal. Terracotta flues was seen which belonging to the water heating system in the bath and providing connection with the hypocaust. These terracotta flues carry hot and cold water from around one meter below *Sıcaklık*. The hot and clean water reaches the basins, where the *Sıcaklık* and *Halvet* spaces (Reyhan, 2004).

CHAPTER 4

CONDITION REPORT OF DÜZCE (HEREKE) BATH

Düzce (Hereke) Bath (Figure 4.1) is accepted as 16th century built cultural heritage according to its plan and architectural characteristics. For Düzce Bath, desicion for conservation and official registration document was signed at 1995 (Appendix.A). Owner of bath is village legal entity in Düzce Village, Seferihisar. Düzce Bath is located in Köyiçi district in Düzce Village, lot number of bath is 623 (Conservation Inventory of Natural and Cultural Property) (Figure 4.2) (Appendix.B).

Figure 4.1. Düzce (Hereke) Bath, (Source: Conservation Inventory of Natural and Cultural Property)

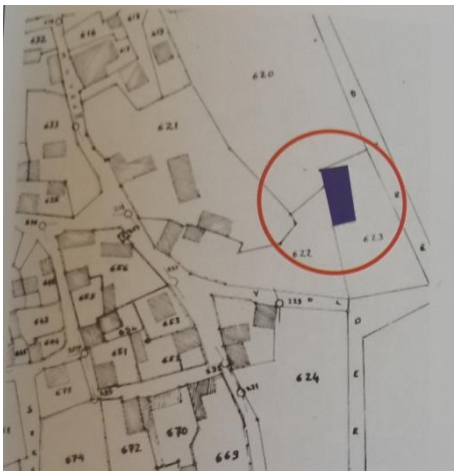


Figure 4.2. Location of Düzce (Hereke) Bath, (Source: Conservation Inventory of Natural and Cultural Property)

Condition survey of Düzce Bath was performed on October, 2016 for preparation the condition report. During the survey, photographs were taken with digital camera. The necessary places were seen with flashlight and were measured with steel meter. Inaccessible spaces of bath are *Külhan*, Hypocaust and Cistern. Also some areas of accessible spaces could not been observed clearly because of heavy temporary items on their fronts. Their informations are almost reliable.

Prepared condition report was summarized on the table (Appendix.B) and 2D drawings (Appendix.C).

The report was prepared in two subtitles as Condition Assessment of Exterior of

Düzce Bath and Condition Assessment of Interior of Düzce Bath. In the first part, exterior of buildings' condition was evaluated with using wall names, arch, superstructure, and cistern. In the second part, interior of buildings' condition was evaluated with spaces' subtitles and their components.

Current plan of Düzce Bath has shown below with exterior wall names and interior spaces of bath (Figure 4.3).

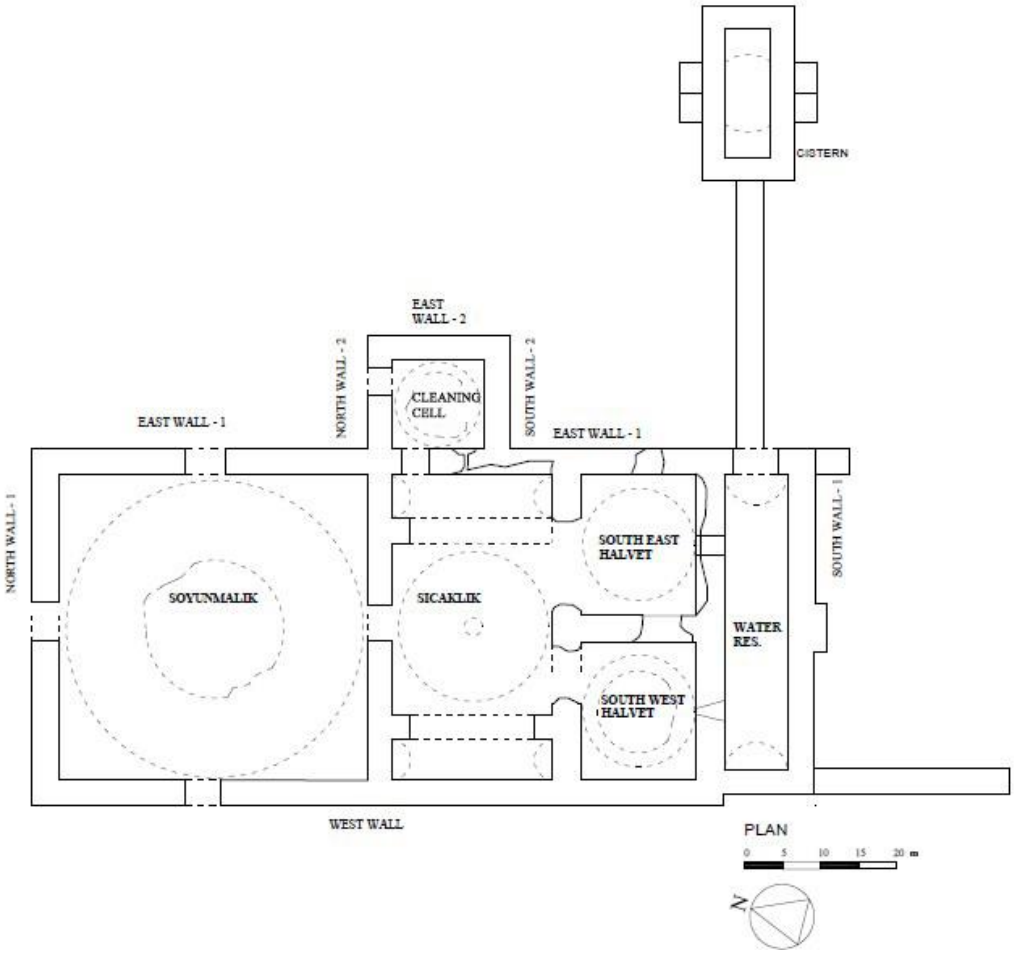


Figure 4.3. Plan of Düzce (Hereke) Bath

Before the condition assessment of Düzce Bath, used deterioration terms were described with their condition classifications, recommendation classifications and urgency classifications. Guideline of deterioration terms is given in the following part.

4.1. Guideline of Deterioration Terms

Historic masonry structures and building materials are deteriorated due to the

external factors. The deteriorations affect the condition of the structure and the building material. They have specific terms which defined by ICOMOS and they are used in conservation studies (ICOMOS, 2008). Condition report should be on the common level, and it can be used as a resource in other studies with the universal terms. In this appendix, definitions of the deterioration terms and their condition classes are given.

For describe the conditions of the elements and stones, some general terms are used. They are alteration; damage; decay; degredation; deterioration and weathering. Alteration means the changing of the material that does not necessary imply a worsening of its characteristics (ICOMOS, 2008). Damage means the human intervention of the loss of value due to decay (ICOMOS, 2008). Decay means the value or to the impairment of use beacuse of any chemical or physical modification of the intrinsic stone properties (ICOMOS, 2008). Degradation means a reduction in condition, quality, or functional capacity (ICOMOS, 2008). Deterioration means process of making or becoming worse or lower physical, chemical, physicochemical quality, and characteristics (ICOMOS, 2008). Weathering means changes in character and deteriorate exposed to weather conditions (ICOMOS, 2008).

Other terms have been defined to describe more detailed conditions. They are missing part, joint discharge, crack, deformation, delamination, peeling, alveolization, mechanical damage, pitting, crust, discolouration, efflorescence, graffiti, microbiological colonization and plant. They were explained below.

Missing Part

Missing part means empty space, which obviously located in the place, formerly existing stone part (ICOMOS, 2008). Loss means that the element is totally missing.

The missing part can be evaluated according to the size of the empty area and it can be in CC1, CC2 or CC3.

Joint discharge

Joint discharge is the missing joints between components of the element and becoming the empty spaces (Ashurst, 1998).

Joint discharge may be in CC1 or CC2 according to the size.

Crack

Crack is the fissure, clearly visible by the naked eye. Cracks are divided into five classes according to their severes. They are fracture, star crack, hair crack, craquele and splitting. Fracture is crosses completely the stone piece. Star crack is crack having

the form of a star. Hair crack is the minor crack with width dimension < 0.1 mm. Craquele is a cracked network of the minor cracks. Lastly, splitting is the fracturing of a stone along planes of weakness (ICOMOS, 2008).

When the crack types are classified in themselves, craquelle, formed by the combination of capillary cracks and small cracks with the slightest deterioration, is a minor symptom and is in CC1. Star crack and fracture is a moderate symptom and CC2 and splitting is the largest type of crack in CC3.

Deformation

Deformation means the change in form without loosing integrity, leading to bending, buckling or twisting of a stone block (ICOMOS,2008). Deformation can be convex or concave (ICOMOS,2008).

Deformation may be in CC1, CC2 or CC3 according to size.

Delamination

Delamination is the physical separation of material into the one or several layers (ICOMOS,2008). The thickness of the layers, their shape and the directions facing the surface may vary (ICOMOS,2008).

Delamination is in CC1 because it affects the surface.

Peeling

Peeling is shedding, coming off, or partial detachment of a superficial layer in submillimetric or millimetric thickness (ICOMOS, 2008).

Peeling is in CC1 because it affects the surface.

Alveolization

Alveolization is the formation of cavities (alveoles) on stone surface, which can be interconnected and may have variable shapes and sizes (ICOMOS, 2008).

Alveolization is, in general, in class CC2 because it affects both physical and chemical properties of the stone.

Mechanical Damage

Mechanical damage means loss of stone or any material clearly because of the mechanical effect (ICOMOS, 2008). Impact damage is the type of the mechanical damage caused by the impact of a hard tool like a bullet (ICOMOS, 2008).

Mechanical damage can be in CC1, CC2, and CC3 which depens on the extent of the damage

Pitting

Pitting means millimetric or submillimetric shallow cavities like points. (ICOMOS, 2008).

Pitting is in CC0 or CC1 class, because there is the shallow deterioration.

Crust

Crust is material accumulation on the surface and can be seen as white crust or black crust (ICOMOS, 2008). Thicknesses may be homogeneous or different (ICOMOS, 2008).

Crust is, in general, in class CC1 because it affects the surface.

Discolouration

Discolouration is the change of the stone colour in one to three of the colour parameters: the tone, the value and/or the brightness (ICOMOS, 2008).

Discolouration is in CC0.

Efflorescence

Efflorescence is usually whitish, powdery or whisker-like crystals on the surface (ICOMOS, 2008).

Efflorescence may be in CC1, CC2 or CC3 according to intensity.

Graffiti

Graffiti is the application of paint, ink or similar matter on the surface (ICOMOS, 2008).

Graffiti is in class CC1 because there is a deterioration on the surface.

Microbiological Colonization

Microbiological colonization or biological colonization is the colonization of the stone or element by plants and micro-organisms such as bacteria, cyanobacteria, algae, fungi and lichen (ICOMOS, 2008).

Microbiological colonization is CC1, CC2 or CC3 according to intensity.

Plant

Plants are the vegetal living being, root, stem, and leave, in the element (ICOMOS, 2008). It growths in the joints (Honeyborne, 1998).

Plant may be in CC1, CC2, or CC3 because it can be small plant or cause of separation the stone.

According to the condition of having these deteriorations, the condition of the historical building elements are divided into four classes, CC0, CC1, CC2 and CC3. The

relation between the damage level, the condition class, recommended measure and urgency is shown below (Table 4.1) (Fitzner & Heinrichs, 2002; EN 16096, 2012).

Table 4.1. Condition, Recommendation and Urgency Classifications

CONDITION DESCRIPTION / CONDITION CLASS (CC)	**RECOMMENDED MEASURE/ RECOMMENDATION CLASS (RC)**	**RISK ASSESSMENT/ URGENCY CLASS (UC)**
No symptoms / CC0 -Discoloration and pitting	Observation / RC0	Long term / UC0
Minor symptoms / CC1 -Minor missing part minor joint discharge; hair crack; minor deformation; delamination; peeling; minor mechanical damage; intense pitting; crust; efflorescence; graffiti; minor microbiological colonization; and minor plant	Maintenence - Preventive conservation / RC1 -Cleaning stone, brick and plaster; consolidation of hair cracks which were observed on stone, brick and plaster; filling minor joints; cleaning minor plants; and pasting plasters	Intermediate term / UC1
Moderately strong symptoms / CC2 -Moderate missing part; major joint discharge; fracture crack; moderate deformation; alveolization; moderate mechanical damage; efflorescence; moderate microbiological colonization; and moderate plant	Moderate repair and further investigation / RC2 -Cleaning stone, brick and plaster, consolidation of fracture cracks which were observed on stone, brick and plaster; filling moderate joints; and cleaning moderate plants	Short term / UC2
Major symptoms / CC3 -Major missing part; splitting; major deformation; major mechanical damage; efflorescence;	Major intervention based on diagnosis / RC3 -Diagnosis should be at site and laboratoires. Diagnosis involves analysis of	Urgent and immediate / UC3

(Cont. on next page)

Table 4.1. Condition, Recommendation and Urgency Classifications (Cont.)

intense microbiological colonization; and major plant	efflorescences salts; moisture content;mechanical characteristics; characterization of microbiological communities; observation of progress of cracks; characterization of plasters.	

4.2. Condition Assessment of Düzce (Hereke) Bath

In this part, condition assessments of exterior of Düzce Bath and interior of Düzce Bath were prepared with the deterioration terms from ICOMOS.

4.2.1. Condition Assessment of Exterior of Düzce (Hereke) Bath

In this part, condition assessments of exterior components of the building were prepared with general descriptions; condition descriptions; condition classifications; recommendation classifications; and urgency classifications.

4.2.1.1. West Wall

West wall of the bath is stone masonry wall which was constructed through bonding technique with rubble stone and brick, which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints (Reyhan, 2004). Roughly cut stones were used on the left edge. Surface is unplastered.

West wall of the bath (Figure 4.4) has sustained loss. It is the entrance door behind metal sheet. Observed structural failures are missing (collapsed) part of the wall on the right part of wall (~20 cm. behind); missing roughly cut stone on the left edge; missing bricks in the middle (*Sıcaklık* and *Halvet* walls) part; splitting on the middle (*Halvet* wall) and the right (water reservoir wall) parts, also small plants were observed

on the left (*Soyunmalık*) and middle (*Halvet*) part of the wall (Figure 4.5). Observed material deteriorations are black crusts and microbiological colonizations on the left (*Soyunmalık*) part of wall; and black crusts, efflorescences, discolourations, hair cracks and pittings which were observed on the whole wall.

According to the findings, west wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.4. West wall of Düzce Bath

A. B.

Figure 4.5.A. Missing part of West wall
B. Splitting and small plant on West wall

4.2.1.2. North Wall - 1

North wall - 1 of the bath (Figure 4.6) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Roughly cut stones were used on edges. Surface is unplastered.

North wall - 1 of the bath has sustained loss. It is the window. Observed structural failures are missing (collapsed) part of wall below the window trace, missing

stones in the middle part, and splitting (Figure 4.7) on the left of wall. Observed material deteriorations are microbiological colonizations, black crusts (especially on the left and right of the wall), efflorescences (Figure 4.7) (especially on the left and right of the wall), pittings, discolorations and hair cracks on the whole wall.

According to the findings, North wall - 1 displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.6. North wall - 1 of Düzce Bath

A. B.

Figure 4.7.A. Splitting on the North wall - 1
B. Efflorescences on the North wall - 1

4.2.1.3. North Wall - 2

North wall - 2 of the bath (Figure 4.8) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is unplastered.

North wall - 2 of the bath has sustained loss. It is the window. Observed structural failures are missing (collapsed) part of wall below the window trace, missing stones in the left part, and splitting on the left of wall. Observed material deteriorations are microbiological colonizations, black crusts (especially above the wall), efflorescences (especially around window trace), discolourations, and pittings on the whole wall.

According to the findings, North wall - 2 displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.8. North wall - 2 of Düzce Bath

4.2.1.4. East Wall - 1

East wall - 1 of the bath (Figure 4.9) is a stone masonry wall which were constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Roughly cut stones were used on edges. Surface is unplastered.

East wall - 1 of the bath has sustained loss. It is the window. Observed structural failures are missing (collapsed) part of wall below window trace (*Soyunmalık*) and left part of wall (South West *Halvet*), missing stones in the right part of the window trace (*Soyunmalık*), joint discharges on the right part of window trace, and plants (Figure 4.10) on the right part of wall. Observed material deteriorations are microbiological colonizations, especially on the left part of wall (South West *Halvet*), black crusts, efflorescences, discolorations, pittings which were widespread.

According to the findings, East wall - 1 displays moderate symptoms and

condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.8. East wall - 1 of Düzce Bath

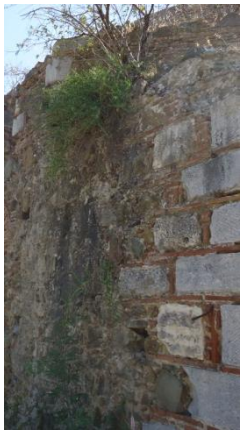


Figure 4.9. Plants on East wall - 1

4.2.1.5. East Wall - 2

East wall - 2 of the bath (Figure 4.10) was constructed through bonding technique with rubble stone and brick, which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints (Reyhan, 2004). Surface is unplastered.

Observed structural failure involves missing (collapsed) part on the right part of the wall. Observed material deteriorations are microbiological colonizations, black crusts, efflorescences, and discolourations on the whole wall.

According to the findings, East wall - 2 displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.10. East wall - 2 of Düzce Bath

4.2.1.6. South Wall - 1

South wall - 1 of the bath (Figure 4.11) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is unplastered.

Observed structural failures are missing part of the wall, splitting, and plants in the middle of the wall. Observed material deteriorations involve discolourations on stones, bricks and mortars.

According to the findings, South wall - 1 displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.11. South wall - 1 of Düzce Bath

4.2.1.7. South Wall - 2

South wall - 2 of bath (Figure 4.12) is a stone masonry wall was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Roughly cut stones were used on edges. Surface is unplastered.

Observed structural failure involves missing stone on the left part of wall. Observed material deteriorations are microbiological colonizations, black crusts, efflorescences, and discolourations on the whole wall.

According to the findings, South wall - 1 displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.12. South wall - 2 of Düzce Bath

4.2.1.8. Arch

Brick and lime mortar arch (Figure 4.13) was located on the east wall of bath. Surface is unplastered.

No structural failure was observed on the arch. Observed material deteriorations are black crusts, efflorescences, discolourations, pittings and microbiological colonizations on the whole arch surface. Microbiological colonizations were seen on the right part of the wall intensely.

According to the findings, the arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B, Appendix.C).

Figure 4.13. Arch of Düzce (Hereke) Bath

4.2.1.9. Superstructure

Superstructure of the bath (Figure 4.14) consists of five domes and barrel vault. All of them are brick - lime mortar superstructures which have oculis. Domes are stand on octogonal drums.

Superstructure of the bath has sustained losses. They are top windows on *Soyunmalık* dome; top skylight on *Sıcaklık* dome; and oculis. Observed structural failures are widely missing (collapsed) part of dome of *Soyunmalık*, Cleaning Cell (*tıraşlık*) and South East *Halvets*; missing central small dome of *Sıcaklık* (top skylight); missing bricks in *Soyunmalık* dome; splitting in *Soyunmalık* dome and barrel vault (water reservoir's superstructure); broken bricks around colapsed areas; plants on all drums and begginnings of the domes and barrel vaults, and all superstructures surfaces. Observed material deteriorations are black crusts, especially on drums' roughly cut stones; efflorescences, discolorations, and pittings on the whole superstructure.

According to the findings, superstructure of bath displays major symptoms and condition class of the superstructure is CC3, recommendation class of the superstructure is RC3, and urgency class of the superstructure is UC3 (Appendix.B, Appendix.C).

Figure 4.14. Superstructure of Düzce Bath

4.2.1.10. Wall between Cistern and Water Reservoir

The wall (Figure 4.15) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is unplastered.

Observed structural failure involves joint discharge which is close to cistern. Efflorescences and discolourations were observed as material deteriorations on the wall.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B).

Figure 4.15. The wall (between cistern and water reservoir)

4.2.1.11. Cistern

Cistern (Figure 4.16) has stone masonry walls which were constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surfaces are unplastered.

The walls of cistern have missing (collapsed) parts and joint discharges as structural failures. Observed material deteriorations are efflorescences, discolourations, and pittings.

According to the findings, the cistern walls display major symptoms and condition class of the wall is CC3, recommendation class of the wall is RC3, and urgency class of the wall is UC3 (Appendix.B, Appendix.C).

Figure 4.16. The cistern

4.2.2. Condition Assessment of Interior of Düzce (Hereke) Bath

In this part, condition assessments of interior spaces of the building with their components were prepared with general descriptions; condition descriptions; condition classifications; recommendation classifications; and urgency classifications.

4.2.2.1. *Soyunmalık*

Soyunmalık is a square-planned entrance space of the bath. It has stone masonry walls which were constructed through bonding technique with rubble stone and brick components in lime mortar. Only west wall was constructed through bonding technique with rubble stone and brick, which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large

pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints. There are four rows of bricks to decorate around the door and window gaps (Reyhan, 2004). Two layers of horasan plaster were used up to a height of 150 centimeters from the floor in the walls. A thin layer of red plaster was applied to the horasan plaster. After the height of 150 centimeters, horasan plaster was applied, and two layers of lime plaster were used (Uğurlu, 2005). The superstructure is a brick dome with a height of 3.15 meters, width of 7.25 meters and thickness of 0.6 meter and is the largest dome in the bath (Reyhan, 2011). Transition to the dome is provided by squinches and plane triangles which are made of brick and lime mortar. Niches are formed around the squinches with brick lowered pointed arches. On the niches, the transition is provided to the dome with the plane triangular elements. Lastly, two rows of bricks are used on the below the dome.

The general condition assessment revealed that the space is largely intact, and the most severely damaged part is the collapsed dome. Timber beams, floor, doors, windows and upper windows are missing. Horasan plasters are present in large quantities on the transition elements. Although *Soyunmalık* space is in a good condition when evaluated in general, it is in CC3 class due to the severe damage on the dome and missing timber beams.

A general risk assessment done in the space revealed that the collapsed dome and missing elements left the space vulnerable. Missing timber beams affects the stability of the construction. Both the structural elements and the original plasters will sustain further damage due to rain penetration; dampness; microorganisms; and microbiological growths. According to all the findings, urgent and immediate intervention is essential, and the urgency class of *Soyunmalık* space is UC3.

Recommended measures between RC0 and RC3 have been found according to risk assessments in *Soyunmalık.* But the recommendation for the general measure of the space has been RC3, because major intervention is recommended for the arch and walls, based on the diagnosis.

General descriptions and conditions of all loadbearing, transition, superstructure, finishing and other interior elements of *Soyunmalık* were explained; their conditions, recommendations and urgency were classified according to the assessments below.

4.2.2.1.1. West Wall

West wall of *Soyunmalık* (Figure 4.17) is a stone masonry wall that was constructed through bonding technique with rubble stone and brick, which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints (Reyhan, 2004). Surface is plastered.

Firstly, condition of the wall was evaluated in three parts as the left part; the middle part and the right part of the wall. Lastly, general assessment of the wall was presented which including condition classification; recommendation classification; and urgency classification.

Figure 4.17. West wall of *Soyunmalık*

No severe damage was observed in the left part of the wall (Figure 4.18). Observed structural failures are joint discharges (Figure 4.19) in unplastered area and missing small parts on bricks and stones. Observed material deteriorations are green graffiti on the corner of wall (Figure 4.19), black crusts that was observed near the graffiti, pittings and efflorescences on mortar below the plastered area, and discolourations on bricks and stones. All findings were evaluated and condition class of the left part of the wall was defined as CC1.

Figure 4.18. Left part of the West wall

A.

B.

Figure 4.19.A. Joint discharge on the left part of wall
B. Graffiti on the left part of wall

The middle part of wall (Figure 4.20) has sustained losses. They are entrance door and timber beam. Observed structural failures are missing (collapsed) parts and joint discharges (Figure 4.21) around missing elements' boundries. Apart from these, missing part of the roughly cut stone is at the upper right of the altered floor level and alveolizations were seen on stones below the beam trace. Observed material deteriorations are white crusts below the wall; efflorescences above the left space; pittings (Figure 4.21) on mortars under the arch. All findings were evaluated and condition class of middle part of wall was defined as CC3.

Figure 4.20. Middle part of the West wall

A. B.

Figure 4.21.A. Joint discharges on the middle part of the wall
B. Pittings on the middle part of the wall

No severe damage was seen in the right part of the wall (Figure 4.22). The most severe structural failure is joint discharge from ground up to 60 - 70 centimeters height. Alveolizations (Figure 4.23) were seen on stones and mortars upper part of wall. Observed material deteriorations are pittings and discolourations (Figure 4.23) on most stones and mortars and some bricks. All findings were evaluated and condition class of right part of wall was defined as CC2.

Figure 4.22. Right part of the West wall

A. B.

Figure 4.23.A. Alveolizations on the right part of the wall
B. Discolourations on the right part of the wall

West wall of *Soyunmalık* is present in large quantities. The most important finding is loss of timber beam. Other important findings are missing (collapsed) parts and joint discharges.

According to the findings, the wall displays moderate symptoms and condition class of wall is CC2, recommendation class of the wall is RC2 and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

4.2.2.1.2. North Wall

North wall of *Soyunmalık* (Figure 4.24) is a stone masonry wall that was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

Firstly, condition of the wall was evaluated in three part as the left part; the middle part and the right part of the wall. Lastly, general assessment of the wall was presented which including condition classification; recommendation classification; and urgency classification.

Figure 4.24. North wall of *Soyunmalık*

No severe damage was observed in the left part of the wall (Figure 4.25). Observed structural failures are joint discharges from ground to plastered area and missing small parts on bricks and stones. Observed material deteriorations are hair cracks; pittings; black crusts from ground to plastered area; and efflorescences on stones and bricks. Also discolourations are widespread. All findings were evaluated and condition class of left part of the wall was defined as CC1.

Figure 4.25. Left part of the North wall

The middle part of the wall (Figure 4.26) has sustained losses. They are window and timber beam. From 40 centimeters height to window trace, the missing (collapsed) part was observed. Missing stone was observed below the timber beam trace. Under the beam trace joint discharges; above the beam trace star crack (Figure 4.27) were seen. Observed material deteriorations are pittings above beam trace; efflorescences and black crusts (Figure 4.27) on the whole wall. Also discolourations are widespread. All findings were evaluated and condition class of the middle part of the wall was defined as CC3.

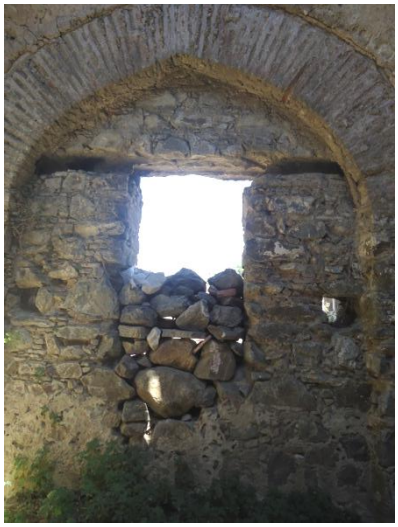


Figure 4.26. Middle part of the North wall

A. B.

Figure 4.27.A. Star crack on the middle part of the wall
B. Black crusts on the middle part of the wall

No severe damage was seen in the right part of the wall (Figure 4.28). Observed material deteriorations are pittings and discolourations on the unplastered small area. All the findings were evaluated and condition class of right part of wall was defined as CC0.

Figure 4.28. Right part of the North wall

North wall of *Soyunmalık* was preserved in the large quantities. The most severe structural failure is loss of timber beam and the missing wide part (collapsed) below the window trace.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

4.2.2.1.3. East Wall

East wall of *Soyunmalık* (Figure 4.29) is a stone masonry wall that was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

Firstly, condition of the wall was evaluated in three parts as the left part; the middle part and the right part of the wall. Lastly, general assessment of the wall was presented which including condition classification; recommendation classification; and urgency classification.

Figure 4.29. East wall of *Soyunmalık*

No severe damage was seen in the left part of the wall (Figure 4.30). In the unplastered small area, no structural failure was observed. Observed material deteriorations are pittings on bricks, stones and mortars, and discolourations on surface. All the findings were evaluated and condition class of left part of the wall was defined as CC0.

Figure 4.30. Left part of the East wall

The middle part of the wall (Figure 4.31) has sustained losses. They are window and timber beam. From ground to above of window trace, missing (collapsed) part were observed. Star crack were seen above the beam trace. Observed material deteriorations are efflorescences and black crusts on the wall. Also discolourations are widespread on

the bricks and stones. All the findings were evaluated and condition class of the middle part of the wall was defined as CC3.

Figure 4.31. Middle part of the East wall

No visual deterioration was observed in the right part of the wall (Figure 4.32). All the findings were evaluated and condition class of the middle part of the wall was defined as CC0.

Figure 4.32. Right part of the East wall

East wall of *Soyunmalık* was preserved in the large quantities. The most important structural failures are loss of timber beam; widely missing (collapsed) part; and joint discharges below and above the window trace.

According to the findings, East wall has moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency classof the wall is UC2 (Appendix.B, Appendix.C).

4.2.2.1.4. South Wall

South wall of *Soyunmalık* (Figure 4.33) is a stone masonry wall that was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

Firstly, condition of the wall was evaluated in three parts as the left part; the middle part and the right part of the wall. Lastly, general assessment of the wall was presented which including condition classification; recommendation classification; and urgency classification.

Figure 4.33. South wall of *Soyunmalık*

No severe damage was observed in the left part of the wall (Figure 4.34). In the unplastered small area, no structural failure was observed. Observed material deteriorations are small pittings on bricks and mortars. All the findings were evaluated and condition class of left part of wall was defined as CC0.

Figure 4.34. Left part of the South wall

The middle part of the wall (Figure 4.35) has sustained losses. They are the door and the flue. Observed structural failures involve joint discharges (Figure 4.36) around the door trace. Observed material deteriorations are efflorescences and pittings (Figure 4.36). Also discolourations were observed on the bricks and stones. All findings were evaluated and condition class of the middle part of the wall was defined as CC2.

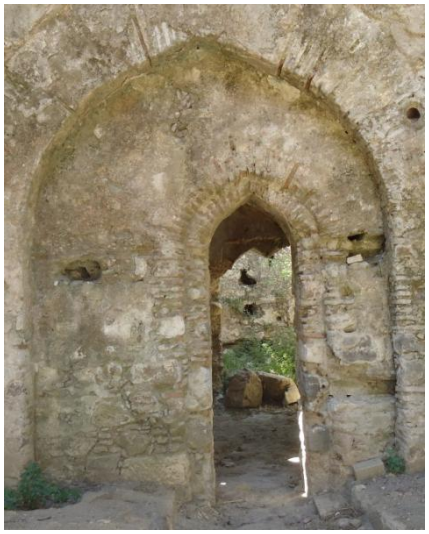


Figure 4.35. Middle part of the South wall

A. B.

Figure 4.36.A. Joint discharge in the middle part of wall
B. Pittings on the middle part of wall

No severe damage was observed in the right part of the wall (Figure 4.37). The general condition assessment revealed that the wall has sustained losses. They are the basin and the flue. No structural failure was observed. Observed material deteriorations are small pittings on the mortars (Figure 4.38); efflorescences; microbiological colonizations (Figure 4.38) on semi part of the wall; and green graffiti. All findings were evaluated and condition class of the right part of the wall was defined as CC1.

Figure 4.37. Right part of the South wall

Figure 4.38. Pittings and microbiological colonizations on the right part

South wall of *Soyunmalık* was preserved in the large quantities. The most important structural failure is joint discharges around the door trace.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B).

4.2.2.1.5. West Arch

West arch of *Soyunmalık* is brick and lime mortar lowered pointed arch (Figure 4.39). Arch bases were made with stone, brick and lime mortar. Surface is plastered.

The general condition assessment revealed that the arch is in a good condition. Observed structural failures are joint discharges on left and right of the door trace; convex deformation (Figure 4.40) below the right of the top point of the arch, and missing parts below the timber beam trace. Observed material deteriorations are pittings on the mortars and black crusts. Black crusts were observed on middle part of arch (~20 centimeters) intensely. Also discolourations were observed on the bricks.

According to the findings, the arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B, Appendix.C).

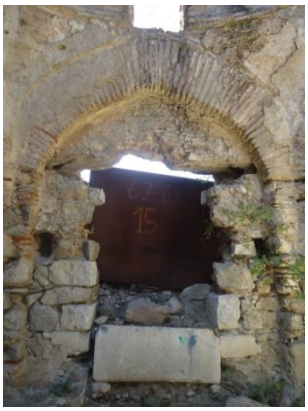


Figure 4.39. West arch of *Soyunmalık*

Figure 4.40. Deformation on the West arch

4.2.2.1.6. North West Arch

North West arch of *Soyunmalık* is brick and lime mortar lowered pointed arch (Figure 4.41). Arch bases were made with stone, brick and lime mortar. It made up niche with squinch and the part of wall. Surfaces are plastered.

The general condition assessment revealed that the arch is in a good condition. Observed structural failures are joint discharges on the base; and missing bricks on the top point and left of the arch. Observed material deteriorations are pittings on the mortars and black crusts. Black crusts were observed on mortars and stones from

plastered area to ground, especially inner surface of niches. Also discolourations were observed in components in different intensities.

According to the findings, North West arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B).

Figure 4.41.North West arch of *Soyunmalık*

4.2.2.1.7. North Arch

North arch of *Soyunmalık* is brick and lime mortar lowered pointed arch (Figure 4.42). Arch bases were made with stone, brick and lime mortar. Surface is plastered.

The general condition assessment revealed that the arch is in a good condition. Observed structural failures are joint discharges from ground up to 50 - 60 centimeters, and missing brick on the right of arch on the timber beam level. Observed material deteriorations are pittings on the mortars, efflorescences near the empty square space, black crusts, and discolourations on the base of arch up to window's middle height.

According to the findings, North arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B).

Figure 4.42. North arch of *Soyunmalık*

4.2.1.8. North East Arch

North East arch of *Soyunmalık* is brick and lime mortar lowered pointed arch (Figure 4.43). Arch bases were made with stone, brick and lime mortar. It made up niche with squinch and the part of wall. Surfaces are plastered.

The general condition assessment revealed that the arch is in a good condition. Observed structural failures are missing bricks on the top point of the arch and alveolization on the stone which is located inner part of the arch, on the 15 centimeters height from ground. Observed material deteriorations are pittings on mortars, widespread efflorescences and discolourations, and rarely seen black crusts below the wall.

According to the findings, North East arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B).

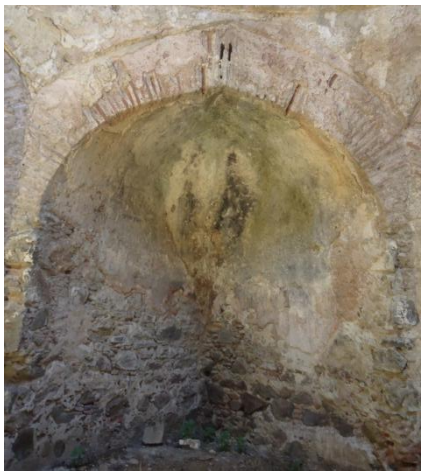


Figure 4.43. North East arch of *Soyunmalık*

4.2.2.1.9. East Arch

East arch of *Soyunmalık* is brick and lime mortar lowered pointed arch (Figure 4.44). Arch bases were made with stone, brick and lime mortar. Surface is plastered.

The general condition assessment revealed that the arch is in a good condition. Observed structural failures are missing part of brick in the right of the top point and below the arch. Observed material deteriorations are pittings, black crusts on the mortar, efflorescences, and discolourations which were seen widespread and homogenously.

According to the findings, East arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B).

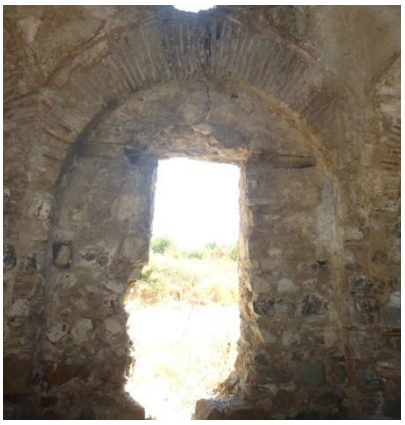


Figure 4.44. East arch of *Soyunmalık*

4.2.2.1.10. South East Arch

South East arch of *Soyunmalık* is brick and lime mortar lowered pointed arch (Figure 4.45). Arch bases were made with stone, brick and lime mortar. It made up niche with squinch and the part of wall. Surfaces are plastered.

The general condition assessment revealed that the arch is in a good condition. Observed structural failures are missing bricks in the right part of the arch. Observed material deteriorations are pittings on the mortars, black crusts on the upper part of the arch, small efflorescences, and discolourations on the bricks and stones on the base of the arch.

According to the findings, South East arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B).

Figure 4.45. South East arch of *Soyunmalık*

4.2.2.1.11. South Arch

South arch of *Soyunmalık* is brick and lime mortar lowered pointed arch (Figure 4.46). Arch bases were made with stone, brick and lime mortar. Surface is plastered.

The general condition assessment revealed that the arch is in a good condition. No structural failure was observed. Observed material deteriorations are pittings, black crusts on the right of top point of the arch, microbiological colonizations on the right part of the arch, and discolourations on the bases.

According to the findings, East arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B).

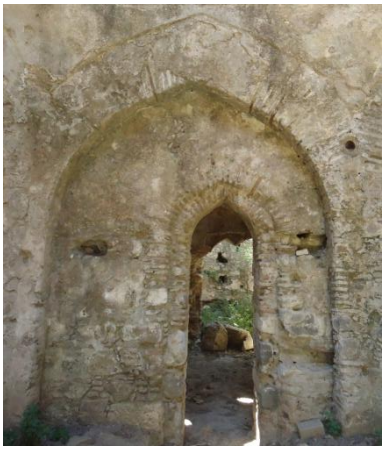


Figure 4.46. South arch of *Soyunmalık*

4.2.2.1.12. South West Arch

South West arch of *Soyunmalık* is brick and lime mortar lowered pointed arch (Figure 4.47). Arch bases were made with stone, brick and lime mortar. It made up niche with squinch and the part of the wall. Surfaces are plastered.

The general condition assessment revealed that the arch is in a good condition. Observed structural failures are missing bricks in the right part of top point of arch and joint discharges inner surface and upper part of the arch. Observed material deteriorations are white crusts on the upper part of the arch, pittings on mortars, and discolourations.

According to the findings, South West arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B, Appendix.C).

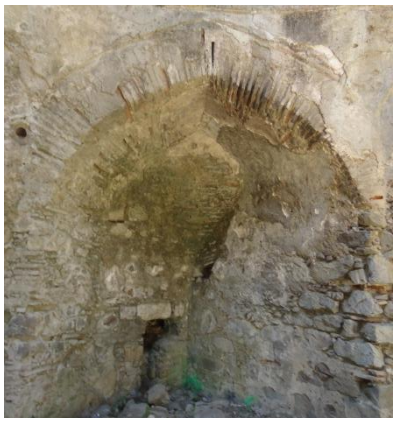


Figure 4.47. South West arch of *Soyunmalık*

4.2.2.1.13. North West Squinch

North West squinch of *Soyunmalık* (Figure 4.48) was made with brick and lime mortar. Surface is plastered.

North West squinch is almost plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the squinch is CC0, recommendation class of the squinch is RC0, and urgency class of the squinch is UC0 (Appendix.B, Appendix.C).

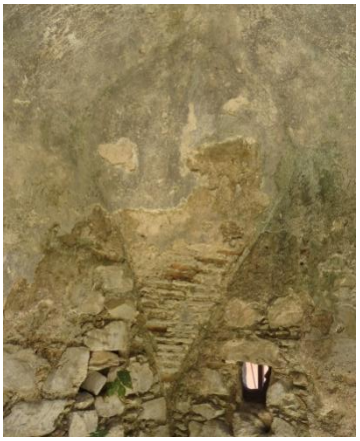


Figure 4.48. North West squinch of *Soyunmalık*

4.2.2.1.14. North East Squinch

North East squinch of *Soyunmalık* (Figure 4.49) was made with brick and lime mortar. Surface is plastered.

North East squinch is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the squinch is CC0, recommendation class of the squinch is RC0, and urgency class of the squinch is UC0 (Appendix.B).

Figure 4.49. North East squinch of *Soyunmalık*

4.2.2.1.15. South East Squinch

South East squinch of *Soyunmalık* (Figure 4.50) was made with brick and lime mortar. Surface is plastered.

South East squinch is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the squinch is CC0, recommendation class of the squinch is RC0, and urgency class of the squinch is UC0 (Appendix.B).

Figure 4.50. South East squinch of *Soyunmalık*

4.2.2.1.16. South West Squinch

South West squinch of *Soyunmalık* (Figure 4.51) was made with brick and lime mortar. Surface is plastered.

South West squinch is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the squinch is CC0, recommendation class of the squinch is RC0, and urgency class of the squinch is UC0 (Appendix.B).

Figure 4.51. South West squinch of *Soyunmalık*

4.2.2.1.17. North West Plane Triangle - 1

North West plane triangle -1 of *Soyunmalık* (Figure 4.52) was made with brick and lime mortar. Surface is plastered.

North West plane triangle - 1 is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B, Appendix.C).

Figure 4.52. North West plane triangle - 1 of *Soyunmalık*

4.2.2.1.18. North West Plane Triangle - 2

North West plane triangle -2 of *Soyunmalık* (Figure 4.53) was made with brick and lime mortar. Surface is plastered.

North West plane triangle - 2 is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.53. North West plane triangle - 2 of *Soyunmalık*

4.2.2.1.19. North East Plane Triangle - 1

North East plane triangle -1 of *Soyunmalık* (Figure 4.54) was made with brick and lime mortar. Surface is plastered.

North East plane triangle - 1 is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.54. North East plane triangle - 1 of *Soyunmalık*

4.2.2.1.20. North East Plane Triangle - 2

North East plane triangle -2 of *Soyunmalık* (Figure 4.55) was made with brick and lime mortar. Surface is plastered.

North East plane triangle - 2 is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.55. North East plane triangle - 2 of *Soyunmalık*

4.2.2.1.21. South East Plane Triangle - 1

South East plane triangle -1 of *Soyunmalık* (Figure 4.56) was made with brick and lime mortar. Surface is plastered.

South East plane triangle -1 is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.56. South East plane triangle - 1 of *Soyunmalı*k

4.2.2.1.22. South East Plane Triangle - 2

South East plane triangle -2 of *Soyunmalık* (Figure 4.57) was made with brick and lime mortar. Surface is plastered.

South East plane triangle -2 is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.57. South East plane triangle - 2 of *Soyunmalık*

4.2.2.1.23. South West Plane Triangle - 1

South West plane triangle - 1 of *Soyunmalık* (Figure 4.58) was made with brick and lime mortar. Surface is plastered.

South West plane triangle - 1 is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.58. South West plane triangle - 1 of *Soyunmalık*

4.2.2.1.24. South West Plane Triangle - 2

South West plane triangle - 2 of *Soyunmalık* (Figure 4.59) was made with brick and lime mortar. Surface is plastered.

South West plane triangle - 2 is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.59. South West plane triangle - 2 of *Soyunmalık*

4.2.2.1.25. Dome

Dome of *Soyunmalık* (Figure 4.60) was made with brick and lime mortar. It has two top windows. Two row brick were used below the dome. Surface is plastered.

Dome is the most deteriorated element of *Soyunmalık* space. Losses are the top windows. Observed structural failures are widely missing part (collapsed) in the middle of the dome, splitting, missing bricks on same orbit with splitting, and broken bricks around the top window traces. Observed material deteriorations are pittings and discolourations on unplastered areas.

According to the findings, dome displays major symptoms and condition class of the dome is CC3, recommendation class of the dome is RC3, and urgency class of the dome is UC3 (Appendix.B, Appendix.C).

Figure 4.60. Dome of *Soyunmalık*

4.2.2.1.26. *Seki*

Seki of *Soyunmalık* space (Figure 4.61) is square-formed stone *seki*. Its heigth is ~ 15 centimeters.

Seki is the semi preserved element of *Soyunmalık*. Observed structural failures are missing parts of the stones and mechanical damage (impact damage) on the surface. Observed material deteriorations are pittings on the surface, plants, white crusts and discolourations.

According to findings, *seki* has moderate symptoms and condition class of the *seki* is CC2, recommendation class of the *seki* is RC2, and urgency class of the *seki* is UC2 (Appendix.B).

Figure 4.61. *Seki* of *Soyunmalık*

4.2.2.1.27. West Wall Plaster

On the West wall of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.62).

Widely missing part of the plaster was observed. On the left part of the wall, delaminations, peelings, and efflorescences were seen near the squinch. From squinch's beginning level to the upper right around 10 centimeter, microbiological colonizations were observed. Graffiti was seen on the left corner of the wall. On the middle part of the wall, delaminations and black crusts were observed between the arch and the door trace. Below the beam trace, white and black crusted horasan and lime plasters were seen on the right and left part. On the right part of the wall, small parts of the plaster have black crusts. Red finishing layer is only preserved in the small area between squinch and niche. Pittings are widespread on all parts of the plaster.

According to the findings, the plaster displays major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency class of the plaster is UC3 (Appendix.B).

Figure 4.62. West Wall Plaster of *Soyunmalık*

4.2.2.1.28. North Wall Plaster

On the North wall of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.63).

Missing semi part of the plaster was observed. On left part of the wall, plaster was preserved in the large extent and black crusts, discolourations, and efflorescences were observed. On middle part of wall, hair cracks; pittings; delaminations; and peelings are widespread. Black crusts were observed around the top point of the arch and white crusts were 10 centimeters below the black crusted area. On the right part of the wall, missing part of the plaster wasseen from squinch's beginning layer to ground. Pittings, delaminations, black crusts were observed on the current plaster. Red finishing layer is only preserved on the small area below the wall.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.63. North Wall Plaster of *Soyunmalık*

4.2.2.1.29. East Wall Plaster

On the East wall of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.64).

East wall plaster is present in large quantities. On the left part of the wall, the plaster has black crusts, efflorescences, and delaminations. On the middle part of the wall, missing part of plaster, between the arch and the window trace, pittings; black crusts; white crusts; and discolourations were observed. On the right part of the wall, discolourations; pittings; black crusts and microbiological colonizations were observed. Microbiological colonizations are widespread on the intersection point of the squinch and the wall.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.64. East Wall Plaster of *Soyunmalık*

4.2.2.1.30. South Wall Plaster

On the South wall of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.65).

South wall plaster is present in large quantities. On the left part of the wall, the plaster was covered with microbiological colonizations. On the middle part of the wall, missing part of plaster; pittings; black crusts; white crusts; and discolourations were observed. On the right part of the wall, discolourations; pittings; black crusts and microbiological colonizations were observed.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.65. South Wall Plaster of *Soyunmalık*

4.2.2.1.31. West Arch Plaster

On the West arch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.66).

Loss of plaster was observed on the arch bases. On the left part of the current plaster, discolourations; black crusts and pittings were observed. On the right part of arch, two small areas are plastered and they have discolourations; delaminations and pittings.

According to the findings, the plaster displays major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency class of the plaster is UC3 (Appendix.B).

Figure 4.66. West arch plaster of *Soyunmalık*

4.2.2.1.32. North West Arch Plaster

On the North West arch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.67).

Loss of plaster was observed on the arch bases. Widely missing part of plaster was observed. On current plaster parts, peelings; pittings and white crusts were observed.

According to the findings, the plaster displays major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency class of the plaster is UC3 (Appendix.B).

Figure 4.67. North West arch plaster of *Soyunmalık*

4.2.2.1.33. North Arch Plaster

On the North arch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.68).

Loss of plaster was observed on the arch bases. The arch has only two small plaster parts and they have pittings and white crusts.

According to the findings, the plaster displays major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency

class of the plaster is UC3 (Appendix.B).

Figure 4.68. North arch plaster of *Soyunmalık*

4.2.2.1.34. North East Arch Plaster

On the North East arch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.69).

Loss of plaster was observed on the arch bases. The arch has only two small plaster parts on outer surface and they have pittings and delaminations. Plasters which are on inner surfaces the arch is present in large quantities and they have microbiological colonizations, black and white crusts, and hair cracks.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

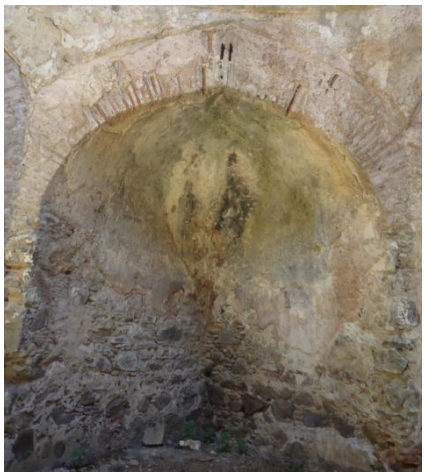


Figure 4.69. North East arch plaster of *Soyunmalık*

4.2.2.1.35. East Arch Plaster

On the East arch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.70).

Loss of plaster was observed on the arch bases. The arch has only two small plaster parts on the right and left of the arch and they have discolourations, pittings, peelings, and white crusts.

According to the findings, the plaster displays major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency class of the plaster is UC3 (Appendix.B).

Figure 4.70. East arch plaster of *Soyunmalık*

4.2.2.1.36. South East Arch Plaster

On the South East arch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.71).

The plaster is present in large quantities on the surfaces. Missing parts of plaster is on the arch bases; the left of inner surfaces and the upper part. On the left part, delaminations, pittings, and white crusts were observed. On the other parts have black crusts intensely and microbiological colonizations, pittings, and discolourations were observed inner surface of plaster.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.71. South East arch plaster of *Soyunmalık*

4.2.2.1.37. South Arch Plaster

On the South arch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.72).

The plaster is present in large quantities on south arch surfaces. Missing parts

are inner left and 20 centimeters right of the top point, and the right base of the arch. Pittings, black crusts, and discolourations were observed on the current plasters.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.72. South arch plaster of *Soyunmalık*

4.2.2.1.38. South West Arch Plaster

On the South West arch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.73).

The plaster is semi preserved on the arch surfaces. On the upper left part of the arch, the plasters have pittings; peelings; delaminations; white crusts and intense black crusts were observed. On the upper right part of the arch, plasters have pittings; peelings; delaminations; black crusts and intense white crusts were observed. Inner surface of plasters have pittings, peelings, delaminations, black crusts, and intensely white crusts.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.73. South West arch plaster of *Soyunmalık*

4.2.2.1.39. North West Squinch Plaster

On the North West squinch of *Soyunmalık,* up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.74).

North West squinch plaster has no missing part. But peelings and delaminations were observed rarely. The plaster is covered with microbiological colonizations, black and white crusts, and pittings.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.74. North West squinch plaster of *Soyunmalık*

4.2.2.1.40. North East Squinch Plaster

On the North East squinch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.75).

North East squinch plaster has no missing part. Microbiological colonizations, black crusts, white crusts on the middle part, and pittings were observed rarely.

According to the findings, the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.75. North East squinch plaster of *Soyunmalık*

4.2.2.1.41. South East Squinch Plaster

On the South East squinch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.76).

South East squinch plaster has no missing part. Microbiological colonizations were seen on the line. Black crusts were seen on the line intensely and they are widespread on whole plaster. White crusts and pittings are widespread on the whole plaster.

According to the findings, the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.76. South East squinch plaster of *Soyunmalık*

4.2.2.1.42. South West Squinch Plaster

On the South West squinch of *Soyunmalık*, up to 150 cm, two layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.77).

South West squinch plaster has no missing part. But peelings and delaminations were observed on the plaster rarely. The plaster is covered with microbiological colonizations; black and white crusts; and pittings.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.77. South West squinch plaster of *Soyunmalık*

4.2.2.1.43. North West Plane Triangle Plaster - 1

On North West plane triange - 1, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.78).

On the plaster, black crusts were observed on the left and between the archs intensely. Peelings and pittings are widespread.

According to the findings, the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.78. North West plane triangle plaster - 1 of *Soyunmalık*

4.2.2.1.44. North West Plane Triangle Plaster - 2

On North West plane triange - 2, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.79).

On the plaster, black crusts were observed on the upper right of plaster. Peelings and pittings are widespread.

According to the findings, the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.79. North West plane triangle plaster- 2 of *Soyunmalık*

4.2.2.1.45. North East Plane Triangle Plaster - 1

On North East plane triange - 1, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.80).

On the plaster, black crusts were observed on the left part. Microbiological colonizations were observed on the middle part. Peelings and pittings are widespread.

According to the findings, the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.80. North East plane triangle - 1 plaster of *Soyunmalık*

4.2.2.1.46. North East Plane Triangle Plaster - 2

On North East plane triange - 2, horasan plaster layer and two layers lime plaster

were used (Uğurlu, 2005) (Figure 4.81).

On the plaster, microbiological colonizations were observed on the middle part. Peelings, delaminations, pittings, and white crusts are widespread.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.81. North East plane triangle - 2 plaster of *Soyunmalık*

4.2.2.1.47. South East Plane Triangle Plaster - 1

On South East plane triange - 1, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.82).

On the plaster, delaminations and peelings were seen rarely. Black crusts were observed on three parts; in the middle, the left, and the right parts. Pittings are widespread.

According to the findings, the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.82. South East plane triangle - 1 plaster of *Soyunmalık*

4.2.2.1.48. South East Plane Triangle Plaster - 2

On South East plane triange - 2, horasan plaster layer and two layers lime plaster

were used (Uğurlu, 2005) (Figure 4.83).

On the plaster, delaminations and peelings were seen rarely. Black crusts; microbiological colonizations; white crusts; discolourations were observed on the plaster. Efflorescences were observed on the corners. Pittings are widespread.

According to the findings, the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.83. South East plane triangle - 2 plaster of *Soyunmalık*

4.2.2.1.49. South West Plane Triangle Plaster - 1

On South West plane triange - 1, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.84).

On plaster, delaminations and peelings were seen rarely around the edges. Microbiological colonizations; white and black crusts; discolourations were observed. Microbiological colonizations were seen on the left part intensely. Pittings are widespread.

According to the findings the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.84. South West plane triangle - 1 plaster of *Soyunmalık*

4.2.2.1.50. South West Plane Triangle Plaster - 2

On South West plane triange - 2, horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.85).

On the plaster, delaminations and peelings were seen rarely on the left. Microbiological colonizations; white and black crusts; discolourations were observed. Microbiological colonizations were seen on the left part intensely. Pittings are widespread. Missing small parts of the plaster were observed.

According to the findings, the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.85. South West plane triangle - 2 plaster of *Soyunmalık*

4.2.2.1.51. Dome Plaster

On dome of *Soyunmalık,* horasan plaster layer and two layers lime plaster were used (Uğurlu, 2005) (Figure 4.86).

On dome of *Soyunmalık,* plaster is present in large quantities. Peelings, hair cracks, microbiological colonizations, white and black crusts, and pittings are widespread.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.86. Dome plaster of *Soyunmalık*

4.2.2.2.*Sıcaklık*

Sıcaklık is a rectangular-planned main space with *Eyvans/Iwans* and two *Halvet* spaces located around it. In *Sıcaklık*, stone masonry walls were constructed through bonding technique with rubble stone and brick components in lime mortar. West wall was constructed through bonding technique with rubble stone and brick, which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints (Reyhan, 2004). Transition to *Sıcaklık* is direct from *Soyunmalık*, without *ılıklık* or *aralık* spaces. Two layers of horasan plaster were used in the walls, up to a height of 150 centimetres from the floor. A thin layer of red plaster was applied to the horasan plaster. After a height of 150 centimetres, horasan plaster was applied, and two layers of lime plaster were used (Uğurlu, 2005). Superstructure is brick dome which has *"top skylight"* (Reyhan, 2011). Around top skylight, four oculis on first orbit; eight oculis on second orbit; and eight oculis on third orbit were located. *Iwans'* superstructures are barrel vaults which have 3

oculis.

The general condition assessment revealed that the space is largely intact, and the most severely damaged parts are the collapsed arch and walls. Floor, doors, and oculis are missing. Horasan plasters are present in large quantities on the transition elements. Although *Sıcaklık* space is in a good condition when evaluated in general, it is in CC3 class due to the severe damage on the arch and walls.

A general risk assessment done in the space revealed that the collapsed arch and walls, and the missing elements have left the space vulnerable and are affecting the structural stability. Both the structural elements and the original plasters will sustain further damage due to rain penetration; dampness; microorganisms; and microbiological growths. According to all the findings, urgent and immediate intervention is essential, and the urgency class of *Sıcaklık* space is UC3.

Recommended measures between RC0 and RC3 have been found according to risk assessments in *Sıcaklık*. But the recommendation for the general measure of the space has been RC3, because major intervention is recommended for the arch and walls, based on the diagnosis.

General descriptions and conditions of all loadbearing, transition, superstructure, finishing and other interior elements of *Sıcaklık* were explained; their conditions, recommendations and urgency were classified according to the assessments below.

4.2.2.2.1. West Wall

West wall of *Sıcaklık* (Figure 4.87) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints (Reyhan, 2004). Surface is plastered.

The general condition assessment revealed that the wall is in a good condition. Losses are *seki* and basin. Broken flue was observed, the height of which is 40 centimetres above the ground. Observed structural failures involve missing stones on the basin trace and bottom of the wall (Figure 4.88).

According to the findings, west wall displays minor symptoms and condition class of the wall is CC1, recommendation class of the wall is RC1, and urgency class of the wall is UC1 (Appendix.B, Appendix.C).

Figure 4.87. West Wall of *Sıcaklık*

Figure 4.88. Missing part of the wall

4.2.2.2.2. North Wall

North wall of *Sıcaklık* (Figure 4.89) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

The general condition assessment revealed that the wall is in a good condition. Losses are *seki* and the basin. On the middle part of unplastered area, discolourations and pittings are widespread.

According to findings, the wall displays minor symptoms and condition class of the wall is CC1, recommendation class of the wall is RC1, and urgency class of the wall is UC1 (Appendix.B).

Figure 4.89. North Wall of *Sıcaklık*

4.2.2.2.3. East Wall

East wall of *Sıcaklık* (Figure 4.90) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

The general condition assessment revealed that the wall has sustained losses and severe structural failures. Losses are *seki*, flue and, basin, the height of which is 40 centimetres above the ground. Observed structural failures are are the widely missing parts (collapsed) on right part of wall; splitting from middle to the right; and joint discharges. Observed material deteriorations are pittings and black crusts.

According to findings, the wall displays major symptoms and condition class of the wall is CC3, recommendation class of the wall is RC3, and urgency class of the wall is UC3 (Appendix.B, Appendix.C).

Figure 4.90. East Wall of *Sıcaklık*

4.2.2.2.4. South Wall

South wall of *Sıcaklık* (Figure 4.91) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

The general condition assessment revealed that the wall has sustained losses and severe structural failures. Losses are the *seki* and basin, the height of which is 40 centimetres above the ground. Observed structural failures are the widely missing parts (collapsed) on the left *Iwan* and the North West *Halvet* wall. On left, joint discharges were observed from the ground up to two meters. Pittings were observed on all the unplastered surfaces as material deteriorations.

According to the findings, the wall displays major symptoms and condition class of the wall is CC3, recommendation class of the wall is RC3, and urgency class of the wall is UC3 (Appendix.B).

Figure 4.91. South Wall of *Sıcaklık*

4.2.2.2.5. West Arch

West arch of *Sıcaklık* (Figure 4.92) is brick and lime mortar round arch. Arch bases made with roughly cut stone, brick and lime mortar. Surfaces are plastered.

The general condition assessment revealed that the arch is in a good condition. Losses are the *seki* and the basin the height of which is 40 centimetres above the ground. No structural failure was observed. Observed material deteriorations are black

crusts; efflorescences; and discolourations.

According to findings, arch displays minor symptoms and condition class of the wall is CC1, recommendation class of the wall is RC1, and urgency class of the wall is UC1 (Appendix.B).

Figure 4.92. West Arch of *Sıcaklık*

4.2.2.2.6. North Arch

North arch of *Sıcaklık* (Figure 4.93) is brick - lime mortar round arch which has no arch base. Surfaces are plastered.

North arch is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the arch is CC0, recommendation class of the arch is RC0, and urgency class of the arch is UC0 (Appendix.B).

Figure 4.93. North Arch of *Sıcaklık*

4.2.2.2.7. East Arch

East arch of *Sıcaklık* (Figure 4.94) is brick and lime mortar round arch. Arch bases made with roughly cut stone, brick and lime mortar. Surfaces are plastered.

Losses are *seki* and the basin the height of which is 40 centimetres above the ground. Right base of the arch is totally collapsed (missing). On the right base, no structural failure was observed on unplastered areas. Observed material deteriorations are black crusts; efflorescences; and discolourations.

According to findings, arch displays major symptoms and condition class of the arch is CC3, recommendation class of the arch is RC3, and urgency class of the arch is UC3 (Appendix.B, Appendix.C).

Figure 4.94. East Arch of *Sıcaklık*

4.2.2.2.8. South Arch

South arch of *Sıcaklık* (Figure 4.95) is brick - lime mortar round arch which has no arch base. Surfaces are plastered.

Observed structural failure of South arch is missing (collapsed) part of arch on the left. Surfaces of the arch are plastered and no deteriorations were observed.

According to findings, arch displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B).

Figure 4.95. South Arch of *Sıcaklık*

4.2.2.2.9. North West Pendentive

North West pendentive of *Sıcaklık* (Figure 4.96) is brick - lime mortar pendentive. Surface is plastered.

North West pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.96. North West Pendentive of *Sıcaklık*

4.2.2.2.10. North East Pendentive

North East pendentive of *Sıcaklık* (Figure 4.97) is brick - lime mortar pendentive. Surface is plastered.

North East pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.97. North East Pendentive of *Sıcaklık*

4.2.2.2.11. South East Pendentive

South East pendentive of *Sıcaklık* (Figure 4.98) is brick - lime mortar pendentive. Surface is plastered.

South East pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.98. South East Pendentive of *Sıcaklık*

4.2.2.2.12. South West Pendentive

South West pendentive of *Sıcaklık* (Figure 4.99) is brick - lime mortar pendentive. Surface is plastered.

South West pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.99. South West Pendentive of *Sıcaklık*

4.2.2.2.13. Drum

Drum of *Sıcaklık* (Figure 4.100) is octogonal drum which was ornamented with muqarnas (Figure 4.101). Surface is plastered.

The drum is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the drum is CC0, recommendation class of the drum is RC0, and urgency class of the drum is UC0 (Appendix.B).

Figure 4.100. Drum of *Sıcaklık*

Figure 4.101. Muqarnas of Drum in *Sıcaklık*

4.2.2.2.14. Dome

Dome of *Sıcaklık* (Figure 4.102) is brick - lime mortar dome which has top skylight and oculis on three rows. Surface is plastered.

Losses of dome are small dome on center which is called top skylight, and oculis. The dome is plastered and no visual deterioration can be observed.

According to findings, dome displays moderate symptoms and condition class of the dome is CC2, recommendation class of the dome is RC2, and urgency class of the dome is UC2 (Appendix.B, Appendix.C).

Figure 4.102. Dome of *Sıcaklık*

4.2.2.2.15. West Barrel Vault

Barrel vault of West *Eyvan/Iwan* of *Sıcaklık* (Figure 4.103) is brick - lime mortar barrel vault which has three oculis. Surface is plastered.

Losses of barrel vault are three oculis. The barrel vault is plastered and no visual deterioration can be observed.

According to the findings, the barrel vault displays minor symptoms and condition class of the barrel vault is CC1, recommendation class of the barrel vault is RC1, and urgency class of the barrel vault is UC1 (Appendix.B, Appendix.C).

Figure 4.103. West Barrel Vault of *Sıcaklık*

4.2.2.2.16. East Barrel Vault

Barrel vault of East *Eyvan/Iwan* of *Sıcaklık* (Figure 4.104) is brick - lime mortar barrel vault which has three oculis. Surface is plastered.

Losses of barrel vault are three oculis. Barrel vault is plastered and no visual

deterioration can be observed.

According to the findings, the barrel vault displays minor symptoms and condition class of the barrel vault is CC1, recommendation class of the barrel vault is RC1, and urgency class of the barrel vault is UC1 (Appendix.B).

Figure 4.104. East Barrel Vault of *Sıcaklık*

4.2.2.2.17. West Wall Plaster

On the West wall of *Sıcaklık*, horasan plaster was used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.105).

On the West wall plaster, microbiological colonizations are widespread, especially it was observed on the right part of surface. Pittings, delaminations and peelings were observed on the left part of wall. Black and white crust; efflorescences; and hair cracks were seen on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.105. West Wall Plaster of *Sıcaklık*

4.2.2.2.18. North Wall Plaster

On the North wall of *Sıcaklık*, horasan plaster was used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.106).

On the North wall plaster, microbiological colonizations are widespread on the right and the left part (*Iwans*). Efflorescences were observed on the left part intensely. On the middle part, missing part of plasters was observed below the wall. Pittings; discolourations and hair cracks were seen on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.106. North Wall plaster of *Sıcaklık*

4.2.2.2.19. East Wall Plaster

On the East wall of *Sıcaklık*, horasan plaster was used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.107).

On the East wall plaster, microbiological colonizations were seen more on the upper surface than bottom of the wall. Efflorescences; pittings; discolourations; black - white crusts and hair cracks were observed on the whole plaster.

According to findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.107. East Wall plaster of *Sıcaklık*

4.2.2.2.20. South Wall Plaster

On the South wall of *Sıcaklık*, horasan plaster was used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.108).

On the South wall plaster, microbiological colonizations were seen more on the upper surface than bottom of the wall. Efflorescences and hair cracks were seen intensely on the left part. Pittings, discolourations, black - white crusts, and hair cracks were observed on the whole plaster.

According to findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.108. South Wall plaster of *Sıcaklık*

4.2.2.2.21. West Arch Plaster

On West arch of *Sıcaklık*, horasan plaster was used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.109).

Loss of plaster was observed on the bases of the arch. Microbiological colonizations were observed the upper points of the inner surface intensely.

Efflorescences; pittings; discolourations; black - white crusts and hair cracks were seen on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.109. West Arch plaster of *Sıcaklık*

4.2.2.2.22. North Arch Plaster

On the North arch of *Sıcaklık*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.110).

On the North arch plaster, microbiological colonizations were observed from the middle part to the left part intensely. Efflorescences; pittings; discolourations; black - white crusts and hair cracks were seen on the whole plaster.

According to the findings, plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.110. North Arch plaster of *Sıcaklık*

4.2.2.2.23. East Arch Plaster

On the East arch of *Sıcaklık*, horasan plaster was used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.111).

On the East arch of plaster, microbiological colonizations were observed on two wide areas from top point to bottom of the wall. Efflorescences; pittings; discolourations; black - white crusts; and hair cracks were seen on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.111. East Arch plaster of *Sıcaklık*

4.2.2.2.24. South Arch Plaster

On the South arch of *Sıcaklık,* two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.112).

On the South arch plaster, microbiological colonizations were observed on the middle, the left and the right part of the surface intensely. Eflorescences were observed on the left part of the surface. Pittings; discolourations; black - white crusts and hair cracks were seen on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.112. South Arch plaster of *Sıcaklık*

4.2.2.2.25. North West Pendentive Plaster

On the North West pendentive, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.113).

On the North West pendentive plaster, black crusts were observed rarely. Pittings and discolourations are widespread.

According to the findings, plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.113. North West Pendentive plaster of *Sıcaklık*

4.2.2.2.26. North East Pendentive Plaster

On the North West pendentive, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.114).

On the North West pendentive plaster, microbiological colonizations were observed on the right and the left corners intensely. Black and white crusts were observed around the edges. Pittings and discolourations were seen on the whole plaster.

According to the findings, plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B, Appendix.C).

Figure 4.114. North East Pendentive plaster of *Sıcaklık*

4.2.2.2.27. South East Pendentive Plaster

On the South East pendentive, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.115).

On the South East pendentive plaster, microbiological colonizations; black and white crusts; hair cracks; pittings and discolourations were observed on the whole.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.115. South East Pendentive of *Sıcaklık*

4.2.2.2.28. South West Pendentive Plaster

On the South West pendentive, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.116).

On the South West pendentive plaster, microbiological colonizations were observed from the intersection points of archs to the middle part of the surface. Black and white crusts; hair cracks; pittings and discolourations were seen on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.116. South West Pendentive plaster of *Sıcaklık*

4.2.2.2.29. Drum Plaster

On the drum of *Sıcaklık*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.117).

On the drum plaster, microbiological colonizations; black and white crusts; hair cracks; pittings and discolourations were observed. Muqarnas patterns could not be seen clearly because of microbiological colonizations and black crusts (Figure 4.118).

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.117. Drum plaster of *Sıcaklık*

Figure 4.118. Muqarnas plaster of Drum plaster in *Sıcaklık*

4.2.2.2.30. Dome Plaster

On the dome of *Sıcaklık*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.119).

On the dome plaster, microbiological colonizations; black and white crusts; hair cracks; pittings and discolourations were observed.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.119. Dome plaster of *Sıcaklık*

4.2.2.2.31. West Barrel Vault Plaster

On the West barrel vault of *Sıcaklık*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.120).

On the West barrel vault plaster, microbiological colonizations, especially on the right part; black and white crusts; hair cracks; pittings and discolourations were observed.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.120. West Barrel Vault plaster of *Sıcaklık*

4.2.2.2.32. East Barrel Vault Plaster

On the East barrel vault of *Sıcaklık*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.121).

On the East barrel vault plaster, microbiological colonizations, especially on the right part; pittings and discolourations were observed.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.121. East Barrel Vault plaster of *Sıcaklık*

4.2.2.3. Cleaning Cell (*Tıraşlık*)

Cleaning Cell is square-planned space and its stone masonry walls were constructed through bonding technique with rubble stone and brick components in lime

mortar (Tümöz, 1987; Reyhan, 2004). Entrance of the space is from the East *Iwan* of *Sıcaklık*. Horasan plaster was observed from the ground up to a height of 150 centimeters in the walls. After a height of 150 centimeters, lime plaster was observed. Superstructure of space is brick dome that seated octogonal drum. Transition element of space is brick and lime mortar pendentive.

The general condition assessment revealed that the space is largely intact, and the most severely damaged part is the collapsed (missing) dome. Floor, door, and window are missing. Horasan plasters are present in large quantities. Although Cleaning Cell is in good condition when evaluated in general, it is in CC3 class due to the severe damage in the dome.

A general risk assessment done in the space revealed that the collapsed dome and missing elements left the space vulnerable and are affecting the structural stability. Both the structural elements and the original plasters will sustain further damage due to rain penetration; dampness; microorganisms; and microbiological growths. According to all the findings, urgent and immediate intervention is essential, and the urgency class of Cleaning Cell is UC3.

Recommended measures between RC0 and RC3 have been found according to risk assessments in Cleaning Cell. But the recommendation for the general measure of the space has been RC3, because major intervention is recommended for the arch and walls, based on the diagnosis.

General descriptions and conditions of all loadbearing, transition, superstructure, finishing and other interior elements of Cleaning Cell were explained; their conditions, recommendations and urgency were classified according to the assessments below.

4.2.2.3.1. West Wall

West wall of the Cleaning Cell (Figure 4.122) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Tümöz, 1987; Reyhan, 2004). Surface is plastered.

On the West wall, losses are door, and flues near door and on the left. Observed structural failures are missing stones and joint discharges above the flue trace on the left part of the wall. Observed material deteriorations involve discolourations on unplastered area.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B).

Figure 4.122. West wall of Cleaning Cell

4.2.2.3.2. North Wall

North wall of the Cleaning Cell (Figure 4.123) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Tümöz, 1987; Reyhan, 2004). Surface is plastered.

On the North wall, losses are window, and flue bottom of the wall. Observed structural failures involve missing part of the wall below the window trace.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.123. North wall of Cleaning Cell

4.2.2.3.3. East Wall

East wall of the Cleaning Cell (Figure 4.124) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints (Tümöz, 1987; Reyhan, 2004). Surface is plastered.

On the East wall, loss of flue was observed which is above the ground. Surface of the wall is plastered and no deterioration was observed.

No symptoms can be seen and condition class of the wall is CC0, recommendation class of the wall is RC0, and urgency class of the wall is UC0 (Appendix.B, Appendix.C).

Figure 4.124. East wall of Cleaning Cell

4.2.2.3.4. South Wall

South wall of the Cleaning Cell (Figure 4.125) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Tümöz, 1987; Reyhan, 2004). Surface is plastered.

On the South wall, losses involve flues, the height of which is 40 and 150 centimeters above ground. Observed structural failure is missing part of the wall above the upper flue trace.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B).

Figure 4.125. South wall of Cleaning Cell

4.2.2.3.5. North West Pendentive

North West pendentive of Cleaning Cell (Figure 4.126) is brick - lime mortar pendentive. Surface is plastered.

North West pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.126. North West pendentive of Cleaning Cell

4.2.2.3.6. North East Pendentive

North East pendentive of the Cleaning Cell (Figure 4.127) is brick - lime mortar pendentive. Surface is plastered.

North East pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.127. North East pendentive of Cleaning Cell

4.2.2.3.7. South East Pendentive

South East pendentive of the Cleaning Cell (Figure 4.128) is brick - lime mortar pendentive. Surface is plastered.

South East pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.128. South East pendentive of the Cleaning Cell

4.2.2.3.8. South West Pendentive

South West pendentive of the Cleaning Cell (Figure 4.129) is brick - lime mortar pendentive. Surface is plastered.

South West pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B, Appendix.C).

Figure 4.129. South West pendentive of Cleaning Cell

4.2.2.3.9. Drum

Drum of the Cleaning Cell is brick - lime mortar octogonal drum (Figure 4.130). Surface is plastered.

Drum is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the

pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.130. Drum of Cleaning Cell

4.2.2.3.10. Dome

Superstructure of space is brick and lime mortar dome that seated octogonal drum (Figure 4.131). One row brick was used below the dome. Surface is plastered.

Dome has missing wide part (almost collapsed) as structural failure. Existing dome is plastered and no deteriorations were observed.

According to the findings, the dome displays major symptoms and condition class of the dome is CC3, recommendation class of the dome is RC3, and urgency class of the dome is UC3 (Appendix.B, Appendix.C).

Figure 4.131. Dome of Cleaning Cell

4.2.2.3.11. West Wall Plaster

On the West wall, Horasan plaster was observed from the ground up to a height of 150 centimeters. After a height of 150 centimeters, lime plaster was observed (Figure 4.132).

On the West wall plaster, peelings and pittings are widespread. Black crusts and microbiological colonizations are widespread on the right and the left part of the surface.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.132. West wall plaster of Cleaning Cell

4.2.2.3.12. North Wall Plaster

On the North wall, Horasan plaster was observed from the ground up to a height of 150 centimeters. After a height of 150 centimeters, lime plaster was observed (Figure 4.133).

On the North wall plaster, delaminations were seen on 30 centimeters left of the window trace, bottom of the wall. Efflorescences; pittings; peelings; black crusts and microbiological colonizations were seen on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition

class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.133. North wall plaster of Cleaning Cell

4.2.2.3.13. East Wall Plaster

On the East wall, Horasan plaster was observed from the ground up to a height of 150 centimeters. After a height of 150 centimeters, lime plaster was observed (Figure 4.134).

On the East wall plaster, microbiological colonizations are widespread except the left and bottom of the wall. Efflorescences were observed between the pendentives. Peelings; black crusts; and pittings were seen on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.134. East wall plaster of Cleaning Cell

4.2.2.3.14. South Wall Plaster

On the South wall, Horasan plaster was observed from the ground up to a height of 150 centimeters. After a height of 150 centimeters, lime plaster was observed (Figure 4.135).

On the South wall plaster, microbiological colonizations are widespread except the left of the wall. Efflorescences were observed upper part of the wall. Peelings; black crusts; and pittings were observed on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.135. South wall plaster of Cleaning Cell

4.2.2.3.15. North West Pendentive Plaster

On the North West pendentive of Cleaning Cell, lime plaster was observed (Figure 4.136).

On the North West pendentive plaster, microbiological colonizations; delaminations and peelings were observed. Also, white crusts and pittings were seen rarely.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.136. North West pendentive plaster of Cleaning Cell

4.2.2.3.16. North East Pendentive Plaster

On the North East pendentive of Cleaning Cell, lime plaster was observed (Figure 4.137).

On the North East pendentive plaster, pittings are widespread. Black crusts were observed upper part and the left edge of the surface. Efflorescences were seen rarely on the middle part, up to drum level.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.137. North East pendentive plaster of Cleaning Cell

4.2.2.3.17. South East Pendentive Plaster

On the South East pendentive of Cleaning Cell, lime plaster was observed (Figure 4.138).

On the South East pendentive plaster, black crusts are widespread on the drum edge. Peelings; delaminations; and pittings were observed on the whole plaster.

According to the findings, plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.138. South East pendentive plaster of Cleaning Cell

4.2.2.3.18. South West Pendentive Plaster

On the South West pendentive of Cleaning Cell, lime plaster was observed (Figure 4.139).

On the South West pendentive plaster, peelings were observed, and black crusts were observed peeled areas' inner layers. Efflorescences were seen partially on the left part. Pittings were observed on the whole plaster.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.139. South West pendentive plaster of Cleaning Cell

4.2.2.3.19. Drum Plaster

On the drum of the Cleaning Cell, lime plaster was observed (Figure 4.140).

On the drum plaster, efflorescences were observed on the West and the South surfaces Black crusts and microbiological colonizations were observed on the whole plaster, especially on the North surfaces of the drum. Peelings; delaminations; pittings are widespread.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.140. Drum plaster of Cleaning Cell

4.2.2.3.20. Dome Plaster

On the dome of the Cleaning Cell, lime plaster was observed (Figure 4.141). Plant, which was seen in figure, has grown on the ground (Figure 4.141).

On the dome plaster, missing part of plaster was observed. Current plaster has microbiological colonizations; pittings; efflorescences; and black crusts.

According to the findings, the plaster displays major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency class of the plaster is UC3 (Appendix.B).

Figure 4.141. Dome plaster of Cleaning Cell

4.2.2.4. South East *Halvet*

South East *Halvet* is square-planned space and its stone masonry walls were constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Entrance of space is from South wall of *Sıcaklık*. Three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls

(10, eight and five milimeters). After a height of 150 centimeters, two layers horasan plaster was applied (13 and four milimeters), and lime plaster were used (five milimeters) (Uğurlu, 2005). Superstructure is brick dome which has oculis. Transition element of space is brick and lime mortar plane triangle.

The general condition assessment revealed that the space is largely intact but all walls have widely missing (collapsed) parts. Floor, door, and window are missing. Horasan plasters are present in large quantities. Both the structural elements and the original plasters will sustain further damage due to rain penetration; dampness; microorganisms; and microbiological growths. South East *Halvet* space is in CC3 class due to the major symptoms in the walls.

According to all the findings, urgent and immediate intervention is essential, and the urgency class of South East *Halvet* space is UC3. Recommended measures between RC0 and RC3 have been found according to risk assessments in the South East *Halvet*. But the recommendation for the general measure of the space has been RC3, because major intervention is recommended for the arch and walls, based on the diagnosis. General descriptions and conditions of all loadbearing, transition, superstructure, finishing and other interior elements of the South East *Halvet* were explained; their conditions, recommendations and urgency were classified according to assessments below.

4.2.2.4.1. West Wall

West wall of the South East *Halvet* (Figure 4.142) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

Observed structural failure is widely missing (collapsed) part in the middle part of the wall. Observed material deteriorations are pittings and discolourations on the mortars and stones.

According to the findings, the wall displays major symptoms and condition class of the wall is CC3, recommendation class of the wall is RC3, and urgency class of the wall is UC3 (Appendix.B, Appendix.C).

Figure 4.142. West wall of the South East *Halvet*

4.2.2.4.2. North Wall

North wall of the South East *Halvet* (Figure 4.143) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

Observed structural failures are missing the widely missing (collapsed) part and joint discharges in current wall. Observed material deteriorations are pittings (Figure 4.144) and discolourations on the mortars and stones.

According to the findings, the wall displays major symptoms and condition class of the wall is CC3, recommendation class of the wall is RC3, and urgency class of the wall is UC3 (Appendix.B, Appendix.C).

Figure 4.143. North wall of the South East *Halvet*

Figure 4.144. Pittings on the North wall

4.2.2.4.3.East Wall

East wall of the South East *Halvet* (Figure 4.145) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

Losses are the flue and the basin on East wall. The widely missing (collapsed) part and joint discharges were observed in the current wall as structural failures. Observed material deteriorations are pittings and discolourations on the mortars and the stones.

According to the findings, the wall displays major symptoms and condition class of the wall is CC3, recommendation class of the wall is RC3, and urgency class of the wall is UC3 (Appendix.B, Appendix.C).

Figure 4.145. East wall of the South East *Halvet*

4.2.2.4.4. South Wall

South wall of the South East *Halvet* (Figure 4.146) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

Losses are the window, the flue and the basin on the East wall. Observed sstructural failures are the widely missing (collapsed) part bottom of the wall; joint discharges; splitting from ground up to the window; star crack from the window to the dome. Observed material deteriorations are pittings and discolourations on mortars and stones.

According to the findings, the wall displays major symptoms and condition class of the wall is CC3, recommendation class of the wall is RC3, and urgency class of the wall is UC3 (Appendix.B).

Figure 4.146. South wall of the South East *Halvet*

4.2.2.4.5. North West Plane Triangles

North West plane triangles of the South East *Halvet* (Figure 4.147) are brick and lime mortar plane triangles. Surfaces are plastered.

North West plane triangles are plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.147. North West plane triangles of the South East *Halvet*

4.2.2.4.6. North East Plane Triangles

North East plane triangles of the South East *Halvet* (Figure 4.148) are brick and lime mortar plane triangles. Surfaces are plastered.

North East plane triangles are plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.148. North East plane triangles of theSouth East *Halvet*

4.2.2.4.7. South East Plane Triangles

South East plane triangles of the South East *Halvet* (Figure 4.149) are brick and lime mortar plane triangles. Surfaces are plastered.

South East plane triangles are plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.149. South East plane triangles of the South East *Halvet*

4.2.2.4.8. South West Plane Triangles

South West plane triangles of the South East *Halvet* (Figure 4.150) are brick and lime mortar plane triangles. Surfaces are plastered.

South West plane triangles are plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the plane triangle is CC0, recommendation class of the plane triangle is RC0, and urgency class of the plane triangle is UC0 (Appendix.B).

Figure 4.150.South West plane triangles of the South East *Halvet*

4.2.2.4.9. Dome

Dome of South East *Halvet* (Figure 4.151) is brick - lime mortar dome which has central oculi and nine oculis around center on two rows. Surface is plastered.

Losses of dome are 10 oculis, and six terracotta pipes of oculis. No structural failure was observed. On unplastered areas, bricks and mortars have microbiological colonizations and discolourations.

According to the findings, the dome displays moderate symptoms and condition class of the dome is CC2, recommendation class of the dome is RC2, and urgency class of the dome is UC2 (Appendix.B, Appendix.C).

Figure 4.151. Dome of South East *Halvet*

4.2.2.4.10. West Wall Plaster

On the West wall of the South East *Halvet*, three layers horasan plaster were used up to 150 cm. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.152).

On the West wall plaster, peelings; pittings; black crusts; efflorescences; and microbiological colonizations were observed. Hair crack was observed from the left part of wall to the South wall.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.152. West wall plaster of the South East *Halvet*

4.2.2.4.11. North Wall Plaster

On the North wall of the South East *Halvet*, three layers horasan plaster were used up to 150 cm. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.153).

On the North wall plaster, peelings; pittings; black crusts; efflorescences; and microbiological colonizations were observed. Microbiological colonizations were seen upper part of the wall intensely. Hair crack was seen on the right part of the wall, close to the plane triangle.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.153. North wall plaster of the South East *Halvet*

4.2.2.4.12. East Wall Plaster

On the East wall of the South East *Halvet*, three layers horasan plaster were used up to 150 cm. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.154).

On the East wall plaster, peelings; pittings; black crusts; efflorescences; and microbiological colonizations were observed. Microbiological colonizations were seen on the left and the right of surface intensely. Delamination was seen on the middle part of the current plaster.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.154. East wall plaster of the South East *Halvet*

4.2.2.4.13. South Wall Plaster

On the South wall of the South East *Halvet*, three layers horasan plaster was used up to 150 cm. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.155).

On the South wall plaster, peelings; pittings; black crusts; efflorescences; and microbiological colonizations were observed. Microbiological colonizations were seen around the edges intensely. Delamination was observed below the window trace.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.155. South wall plaster of the South East *Halvet*

4.2.2.4.14. North West Plane Triangles Plasters

On the North West plane triangles of the South East *Halvet*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.156).

On the North West plane triangles plasters, delaminations were observed on the left one. Microbiological colonizations; peelings; pittings; black crusts and efflorescenes were observed on the whole plasters.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B, Appendix.C).

Figure 4.156. North West plane triangles plaster of the South East *Halvet*

4.2.2.4.15. North East Plane Triangles Plasters

On the North East plane triangles of the South East *Halvet*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.157).

On the North East plane triangles plasters, delaminations were observed on the upper parts. Microbiological colonizations; peelings; pittings; black crusts and efflorescenes were observed on the whole surfaces.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.157. North East plane triangles plaster of the South East *Halvet*

4.2.2.4.16. South East Plane Triangles Plasters

On the South East plane triangles of the South East *Halvet*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.158).

On the South East plane triangles plasters, microbiological colonizations especially on the right plane triangle; peelings; pittings; black crusts and efflorescenes were observed.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.158. South East plane triangles plaster of the South East *Halvet*

4.2.2.4.17. South West Plane Triangles Plasters

On the South West plane triangles of the South East *Halvet*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.159).

On the South West plane triangles plasters, microbiological colonizations; peelings; pittings; black crusts and efflorescenes were observed.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.159. South West plane triangles plaster of the South East *Halvet*

4.2.2.4.18. Dome Plaster

On dome of the South East *Halvet*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.160).

Plaster of the South East *Halvet* dome has missing parts. Microbiological colonizations; peelings; pittings; black crusts and efflorescenes were observed on the

existing plaster.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.160. Dome plaster of the South East *Halvet*

4.2.2.5. South West *Halvet*

South West *Halvet* is square-planned space and its stone masonry walls were constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Entrance of space is from South wall of *Sıcaklık*. Three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls (10, eight and five milimeters). After a height of 150 centimeters, two layers horasan plaster was applied (13 and four milimeters), and lime plaster were used (five milimeters) (Uğurlu, 2005). Superstructure is brick dome. Transition element of space is brick and lime mortar pendentive.

The general condition assessment revealed that the space is largely intact and the most severe damaged parts are the collapsed dome and partially collapsed walls. Floor, door, and window are missing. Horasan plasters are deteriorated in large quantities. South West *Halvet* space is in CC3 class, due to the severe damages in the dome and walls.

A general risk assessment done in the space, collapsed dome and walls left the space vulnerable and are affecting the structural stability. Both the structural elements

and the original plasters will sustain further damage due to rain penetration; dampness; microorganisms; and microbiological growths. According to all the findings, urgent and immediate intervention is essential, and the urgency class of the space is UC3.

Recommended measures between RC0 and RC3 have been found according to risk assessments in the South West *Halvet*. But the recommendation for the general measure of the space has been RC3, because major intervention is recommended for the arch and walls, based on the diagnosis.

General descriptions and conditions of all loadbearing, transition, superstructure, finishing and other interior elements of South West *Halvet* were explained; their conditions, recommendations and urgency were classified according to assessments below.

4.2.2.5.1. West Wall

West wall of the South West *Halvet* (Figure 4.161) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints (Reyhan, 2004). Surface is plastered.

Losses of wall are flue and basin. Observed structural failures are missing stones and bricks around the basin trace. Observed material deteriorations are discolourations and pittings on the components of the wall.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.161. West wall of the South West *Halvet*

4.2.2.5.2. North Wall

North wall of the South West *Halvet* (Figure 4.162) is stone masonry wall which was constructed with bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

On the North wall, losses are door, flue and seki. Observed structural failures are missing (collapsed) part around the door trace, the plants inner surfaces of the collapsed area's mortars and joint discharges. Observed material deteriorations involve pittings on mortars.

According to the findings, the wall displays major symptoms and condition class of the wall is CC3, recommendation class of the wall is RC3, and urgency class of the wall is UC3 (Appendix.B, Appendix.C).

Figure 4.162. North wall of the South West *Halvet*

4.2.2.5.3. East Wall

East wall of the South West *Halvet* (Figure 4.163) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

Observed structural failures are missing part of the wall around one squaremeter; joint discharges and small plants inner the surfaces of the missing part. Observed material deteriorations are pittings on mortars; black crusts and discolourations on unplastered surfaces.

According to the findings, the wall displays major symptoms and condition class of the wall is CC3, recommendation class of the wall is RC3, and urgency class of the wall is UC3 (Appendix.B, Appendix.C).

Figure 4.163. East wall of the South West *Halvet*

4.2.2.5.4. South Wall

South wall of the South West *Halvet* (Figure 4.164) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

On the South wall, losses are window, flue and basin. Observed structural failures are missing parts around the basin trace and joint discharges. Observed material deteriorations are discolorations; black crusts; efflorescences; and pittings on the unplastered surfaces.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B).

Figure 4.164. South wall of the South West *Halvet*

4.2.2.5.5. North West Pendentive

North West pendentive of the South West *Halvet* (Figure 4.165) is brick - lime mortar pendentive. Surface is plastered.

North West pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.165. North West pendentive of the South West *Halvet*

4.2.2.5.6. North East Pendentive

North East pendentive of the South West *Halvet* (Figure 4.166) is brick - lime mortar pendentive. Surface is plastered.

North East pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.166. North East pendentive of the South West *Halvet*

4.2.2.5.7. South East Pendentive

South East pendentive of the South West *Halvet* (Figure 4.167) is brick - lime mortar pendentive. Surface is plastered.

South East pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.167. South East pendentive of the South West *Halvet*

4.2.2.5.8. South West Pendentive

South West pendentive of the South West *Halvet* (Figure 4.168) is brick - lime mortar pendentive. Surface is plastered.

South West pendentive is plastered and no visual deterioration can be observed. No symptoms can be seen and condition class of the pendentive is CC0, recommendation class of the pendentive is RC0, and urgency class of the pendentive is UC0 (Appendix.B).

Figure 4.168. South West pendentive of the South West *Halvet*

4.2.2.5.9. Dome

Dome of the South West Halvet (Figure 4.169) is brick - lime mortar dome. Surface is plastered.

Observed structural failure is widely missing part (almost collapsed). Observed material deteriorations involve small plants and pittings were observed on mortars of existing dome.

According to the findings, the dome displays major symptoms and condition class of the dome is CC3, recommendation class of the dome is RC3, and urgency class of the dome is UC3 (Appendix.B, Appendix.C).

Figure 4.169. Dome of the South West *Halvet*

4.2.2.5.10. West Wall Plaster

On the West wall of the South West *Halvet*, three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls. After a height of 150 centimeters, two layers horasan plaster was applied, and lime plaster were used (Uğurlu, 2005) (Figure 4.170).

On the West wall plaster, delaminations and peelings were observed from ground up to 150 cm height intensely. Pittings; black crusts; efflorescences; and microbiological colonizations were observed on the whole plaster, but they are widespread from 150 cm height up to dome.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and

urgency class of the plaster is UC2 (Appendix.B).

Figure 4.170. West wall plaster of the South West *Halvet*

4.2.2.5.11. North Wall Plaster

On the North wall of the South West *Halvet*, three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls. After a height of 150 centimeters, two layers horasan plaster was applied, and lime plaster were used (Uğurlu, 2005) (Figure 4.171).

On the North wall plaster, missing parts were seen intensely. Microbiological colonizations were observed on the whole plaster, but they are widespread on the left part of the wall.

According to the findings, the plaster displays major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency class of the plaster is UC3 (Appendix.B).

Figure 4.171. North wall plaster of the South West *Halvet*

4.2.2.5.12. East Wall Plaster

On the East wall of the South West *Halvet*, three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls. After a height of 150 centimeters, two layers horasan plaster was applied, and lime plaster were used (Uğurlu, 2005) (Figure 4.172).

On the East wall plaster, missing small parts of the plaster were observed. Pittings; black crusts; efflorescences; peelings and microbiological colonizations were observed on the whole plaster.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.172. East wall plaster of the South West *Halvet*

4.2.2.5.13. South Wall Plaster

On the South wall of the South West *Halvet*, three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls. After a height of 150 centimeters, two layers horasan plaster was applied, and lime plaster were used (Uğurlu, 2005) (Figure 4.173).

On the South wall plaster, pittings; black crusts; efflorescences; peelings and microbiological colonizations were observed.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.173. South wall plaster of the South West *Halvet*

4.2.2.5.14. North West Pendentive Plaster

On the North West pendentive of the South West *Halvet*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.174).

On the North West pendentive plaster, microbiological colonizations and black crusts were observed intensely. Peelings and discolourations are other deteriorations of plaster.

According to the findings, the plaster displays moderate symptoms and

condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.174. North West pendentive plaster of the South West *Halvet*

4.2.2.5.15. North East Pendentive Plaster

On the North East pendentive of the South West *Halvet,* two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.175).

On the North East pendentive plaster, pittings and delaminations were observed.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.175. North East pendentive plaster of the South West *Halvet*

4.2.2.5.16. South East Pendentive Plaster

On the South East pendentive of the South West *Halvet,* two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.176).

On the South East pendentive plaster, pittings; black crusts; efflorescences; and microbiological colonizations were observed. Delaminations were seen on the plaster except the upper right of the surface.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.176. South East pendentive plaster of the South West *Halvet*

4.2.2.5.17. South West Pendentive Plaster

On the South West pendentive of the South West *Halvet*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.177).

On the South West pendentive plaster, discolourations and pittings were observed.

According to the findings, the plaster displays minor symptoms and condition class of the plaster is CC1, recommendation class of the plaster is RC1, and urgency class of the plaster is UC1 (Appendix.B).

Figure 4.177. South West pendentive plaster of the South West *Halvet*

4.2.2.5.18. Dome Plaster

On the dome of the South West *Halvet*, two layers horasan plaster layer were used and lime plaster were used as finishing layer (Uğurlu, 2005) (Figure 4.178).

On the dome plaster, widely missing plaster part was observed. Current plaster has microbiological colonizations; pittings; efflorescences; and black crusts.

According to the findings, the plaster displays major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency class of the plaster is UC3 (Appendix.B).

Figure 4.178. Dome plaster of the South West *Halvet*

4.2.2.6. Water Reservoir

Water reservoir is long rectangular-planned space and its stone masonry walls were constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Entrance of space is from the East wall of the bath.

Superstructure of space is the barrel vault.

The general condition assessment revealed that the space is largely intact. Floor, etrance functioned east wall, and windows are missing. Plasters are present in large quantities. Both the structural elements and the original plasters will sustain further damage due to rain penetration; dampness; microorganisms; and microbiological growths.

A general risk assessment done in the space revealed that the dome and walls have moderate symtoms. According to the all findings short term intervention is essential and UC2 is urgency class of space.

Recommended measures between RC0 and RC3 have been found according to risk assessments in water reservoir. But the recommendation for the general measure of the space has been RC2, because moderate repair and further investigation is recommended for the dome and the walls.

General descriptions and conditions of all loadbearing, transition, superstructure, finishing and other interior elements of water reservoir were explained; their conditions, recommendations and urgency were classified according to assessments below.

4.2.2.6.1. West Wall

West wall of the water reservoir (Figure 4.179) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

No structural failure was observed. Observed material deteriorations are microbiological colonization, discolourations and pittings on the unplastered areas. Black crusts are widespread on the middle and the right areas.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B, Appendix.C).

Figure 4.179. West wall of the water reservoir

4.2.2.6.2. North Wall

North wall of the water reservoir (Figure 4.180) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

Losses of the wall involve the windows. Discolourations were observed on the all unplastered areas. Microbiological crusts were seen the upper right of the wall.

According to the findings, the wall displays moderate symptoms and condition class of the wall is CC2, recommendation class of the wall is RC2, and urgency class of the wall is UC2 (Appendix.B).

Figure 4.180. North wall of the water reservoir

4.2.2.6.3. South Wall

South wall of the water reservoir (Figure 4.181) is a stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar (Reyhan, 2004). Surface is plastered.

No structural failure was observed. Observed material deteriorations are discolourations and pittings on the all unplastered areas.

According to the findings, the wall displays minor symptoms and condition class of the wall is CC1, recommendation class of the wall is RC1, and urgency class of the wall is UC1 (Appendix.B).

Figure 4.181. South wall of water reservoir

4.2.2.6.4. East Arch

East arch of the water reservoir (Figure 4.182) is brick and lime mortar round arch. Surface is plastered.

The general condition assessment revealed that the arch is in a good condition. No structural failure was observed. Observed material deteriorations are pittings and microbiological colonizations.

According to the findings, the arch displays minor symptoms and condition class of the arch is CC1, recommendation class of the arch is RC1, and urgency class of the arch is UC1 (Appendix.B).

Figure 4.182. East arch of water reservoir

4.2.2.6.5. Barrel Vault

Superstructure of the water reservoir (Figure 4.183) is brick and lime mortar barrel vault which has no oculi. Surface is plastered.

Observed structural failures of barrel vault are splitting in the middle and loss of bricks. Observed material deteriorations involve discolorations on unplastered bricks.

According to the findings, the barrel vault displays moderate symptoms and condition class of the barrel vault is CC2, recommendation class of the barrel vault is RC2, and urgency class of the barrel vault is UC2 (Appendix.B, Appendix.C).

Figure 4.183. Barrel vault of the water reservoir

4.2.2.6.6. West Wall Plaster

On the West wall plaster (Figure 4.184), widely missing part of the plaster was

observed from the middle height of the wall to the barrel vault level. Microbiological colonizations, efflorescences and discolorations were observed on the current plaster.

According to the findings, the plaster displays major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency class of the plaster is UC3 (Appendix.B).

Figure 4.184. West wall plaster of the water reservoir

4.2.2.6.7. North Wall Plaster

On the North wall plaster (Figure 4.185), missing parts of the plasters are widespread and delaminations were observed from the window trace to the barrel vault.

According to findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.185. North wall plaster of the water reservoir

4.2.2.6.8. South Wall Plaster

On the South wall plaster (Figure 4.186), missing parts of the plasters are widespread and microbiological colonizations were observed below the wall.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.186. South wall plaster of the water reservoir

4.2.2.6.9. East Arch Plaster

On the East arch plaster (Figure 4.187), inner surface has missing wide part of the plaster. Microbiological colonizations were seen on the existing small areas.

According to the findings, plaster has major symptoms and condition class of the plaster is CC3, recommendation class of the plaster is RC3, and urgency class of the plaster is UC3 (Appendix.B).

Figure 4.187. East arch plaster of the water reservoir

4.2.2.6.10. Barrel Vault Plaster

On the barrel vault plaster (Figure 4.188), delamination was observed on the right corner of the surface. Microbiological colonizations are widespread. Effloresences were observed rarely.

According to the findings, the plaster displays moderate symptoms and condition class of the plaster is CC2, recommendation class of the plaster is RC2, and urgency class of the plaster is UC2 (Appendix.B).

Figure 4.188. Barrel vault plaster of the water reservoir

The parts that are affected by the deterioration in the construction are shown in the Table 4.2. The roughly affected areas from deterioration should be taken into consideration in the planning of the interventions and in the preparation of the budget.

Table 4.2 Structural areas affected by deterioration

DETERIORATION TYPE	AFFECTED AREA	RISK ASSESSMENT AND CONDITION CLASS (CC)	RECOMMENDED MEASURE
LOSSES	3 timber beams, 5 doors,	Loss of timber beams Urgent and immediate measure (CC3	Major intervention based on diagnosis (for CC3)

(Cont. on next page)

Table 4.2 Structural areas affected by deterioration (Cont.)

	7 windows, flues, basins, seki, 37 oculis (33 oculis were lost with their terra ccotta pipes)	Other losses Intermediate term measure (CC1)	Maintenance/ preventive conservation (for CC1)
MISSING PARTS	~ 26 m^2	Intermediate term measure (CC1) Short term measure (CC2) Urgent and immediate measure (CC3)	Maintenance/ preventive conservation (for CC1) Moderate repairs and further investigation (for CC2) Major intervention based on diagnosis (for CC3)
JOINT DISCHARGES	~5 m^2	Intermediate term measure (CC1) Short term measure (CC2)	Maintenance/ preventive conservation (for CC1) Moderate repairs and further investigation (for CC2)
MECHANICAL DAMAGE	~6 m^2	Short term measure (CC2)	Moderate repairs and further investigation (for CC2)
ALVEOLIZATIONS	~2 m^2	Intermediate term measure (CC2)	Maintenance/ preventive conservation (for CC2)

(Cont. on next page)

Table 4.2 Structural areas affected by deterioration (Cont.)

SPLITTING (4-10 mm width)	~9 m length	Urgent and immediate measure (CC3) Short term measure (CC2) (exceptional)	Major intervention based on diagnosis (for CC3) Moderate repairs and further investigation (for CC2)
HAIR CRACK - STAR CRACK (1-4 mm width)	~4 m length	Intermediate term measure (CC1)	Maintenance/ preventive conservation (for CC1)
BLACK - WHITE CRUSTS	~ 12m^2	Intermediate term measure (CC1)	Maintenance/ preventive conservation (for CC1)
EFFLORESCENCES	~ 3m^2	Intermediate term measure (CC1)	Maintenance/ preventive conservation (for CC1)
PITTINGS	~ 50 m^2	Long term measure (CC0) Intermediate term measure (CC1)	Observation (for CC0) Maintenance/ preventive conservation (for CC1)
PLANTS	~ 140 m^2	Short term measure (CC2) Urgent and immediate measure (CC3)	Moderate repairs and further investigation (for CC2) Major intervention based on diagnosis (for CC3)
MICROBIOLOGICAL COLONIZATIONS	~15 m^2	Intermediate term measure (CC1) Short term measure (CC2)	Maintenance/ preventive conservation (for CC1) Moderate repairs and further investigation (for CC2)

General condition class of Düzce Bath was identified as CC3 and major intervention based on diagnosis were recomended. Urgent and immediate interventions

should be done for *Sıcaklık* South wall; *Sıcaklık* East arch; *Sıcaklık* and South East *Halvet* South East walls; South East *Halvet* South West wall; and collapsed domes, respectively for structural stability of bath.

In general 32 elements were defined in zero group. These elements are walls, plane triangles, pendentives, horasan and lime plasters of spaces. Affected area is 46 m^2. 29 elements were defined in one group. These elements are walls, pendentives, horasan and lime plasters of spaces. Affected area is 49 m^2. 76 elements were defined in two group. These elements are arch, domes, vault, squinch, plane triangle, walls, pendentives, horasan and lime plasters of spaces. Affected area is 331 m^2. 23 elements were defined in three group. These elements are superstructure, walls, cistern walls, arch, domes, dome plasters, horasan and lime plasters of spaces. Affected area is 138 m^2.

Horasan plasters manufactured crushed brick and lime have been widely used as water-proof materials in aqueducts, cisterns and baths since early Hellenistic time. In the Ottoman period, horasan plasters were used as protective layers against water penetration into the the baths structures. Hence, they are one of the important values of the baths that must be preserved. Protection work of the plasters requires identification of deterioration and affected areas. The deteriorations observed in the plasters and the areas are given in Table 4.3.

Table 4.3. Plaster areas affected by deterioration

DETERIORATION TYPE	**AFFECTED AREA**	**RISK ASSESSMENT AND CONDITION CLASS (CC)**	**RECOMMENDED MEASURE**
MISSING PART	~ 40 m^2	Intermediate term measure (CC1) Short term measure (CC2) Urgent and immediate measure (CC3)	Maintenance/ preventive conservation (for CC1) Moderate repairs and further investigation (for CC2)

(Cont. on next page)

Table 4.3. Plaster areas affected by deterioration (Cont.)

			Major intervention based on diagnosis (for CC3)
MICROBIOLOGICAL COLONIZATIONS	~ 40 m^2	Intermediate term measure (CC1) Short term measure (CC2) Urgent and immediate measure (CC3)	Maintenance/ preventive conservation (for CC1) Moderate repairs and further investigation (for CC2) Major intervention based on diagnosis (for CC3)
BLACK - WHITE CRUSTS	~ 20m^2	Intermediate term measure (CC1)	Maintenance/ preventive conservation (for CC1)
EFFLORESCENCES	~ 10m^2	Intermediate term measure (CC1)	Maintenance/ preventive conservation (for CC1)
DELAMINATION - PEELING	~ 12m^2	Intermediate term measure (CC1) Short term measure (CC2)	Maintenance/ preventive conservation (for CC1) Moderate repairs and further investigation (for CC2)
HAIR CRACK - STAR CRACK (1-4 mm width)	~15 m length	Intermediate term measure (CC1)	Maintenance/ preventive conservation (for CC1)
PITTINGS	~ 60 m^2	Long term measure (CC0) Intermediate term measure (CC1)	Observation (for CC0) Maintenance/ preventive conservation (for CC1)

The condition report should be prepared before the interventions to be carried out to the historic building. If interventions carried out without the current condition report, will destroy the original character of the historic building will be lost.

Until now, horasan plasters of historic bath buildings were scraped out and new plasters were applied during the restoration in Turkey. Some of the examples are given in this section.

For example, the restoration approach of the Tire Tahtakale bath should be to control the deterioration of materials and consolidation of the structure that needing reinforcement. However, the original horasan plaster was removed by scraping and a new plaster was applied. It damaged the original character of the bath (Figure 4.189, 4.199).

Figure 4.189.Tahtakale Bath in Tire, İzmir (before conservation)
(Source:Kültürel Mimarlık, 2011)

Figure 4.190. Tahtakale Bath in Tire, İzmir (after conservation)
(Source: Kültürel Mimarlık, 2011)

The other example of Hacı Hekim bath (Bergama) has been restored many times (Şaşmaz, 2012a). During the restoration, the original horasan plaster was removed by scraping and new plaster was applied like Tahtakale Bath.

Pınarbaşı Bath is the same example as above. New spaces and new heating system added without considering the European standards and horasan plaster were

replaced with the new ones (İzmir Büyükşehir Belediyesi, 2012) (Figure 4.191). Therefore, the bath lost its original characteristics.

A. B.

Figure 4.191.A. Pınarbaşı Bath, before conservation work (2011)
B. Pınarbaşı Bath, during conservation work
(Source: İzmir Büyükşehir Belediyesi, 2012)

Other example is Yeşildirek Bath in Konak (İzmir) (Figure 4.192). The similar restorations have been carried out in the bath since 1940 and eventually lost its original character.

A. B.

Figure 4.192.A. Yeşildirek Bath, before conservation work (Source: Şaşmaz, 2012b)
B. Yeşildirek Bath, after conservation work (Source: Şaşmaz 2012b)

CHAPTER 5

CONCLUSION

Built cultural heritage have different structural and material deterioration problems depending on climatic conditions and the use of new materials during the interventions. The determination of the problems and choosing the compatible materials depend on working methods that are in accordance with scientific standards.

The European Committee for Standardization (CEN) has initiated standardization studies in the protection of cultural heritage. One of the important developed standards is the "condition survey and report of built cultural heritage" that accepted in 2012. Conservation work of built cultural heritage begins with the preparation of condition report. This report will determine what studies should be carried out in the later stages of the conservation.

This standard specifies how the present condition of cultural heritage will be evaluated, documented, recorded and reported. This standard is applied in the determination of the need for maintenance measures and the identification of detailed principles of conservation.

This standard is important in terms of determination of the need for maintenance measures, identification of detailed principles of conservation, providing comparative data while conducting a case study of a building group or area, and decision-making, planning, implementation and protection of tangible heritage. Also it is the prerequisite for certain standards related to conservation.

In the condition report of the Düzce bath, damages were determined and classified, and recommendations were proposed. Work has to be started from largely dilapidated walls, arches and domes, since they significantly affect the stability of the building. Although most of the damages (deterioration) are structural failures that demands urgent intervention, some serious material deteriorations are also observed. Other factors that should be primarily considered are the cracks and missing timber beams affecting the stability of the walls.

The superstructure of the bath is entirely covered with plants. They may lead to disintegration and cracks in the structure. It is an urgent necessity to clean the plant

formation of the superstructure. After this intervention, the problems that will arise are to be diagnosed and intervention decisions must be determined.

Other interventions to be carried out in the bath should be in accordance with the time and budget planning and the interventions to be performed should be based on diagnostic work. In this study, four basic interventions were defined for the protection of the bath. These are observation, maintenance/preventive conservation, moderate repairs, further investigation and major intervention based on diagnosis. Following the major interventions based on diagnosis for largely dilapidated walls; arches; domes; cracks; and missing timber beams, moderate repairs and / or further investigation should be preferred for joint discharges in walls; missing small parts; small plants or any observed moderate symptoms. Then, maintenance / preventive conservations should be applied to hair - star cracks, microbiological colonisations; black - white crusts; efflorescence; or any observed minor symptoms. Lastly, observation was recommended for the elements that have no visual observation or have only discolouration or small pittings.

Structural failures of the bath are the main problems. However, the interventions to be made in the Horasan plaster should also be determined. Microbiological colonisations, black and white deposition and efflorescence have been determined on the Horasan plasters. The interventions to be done to the Horasan plasters are cleaning and consolidation. The original Horasan plaster should not be scraped and a new plaster should not be applied.

In order to make correct intervention decisions in the conservation, maintenance and repair processes of historical structures and to determine the urgency of the interventions to be carried out, the standards EN and TSE 16096 Condition Survey and Report of Built Cultural Heritage should be complied.

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https://upload.wikimedia.org/wikipedia/commons/thumb/1/17/Qusayr_Amra.jpg/1200px-Qusayr_Amra.jpg (accessed March 9, 2017)

APPENDIX A

CONSERVATION AND OFFICIAL REGISTRATION DOCUMENT OF DÜZCE (HEREKE) BATH

T.C.
KÜLTÜR BAKANLIĞI
İZMİR 1 NUMARALI KÜLTÜR VE TABİAT VARLIKLARINI
KORUMA KURULU

KARAR 35.14/373

Toplantı Tarihi ve No : 7.3.1995-348
Karar Tarihi ve No : 7.3.1995-5738

Toplantı Yeri
İZMİR

İzmir İli,Seferihisar İlçesi,Düzce (Hereke) KöyÜ,KöyiÇi Mevkiinde yeralan, tapunun 598 parselinde kayıtlı Fatih Medresesi ile 623 parselinde kayıtlı Hamam hakkında Kültür ve Tabiat Varlıklarını Koruma Genel Müdürlüğü'nün 3.8.1994 tarih ve 3352 sayılı,1.12.1994 tarih ve 5050 sayılı yazıları okundu,ekleri incelendi. Yapılan görüşmeler sonunda;

İzmir İli ,Seferihisar İlçesi,Düzce (Hereke) KöyÜ,KöyiÇi Mevkiinde yeralan tapunun 598 parselinde kayıtlı Fatih Medresesinin ve aynı parselde yeralan Kasım Çelebi Camisinin,623 parselde kayıtlı hamamın,2863 ve 3386 sayılı Yasalar uyarınca Korunması Gerekli Taşınmaz Kültür Varlığı olarak tescillenmelerine,Kültür ve Tabiat Varlıklarını Koruma Yüksek Kurulu'nun 4.3.1988 tarih ve 14 sayılı İlke Kararına göre Koruma Gruplarının I.Derece olarak belirlenmesine,buna göre;Değerlendirmede aranan ve 2863 sayılı yasada belirtilmiş bulunan özelliklerden çoğunu,üstün değerlere sahip olması nedeni ile gelecek kuşaklar için içi ve dışı ile olduğu gibi korunması gereken,malzeme değişikliği yapılmadan,sadece bakım ve koruma onarımı gerçekleştirilebilecek,ayrıca binanın yaşamını devam ettirebilmesi için zorunlu tesisatın konulabileceği veya mevcudun değiştirilebileceği yapılardan olduklarına,ayrıca Medrese ve Hamamın son derece bakımsız barakalarla sarılmış olup,sözlen restorasyonunun gerektiğine,yapıların doğal ve dış etkenlere karşı korunabilmesi için gerekli koruyucu önlemlerin alınması ve medresenin kuzey duvarına bitişik sundurmanın kaldırılması konusunda mülk sahiplerinin uyarılmasına karar verildi.

Canan ÇAKMAK
M. Arkeolog

ASLI GİBİDİR

BAŞKAN
Prof.Dr.Çınar ATAY
İMZA

BAŞKAN YARDIMCISI
Doç.Dr.Numan TUNA
BULUNMADI

ÜYE
Doç.Dr.İnci KUYULU
İMZA

ÜYE
Y.Mimar Emre MAMRAN
İMZA

ÜYE
Rıdvan KOZAN
Seferihisar Belediye Bşk.Yr.
İMZA

APPENDIX B

CONDITION ASSESSMENT OF DÜZCE (HEREKE) BATH

A.B.1. Object information

1)Identification number (and reference): 66361928 (General Directorate of Land Registers)
2)Name of the object (if any): Düzce (Hereke) Bath
3)Location and property adress: Düzce Village, Köyiçi district, Seferihisar/İzmir
4)Geographic identification (municipality, county region, GIS reference, etc): Seferihisar municipality, 38^{o}, 27^{o} , Aegean Region Turkey
5)Land number, title number and any lease number: Lot number: 623 Title number: 1
6)Object category (civil building, church, palace, tower, bridge, etc.): Bath
7)Date, year or period of construction phases and major modifications: 16^{th} century
8)Original function and any other historical functions: Bath
9) Current function (mention if open or closed to the public): Unused
10) Name and adress of owner(s): Village Legal Entity

A.B.2. Protection Information

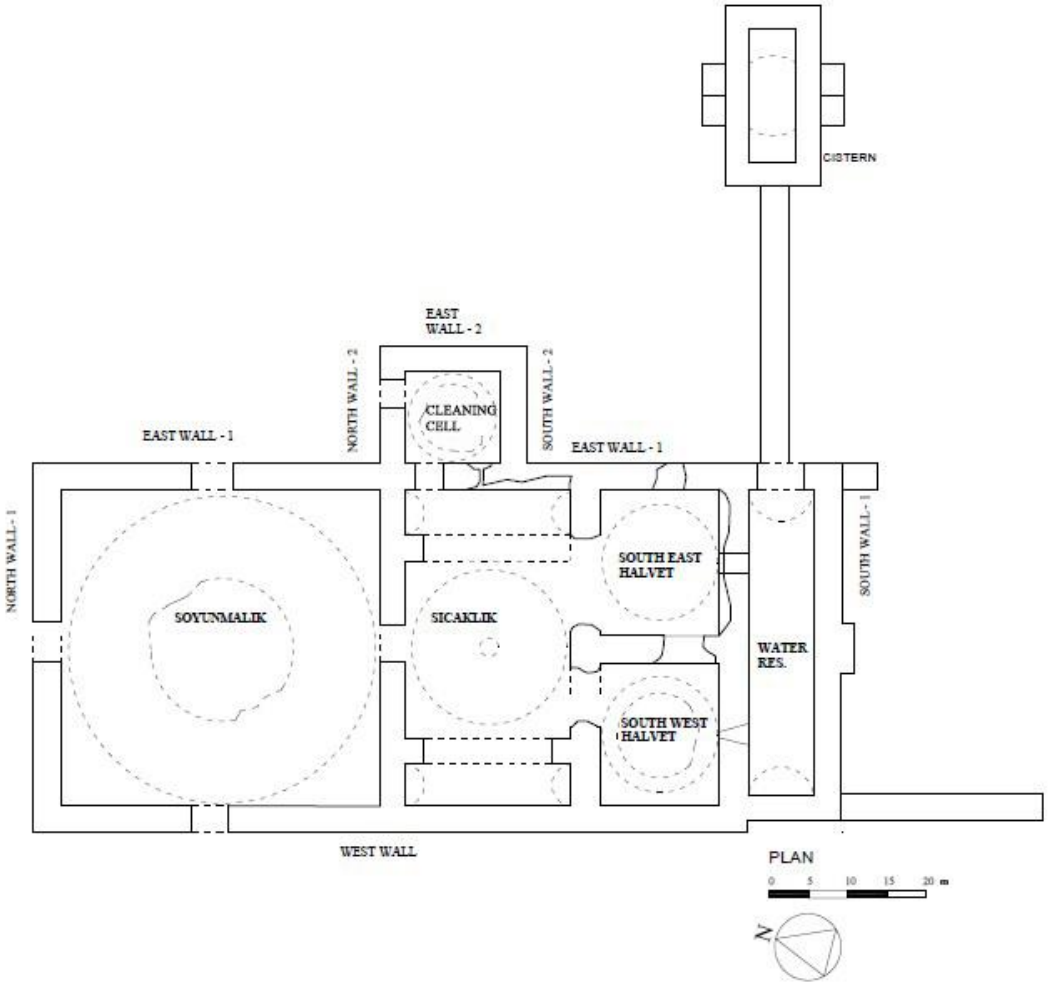
11)What is protected (area/building/facade/component)
12) Protection Act and section or article
13) Protection date
14) Statements of significance
For buildings:
15)Number of floors: 1
16)Height of the building: ~6.5 m
17)Ground area of building: 194,46 m^2 land area: 1085,43 m^2
18)Other important characteristics of the building Düzce bath, which has rectangular plan shape, includes the entrance space *Soyunmalık*; the main space *Sıcaklık*; *Sıcaklık*'s units 2 *Halvet*s; cleaning space; water reservoir; and the spaces have no access; *külhan*, hypocaust and cistern. bath has no *ılıklık* space. Superstructure of *Soyunmalık, Sıcaklık* and *Halvet*s are domes which have oculis, barrel vaults are superstructure of the iwans and water reservoir.

A.B.3 Sources and management information

Historic source material from archives, including pictures and photographs (Chapter 3, 22)

Original drawings, drawings showing later additions, changes and the sequence of development

Current plan of Bath



Earlier inventories, conservation plans, technical information and condition reports
Summaries of conservation and maintenance performed
Summaries of functional and structural changes
Inspection reports and orders/injuctions/instructions from national or regional authorities and services (fire,electrical wiring,etc.)

A.B.4 General information for the condition survey

Person(s) who has performed the survey, position and qualifications: Yasemen Ünal, M.S. Student in İzmir Institute of Technology, Department of Architectural Restoration
Time used to complete the survey in situ and tools and methodologies used:
Specification of any use of scaffolding, ladders, lifts or other aids: Steel meter, digital camera, flashlight
Contact persons for the inspection:
Person(s) present during the inspection: Yasemen Ünal
Date of the inspection: October, 2016
Weather conditions during inspection, e.g. rain/sun/cloudy, temperature, air condition: Sunny , ~ 25^{o}C
Inaccessibility of parts of the object, if relevant: Külhan, Cehennemlik, Cistern spaces, and some parts of Soyunmalık walls because of the heavy temporary items
Reliability of collected data (not available, incomplete or exhaustive): Almost reliable


Exterior of Düzce (Hereke) Bath, East wall


Interior of Düzce (Hereke) Bath, Soyunmalık

Photographic documentation of the inspection

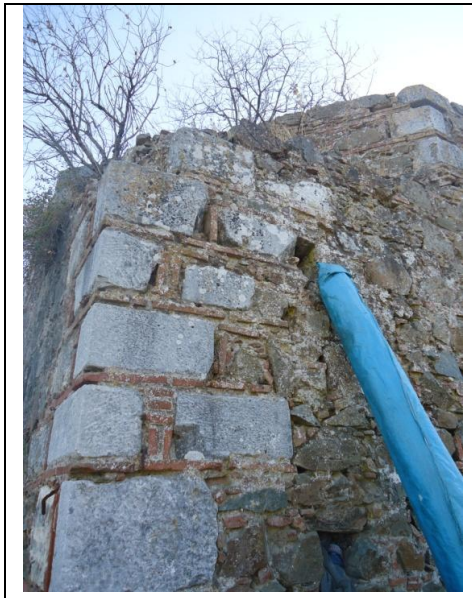

Interior of Düzce (Hereke) Bath, walls of Sıcaklık and South East Halvet

A.B.5 Building components and condition

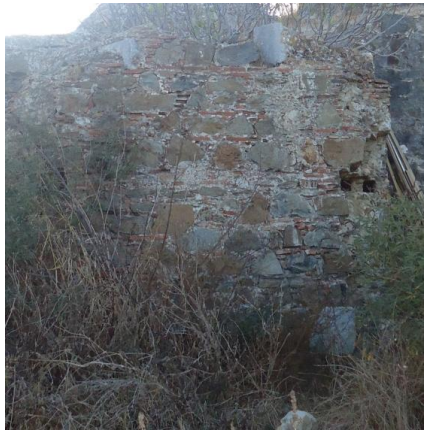
Id number 66361928	**Name of the object** Düzce (Hereke) Bath	**Inspection date/revised** October, 2016
Registered by	**Persons present during the inspection** Yasemen Ünal	**Weather conditions during survey** Sunny , ~ 25^{o}C

Exterior of Düzce Bath								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall  	Stone masonry wall which was constructed through bonding technique with rubble stone and brick, which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints. Roughly cut stones were used on the left edge. Surface is unplastered.	<u>Losses</u> -Entrance door <u>Structural failures</u> -Missing part of wall on the right -Missing roughly cut stone on left edge -Missing bricks in the middle (*Sıcaklık, Halvet*) part -Splitting on the middle (*Halvet*) and right (water reservoir) part -Plants on the left (*Soyunmalık*) and middle (*Halvet*) part of wall <u>Material deteriorations</u> -Black crusts on the left (*Soyunmalık*) part of wall -Microbiological colonizations on	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

		the left (*Soyunmalık*) part of wall -Black crusts are widespread -Efflorescences are widespread -Discolourations are widespread -Hair cracks are widespread -Pittings are widespread						
North wall - 1 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Roughly cut stones were used on edges. Surface is unplastered.	<u>Losses</u> -Window <u>Structural failures</u> -Missing part of wall below the window trace -Missing stones in the middle part -Splitting on the left of wall <u>Material deteriorations</u> -Microbiological colonizations -Black crusts are widespread, especially on the	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

		left and right of the wall -Efflorescences are widespread, especially on the left and right of the wall -Pittings -Discolourations are widespread -Hair cracks are widespread						
North wall - 2 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is unplastered.	<u>Losses</u> -Window <u>Structural failures</u> -Missing part of wall below window trace -Missing stones in the left part -Splitting on the left of wall <u>Material deteriorations</u> -Microbiological	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

		colonizations -Black crusts are widespread, especially above the wall -Efflorescences are widespread, especially around window trace -Discolourations are widespread -Pittings						
East wall - 1  	Stone masonry wall which were constructed through bonding technique with rubble stone and brick components in lime mortar. Roughly cut stones were used on edges. Surface is unplastered.	<u>Losses</u> -Window <u>Structural failures</u> -Missing part of wall below window trace and left part of wall -Missing stones in the right part of window trace -Joint discharges on the right part of window trace -Plants on the right <u>Material deteriorations</u> -Microbiological colonizations,	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

		especially on the left part of wall (South West Halvet wall) -Black crusts are widespread -Efflorescences are widespread -Discolourations are widespread -Pittings						
East wall - 2 	Stone - brick bonding technique with lime mortar. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints. Surface is unplastered.	<u>Structural failures</u> -Missing part on right part of wall <u>Material deteriorations</u> -Microbiological colonizations -Black crusts are widespread -Efflorescences are widespread -Discolourations are widespread	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South wall - 1	Stone masonry wall which was constructed through bonding technique	<u>Structural failures</u> -Missing part of wall -Splitting in the	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

	with rubble stone and brick components in lime mortar. Surface is unplastered.	middle -Plants <u>Material deteriorations</u> -Discolourations in components						
South wall - 2 	Stone masonry wall which were constructed with bonding technique with rubble stone and brick components in lime mortar. Surface is unplastered	<u>Structural failures</u> -Missing stone on the left <u>Material deteriorations</u> -Microbiological colonizations -Black crusts are widespread -Efflorescences are widespread -Discolourations are widespread	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
Arch	Brick - lime mortar arch. Surface is unplastered.	<u>Material deteriorations</u> -Microbiological colonizations, especially on the right -Black crusts -Efflorescences -Discolourations	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

		-Pittings						
Superstructure    	Superstructure of five domes and barrel vault. All of them are brick - lime mortar superstructures which have oculis. Domes are stand on octogonal drums.	<u>Losses</u> -Top windows of Soyunmalık dome -Top skylight -Oculis <u>Structural failures</u> -Missing wide (collapsed) part of dome of Soyunmalık, East and South East Halvets. -Missing central small dome of Sıcaklık -Missing bricks in Soyunmalık dome -Splitting in Soyunmalık dome and barrel vault (water reservoir's	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

		superstructure) -Broken bricks around colapsed areas -Plants on all drums and begginnings of domes and barrel vaults and all superstructures surfaces <u>Material deteriorations</u> -Black crusts were seen, especially on drums' roughly cut stones -Efflorescences are widespread -Discolourations are widespread -Pittings in components						
Wall between cistern and water reservoir	Stone masonry wall which were constructed with bonding technique with rubble stone and brick components in lime mortar. Surface is	<u>Structural failures</u> -Joint discharges close to the cistern <u>Material deteriorations</u> -Efflorescences -Discolourations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

	unplastered.							
Cistern  	Has stone masonry walls which were constructed with bonding technique with rubble stone and brick components in lime mortar. Surfaces are unplastered	<u>Structural failures</u> -Missing wide parts of the walls -Joint discharges <u>Material deteriorations</u> -Efflorescences are widespread -Discolourations -Pittings	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

Interior of Düzce Bath	
Soyunmalık	
<u>Walls</u>	

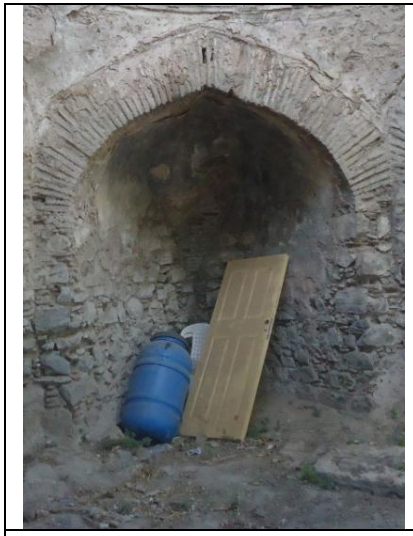
Building Component	Component Description	Condition Description	Symptoms	CC	Recomended Measure	RC	Risk Assessment	UC
West wall 	Stone masonry wall that was constructed through bonding technique with rubble stone and brick, which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints. Surface is plastered.	<u>Losses</u> -Entrance door -Timber beam <u>Structural Failures</u> -Partial collapse around door -Joint discharge around the door and right of the wall -Missing parts of bricks and stones in the left of wall (under the left arch) -Alveolizations on stones under the timber beam trace <u>Material Deteriorations</u> -Discoloration in components -Graffiti on left of wall -Black crusts on left of wall -Efflorescences on mortars on left of wall, rough cut stones under entrance door trace	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

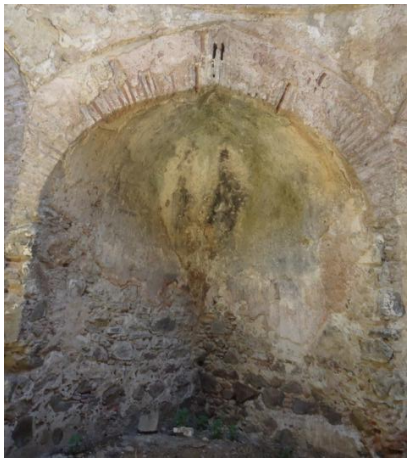
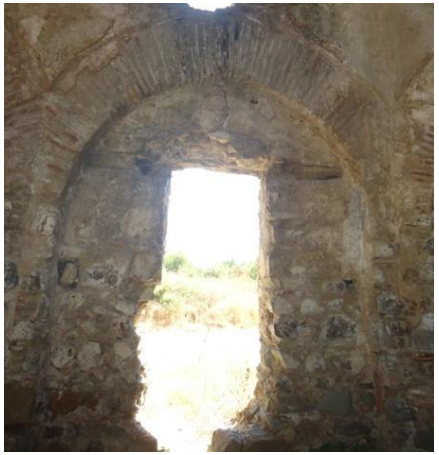
		-Pittings on left of wall						
North wall 	Stone masonry wall that was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Window -Timber beam <u>Structural Failures</u> -Missing part (partial collapse) below the window trace -Joint discharge on the left of wall -Missing parts of bricks and stones in the left of wall -Missing stone below the timber beam trace -Alveolizations on components of right part of wall -Hair cracks on left of wall -Star crack above timber beam trace <u>Material Deteriorations</u> -Discoloration in components	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

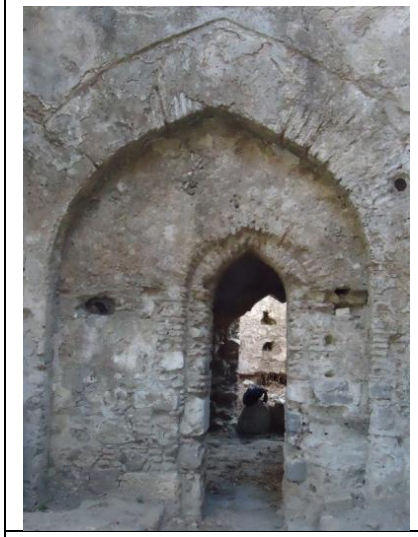
		-Black crusts on middle part of wall -Efflorescences on mortars -Pittings on components						
East wall 	Stone masonry wall that was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Window -Timber beam <u>Structural Failures</u> -Partial Collapse below the window trace and between timber beam trace and window trace -Joint discharge around the window trace -Star crack splitting above the timber beam trace <u>Material Deteriorations</u> -Discoloration in components -Black crusts on the middle part of the wall -Efflorescences on	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

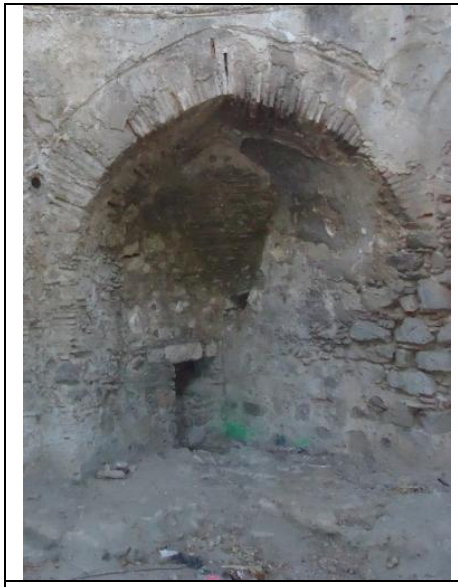
		the middle part of wall -Pittings on components						
South wall 	Stone masonry wall that was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Door -Flue -Basin <u>Structural Failures</u> -Joint discharge around the door trace <u>Material Deteriorations</u> -Discoloration in components -Efflorescences on the middle and the right part of the wall -Microbiological colonization on the right part of the wall -Graffiti on the right part of the wall -Pittings on the mortars	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

Arches								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West arch 	Brick and lime mortar lowered pointed arch. Arch bases made with stone, brick and lime mortar. Surface is plastered.	<u>Structural Failures</u> -Convex deformation on the right -Joint discharge on the bases -Broken bricks on the top point and the right of arch -Missing parts of bricks around the timber beam trace <u>Material Deteriorations</u> -Discoloration in components -Black crusts on the mortars -Pittings on the mortars	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
North West arch	Brick and lime mortar lowered pointed arch. Arch bases made with stone, brick and lime mortar. It made up niche with	<u>Structural Failures</u> -Joint discharge on the bases -Missing bricks on the top point and the left of arch	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

	squinch and part of the wall. Surface is plastered.	<u>Material Deteriorations</u> -Discoloration in components -Black crusts on the bases and inner surface -Pittings on mortars						
North arch 	Brick and lime mortar lowered pointed arch. Arch bases made with stone, brick and lime mortar. Surface is plastered.	<u>Structural Failures</u> -Joint discharge on the bases -Missing bricks around the timber beam trace <u>Material Deteriorations</u> -Discoloration in components -Black crusts on bases -Efflorescences on bases -Pittings on mortars	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

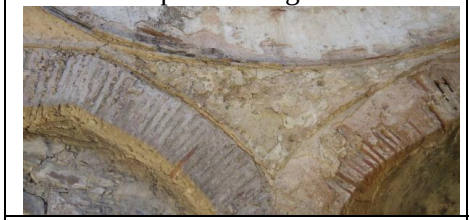
North East arch 	Brick and lime mortar lowered pointed arch. Arch bases made with stone, brick and lime mortar. It made up niche with squinch and part of the wall. Surface is plastered.	<u>Structural Failures</u> -Missing bricks on the top point of the arch -Alveolization on the stone inner part of the arch <u>Material Deteriorations</u> -Discoloration in components -Black crusts on the bases -Efflorescences -Pittings on mortars	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
East arch 	Brick and lime mortar lowered pointed arch. Arch bases made with stone, brick and lime mortar. Surface is plastered.	<u>Structural Failures</u> -Missing bricks near the top point of the arch <u>Material Deteriorations</u> -Discoloration in components -Black crusts on mortars -Efflorescences on mortars -Pittings	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
South East arch	Brick and lime mortar lowered	<u>Structural Failures</u> -Missing bricks in	Minor symptoms	1	Maintenance / Preventive	1	Intermediate term	1

	pointed arch. Arch bases made with stone, brick and lime mortar. It made up niche with squinch and part of the wall. Surface is plastered.	the right part of the arch <u>Material Deteriorations</u> -Discoloration in components -Black crusts on the upper part of the arch -Efflorescences in components -Pittings on mortars			conservation			
South arch 	Brick and lime mortar lowered pointed arch. Arch bases made with stone, brick and lime mortar. Surface is plastered.	<u>Material Deteriorations</u> -Discoloration on the bases -Black crusts on right of top part of the arch - Microbiological colonizations on right top part of the arch -Pittings on components	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
South West arch	Brick and lime mortar lowered	<u>Structural Failures</u> -Joint discharges	Minor symptoms	1	Maintenance / Preventive	1	Intermediate term	1

	pointed arch. Arch bases made with stone, brick and lime mortar. It made up niche with squinch and part of the wall. Surface is plastered.	inner surface and upper part of the arch -Missing brick in the right part of top point of arch <u>Material Deteriorations</u> -Discoloration in components -White crusts on the upper part of the arch -Pittings on mortars			conservation			
<u>Squinches</u>								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
North West squinch	Brick and lime mortar squinch. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0

								
North East squinch 	Brick and lime mortar squinch. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
South East squinch	Brick and lime mortar squinch. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0

								
South West squinch 	Brick and lime mortar squinch. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
Plane Triangle								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**

North West plane triangle - 1 	Brick and lime mortar plane triangle. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
North West plane triangle - 2 	Brick and lime mortar plane triangle. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
North East plane triangle - 1 	Brick and lime mortar plane triangle. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
North East plane triangle - 2 	Brick and lime mortar plane triangle. Surface has plaster.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
South East plane triangle - 1	Brick and lime mortar plane triangle. Surface is	No visual deterioration	No symptoms	0	Observation	0	Long term	0

	plastered.							
South East plane triangle - 2 	Brick and lime mortar plane triangle. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
South West plane triangle - 1 	Brick and lime mortar plane triangle. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
South West plane triangle - 2 	Brick and lime mortar plane triangle. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
Dome								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**

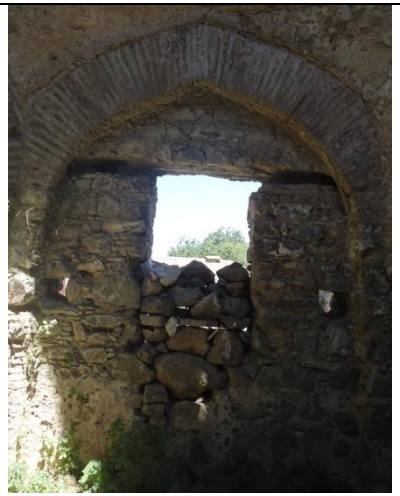
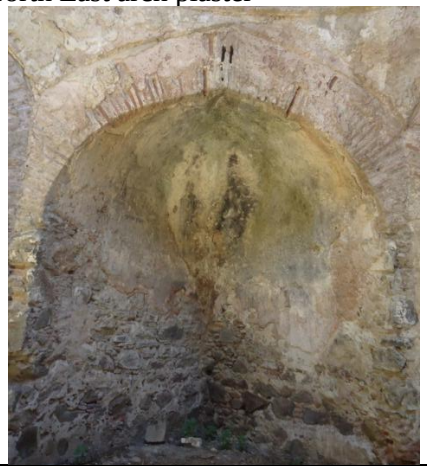
	Brick and lime mortar dome has 2 top window. Below of dome, two row brick were used. Surface is plastered.	<u>Losses</u> -Top windows <u>Structural Failures</u> -Missing wide part (collapsed) in the middle of the dome -Splitting around collapsed area -Missing bricks around the collapsed area -Broken bricks around the top windows traces <u>Material Deteriorations</u> -Discoloration in components -Pittings on components	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3
<u>Seki</u>								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
	Square-formed stone *seki*.	<u>Structural Failures</u> -Missing parts of the stones -Mechanical damage - impact damage	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

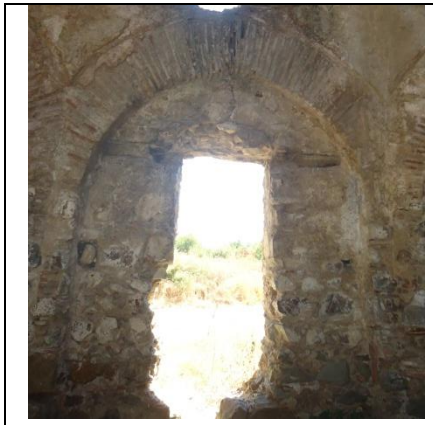
 		Material Deteriorations -Discoloration in components -White crusts -Pittings on components						
Plasters								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall plaster	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to	-Missing wide part of the plaster -Microbiological colonisation on the left part of the wall -Graffiti on the left part of the wall	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

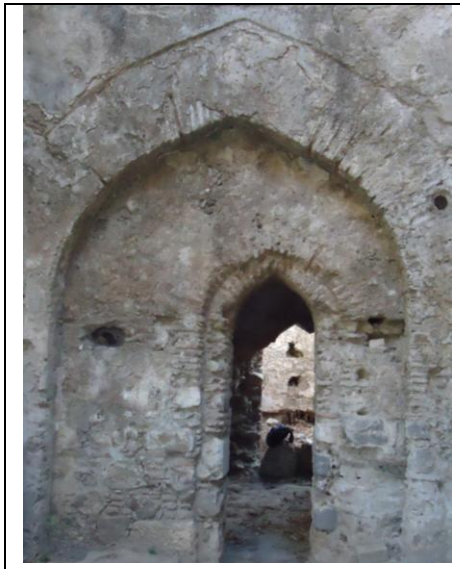
	dome, horasan plaster layer and 2 layers lime plaster were used	-Delamination on the middle part of the wall -Black and white crusts under the timber beam trace -Black crusts on the right part of the wall -Pittings						
North wall plaster 	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used	-Missing semi part of the plaster -Black crusts, discolourations and efflorescences on the left part and middle part of the wall -Delamination and peeling below the middle arch and the right part of the wall	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
East wall plaster	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2	-Missing part of plaster on middle part of wall - Black crustss -White crusts below the timber beam trace in the middle part -Discolourations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

	layers lime plaster were used	-Microbiological colonizations on the right part of the wall near squinch						
South wall plaster 	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used	-Missing part of the plaster on the middle and the right part of the wall - Microbiological colonizations on the left and right part of wall -Pittings on the right and the middle part of the wall -Discolourations -Black and white crusts on middle and right part of wall	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
West arch plaster	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer.	-Loss of plaster on the arch bases -Missing wide part of the plaster of arch -Discolourations on	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

	From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	the left and right plaster parts -Black crusts on the left plaster part -Pittings on the left and the right plaster parts -Delaminations on the right plaster part						
North West arch plaster 	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	-Loss of plaster on the arch bases -Missing wide part of the plaster of arch -Peelings -Pittings -White crusts	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3
North arch plaster	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as	-Loss of plaster on the arch bases -Missing wide part of the plaster of arch	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

	finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	-Pittings -White crusts						
North East arch plaster 	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	-Loss of plaster on the arch bases -Missing wide part of the plaster of the arch -Delaminations -Pittings -Microbiological colonizations inner surface -Hair cracks inner surface -White and black crusts inner surface	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
East arch plaster	Up to 150 cm, 2 layers horasan plaster were used	-Missing wide part of plaster on the arch bases	Major symptoms	3	Major intervention based on	3	Urgent and immediate	3

	as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	-Discolourations -Peelings -Pittings -White crusts			diagnosis			
Sourt East arch plaster 	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	-Missing parts of plaster on the arch bases; the left of inner surfaces and the upper part -Delamination on the left part of arch -Pittings on the left part of arch -White crusts on the left part of arch -Black crusts -Microbiological colonizations inner surface -Pittings inner surface -Discoloration inner surface	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South arch plaster	Up to 150 cm, 2	-Missing parts of	Moderately	2	Moderate	2	Short Term	2

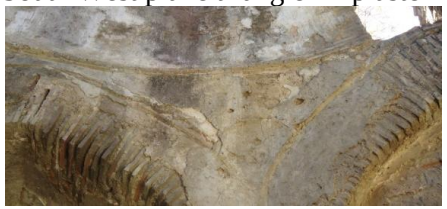
	layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	the plasters on the arch bases and around top point of arch -Pittings -Black crusts -Discolourations	strong symptoms		repair and further investigation			
South West arch plaster 	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	-Missing parts of the plaster on arch and inner surface -Delamination on the left part of the arch -Pittings on the left part of the arch -White crusts on the left part of the arch -Black crusts White crusts	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

North West squinch plaster 	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	-Peelings were seen rarely -Delaminations were seen rarely - Microbiological colonizations are widespread -Black - white crusts are widespread -Pittings are widespread	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North East squinch plaster 	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	-Microbiological colonizations were seen rarely -Black - white crusts were seen rarely -Pittings were seen rarely	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
South East squinch plaster	Up to 150 cm, 2 layers horasan	-Microbiological colonizations were	Minor symptoms	1	Maintenance / Preventive	1	Intermediate term	1

	plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	seen on the line -Black crusts were seen on the line and widespread on the whole plaster -White and black crusts are widespread -Pittings are widespread			conservation			
South West squinch plaster 	Up to 150 cm, 2 layers horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, horasan plaster layer and 2 layers lime plaster were used.	-Delaminations -Peelings - Microbiological colonizations are widespread -White and black crusts are widespread -Pittings are widespread	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North West plane triangle - 1 plaster	Horasan plaster	-Black crusts on the	Minor	1	Maintenance /	1	Intermediate	1

	layer and 2 layers lime plaster were used.	left part and below the surface -Peelings -Pittings	symptoms		Preventive conservation		term	
North West plane triangle - 2 plaster 	Horasan plaster layer and 2 layers lime plaster were used.	-Black crusts on the upper right part -Peelings -Pittings	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
North East plane triangle - 1 plaster 	Horasan plaster layer and 2 layers lime plaster were used.	-Black crusts on the left part - Microbiological colonizations on the middle -Peelings -Pittings	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
North East plane triangle - 2 plaster	Horasan plaster layer and 2 layers lime plaster were used.	-Delaminations -Peelings - Microbiological colonizations on the middle -White crusts	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

		-Pittings						
South East plane triangle - 1 plaster 	Horasan plaster layer and 2 layers lime plaster were used.	-Delaminations were seen rarely -Peelings were seen rarely -Black crusts -Pittings	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
South East plane triangle - 2 plaster 	Horasan plaster layer and 2 layers lime plaster were used.	-Delaminations were seen rarely -Peelings were seen rarely -Black and white crusts -Pittings -Discolourations -Efflorescences on the corners	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
South West plane triangle - 1 plaster 	Horasan plaster layer and 2 layers lime plaster were used.	-Delaminations were seen rarely on the edges -Peelings were seen rarely on the edges - Microbiological colonizations on the left part	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

		-Pittings -Black and white crusts -Discolourations						
South West plane triangle - 2 plaster 	Horasan plaster layer and 2 layers lime plaster were used.	-Delaminations were seen rarely on the left part of the surface -Peelings were seen rarely on the left part of the surface - Microbiological colonizations on the left part -Pittings -Black and white crusts -Discolourations	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
Dome plaster 	Horasan plaster layer and 2 layers lime plaster were used.	-Delamination -Peeling -Hair crack -Microbiological colonizations -Black and white crusts - Pittings	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

								
Sıcaklık								
Walls								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints.	<u>Losses</u> -Seki -Basin <u>Structural Failures</u> -Broken flue -Missing stones on the basin trace and below the wall	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

	Surface is plastered.							
North wall   	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Seki -Basin <u>Material Deteriorations</u> -Discolourations -Pittings on middle part of wall	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
East wall	Stone masonry wall which was constructed through bonding technique with rubble stone	<u>Losses</u> -Seki -Flue -Basin	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

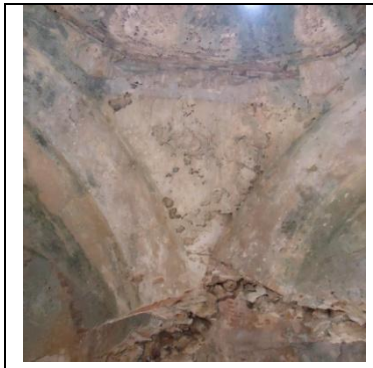
	and brick components in lime mortar. Surface is plastered.	<u>Structural Failures</u> -Missing part of wall - partial collapse in the right part of the wall -Joint discharges -Splitting <u>Material Deteriorations</u> -Black crusts -Pitting						
South wall  	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Seki -Basin <u>Structural Failures</u> -Missing part of wall (collapsed) in the left iwan part and the middle part of the wall -Joint discharges <u>Material Deteriorations</u> -Pittings	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

								
Archs								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West arch 	Brick - lime mortar round arch. Roughly cut stone and brick were used in arch bases. Surfaces are plastered.	Losses -Seki -Basin Material Deteriorations -Black crusts -Efflorescences -Discolourations	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

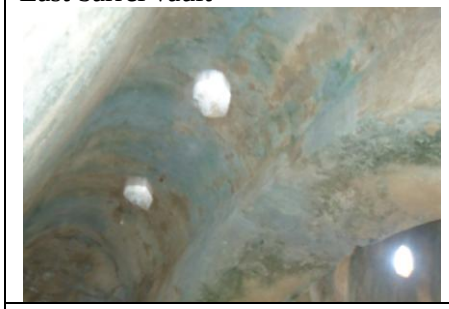
 								
North arch 	Brick - lime mortar round arch. There is no arch base. Surfaces are plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
East arch	Brick - lime mortar round arch. Roughly cut stone and brick were used in arch bases. Surfaces are plastered.	<u>Losses</u> -Seki -Basin <u>Structural Failures</u> -Missing part of the arch - totally collapse of right part of the arch <u>Material Deteriorations</u> -Black crusts	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

  		-Efflorescences -Discoloration						
South arch 	Brick - lime mortar round arch. There is no arch base. Surfaces are plastered.	<u>Structural Failures</u> -Missing part of arch - collapse in left part of arch	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
<u>Pendentives</u>								

Building Component	Component Description	Condition Description	Symptoms	CC	Recomended Measure	RC	Risk Assessment	UC
North West pendentive 	Brick - lime mortar pendentive. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
North East pendentive 	Brick - lime mortar pendentive. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
South East pendentive	Brick - lime mortar pendentive. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0

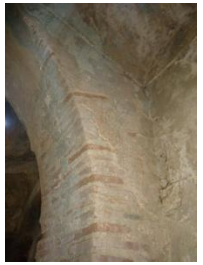
								
South West pendentive 	Brick - lime mortar pendentive. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0
Drum								
Building Component	**Component Description**	**Condition Description**		**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
Drum	Octogonal drum which has muqarnas. Surface is plastered.	No visual deterioration	No symptoms	0	Observation	0	Long term	0

								
Superstructure								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
Dome 	Brick - lime mortar dome. Has top skylight and oculi on 3 rows. Surface is plastered.	Losses -Oculis -Top skylight (small dome)	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
West barrel vault	Brick - lime mortar barrel vault. Has 3 oculis. Surface is plastered.	Losses -Oculis	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

								
East barrel vault 	Brick - lime mortar barrel vault. Has 3 oculis. Surface is plastered.	<u>Losses</u> -Oculis	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
<u>Plasters</u>								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall plaster 	Horasan plaster were used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, 2 layers horasan plaster layer were used and lime plaster were used as finishing layer	-Microbiological colonizations are widespread, especially on the right part of the surface -Pittings on the left part of the surface -Delaminations and peelings on the left part of the surface -Black and white	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

		crusts -Eflorescences -Hair cracks						
North wall plaster   	Horasan plaster were used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, 2 layers horasan plaster layer were used and lime plaster were used as finishing layer	-Missing parts of plasters below the wall - Microbiological colonizations are widespread on iwans - Eflorescences on the left part -Pittings -Discolourations -Hair cracks	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
East wall plaster	Horasan plaster were used as plaster up to 150 cm, and thin red plaster used as finishing layer.	- Microbiological colonizations are widespread from the ground to the drum	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

	From 150 cm up to dome, 2 layers horasan plaster layer were used lime plaster were used as finishing layer	-Pittings -Black and white crusts -Eflorescences -Hair cracks						
South wall plaster  	Horasan plaster were used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, 2 layers horasan plaster layer were used lime plaster were used as finishing layer	- Microbiological colonizationsare were seen more on the upper surface than below the wall -Pittings -Black and white crusts -Eflorescences, especially on the left part of the surface -Hair cracks, especially on the left part of the surface	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

								
West arch plaster   	Horasan plaster were used as plaster up to 150 cm, and thin red plaster used as finishing layer. From 150 cm up to dome, 2 layers horasan plaster layer were used and lime plaster were used as finishing layer	-Missing parts of plasters on the arch bases -Microbiological colonizations are observed the upper points of the inner surface intensely -Pittings -Black and white crusts -Eflorescences -Hair cracks -Discolourations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North arch plaster	2 layers horasan	-Microbiological	Minor	1	Maintenance /	1	Intermediate	1

	plaster layer were used lime plaster were used as finishing layer.	colonizations are widespread from the middle part to the left part of surface -Pittings -Black and white crusts -Eflorescences -Hair cracks -Discolourations	symptoms		Preventive conservation		term	
East arch plaster   	Up to 150 cm, horasan plaster were used as plaster and thin red plaster used as finishing layer. From 150 cm up to dome, 2 layers horasan plaster layer were used and lime plaster were used as finishing layer.	-Microbiological colonizations are widespread from top point to below of wall -Pittings -Black and white crusts -Eflorescences -Hair cracks -Discolourations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

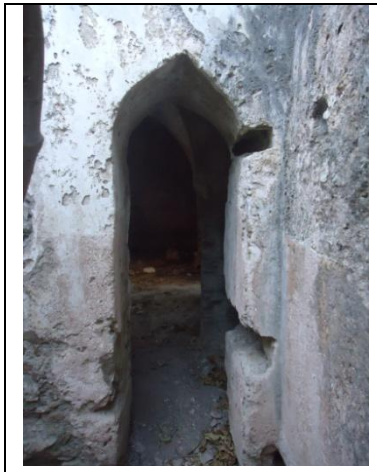
								
South arch plaster 	2 layers horasan plaster layer were used lime plaster were used as finishing layer.	-Microbiological colonizations were seen intensely areas middle, left and right part of surface -Eflorescences on the left part of surface -Pittings -Black and white crusts -Discolourations -Hair cracks	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North West pendentive plaster	2 layers horasan plaster layer were used and lime plaster were used as finishing layer.	-Black crusts were seen rarely -Pittings -Discolourations	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

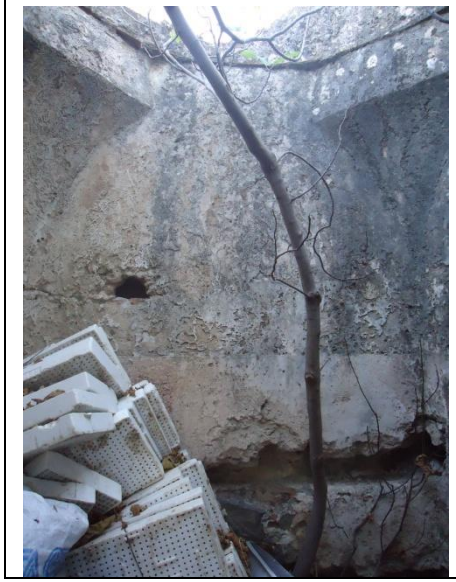
								
North East pendentive plaster 	2 layers horasan plaster layer were used and lime plaster were used as finishing layer.	-Microbiological colonizations on the left and right corners - Black crusts were seen rarely on the edges -Pittings -Discolourations	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1
South East pendentive plaster 	2 layers horasan plaster layer were used and lime plaster were used as finishing layer.	-Microbiological colonizations -Black crusts -Pittings -Discolourations -Hair cracks	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

South West pendentive plaster 	2 layers horasan plaster layer were used and lime plaster were used as finishing layer.	- Microbiological colonizations from the intersection points of the archs to the middle part of surface -Black and white crusts -Pittings -Discolourations -Hair cracks	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
Drum plaster  	2 layers horasan plaster layer were used and lime plaster were used as finishing layer.	-Muqarnas patterns could not be seen clearly because of microbiological colonizations and black crusts - Black and white crusts -Discolourations -Hair cracks -Pittings	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
Dome plaster	2 layers horasan plaster layer were used lime plaster were used as finishing layer.	-Microbiological colonizations -Black and white crusts -Discolourations -Hair cracks	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

								
West barrel vault plaster 	2 layers horasan plaster layer were used lime plaster were used as finishing layer.	-Microbiological colonizations, especially were seen on the right part -Black and white crusts -Discolourations -Hair cracks	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
East barrel vault plaster 	2 layers horasan plaster layer were used and lime plaster were used as finishing layer.	-Microbiological colonizations, especially on the right part -Discolourations -Hair cracks	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

Cleaning Space (*Tıraşlık*)								
<u>Walls</u>								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Door -Flues <u>Structural Failures</u> -Missing components above flue trace on the left part of wall -Joint discharges above flue trace on the left part of wall <u>Material Deteriorations</u> -Discolourations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

								
North wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Window -Flue <u>Structural Failures</u> -Missing wide part (collapsed) below the window trace	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
East wall	Stone masonry wall which was constructed through bonding technique with rubble stone and brick which is different from other	<u>Losses</u> -Flue No visual deteriorations	No symptoms	0	Observation	0	Long term	0

	walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints. Surface is plastered.							
South wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Flues <u>Structural Failures</u> -Missing components around the flue trace	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

Pendentives								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
North West pendentive 	Brick - lime mortar pendentive. Surface is plastered.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0
North East pendentive 	Brick - lime mortar pendentive. Surface is plastered.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0
South East pendentive	Brick - lime mortar pendentive. Surface is plastered.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0

								
South West pendentive 	Brick - lime mortar pendentive. Surface is plastered.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0

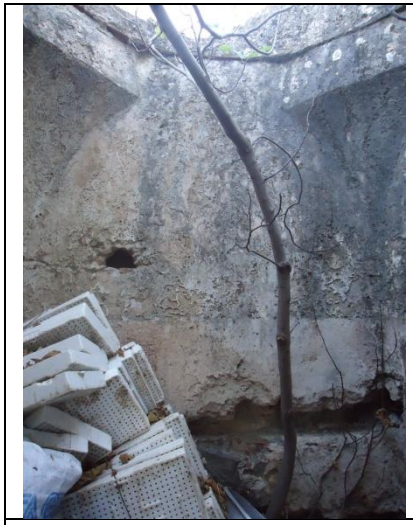
Drum

Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
Drum 	Brick - lime mortar octogonal drum. Surfaces are plastered.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0

								
Dome								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
Dome 	Brick - lime mortar drum. Surface is plastered.	-Mising wide part (collapsed) on the middle part of the dome	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3
Plasters								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall plaster	Horasan plaster was observed from the ground up to a height of 150 centimeters. After a	-Pittings -Peelings -Black crusts and microbiological colonizations are	Major symptoms	2	Moderate repair and further investigation	2	Short Term	2

	 	height of 150 centimeters, lime plaster was observed	widespread on the right and the left part of the surface						
North wall plaster	Horasan plaster was	-Pittings	Moderately	2	Moderate	2	Short Term	2

	observed from the ground up to a height of 150 centimeters. After a height of 150 centimeters, lime plaster was observed	-Peelings -Black crusts -Microbiological colonizations -Efflorescences -Delaminations below the wall	strong symptoms		repair and further investigation			
East wall plaster 	Horasan plaster was observed from the ground up to a height of 150 centimeters. After a height of 150 centimeters, lime plaster was observed	-Microbiological colonizations -Efflorescences between the pendentives -Pittings -Peelings -Black crusts	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South wall plaster	Horasan plaster was observed from the ground up to a height of 150 centimeters. After a height of 150 centimeters, lime	-Microbiological colonizations -Efflorescences above the wall -Pittings -Peelings -Black crusts	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

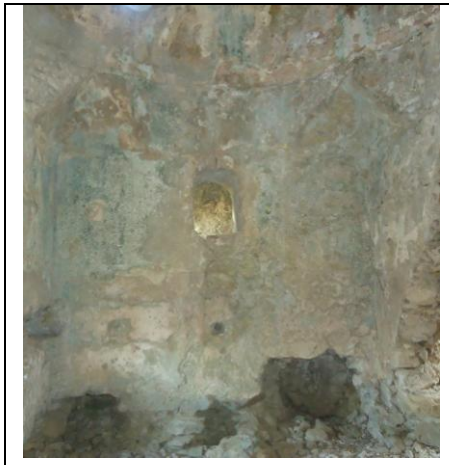
	plaster was observed							
North West pendentive plaster 	Lime plaster was observed.	-Delaminations are widespread -Peelings are widespread -Microbiological colonizations are widespread -Pittings were seen rarely -Efflorescences were seen rarely	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North East pendentive plaster	Lime plaster was observed.	-Pittings are widespread -Black crusts above and the left edge of surface -Efflorescences	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

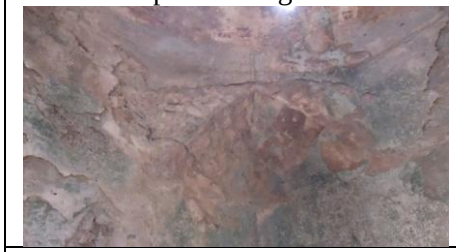
		were seen rarely on the middle part, up to the drum						
South East pendentive plaster 	Lime plaster was observed..	-Black crusts on the drum edge of the surface -Pittings -Peelings -Delaminations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South West pendentive plaster	Lime plaster was observed.	-Peelings -Black crusts inner layers -Efflorescences were seen partially on the left -Pittings	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

								
Drum plaster  	Lime plaster was observed.	-Efflorescences on the West and the South surfaces of the drum -Black crusts and microbiological colonizations, especially on the North surfaces of the drum -Peelings -Delaminations -Pittings	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
Dome plaster	Lime plaster was observed. (Plant, which were seen in figure, has grown on ground.)	-Missing the wide part -Pittings -Black crusts -Microbiological colonizations -Efflorescences	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

								
South East *Halvet*								
Walls								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	Structural Failures -Missing wide part (collapsed) in the middle part Material Deteriorations -Discolourations -Pittings	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3
North wall	Stone masonry wall which was constructed through bonding technique with rubble stone and brick	Structural Failures -Missing (collapsed) wide part -Joint discharges	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

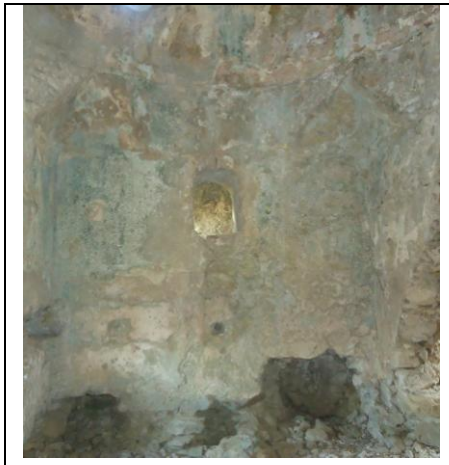
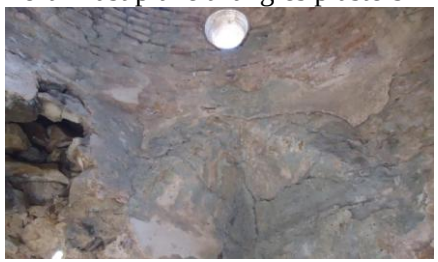
	components in lime mortar. Surface is plastered.	<u>Material Deteriorations</u> -Discolourations -Pittings						
East wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Flue -Basin <u>Structural Failures</u> -Missing wide part - Joint discharges <u>Material Deteriorations</u> -Discolourations -Pittings	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3
South wall	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Window -Flue -Basin <u>Structural Failures</u> -Missing wide part -Joint discharges -Star crack around window trace	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

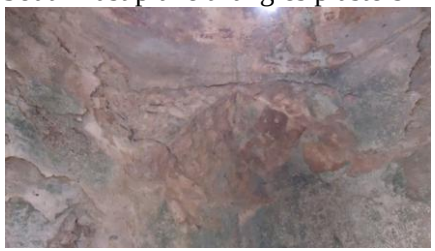
		Material Deteriorations -Discolourations -Pittings						
Plane Triangles								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
North West plane triangles 	Brick - lime mortar plane triangles. Surfaces have plaster.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0
North East plane triangles	Brick - lime mortar plane triangles. Surfaces have plaster.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0

								
South East plane triangles 	Brick - lime mortar plane triangles. Surfaces have plaster.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0
South West plane triangles 	Brick - lime mortar plane triangles. Surfaces have plaster.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0
<u>Dome</u>								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**

	Brick - lime mortar dome have 10 oculis. Surfaces have plaster.	<u>Losses</u> -10 oculis -6 terrakotta pipes of oculis <u>Material Deteriorations</u> -Discolourations -Microbiological colonizations on unplastered areas	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
<u>Plasters</u>								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall plaster 	Three layers horasan plaster were used up to 150 cm. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Peelings -Pittings -Black crusts -Microbiological colonizations -Efflorescences -Hair crack on the left part of surface	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North wall plaster	Three layers horasan plaster were used up to 150 cm. From 150 cm up to dome, two layers horasan plaster layer	-Peelings -Pittings -Black crusts -Microbiological colonizations, especially above the	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

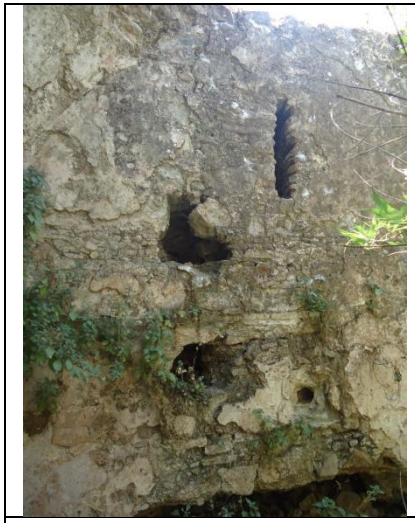
	were used and lime plaster were used as finishing layer	wall -Efflorescences -Hair crack on the right, close to the plane triangle						
East wall plaster 	Three layers horasan plaster were used up to 150 cm. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Delaminations on the middle part -Peelings -Pittings -Microbiological colonizations, especially on the right and the left parts -Efflorescences	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South wall plaster	Three layers horasan plaster were used up to 150 cm. From 150 cm up to dome, two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Delaminations below the window trace -Peelings -Pittings -Microbiological colonizations, especially on right and left parts -Efflorescences -Black crusts	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

								
North West plane triangles plasters 	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Delaminations on the left plane triangle -Peelings -Pittings -Microbiological colonizations -Efflorescences -Black crusts	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North East plane triangles plasters 	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Delaminations on the upper parts -Peelings -Pittings -Microbiological colonizations -Black crusts -Efflorescences	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

South East plane triangles plasters 	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Peelings -Pittings -Microbiological colonizations, especially on right plane triangle -Black crusts -Efflorescences	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South West plane triangles plasters 	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Peelings -Pittings -Microbiological colonizations -Black crusts -Efflorescences	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
Dome plaster 	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Missing parts of plaster were observed from central oculi to below the dome -Peelings -Pittings -Microbiological colonizations -Black crusts -Efflorescences	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South West *Halvet*								
<u>Walls</u>								

Building Component	Component Description	Condition Description	Symptoms	CC	Recomended Measure	RC	Risk Assessment	UC
West wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick which is different from other walls. In horizontal joints, one or two rows of brick bonds lie between rubble stones, while in vertical joints, large pieces of bricks are mixed into the lime mortar and they are parallel to the horizontal joints. Surface is plastered.	<u>Losses</u> -Flue -Basin <u>Structural Failures</u> -Missing components around the basin trace <u>Material Deteriorations</u> -Discolourations -Pittings	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Door -Flue -Seki <u>Structural Failures</u> -Collapsed (missing) part around the door trace -Plants in the surfaces of the	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

		collapsed area's mortars -Joint discharges <u>Material Deteriorations</u> -Pittings						
East wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Structural Failures</u> -Missing wide part below thewall -Plants inner surface of missing part -Joint discharges <u>Material Deteriorations</u> -Discolourations -Black crusts -Pittings	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3
South wall	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Window -Flue -Basin <u>Structural Failures</u> -Missing components around the basin trace -Joint discharges	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

		Material Deteriorations -Discolourations -Black crusts -Efflorescences -Pittings						

Pendentives

Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
North West pendentive 	Brick - lime mortar pendentive. Surface is plastered.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0

North East pendentive 	Brick - lime mortar pendentive. Surface is plastered.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0
South East pendentive 	Brick - lime mortar pendentive. Surface is plastered.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0
South West pendentive	Brick - lime mortar pendentive. Surface is plastered.	No visual deteriorations	No symptoms	0	Observation	0	Long term	0

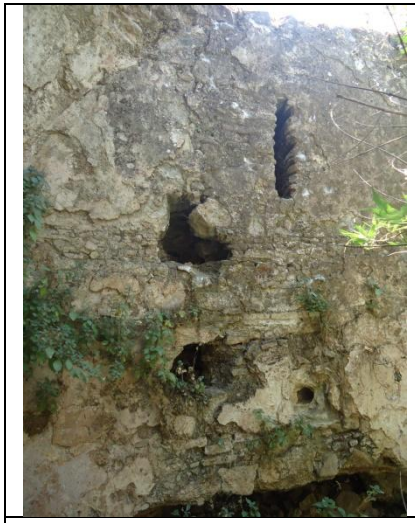
								

Dome

Building Component	Component Description	Condition Description	Symptoms	CC	Recomended Measure	RC	Risk Assessment	UC
 	Brick - lime mortar dome. Surface is plastered.	Structural Failures -Missing wide (collapsed) part of dome -Plants	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

Plasters								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall plaster 	Three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls. After a height of 150 centimeters, two layers horasan plaster was applied, and lime plaster were used	-Delaminations and peelings up to 150 cm -Pittings , especially from 150 cm up to the dome -Black crusts , especially from 150 cm up to dome -Efflorescences, especially from 150 cm up to the dome -Microbiological colonizations, especially from 150 cm up to the dome	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North wall plaster	Three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls. After a height of 150 centimeters, two layers horasan	-Missing parts of plasters are widespread -Microbiological colonizations, especially on the left part of the surface	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

	plaster was applied, and lime plaster were used							
East wall plaster 	Three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls. After a height of 150 centimeters, two layers horasan plaster was applied, and lime plaster were used	-Missing parts of plasters -Peelings -Pittings -Black crusts -Efflorescences -Microbiological colonizations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South wall plaster	Three layers horasan plaster was used up to a height of 150 centimeters from the floor in the walls. After a height of 150 centimeters, two layers horasan plaster was applied,	-Pittings - Black crusts -Efflorescences -Microbiological colonizations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

	and lime plaster were used							
North West pendentive 	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	- Black crusts -Microbiological colonizations -Peelings -Discolourations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

North East pendentive plaster 	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Delaminations -Pittings	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South East pendentive plaster 	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	- Black crusts -Microbiological colonizations -Efflorescences -Delaminations -Pittings	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South West pendentive plaster	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Pittings -Discolourations	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

								
Dome plaster  	Two layers horasan plaster layer were used and lime plaster were used as finishing layer	-Missing wide part of plaster -Pittings -Black crusts -Efflorescences - Microbiological colonizations	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

Water Reservoir								
<u>Walls</u>								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Material deteriorations</u> - Microbiological colonizations -Discolourations -Black crusts, especially on the middle and the right part of the wall	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
North wall 	Stone masonry wall which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>Losses</u> -Windows <u>Material deteriorations</u> - Microbiological colonizations -Discolourations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South wall	Stone masonry wall	<u>Material</u>	Minor	1	Maintenance /	1	Intermediate	1

	which was constructed through bonding technique with rubble stone and brick components in lime mortar. Surface is plastered.	<u>deteriorations</u> - Pittings -Discolourations	symptoms		Preventive conservation		term	
<u>Arch</u>								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
East arch  	Brick - lime mortar round arch. Surface has plaster.	<u>Material deteriorations</u> - Microbiological colonizations -Pittings	Minor symptoms	1	Maintenance / Preventive conservation	1	Intermediate term	1

Barrel Vault								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
	Brick - lime mortar barrel vault, has no oculi. Surface has plaster.	<u>Structural failures</u> -Small splitting in the middle -Loss of bricks <u>Material deteriorations</u> - Discolourations	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
Plasters								
Building Component	**Component Description**	**Condition Description**	**Symptoms**	**CC**	**Recomended Measure**	**RC**	**Risk Assessment**	**UC**
West wall plaster		-Missing wide part of plasters from the middle height of the wall to the barrel vault level - Microbiological colonizations -Efflorescences	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3

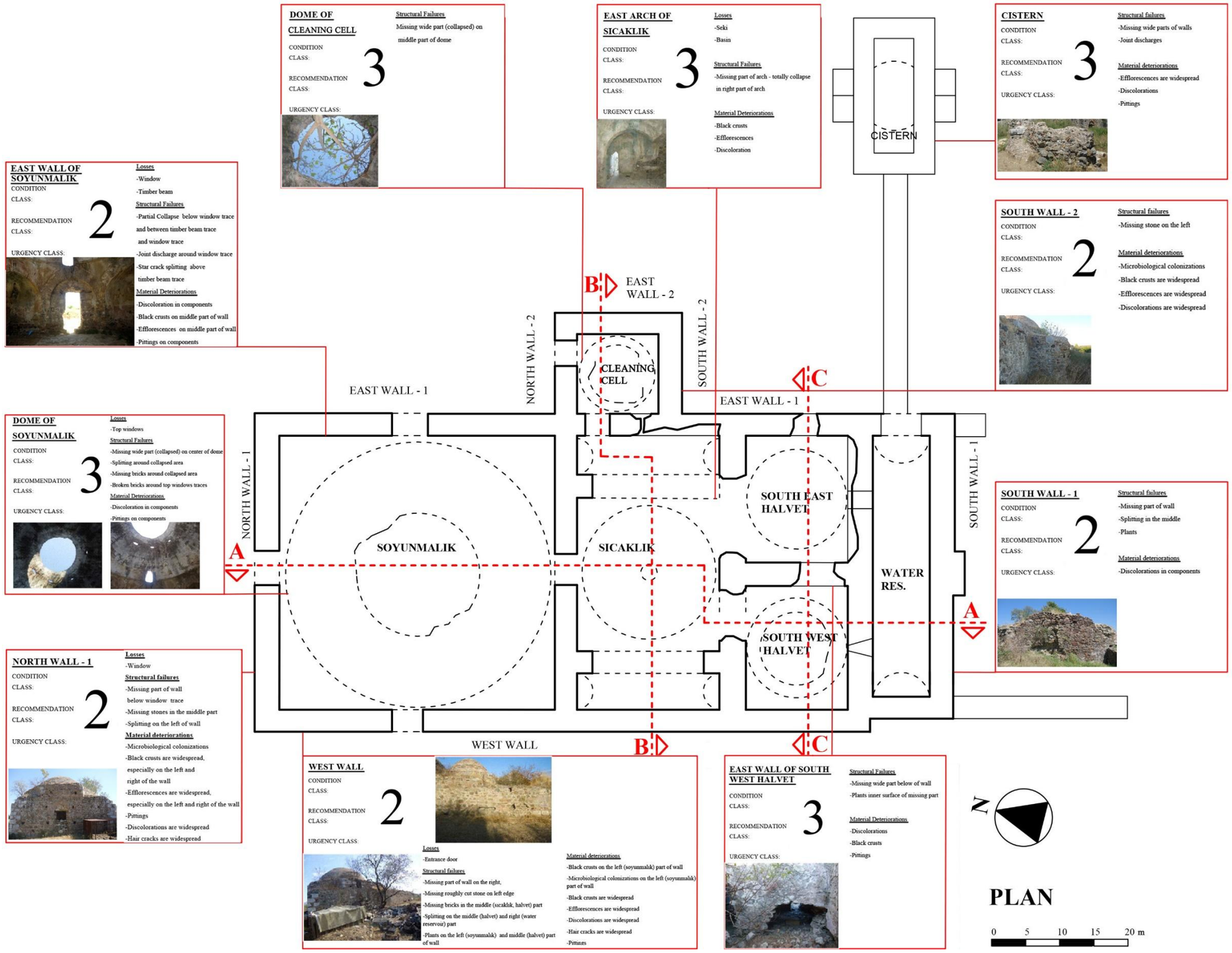
		- Discolourations						
North wall plaster 		-Delaminations from the window trace to thebarrel vault -Missing parts of the plasters	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2
South wall plaster		-Missing parts of the plasters -Microbiological colonizations below the wall	Moderately strong symptoms	2	Moderate repair and further investigation	2	Short Term	2

								
East arch plaster  		-Missing wide part of the plaster inner surface -Microbiological colonizations were seen on the existing small areas	Major symptoms	3	Major intervention based on diagnosis	3	Urgent and immediate	3
Barrel vault plaster		-Delamination on the right corner of	Moderately strong	2	Moderate repair and	2	Short Term	2

			the surface -Microbiological colonizations -Effloresences were seen rarely	symptoms		further investigation			

APPENDIX C

CONDITION ASSESSMENT OF DÜZCE (HEREKE) BATH ON 2D DRAWINGS



BARREL VAULT OF WATER RESERVOIR

CONDITION CLASS: 2

RECOMMENDATION CLASS:

URGENCY CLASS:

Structural failures
- -Splitting in the middle
- - Missing bricks

Material deteriorations
- - Discolorations

WEST WALL OF WATER RESERVOIR

CONDITION CLASS: 2

RECOMMENDATION CLASS:

URGENCY CLASS:

Material deteriorations
- - Microbiological colonizations
- -Discolorations
- -Black crusts, especially on the middle and right part of wall

NORTH WALL OF SOUTH WESTHALVET

CONDITION CLASS: 3

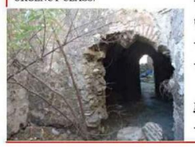
RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
- -Door
- -Flue
- -Seki

Structural Failures
- -Collapsed part around door trace
- -Plants on surfaces of collapsed area
- -Joint discharges

Material Deteriorations
- -Pittings



DOME OF SOUTH WEST HALVET

CONDITION CLASS: 3

RECOMMENDATION CLASS:

URGENCY CLASS:

Structural Failures
- -Missing wide (collapsed) part of dome
- -Plants

DOME OF SICAKLIK

CONDITION CLASS: 2

RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
- -Oculis
- -Top skylight dome

DOME OF SOYUNMALIK

CONDITION CLASS: 3

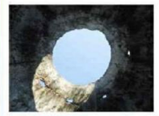
RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
- -Top windows

Structural Failures
- -Missing wide part (collapsed) on center of dome
- -Splitting around collapsed area
- -Missing bricks around collapsed area
- -Broken bricks around top windows traces

Material Deteriorations
- -Discoloration in components
- -Pittings on components



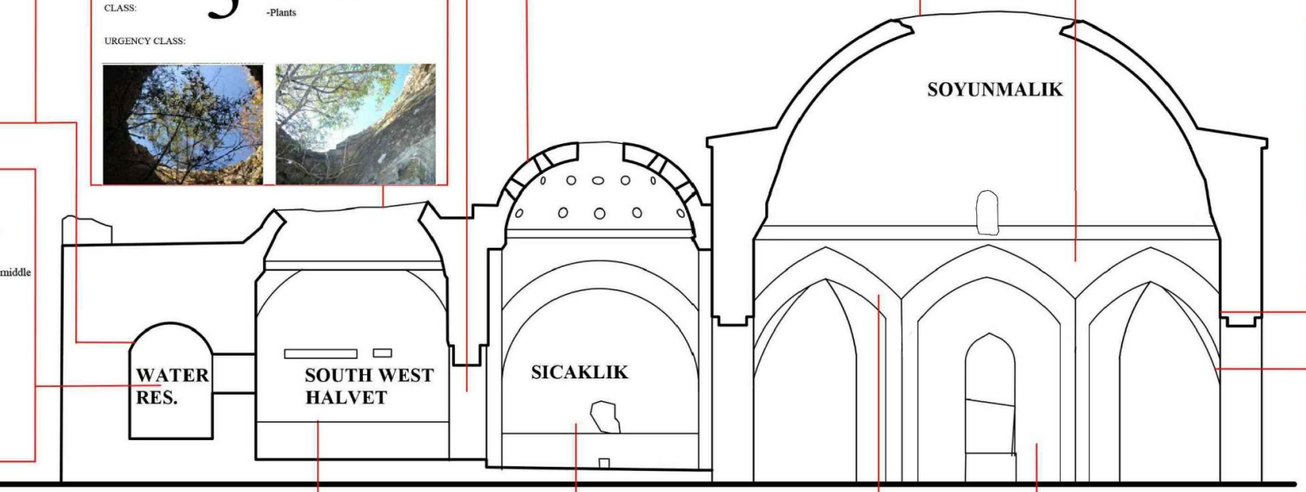
NORTH WEST PLANE TRIANGLE - 1 SOYUNMALIK

CONDITION CLASS:

RECOMMENDATION CLASS: 0

No visual deterioration

URGENCY CLASS:



NORTH WALL OF SOYUNMALIK

CONDITION CLASS: 2

RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
- -Window
- -Timber beam

Structural Failures
- -Partial Collapse below window trace
- -Joint discharge on left of wall
- -Missing parts of bricks and stones in left of wall
- -Missing stone below timber beam trace
- -Alveolizations on components of right part of wall
- -Hair cracks on left of wall
- -Star crack above timber beam trace

Material Deteriorations
- -Discoloration in components
- -Black crusts on middle part of wall
- -Efflorescences on mortars
- -Pittings on components

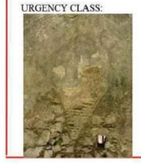
NORTH WEST SQUINCHOF SOYUNMALIK

CONDITION CLASS:

RECOMMENDATION CLASS: 0

No visual deterioration

URGENCY CLASS:



WEST WALL OF SOUTH WEST HALVET

CONDITION CLASS: 2

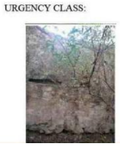
RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
- -Flue
- -Basin

Structural Failures
- -Missing components around basin trace

Material Deteriorations
- -Discolorations
- -Pittings



WEST WALL OF SICAKLIK

CONDITION CLASS: 1

RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
- -Seki
- -Basin

Structural Failures
- -Broken flue
- -Missing stones below of wall

SOUTH WEST ARCH OF SOYUNMALIK

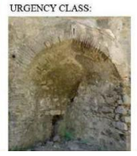
CONDITION CLASS: 1

RECOMMENDATION CLASS:

URGENCY CLASS:

Structural Failures
- -Joint discharges inner surface
- -Missing brick on top point of arch

Material Deteriorations
- -Discoloration in components
- -White crusts on top part of arch
- -Pittings on mortars



WEST WALL OF SOYUNMALIK

CONDITION CLASS: 2

RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
- -Entrance door
- -Timber beam

Structural Failures
- -Partial collapse around door
- -Joint discharge around door and right of wall
- -Missing parts of bricks and stones in left of wall (under left arch)
- -Alveolizations on stones under timber beam trace

Material Deteriorations
- -Discoloration in components
- -Graffiti on left of wall
- -Black crusts on left of wall
- -Efflorescences on mortars on left of wall, rough cut stones under entrance door trace
- -Pittings on left of wall

SECTION AA

0 5 10 15 20 m

DOME OF CLEANING CELL

CONDITION CLASS:

RECOMMENDATION CLASS: 3

URGENCY CLASS:

Structural Failures

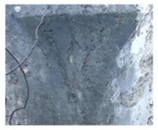
Missing wide part (collapsed) on middle part of dome

SOUTH WEST PENDENTIVE OF CLEANING CELL

CONDITION CLASS:

RECOMMENDATION CLASS: 0

URGENCY CLASS:



No visual deterioration

DOME OF SICAKLIK

CONDITION CLASS:

RECOMMENDATION CLASS: 2

URGENCY CLASS:

Losses

-Oculis

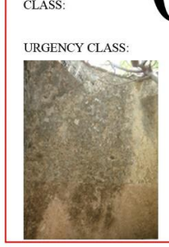
-Top skylight dome

EAST WALL OF CLEANING CELL

CONDITION CLASS:

RECOMMENDATION CLASS: 0

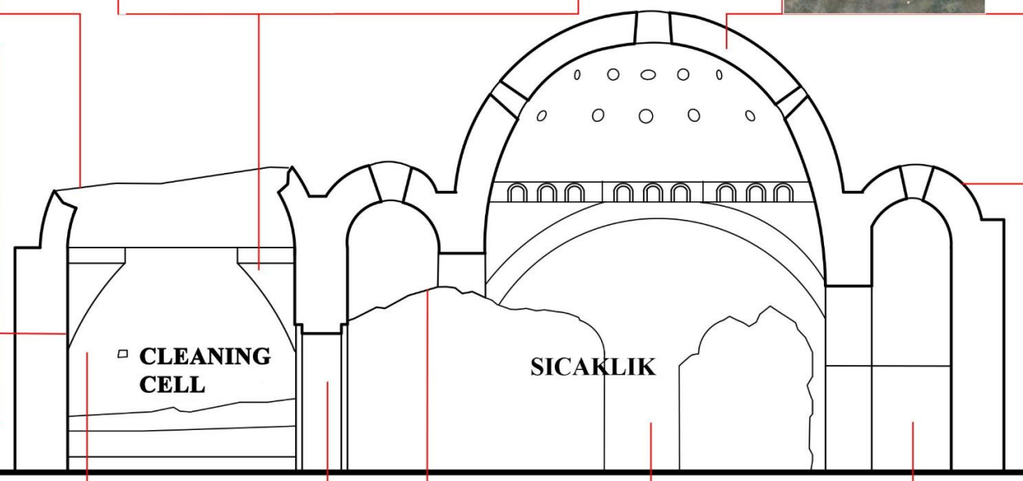
URGENCY CLASS:



Loss

-Flue

No visual deterioration



BARREL VAULT OF WEST IWAN

CONDITION CLASS:

RECOMMENDATION CLASS: 1

URGENCY CLASS:

Losses

-Oculis

SOUTH WALL OF CLEANING CELL

CONDITION CLASS:

RECOMMENDATION CLASS: 2

URGENCY CLASS:

Losses

-Flues

Structural Failures

-Missing components around flue trace

EAST WALL OF SICAKLIK

CONDITION CLASS:

RECOMMENDATION CLASS: 3

URGENCY CLASS:

Losses

-Seki

-Flue

-Basin

Structural Failures

-Missing part of wall - partial collapse in right part of wall

-Joint discharges

-Splitting

Material Deteriorations

-Black crusts

-Pitting

SOUTH WALL OF SICAKLIK

CONDITION CLASS:

RECOMMENDATION CLASS: 3

URGENCY CLASS:

Losses

-Seki

-Basin

Structural Failures

-Missing part of wall (collapsed) in left iwan part and middle part of wall

-Joint discharges

Material Deteriorations

-Pittings

SECTION BB

0 5 10 15 20 m

DOME OF SOUTH WEST HALVET

CONDITION CLASS: 3

RECOMMENDATION CLASS:

URGENCY CLASS:

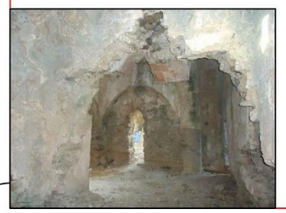
Structural Failures
-Missing wide (collapsed) part of dome
-Plants

NORTH WALL OF SOUTH EAST HALVET

CONDITION CLASS: 3

RECOMMENDATION CLASS:

URGENCY CLASS:



Structural Failures
-Missing wide (collapsed) part of dome
-Joint discharges

Material Deteriorations
-Discolorations
-Pittings

DOME OF SOUTH EAST HALVET

CONDITION CLASS: 2

RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
-10 oculis
-6 terrakotta pipes of oculis

Material Deteriorations
-Discolorations
-Microbiological colonizations

WEST WALL OF SOUTH WEST HALVET

CONDITION CLASS: 2

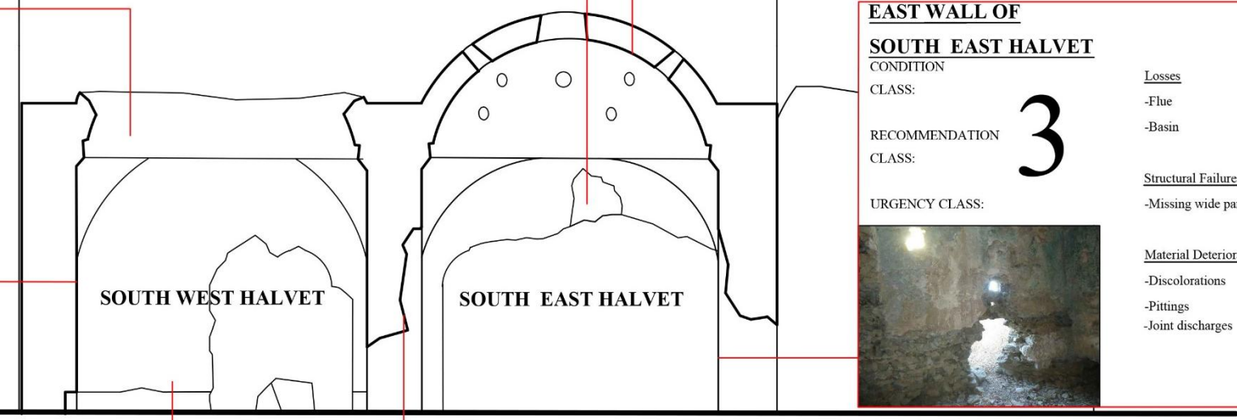
RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
-Flue
-Basin

Structural Failures
-Missing components around basin trace

Material Deteriorations
-Discolorations
-Pittings



EAST WALL OF SOUTH EAST HALVET

CONDITION CLASS: 3

RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
-Flue
-Basin

Structural Failures
-Missing wide part

Material Deteriorations
-Discolorations
-Pittings
-Joint discharges

NORTH WALL OF SOUTH WEST HALVET

CONDITION CLASS: 3

RECOMMENDATION CLASS:

URGENCY CLASS:

Losses
-Door
-Flue
-Seki

Structural Failures
-Collapsed part around door trace
-Plants on surfaces of collapsed area
-Joint discharges

Material Deteriorations
-Pittings

WEST WALL OF SOUTH EAST HALVET

CONDITION CLASS: 3

RECOMMENDATION CLASS:

URGENCY CLASS:

Structural Failures
-Missing wide part (collapsed) in the middle part

Material Deteriorations
-Discolorations
-Pittings

SECTION CC

0 5 10 15 20 m

EAST ARCH

CONDITION CLASS: 1

RECOMMENDATION CLASS:

URGENCY CLASS:

Material deteriorations

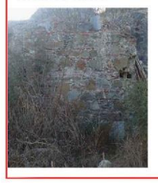
-Microbiological colonizations, especially on the right
-Black crusts
-Efflorescences
-Discolorations
-Pittings

EAST WALL - 2

CONDITION CLASS: 2

RECOMMENDATION CLASS:

URGENCY CLASS:

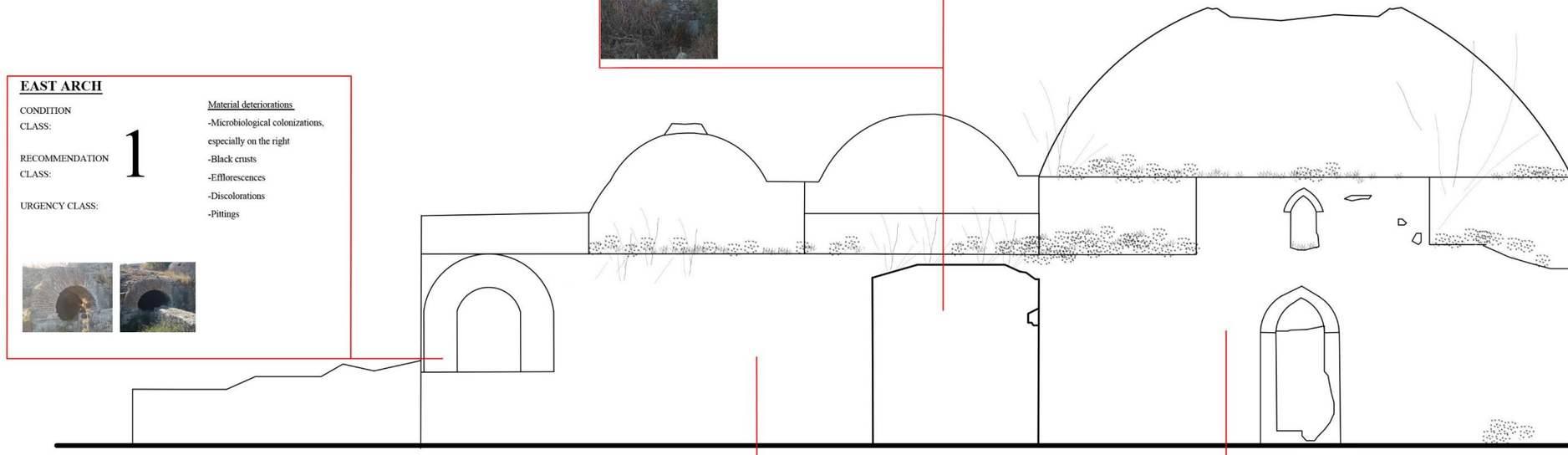


Structural failures

-Missing part on right part of wall

Material deteriorations

-Microbiological colonizations
-Black crusts are widespread
-Efflorescences are widespread
-Discolorations are widespread



EAST WALL - 1

CONDITION CLASS: 2

RECOMMENDATION CLASS:

URGENCY CLASS:

Loss

-Window

Structural failures

-Missing part (collapsed) of wall below window trace and left part of wall (south west halvet)
-Missing stones in the right part of window trace
-Joint discharges on the right part of window trace
-Plants on the right


Material deteriorations

-Microbiological colonizations, especially on the left part of wall (south west halvet)
-Black crusts are widespread
-Efflorescences are widespread
-Discolorations are widespread
-Pittings

EAST VIEW

0 5 10 15 20 m

NORTH WALL - 2

CONDITION CLASS:

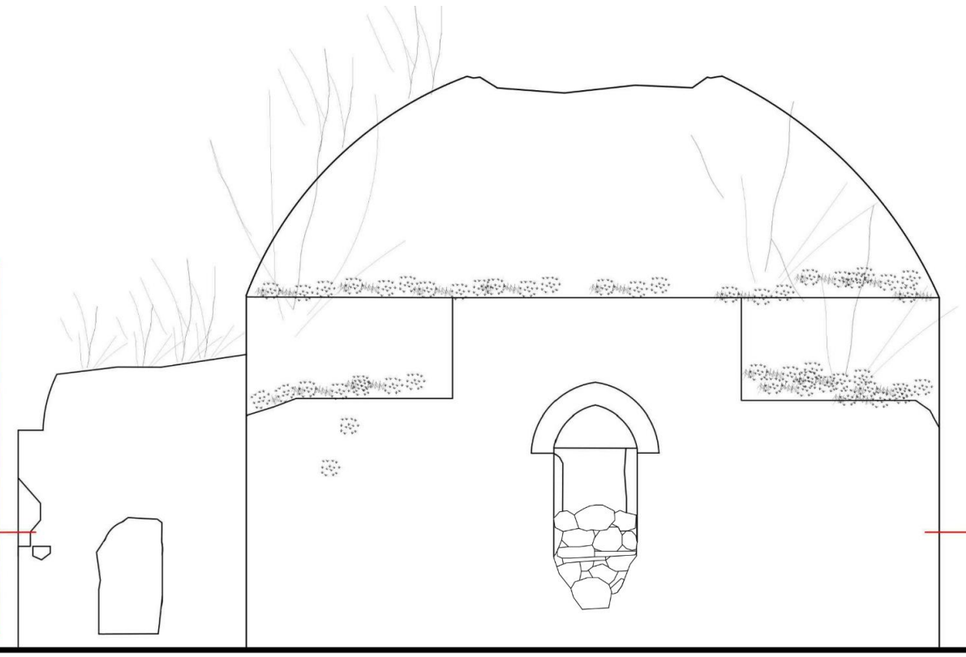
RECOMMENDATION CLASS: 2

URGENCY CLASS:

Losses
-Window

Structural failures
-Missing part (collapsed) of wall below window trace
-Missing stones in the left part
-Splitting on the left of wall

Material deteriorations
-Microbiological colonizations
-Black crusts are widespread, especially above of wall
-Efflorescences are widespread, especially around window trace
-Discolorations are widespread
-Pittings



NORTH WALL - 1

CONDITION CLASS:

RECOMMENDATION CLASS: 2

URGENCY CLASS:

Losses
-Window

Structural failures
-Missing part (collapsed) of wall below window trace
-Missing stones in the middle part
-Splitting on the left of wall

Material deteriorations
-Microbiological colonizations
-Black crusts are widespread, especially on the left and right of the wall
-Efflorescences are widespread, especially on the left and right of the wall
-Pittings
-Discolorations are widespread
-Hair cracks are widespread

NORTH VIEW

0 5 10 15 20 m