

RESTORATION PROJECT OF CİN KULE  
IN PAYAS, ANTAKYA

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## **ABSTRACT**

### **RESTORATION PROJECT OF CİN KULE IN PAYAS, ANTAKYA**

Işık, Bora

M.S. in Restoration, Department of Architecture

Supervisor: Inst. Dr. Fuat Gökçe

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The subject of this thesis is the restoration project of Cin Kule in Payas. The building in Payas is one of the unique examples of watch towers dating to 16<sup>th</sup> century –Classical Ottoman Period-. The building is located at the coast side of the city (Sahil Yolu).

The aim of the study is to prepare a restoration project that will transfer Cin Kule to the further generations.

The thesis includes a detailed description of the present state of the site and the building, historical background of Payas, comparative study and restitution scheme. Consequently, the restoration project including the interventions and a proposal for a new function are prepared according to the evaluation of the information gathered throughout the study.

Keywords: Restoration, Payas, Military Architecture, Watch Towers.

## ÖZ

### ANTAKTA PAYAS'DAKİ CİN KULENİN RESTORASYON PROJESİ

Işık, Bora

Yüksek Lisans, Mimarlık Bölümü, Restorasyon Anabilim Dalı

Tez Yöneticisi: Öğr. Gör. Dr. Fuat Gökçe

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Bu tezin konusu Payas'da bulunan Cin Kulenin restorasyon projesidir. Payas'da yer alan bu yapı, 16. yüzyıla tarihlenen –Klasik Osmanlı dönemi- gözetleme kuleleri arasında ender bulunan örneklerdendir. Yapı kentin kıyı tarafında yer almaktadır (Sahil Yolu).

Bu çalışmanın amacı, yapının gelecek nesillere ulaşmasını sağlayacak bir restorasyon projesinin hazırlanmasıdır.

Bu çalışma kapsamında yapı ve çevresinin detaylı bir tanımı yapılmakta, tarihi araştırma ve yapının özgün durumunu araştırmak için karşılaştırmalı çalışma ve restitüsyon projesi hazırlanmıştır. Son olarak, toplanan bu bilgilerin değerlendirilmesi sonucunda yapının restorasyon projesi hazırlanmıştır.

Anahtar Kelimeler: Restorasyon, Payas, Askeri Mimari, Gözetleme Kuleleri.

To the memory of Alpay ÖZDURAL

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## TABLE OF CONTENTS

<b>PLAGIARISM</b> .....	<b>iii</b>
<b>ABSTRACT</b> .....	<b>iv</b>
<b>ÖZ</b> .....	<b>v</b>
<b>DEDICATION</b> .....	<b>vi</b>
<b>ACKNOWLEDGEMENTS</b> .....	<b>vii</b>
<b>TABLE OF CONTENTS</b> .....	<b>viii</b>
<b>LIST OF TABLES</b> .....	<b>xv</b>
<b>LIST OF FIGURES</b> .....	<b>xvi</b>

### CHAPTER

<b>1. INTRODUCTION</b> .....	<b>1</b>
1.1. Aim Of The Study.....	1
1.2. Selection Of The Building.....	2
1.3. Methodology.....	2
1.3.1. Documentation Of The Building.....	2
1.3.1.1. Documentation Of The Survey.....	2
1.3.1.2. Graphical Documentation.....	3
1.3.1.3. Verbal Documentation.....	4
1.3.2. Historical Research.....	5
1.3.3. Comparative Study.....	5
1.3.4. Restitution.....	6
1.3.5. Restoration.....	7
<b>2. DESCRIPTION</b> .....	<b>8</b>
2.1. Geographical Position Of Payas.....	8
2.2. Nearby Environment Of The Building.....	9
2.2.1. Location Of The Building.....	9
2.2.2. General Characteristic Of The Nearby Environment Of The Building.....	9

2.3. Verbal Documentation Of The Present State Of The Building.....	13
2.3.1. General Description Of The Building.....	13
2.3.2. Façades .....	14
2.3.2.1. Southwest Façade.....	14
2.3.2.2. Southeast Façade.....	17
2.3.2.3. Northeast Façade.....	19
2.3.2.4. Northwest Façade.....	21
2.3.3. Description Of The Spaces.....	22
2.3.3.1. Planimetric Features Of The Spaces.....	22
2.3.3.1.1. Space S1.....	22
2.3.3.1.2. Space S2.....	25
2.3.3.1.3. Space S3.....	26
2.3.3.1.4. Space S4.....	26
2.3.3.1.5. Space S5.....	28
2.3.3.1.6. Space S6.....	28
2.3.3.1.7. Space S7.....	28
2.3.3.1.8. Space S8.....	30
2.3.3.1.9. Space S9.....	31
2.3.3.1.10. Space S10.....	31
2.3.3.2. Floors.....	33
2.3.3.2.1. Space S1.....	33
2.3.3.2.2. Space S2.....	33
2.3.3.2.3. Space S3.....	34
2.3.3.2.4. Space S4.....	34
2.3.3.2.5. Space S5.....	34
2.3.3.2.6. Space S6.....	35
2.3.3.2.7. Space S7.....	35
2.3.3.2.8. Space S8.....	36
2.3.3.2.9. Space S9.....	36
2.3.3.2.10. Space S10.....	37
2.3.3.3. Walls.....	37
2.3.3.3.1. Space S1.....	37
2.3.3.3.2. Space S2.....	40

2.3.3.3.3. Space S3.....	48
2.3.3.3.4. Space S4.....	49
2.3.3.3.5. Space S5.....	49
2.3.3.3.6. Space S6.....	50
2.3.3.3.7. Space S7.....	51
2.3.3.3.8. Space S8.....	58
2.3.3.3.9. Space S9.....	59
2.3.3.3.10. Space S10.....	60
2.3.3.4. Ceilings.....	61
2.3.3.4.1. Space S1.....	61
2.3.3.4.2. Space S3.....	61
2.3.3.4.3. Space S4.....	62
2.3.3.4.4. Space S5.....	62
2.3.3.4.5. Space S6.....	63
2.3.3.4.6. Space S7.....	63
2.3.3.4.7. Space S8.....	64
2.3.4. Material Analysis.....	65
2.3.4.1. Building Materials.....	65
2.3.4.1.1. Natural Building Materials.....	65
2.3.4.1.2. Artificial Materials.....	66
2.3.4.2. Binding Materials.....	66
2.3.4.3. Finishing Materials.....	67
2.3.4.4. Others.....	67
2.3.5. Workmanship Of The Cut Stone Blocks.....	67
2.3.6. Construction Techniques.....	73
2.3.6.1. Walls.....	73
2.3.6.2. Floors.....	75
2.3.6.3. Ceilings.....	76
2.3.7. Architectural Features.....	80
2.3.7.1. Door Openings.....	80
2.3.7.2. Window Openings.....	81
2.3.7.3. Stairs.....	85
2.3.7.4. Embrasures.....	85

2.3.7.5. Wall Walks.....	90
2.3.7.6. Turrets.....	90
2.3.7.7. Gutters.....	91
2.3.7.8. Moldings.....	91
2.3.8. Condition Of Material.....	91
2.3.9. Changes In The Building.....	96
2.3.9.1. Alterations.....	97
2.3.9.2. Additions.....	97
2.3.9.3. Missing Elements.....	97
2.3.9.4. Unidentified Elements.....	98
<b>3. HISTORICAL RESEARCH.....</b>	<b>104</b>
3.1. History Of Payas- Pre Ottoman Period.....	104
3.2. History Of Payas- Ottoman Period.....	105
3.3. History Of Payas- Republic Period.....	107
3.4. History Of The 16 <sup>th</sup> Century Monumental Buildings In Payas.....	107
3.4.1. Payas Castle.....	107
3.4.2. Sokollu Mehmet Paşa Menzil Complex.....	109
3.4.3. Dock, Shipyard And Customs Buildings.....	111
3.5. History Of Cin Kule.....	112
<b>4. COMPARATIVE STUDY.....</b>	<b>114</b>
4.1. Comparative Study Of Plan Layouts.....	115
4.1.1. Location.....	115
4.1.2. Circuit Walls & Wall Walks.....	115
4.1.3. Towers – Bastions.....	116
4.1.4. Entrances.....	117
4.1.5. Cisterns & Storages.....	117
4.2. Comparative Study Of The Architectural Elements Of Castles And Watch Towers.....	118
4.2.1. Construction Techniques.....	118
4.2.2. Embrasures.....	119
4.2.3. Wall Walks And Battlements.....	127

4.2.4. Door Openings.....	127
4.2.5. Machicolation & Turrets.....	128
4.2.6. Oculus.....	129
4.3. Comparative Study Of 16 <sup>th</sup> Century Monumental Buildings In Payas.....	130
4.3.1. Entrances.....	130
4.3.2. Construction Techniques Of Floors.....	138
4.3.3. Construction Techniques Of Walls.....	139
4.3.4. Construction Techniques Of Ceilings.....	140
4.3.5. Workmanship Of The Cut Stone Blocks.....	141
4.4. Evaluation Of The Comparative Study.....	143
<b>5. RESTITUTION.....</b>	<b>152</b>
5.1. Phases.....	152
5.2. Restitution Schemes.....	152
5.2.1. Phase 1.....	153
5.2.1.1. Site Plan.....	153
5.2.1.2. Plans.....	153
5.2.1.2.1. Ground Floor Plan.....	153
5.2.1.2.2. 1 <sup>st</sup> Floor Plan.....	155
5.2.1.2.3. 2 <sup>nd</sup> Floor Plan.....	155
5.2.1.3. Façades.....	156
5.2.2. Phase 2.....	157
5.2.2.1. Plans.....	157
5.2.2.1.1. Ground Floor Plan.....	157
5.2.2.1.2. 1 <sup>st</sup> Floor Plan.....	157
5.2.2.1.3. 2 <sup>nd</sup> Floor Plan.....	158
5.2.2.2. Façades.....	158
5.3. Reliability Degrees Of Restitution Phases.....	158
5.3.1. Phase 1.....	158
5.3.1.1. Site Plan.....	158
5.3.1.2. Plans.....	167
5.3.1.2.1. Ground Floor Plan.....	167

5.3.1.2.2. 1 <sup>st</sup> Floor Plan.....	169
5.3.1.2.3. 2 <sup>nd</sup> Floor Plan.....	170
5.3.1.3. Façades.....	171
5.3.2. Phase 2.....	172
5.3.2.1. Plans.....	172
5.3.2.1.1. Ground Floor Plan.....	172
5.3.2.1.2. 1 <sup>st</sup> Floor Plan.....	172
5.3.2.1.3. 2 <sup>nd</sup> floor plan.....	179
5.4.Function Proposal For The Original Layout .....	179
<b>6. RESTORATION.....</b>	<b>185</b>
6.1. Evaluation Of The Present Situation Of The Building.....	185
6.1.1. Evaluation Of The Environment Of The Building.....	185
6.1.2. Evaluation Of The Changes Of The Building.....	186
6.1.3. Evaluation Of The Spaces In The Building.....	187
6.1.3.1. Types Of Spaces And Circulation Layout.....	187
6.1.3.2. Authenticity Of The Spaces.....	189
6.1.3.3. Wealth Of The Architectural Elements In The Spaces.....	190
6.1.3.4. Source And Quality Of Light Entering The Spaces.....	191
6.1.4 Evaluation Of The Physical Condition Of The Building.....	192
6.2. General Restoration Principles.....	196
6.3. Interventions.....	198
6.3.1. Preservation of the Site.....	198
6.3.2.Preservation of the Building.....	202
6.3.2.1. Completions.....	202
6.3.2.2. Consolidations.....	204
6.3.2.3. Removals.....	204
6.3.2.4. Alterations.....	205
6.3.2.5. Researches.....	206
6.4. Functioning.....	206
6.4.1. New Function of the Building.....	206

6.4.2. Additions Need for the New Function.....	207
6.4.3. Installations.....	207
<b>BIBLIOGRAPHY.....</b>	<b>220</b>
<b>APPENDICES</b>	
<b>A. MEASURED DRAWINGS.....</b>	<b>224</b>
<b>B. GLOSSARY.....</b>	<b>237</b>
<b>C. LIST OF THE SUBMITTED MATERIAL OF THE THESIS.....</b>	<b>240</b>

## LIST OF TABLES

### TABLE

4.1. The chart for the general architectural features of the castles.....	120
4.2. The chart for the general architectural features of the watch towers.....	121
4.3. Plans of the castles.....	122
4.4. Plans of the castles.....	123
4.5. Plans of the watch towers.....	124
4.6. Plans of the watch towers.....	125
4.7. Typology of the construction technique of the walls of the buildings.....	131
4.8. Typology of the embrasures of the buildings.....	132
4.9. Typology of the wall walks of the buildings.....	133
4.10. Typology of the doors of the buildings.....	134
4.11. Typology of the machicolations and turrets of the buildings.....	135
4.12. Typology of the oculus of the buildings.....	136
4.13. Typology of the portals.....	144
4.14. Typology of the construction techniques of the floors.....	145
4.15. Typology of the construction techniques of the walls.....	146
4.16. Typology of the construction techniques of the vaults.....	147
4.17. Typology of the workmanship of the cut stone blocks.....	148

## LIST OF FIGURES

### FIGURE

2.1. Aerial Photography of the Site.....	11
2.2. Site Plan of the Building.....	12
2.3. Southwest Façade.....	22
2.4. Southeast Façade.....	23
2.5. Northeast Façade.....	23
2.6. Northwest Façade.....	24
2.7. Key Plan- Ground Floor.....	27
2.8. Key Plan- 1 <sup>st</sup> Floor.....	29
2.9. Key Plan- 2 <sup>nd</sup> Floor.....	32
2.10. View from the entrance door of the space S1.....	39
2.11. View from the courtyard S2.....	42
2.12. View from the courtyard S2.....	42
2.13. View from the space S7.....	52
2.14. Material Analysis- Legend.....	69
2.15. Material Analysis- Section B-B.....	70
2.16. Material Analysis- Section G-G.....	71
2.17. Workmanship of the Cut Stone Blocks- Legend.....	77
2.18. Workmanship of the Cut Stone Blocks- Section G-G.....	78
2.19. Workmanship of the Cut Stone Blocks- Section C-C.....	79
2.20. Construction Techniques- Legend.....	82
2.21. Construction Techniques- Section C-C.....	83
2.22. Construction Techniques- Section G-G.....	84
2.23. Architectural Elements of Cin Kule.....	86
2.24. Portal of the Building- Entrance Door.....	87
2.25. Entrance Door of the space S5.....	87
2.26. Door of the space S6.....	87
2.27. Detail from the Door in space S6.....	87
2.28. View of the space S3.....	88
2.29. View of the stair ST2.....	88

2.30. View from the Embrasure Type 1.....	93
2.31. View from the Embrasure Type 2.....	93
2.32. View from the Embrasure Type 3.....	93
2.33. View from the wall walks.....	94
2.34. View from the Projecting Stone Blocks of the Turret.....	94
2.35. View from the Concrete Gutters.....	94
2.36. View from the Cut Stone Gutters.....	95
2.37. View from the Torus Molding.....	95
2.38. Deterioration Analysis- Legend.....	99
2.39. Deterioration Analysis- Southwest Façade.....	100
2.40. Deterioration Analysis- Section E-E.....	101
2.41. Changes in the Building- Section G-G.....	102
2.42. Changes in the Building- Section A-A.....	103
5.1. Site Plan- Restitution Phase 1.....	160
5.2. Ground Floor Plan- Restitution Phase 1.....	161
5.3. Section B-B- Restitution Phase 1.....	162
5.4. Southeast Façade- Restitution Phase 1.....	163
5.5. Northeast Façade- Restitution Phase 1.....	164
5.6. 1 <sup>st</sup> Floor Plan- Restitution Phase 2.....	165
5.7. Section A-A- Restitution Phase 2.....	166
5.8. Site Plan- Reliability of Restitution Phase 1.....	173
5.9. Ground Floor Plan- Reliability of Restitution Phase 1.....	174
5.10. Section B-B - Reliability of Restitution Phase 1.....	175
5.11. Northeast Façade- Reliability of Restitution Phase 1.....	176
5.12. 1 <sup>st</sup> Floor Plan - Reliability of Restitution Phase 2.....	177
5.13. Section A-A - Reliability of Restitution Phase 2.....	178
5.14. Ground Floor Plan- Distribution of the Function in the Spaces.....	182
5.15. 1 <sup>st</sup> Floor Plan- Distribution of the Function in the Spaces.....	183
5.16. 2 <sup>nd</sup> Floor Plan- Distribution of the Function in the Spaces.....	184
6.1. Evaluation of the Nearby Environment of the Building.....	193
6.2. Types of Spaces and Circulation Layout-Legend.....	194
6.3. Types of Spaces and Circulation Layout-Ground Floor Plan.....	195
6.4. Types of Spaces and Circulation Layout-1 <sup>st</sup> Floor Plan.....	195

6.5. Types of Spaces and Circulation Layout-2 <sup>nd</sup> Floor Plan.....	196
6.6. Authenticity of the Spaces- Floor Plans.....	199
6.7. Wealth of the Architectural Elements in the Spaces- Floor Plans....	200
6.8. Source and Quality of Light Entering the Spaces- Floor Plans.....	201
6.9. Proposal of 1 <sup>st</sup> Degree Archaeological Site.....	203
6.10. Types of Interventions- Legend.....	209
6.11. Interventions- Ground Floor Plan.....	210
6.12. Interventions- Northeast Façade.....	211
6.13. Interventions- Section A-A.....	212
6.14. Interventions- Northwest Façade.....	213
6.15. Restoration Project- Ground Floor Plan.....	214
6.16. Restoration Project- 1 <sup>st</sup> Floor Plan.....	215
6.17. Restoration Project- 2 <sup>nd</sup> Floor Plan.....	216
6.18. Restoration Project- Section B-B.....	217
6.19. Restoration Project- Section C-C.....	218
6.20. Restoration Project- Section G-G.....	219
A.1 Measured Drawings- Ground Floor Plan.....	225
A.2. Measured Drawings- 1 <sup>st</sup> Floor.....	226
A.3. Measured Drawings- 2 <sup>nd</sup> Floor.....	227
A.4. Measured Drawings- Section E-E.....	228
A.5. Measured Drawings- Section G-G.....	229
A.6. Measured Drawings- Northwest Elevation.....	230
A.7. Measured Drawings- Southwest Elevation.....	231
A.8. Measured Drawings- Southeast Elevation.....	232
A.9. Measured Drawings- Northeast Elevation.....	233
A.10. Measured Drawings- Profiles of Arches.....	234
A.11. Measured Drawings- Profiles of Arches.....	235
A.12. Measured Drawings- Profiles of Arches.....	236

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1. AIM OF THE STUDY**

Payas which was once very important in terms of sea and overland trade, is one of the settlements that have been seriously ignored. The reason for this is probably the historical richness which consists of couple of monumental buildings and lack of surveys. However, these buildings present an important information in detail about the architecture and sociology of the period they were built.

These monumental buildings - Cin Kule, Sokollu Mehmet Paşa Menzil Külliyesi and Payas Castle –are located very close to each other. Even though all three buildings were restored during the time, it is very difficult to state that they are all preserved in terms of architectural quality of the restoration projects and the usage of the buildings afterwards. All of these buildings have no architectural function at present. The control of them is provided by two guards. However, the most far from the control and therefore the interests is Cin Kule that is located 1km away from the others. This reality is supported by the development plan of the city which is still being applied. It directly changes the character of Cin Kule and its closer environment.

Hence, the aim of this study is to prepare a restoration projects for the most damaged one of three monumental buildings. It is aimed that while the projects presents the information about the application of the restoration of Cin Kule, it also presents a conceptual base for the restoration principles for the rest of the similar buildings in Payas which are carrying very important information about the 16<sup>th</sup> century –classical-Ottoman period.

## **1.2. SELECTION OF THE BUILDING**

Cin Kule which is one of the three 16<sup>th</sup> century monumental buildings is registered in 1990 and is a property of Ministry of Culture and Tourism. Because it is a defense building, Cin Kule had been repaired during Ottoman reign and this process is continued by the restorations of the ministry until 1960's. However, these interventions could not preserve the building very well.

Besides, in comparison to the other historical building, Cin Kule is smaller which provides an opportunity to work on in detail at every stage of the study. Therefore, with these unique specifications, this building is selected to form a base for the application project and to form the conceptual base for the forthcoming restoration projects of the other buildings in the city.

## **1.3. METHODOLOGY**

### **1.3.1. DOCUMENTATION OF THE BUILDING**

#### **1.3.1.1. DOCUMENTATION OF THE SURVEY**

As the basic material, the sketches of both the building and the site are used during the site survey. These sketches are prepared on the papers which are divided into squares that are 0.01m to 0.01m in size. The building is drawn on the sketches with details that can be seen up to 1/20m scale. Moreover, there are ten sections drawn in order to document the entire building. In addition to this, certain height levels are noted on the plan sketches which allowed for the drawings of the un-sketched parts of the building.

Along with the sketches, a serious amount of photographic documentation is done as well. During this process, every part of the building is documented. Not to mention, enriching the visual materials that are presented in certain parts of the thesis, the photographs are also

used to prepare materials in more detail such as architectural features, construction techniques etc.

The building is measured by theodolite. Thus, the floor measurements are tied up to each other vertically (z-axis) which allowed to check certain deformations that could only be surveyed after precise measurements.

However, such modern instruments like theodolite necessities to be used in certain conditions. Therefore, some points of the building could not be measured because of such reasons like low light in the space or physical obstacles between the station points of the instrument. These points are measured by conventional method that consists of hand measurement technique with steel tapes.

For the vertical measurement, horizontal axis –datum line- was formed by theodolite at each floor. All of the datum lines are connected to the ground floor one which is accepted as 0.00 level.

The building block is measured by the theodolite as well. The near by environment of the building block is partly measured.

The cadastration plan of the area is taken from the municipality of Payas. However, both in Ankara and in the municipality of Payas, the site plan could not be found. Therefore, the aerial photography which is in 1/25000 scale is obtained from Harita Genel Komutanlığı (Ankara). The site plans are produced over this photogrametric document.

### **1.3.1.2. GRAPHICAL DOCUMENTATION**

The entire graphical expositions are prepared in the computer program AutoCAD. The preparation of these materials is mostly based on the measured drawings of the building. The measured drawings are prepared with the points measured by the theodolite and other information on the sketches. The first of these drawings are the site plans which are both prepared in 1/2500 and 1/500 scales. These drawings are produced by using the aerial photography<sup>1</sup> as the base drawing. Plan,

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<sup>1</sup> TSK, Harita Genel Komutanlığı Archives- Arch. No: 01649550, Ankara.

section and façade drawings are prepared in 1/50 scale and the architectural elements are drawn in 1/20 scale. The rest of the drawings are produced in 1/50 scale over these drawings. However, more informative graphical expositions in 1/20 scale are also presented in such drawings like construction technique, workmanship of the cut stone blocks. Colored technique is also used in all of the analysis.

In order to find the centers, relation between the centers and the deformations, the profiles of the arches and the vaults are drawn in 1/20 scale.

### **1.3.1.3. VERBAL DOCUMENTATION**

Another part of the documentation is the verbal documentation. The building and its close neighborhood are documented by written descriptions.

The description about the nearby environment consists of surrounding buildings of Cin Kule with their general characteristics. The historical pattern is also described in this section.

The description about the building begins with the façades. The façades are described in anti-clock wise direction. In addition to this part, if there is any, the direction of the slope and level differences are also given. The information about the materials, construction techniques and workmanship of the façade is given as the additional information. Ultimately, it ends with the general description of the architectural elements.

After the façade descriptions, the descriptions of the each space are given. At first, in order to provide a brief idea about the spaces, the planimetric description is presented which consists of the information about the location, form, general dimensions and entrance of the space.

Description in more detail is given right after the planimetric description. Here, the spaces are divided into three main categories; floors, walls and ceilings. By this division, every feature of the spaces can be followed under one title which allows easy comparisons among the spaces. At this part of the description, again anti-clock wise direction is

followed. Every part of the spaces is described by giving the dimensions, construction technique, material, workmanship and the traces that they carry. It is supported by the codes of the architectural elements, dimensions, construction technique and material of the elements.

Moreover, the architectural elements which are coded one by one are categorized as types in the architectural features section. In this part of the description, the information like the dimensions of the stone blocks, thickness and types of mortars are presented as well.

All of these are followed by certain analysis like materials, construction technique, workmanship and condition of materials. The order of these analysis is formed due to their legends.

### **1.3.2. HISTORICAL RESEARCH**

Historical research basically consists of two titles; History of Payas and History of Cin Kule.

History of Payas was described as pre-Ottoman period, Ottoman period and Republic period. In order to comprehend the history of Cin Kule, the history of the monumental buildings that were built in the same period in Payas is also given. Ultimately the chapter ends with the history of Cin Kule.

During the historical research the foundation charter of Sokollu Mehmet Paşa was the only primary source that could be reached. However, most of the secondary sources about the history of both Cin Kule and the counterparts involve the primary sources like “*mühimme defterleri*”.

Even though once the building had an inscription panel at its entrance, this information is lost because the panel is vanished at present.

### **1.3.3. COMPARATIVE STUDY**

Basically the comparison of Cin Kule consists of three different stages. In this process, eight castles and six watch towers are surveyed

because of the lack of the sources about the military architecture and buildings. All of these buildings are surveyed and documented in three months. The castles are Yılan Castle (Misis-Adana), Anavarza Castle (Kadirli-Adana), Silifke Castle (Silifke-Mersin), Payas Castle (Payas-Antakya), Kozan Castle (Kozan-Osmaniye), Toprak Castle (Osmaniye), Corycus Castle (Kızkalesi-Mersin), Tumlu Castle (Ceyhan-Adana) and the watch towers are Cin Kule (Payas-Antakya), Ayas (Yumurtalık-Adana), Sinap (Gösne-Mersin), Belen (Gösne-Mersin), Tece (Tece-Mersin), Cezayirli Hasan Paşa (Ezine-Çanakkale).

The first stage of the comparative study consists of the comparison of the general plan lay outs of the buildings and general characteristics of the military architecture. The second one consists of the comparison of the architectural elements of all these buildings. The last stage is the comparison of the 16<sup>th</sup> century monumental buildings in Payas.

At the end of these comparisons, an evaluation of all three is also presented to locate Cin Kule in the general context of military architecture and 16<sup>th</sup> century Ottoman architecture in Payas.

#### **1.3.4. RESTITUTION**

Basically the restitution chapter consists of two stages; phases of the building and the restitution-original scheme of the building.

Even though the building was used throughout its history, the original plan can still be read easily. During the use of the building, the phases of it are presented which determined according to the information derived from the building itself. However, there is not enough data to establish the exact date of these phases.

The restitution project is drawn to present the original plan and façade of the building. Mostly the restitution drawings are focused on the façades and sections, because the plan layout is generally well protected. During the restitution projects, as the basic information, comparative study and the traces of the elements of the building are used.

The reliability degrees drawings are following the restitution project. Several criteria are forming the reliability of the proposal of the original phase of the building.

At the end of the chapter, proposals for the functions of the spaces in Cin Kule are presented as another result of the complete comparative study and historical research.

### **1.3.5. RESTORATION**

Restoration project is the last and the main project prepared for the building. In this process, a general evaluation of the present situation of the building is presented. In this evaluation, the value of the building for Payas and the present relation between the counterparts of Cin Kule in Payas are discussed.

An evaluation of the changes like alterations and additions that the building subjected throughout the history is discussed in terms of the values and negativity of these interventions that have been brought to the building.

The architectural quality of the spaces of the building at present are also evaluated. The circulation scheme and the light quality of the spaces are the basic criteria during the evaluation process.

The values and qualities of the present situation of the plan lay out, façade organization and architectural elements are discussed in reference to their original phase and in reference to the general typology of the historical military buildings. As the final evaluation, general physical condition of the building is presented.

As the result of these evaluations, the general principles for the restoration are determined both for the building and for the site. The types of interventions that are based on the restoration principles are presented both for architectural elements and for the spaces. The definition of the proposed new function for the building is presented as the next stage. The harmony of the existing spaces with the new function and the detailed program of this function are presented in this stage.

## CHAPTER 2

### DESCRIPTION

#### 2.1. GEOGRAPHICAL POSITION OF PAYAS

Payas<sup>2</sup>, which is located at the south of Anatolia, is a sea side settlement that faces to İskenderun Gulf. Payas, which is administrated by Dört Yol town, is located at 107<sup>th</sup> km of Adana-Antakya highway. Adana is the closest city located at the west of Payas and İskenderun and Antakya are closest cities located at the south.

Payas town had settled down on both sides of Özer River, which divides the town. It is surrounded by Amanos Mountains which are at 2150m altitude at the east. Amanos Mountains which rise vertically against Taurus Mountains<sup>3</sup> are the natural border between Mediterranean and Southeast Anatolia regions.

Climate in Payas consisted of a harder Mediterranean climate in comparison to the typical climate conditions in Mediterranean region. It is cold and rainy in winters and hot in summers in Payas. Even though the average summer heat<sup>4</sup> is between 32°-37°C, generally breezes blowing from Amanos Mountains cools off the town. Average rain amount per square meter in winters in Payas is 150gr/mt<sup>2</sup> and 75gr/mt<sup>2</sup> in summers. Payas and the nearby environment get more rain than the other Mediterranean towns and this directly affects the woods and vegetation. Today there is no dense green area in the city because of the wrong planning of Payas which is an industrial town.

The biggest earthquake that has ever been in the region was in 13.08.1822. İskenderun centered earthquake was in 10 seismic energy<sup>5</sup>. The second biggest one was happened 50 years later in 02.04.1872.

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<sup>2</sup> Present name of Payas is Yakacık.

<sup>3</sup> Taurus Mountains raise parallel to Mediterranean Sea.

<sup>4</sup> Hatay İl Yıllığı p.47

<sup>5</sup> Hatay İl Yıllığı p.49

Because of a Tsunami occurred right after the earthquake 20.000 people died and lots of building collapsed or damaged.

Eighteen thousand people died because of this earthquake which initiated in Samandağ.

## **2.2. NEARBY ENVIRONMENT OF THE BUILDING**

### **2.2.1. LOCATION OF THE BUILDING**

Cin Kule is located at the south part of the city (Figure 2.1.). It is located at 1.5km distance from the city center and 100m from the sea. The building occupies a city block which consists of a single building lot. The building lot is a flat area which is located at +40m high above the sea level.

Cin Kule is positioned at the end of the main road which goes parallel to Özer River that divides the city into two parts among north and south directions. This road is interrupted by the rail road which goes parallel to the sea at 70m distance from Cin Kule. The western part of this main road is called Sahil Yolu which is located in a quite unoccupied area. However, because new built-up area has been sliding towards this part of the city, dense construction works which are generally consisted of apartment blocks have been started to rise around the area.

### **2.2.2. GENERAL CHARACTERISTIC OF THE NEARBY ENVIRONMENT OF THE BUILDING**

Since Cin Kule is located in the new built-up area of the city, the nearby environment is mostly shaped by modern apartment blocks. Particularly most of these blocks which rise parallel to the sea are located on the west side of Sahil Yolu. These settlements consist of averagely 6-7 storied blocks.

The closest buildings to Cin Kule are all positioned around the dock which is located at the north direction (Figure 2.2.). Presently, this

dock is used by a serious amount people<sup>6</sup>. Therefore, some of the buildings around the dock are functioning as fish restaurants and some of them are houses of the anglers. These new buildings are all two storied buildings. Another closer building to Cin Kule is the hostel compound of police which is called “polis evi”. It is a complex occupying averagely a 2000m<sup>2</sup> area which is located at the west of the dock. However, surprising point of the complex is that it is located right on the coast where the sea ends.

Apart from these, there is another construction work of the local municipality that has been continuing since 2000. These constructions which are dramatically changing the visual features of the area are mainly located both in Cin Kule and in the nearby environment. The most important of these is probably the road construction (Sahil Yolu) which starts from the rail road and goes in several directions parallel to the sea. Mainly the road which is widened, paved and so on leads up to the east and west where the new built-up areas are located. At the east direction, because this road passes right next to Cin Kule, the southeast façade of the building is raised by the 1.00m wide pavement which is adjacent to the façade. On the other hand, the building block where Cin Kule is positioned has been used as recreation area by the municipality since 2000. This area where couple timber pergolas are constructed in, is planted and illuminated. Similar additions are made in Cin Kule as well<sup>7</sup>.

The south and southeast part of the building is composed of 2-3 storey houses which are quite far from Cin Kule. The importance of this area of the city is that the main tourist axis is located here as well. All of the historical buildings in the city are located around this axis. Sokollu Mehmet Paşa Menzil külliyesi which is located approximately 1km away from the south of Cin Kule is the first of these buildings on this road. It is a very large scaled complex which is a donation of Sokollu M.Paşa in the 16<sup>th</sup> century.

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<sup>6</sup> There are 50 boats around the dock where fish trading is made everyday.

<sup>7</sup> Trash baskets, projectors and a flag post are placed in Cin Kule during these construction works of the municipality.



Figure 2.1. Aerial Photography of the site.



Figure 2.2. Site Plan of the Building.

It is composed of a mosque, medrese, imaret, kervansaray, tabhane, hamam and an arasta. Right across the complex, Payas Castle<sup>8</sup> which is claimed to be a Crusader remain exists. It is a castle surrounded by a deep moat where the entrance is provided by a bridge.

A historical tower-house<sup>9</sup> is located 40m away from Payas Castle on the northeast direction. In addition, a monumental park which is constructed at the 10<sup>th</sup> year of Hatay's re-union with Turkey is located next to the tower-house building. The importance of this park in Payas is that Payas was once the southeastern frontier of new Turkish Republic and the Özer River was the natural boundary between two countries.

### **2.3. VERBAL DOCUMENTATION OF THE PRESENT STATE OF THE BUILDING**

#### **2.3.1. GENERAL DESCRIPTION OF THE BUILDING**

Cin Kule is located on a building lot which is in Sahil Yolu neighborhood and where there is no any other building is located. Therefore this makes Cin Kule perceived easily from this part of the city.

Basically, Cin Kule is composed of two storied building which is located at the south direction and an L shaped courtyard which surrounds the building from northwest and southwest. There are three round circular towers located at the north, west and east corners of the courtyard outside. The entrance of the complex is provided by space S1 which projects out with a portal on the southwest (entrance) façade. It leads to the courtyard (S2) with a 90 degree bent access.

Inside the courtyard, there are two small and depressed spaces (S3 and S4) which are located at the north and west corners. At the south corner, two storied building rises. It is surrounded by a round molding which is located between the floor levels of 1<sup>st</sup> and 2<sup>nd</sup> floors.

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<sup>8</sup> Today, there is nothing in the castle except for the remains of the buildings inside.

<sup>9</sup> The tower house which is presently in ruined condition is surrounded by the modern houses, next to the military station. This prevents the building to be perceived by the visitors.

Ground floor of the building is composed of a single space (S5) where the entrance of the space is provided directly from the courtyard. First floor which is reached from the courtyard is basically composed of single space (S7) which covers the total area of the first floor. It is formed by a central semi-open square space (S7e) and the rectangular semi-open corridor spaces (S7a, b, c and d) which surround the central space. Second floor which is reached from the first floor consists of a wide wall (S9) walk which covers the total area of the second floor and an octagonal space (S10) which rises at the center of the floor is also located at this floor.

Generally, the building is constructed with double skin walls which are made of cut stone blocks on both sides and lime mortar as a binding material. The infill between two cut stone sides of the walls is made of rubble stones and lime mortar. There are lime plaster remains that are followed at the surfaces of walls and vaults of the entire spaces.

The complex covers 712m<sup>2</sup> area which includes the open spaces. 221m<sup>2</sup> of the total area is occupied by the building itself.

### **2.3.2. FAÇADES**

#### **2.3.2.1. SOUTHWEST FAÇADE**

Southwest façade is composed of the circuit wall, projecting portal and the circular towers on the two corners (Figure 2.3.). It is the entrance façade of the building which is 28.5m in total length. The façade is divided in two parts by the projecting portal. The highest level of the façade wall is at +3.82m level on the northwest corner and at +4.30m level on the southeast corner. The wall is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as a binding material. However, the workmanship of the cut stone blocks shows variety<sup>10</sup>. The wall is composed of randomly used bossaged and smooth surfaced cut stone blocks.

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<sup>10</sup> These variations and their mapping are all discussed in detail under WORKMANSHIP OF THE CUT STONE BLOCKS.

The ground of the façade is sloping towards northwest direction. The height of the ground is at -1.35m level<sup>11</sup> at the southeast corner and at -1.70m level at the northwest corner of the façade.

The northwest part of the wall which is 11.71m in length is made of cut stone blocks and lime mortar as the binding material. These blocks which are averagely 0.50m to 0.30m in size have bossaged and smooth surfaces. Both types of blocks were used randomly on the wall. However the cut stone blocks used in the wall get smaller in size above +2.83m level. Above this level, the wall is made of again with cut stone blocks which are 0.40m to 0.20m in size and lime mortar as the binding material. Nevertheless, in spite of the lower part of the same wall, none of these cut stone blocks has bossages.

The tower at the west corner has a circular form which is 1.88m in diameter. However, the circular form turns into U form at +1.38m height level and continues in this form up to +2.13m level. The tower is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. However, in spite of the general construction technique, none of the cut stone blocks used in the tower have bossages.

The portal which is 4.85m high from the ground level (+3.14m level) and 4.40m in length projects 1.05m forward from the facade walls. The projecting portal connects the façade walls with round tower like walls on both sides. However, the round walls and the façade walls do not practically meet because the joints of the façade wall and the round walls are all located at different levels instead of meeting at the same level.

The façade of the portal is made of cut stone blocks and lime mortar as the binding material. But the way how these stone blocks were dressed is different from the others. The surfaces of the stones used at the portal are polished and constructed with very thin lime joints.

The portal is composed of pointed arch which starts at +1.02m level, above the door opening and a surrounding hollow relief frame. The top level of the arch which is composed of 0.30m thick voussoirs is

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<sup>11</sup> All height levels are given in reference to 0.00 level unless another information is announced.

located at +2.58m level. There is only one single course of wall rises above the arch. Presently, the rest of the portal façade is completely vanished.

The door opening<sup>12</sup> D1 is located 0.73m behind the portal facade with two cut stone benches on sides which are at -0.55m level. The wall where the door opening D1 is located is made of cut stone blocks and lime mortar as the binding material. Both this wall and the outer façade wall of the portal are showing the same features in terms of dimension, material and construction techniques. The threshold of the door is made of two polished cut stones which are located at -1.30m level. And the lintel of the door is composed of a depressed joggled arch where the springings are located +0.74m level. Above the lintel, the trace of an inscription panel or coat of arms exists without the panel's itself. The trace which starts at +1.65m level and ends at +2.27m level has a rectangular form. There is 0.03m thick lime mortar located in the trace which is 0.77m in length and 0.61m in height.

The southeast part of the wall which is 11.66m in length is made of cut stone blocks and lime mortar as the binding material. These blocks which are averagely 0.50m to 0.30m in size have both bossages and smooth surfaces. Both types of blocks were used randomly on the wall. But above +2.83m level, the cut stone blocks used in the wall get smaller in size. Above this level, the wall is made of again with cut stone blocks which are 0.40m to 0.20m in size and lime mortar as the binding material. But the difference between the blocks used in here and the blocks used in the lower parts of the same wall is not only the dimensions but also the workmanship. None of these cut stone blocks has bossages.

Another circular tower which reaches up to +2.98m level exists at the southeast corner of the wall. However, although the southeast tower is higher than the northwest one, the change of the form from circle to U form at the northwest tower could not be followed at the southeast tower. The circular tower which is 1.88m in diameter is made of cut stone blocks

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<sup>12</sup> For more detailed information about any of the architectural elements, see ARCHITECTURAL FEATURES.

and lime mortar as the binding material. None of the cut stone blocks have bossages.

Today 1.00m part of this tower is buried or hidden by the new pedestrian pavement which continues along the southeast façade of the building.

### **2.3.2.2. SOUTHEAST FAÇADE**

Southeast façade which is 27.49m in length is composed of the building façade and the courtyard wall façade (Figure 2.4.). It ends with a circular tower at the southwest end but at the northeast corner, it ends with the corner of the building. Besides, a new retaining wall was constructed adjacent to the northeast corner of the façade which continues about 50m further from the building. The new wall which is 1.05m above the ground level is constructed by the municipality.

The ground level of the façade is unfortunately covered with the new modern pavement tiles. But although it is covered, it follows the slope lying beneath. According to this, at the southwest end, the ground level starts at -0.93m and at the northeast end it ends at -1.55m height level.

The highest point of the courtyard wall façade which is 12.40m in length is at +4.52m level. But at the point where the building and the space S6 is connecting, a sloppy wall starts rising at +4.52 and ends at +5.05m level on the façade. This slope on the façade wall is preventing to see the sloppy ceiling of the space S6.

The courtyard wall façade is made of cut stone blocks which are averagely 0.50m to 0.30m in size and lime mortar as the binding material. These blocks which are used in this part of the wall have bossaged and smooth surfaces where both types of blocks were used randomly. However this technique which starts from the ground could only be followed up to +2.83m level. Above this level, the wall is made of again cut stone blocks and lime mortar as the binding material. But these cut stone blocks which are 0.40m to 0.20m in size are smaller than the ones

used at the lower parts of the wall. On the other hand, none of these blocks have bossages.

The façade ends with a circular tower which is 1.88m in diameter at the southwest end. The tower rises up to +2.98m level. It is made of cut stone blocks and lime mortar as the binding material. These blocks which are averagely 0.50m to 0.30m in size have smooth surfaces.

The northeast part of the façade which is 14.91m in length is composed of the façade of the two storied building where the highest point<sup>13</sup> is at +9.45m level.

The building façade is surrounded from four sides by a torus molding which is 0.25m in diameter and which starts at +3.63m level<sup>14</sup>. Above the molding, there are three loopholes which belong to the embrasures located at the first floor of the building. These loopholes are all located at +4.29m level. The first one (E7) is located at a 2.29m distance from the northeast corner of the façade. It is 0.12m in length and 1.19m in height. The second one (E6) is located 6.03m and the third one (E5) is located 8.57m away from the northeast corner of the façade. Although today E6 and E5 are partly collapsed, all of these loopholes are same in dimension.

There is a window opening (W2) which is 0.20m in length and 0.45m in height located at +8.03m level and at the southwest corner of the building façade. This opening is the top opening of the space S8 which is the transition space between the first and the second floors.

At the +7.66m level<sup>15</sup>, there is a gutter (G4) located 5.94m away from the southwest corner of the building façade. The gutter which is composed of a single cut stone block is projecting 0.08m forward from the building.

At northeast corner of the building façade, there are three single stone blocks which are projecting 0.43m towards southeast, east and northeast directions. These blocks are all at +7.21m level and the one

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<sup>13</sup> This height level does not include the outer walls of the octagonal space (S10). These walls which are rising behind the façades of the building are revealed in both spaces S9 and S10.

<sup>14</sup> The initial level of the molding and the ground level of the first floor behind are all at the same level.

<sup>15</sup> It is also the ground level of the second floor.

which is projecting southeast are composed of two corbelling cut stone blocks. However the upper blocks were all collapsed above the other two.

The building façade wall is also made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. These blocks which are used in this part of the wall have bossaged and smooth surfaces where both types of blocks were used randomly.

### **2.3.2.3. NORTHEAST FAÇADE**

The northeast façade which is 27.45m in length is composed of the building and courtyard wall façades (Figure 2.5.). There is only one circular tower which is located at the northwest end of the façade. The southeast corner of the façade ends with the corner of the building.

The ground level at the southeast part of the façade is at -0.04m level which starts with the modern retaining wall<sup>16</sup>. It slopes towards northwest direction where the ground level decreases down to -1.43m level.

The building façade which is 14.49m in length is divided in two parts by the round molding which is partly collapsed in this façade. Lower part of the molding which starts at +3.63m level is composed of a blind wall.

There are four embrasures located at the upper part of the molding. All of these embrasures are located at the same level which is +4.26m. The first one of these which is 1.91m in height (E8) is located 1.91m away from the southeast corner of the façade. Because half of the loophole is collapsed, the length of it could not be measured. The second loophole (E9) which is 0.12m in length and 1.91m in height is located 5.95m away from the southeast corner of the façade. The third one (E10) is located 8.25m away from the southeast corner. However, this part of

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<sup>16</sup> Because of this retaining wall, the ground of the northeast façade is 1.65m higher than the ground level of the southeast façade.

the façade was completely collapsed<sup>17</sup>. Today there is only a huge gap which is averagely 1.21m in length and 2.95m in height.

The last one (E11) which is located 12.29m away from the southeast corner of the façade is totally different from the other two. The embrasure which is 1.20m in length ends at +5.87m level with a two pointed arch above. Both the arch at the top which is composed of 0.26m thick voussoirs and the sides of the embrasure get narrower towards the inside of the building.

The highest point of the building façade is at +7.64m level. However, a huge part of the wall at the second floor level and the outer cut stone blocks of the double skin wall at the first floor level were collapsed.

The building façade wall was made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. These blocks which are used in this part of the wall have both bossaged and smooth surfaces. Both types of blocks were used randomly on the wall.

The northwest part of the façade which is composed of the courtyard wall is 14.49m in length and the highest point of the wall is at +3.49m level. The wall is made of cut stone blocks which are averagely 0.50m to 0.30m in size and lime mortar as the binding material. These blocks have bossaged and smooth surfaces and where both types of blocks were used randomly. However this technique which starts from the ground could be only followed up to +2.28m level. Above this level, the wall which rises up to +3.49m level is made of rubble stones and cement mortar as the binding material. Another remarkable feature of the wall is- behind the façade wall- a sloppy rising wall is located that faces to the courtyard (space S2) of the building. There is a 0.80m thick gap between these two walls where no information could be obtained because of the dense plants.

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<sup>17</sup> According to the façade order and the some of the traces located inside the wall at the first floor, it is understood that this part of the wall was once composed of an embrasure which is similar to the embrasure E9 and E8.

There is an opening on this part of the façade which is located 3.18m away from the northwest corner. However, some parts of collapsed opening are filled with rubble stones and cement mortar. Because of this infill, the opening has an amorphous form now.

The façade ends with a circular tower which is 1.88m in diameter at the northwest end. The tower rises up to +2.58m level. It is made of cut stone blocks and lime mortar as the binding material. These blocks which are averagely 0.50m to 0.30m in size are all smooth surfaced blocks.

#### **2.3.2.4. NORTHWEST FAÇADE**

The northwest façade which is composed of the courtyard wall is 28.73m in length. It ends with circular towers both on northeast and southwest corners and the highest point of the façade is at +3.37m level (Figure 2.6.).

There are three embrasures located on this façade. The first one is (E1) located 7.27m away from the southwest corner. The embrasure which is 0.94m in length starts at -1.22m level and ends with an arch above at +0.30m level. The pointed arch above the embrasure is composed of 0.30m thick voussoirs. The embrasure gets conically narrower towards inside of the wall. The second one (E2) is located 12.38m and the third one (E3) is located 17.35m away from the southwest corners. All of three embrasures are carrying exactly the same features in terms of dimension, location, construction technique and material.

On both sides, the façade ends with circular towers which are 1.88m in diameter. The northeast tower rises up to +2.45m level and the southwest one rises up to +2.10m level. Both of them are made of cut stone blocks and lime mortar as the binding material. These blocks which are averagely 0.50m to 0.30m in size have all smooth surfaces.

The façade wall is made of cut stone blocks which are averagely 0.50m to 0.30m in size and lime mortar as the binding material. These blocks have bossaged and smooth surfaces and both types of blocks were used randomly. However, this technique which starts from the

ground could be only followed up to +2.83m level. Above this level, the wall is made of again cut stone blocks and lime mortar as the binding material. But these cut stone blocks which are 0.40m to 0.20m in size are smaller than the ones used at the lower parts of the wall. On the other hand, none of these blocks have bossages.

### **2.3.3. DESCRIPTION OF THE SPACES**

#### **2.3.3.1. PLANIMETRIC FEATURES OF THE SPACES**

##### **2.3.3.1.1. SPACE S1**

Space S1 is the entrance space where the relationship between the building and outside is provided. It ends with a 1.05m projecting portal on the southwest façade of the building. The space is 4.40m in length and 3.71m in width. Space S1 provides a 90 degree bent entrance access form outside to inside. The entrance door (D1) is located at the



Figure 2.3. Southwest Façade.



Figure 2.4. Southeast Façade.



Figure 2.5. Northeast Façade.



Figure 2.6. Northwest Façade.

southwest wall of the space and the space leads to the courtyard S2 by the door opening (D2) located on the southeast wall of the space.

There are two pilasters that project 0.70m located at the north and east corners of the space. The vault of the space is carried by these two pilasters on the northeast and directly carried by the wall on the southwest. The projection of the pilasters is caused the vault carried on a square area which is 3.70m to 3.70m in size instead of a rectangular one.

The portal of the space S1 which is projecting 1.05m from the southwest façade connects with the façade walls with the round tower like walls at the southeast and northwest direction. The portal recesses 0.73m backwards where two stone benches are located. The door opening (D1) is located in between these side benches which are 0.63m to 0.56m in size.

### **2.3.3.1.2. SPACE S2**

Space S2 is an L shaped courtyard which surrounds the two storied building from northwest and southwest directions. The length of the northwest-southeast span of the courtyard is 22.21m and of the northeast-southwest span is 23.40m. The courtyard is defined by the walls rising at southwest, northwest and northeast directions. The southeast wing of the courtyard which is 9.93m in length is composed of space S6 and the stair ST2 which provides the access from ground to the first floor. There is the stair (ST2) with two wings leading to different directions at the end of the space S6 projects 5.10m from the building. It ends with a landing which is 1.45m in length and 1.19m in width on the ground of the courtyard. Right next to the landing, a buttress like tooth which is 1.20m in length and 1.10m in width on the wall exists.

The main building which is 14.95m to 14.95m in size rises at the east corner of the courtyard S2. At the first floor level, 4.50m thick blind wall of the building faces to the courtyard except for the entrance door opening of the space S5 located on the northwest corner.

Northeast wall of the space S2 which is 10.03m in length is composed of the space S4, embrasure E4 and the wall itself. It is located at the north corner of the courtyard. Space S4 is a small and depressed space which projects 2.59m from northwest wall of the courtyard and 2.40m from northeast wall.

There are three embrasures (E1, E2 and E3) which are 2.91m in length located on the northwest wall of the courtyard. The first one of these embrasures (E1) is located 2.42m away from southwest corner. Embrasure E2 is located 7.57m and embrasure E3 is located 12.62m away from southwest corner. These same type embrasures which are 2.91m in length get narrower toward outside and end with openings (loopholes) which are 0.42m in length.

Space S3 is located at the west corner of the courtyard which projects 2.35m from northwest wall and 2.52m from southwest wall. Space S3 is a small and depressed corner space like space S4.

However, in S3, there is window opening W1 which is 0.67m in width and 0.57m in length located on the southeast wall.

Southwest façade of the courtyard is divided in two parts by the 3.78m projecting space S1. There is the stair ST1 which rises behind the space S3 on the northwest side of the divided façade. This stair leads up to the wall walks from the courtyard. The southeast side of the southwest façade of the courtyard is composed of the wall walks located on the blind courtyard wall which is 5.98m in height.

#### **2.3.3.1.3. SPACE S3**

Space S3 which is 2.42m to 2.95m in size is located at the west corner of the courtyard S2. At the northwest and southwest directions, the space enlarges 0.78m more towards the courtyard walls. Although space S3 is perceived like a square space from outside, it is in fact a rectangular space.

The entrance of the space is provided by the door opening D5 which is located on the northeast wall. The wings of the door opening which is located 1.53m away from the northwest corner of the space are presently vanished<sup>18</sup>. There is a window opening W1 on the southeast wall is located 1.41m away from northeast corner of the space.

#### **2.3.3.1.4. SPACE S4**

Space S4 which is 2.47m to 2.47m in size is located at the north corner of the courtyard. As it was in space S3, space S4 enlarges 0.64m towards northeast and northwest walls of the courtyard. However, unlike space S3, even though the space S4 enlarges inside, it is still a square space.

Except for the door opening D4 on the southwest wall, there is no opening in this space. The only opening in the space is the door D4 which is 0.68m in length located 1.57m away from the northwest corner of the space.

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<sup>18</sup> All of the wings of the door openings in the building are vanished.

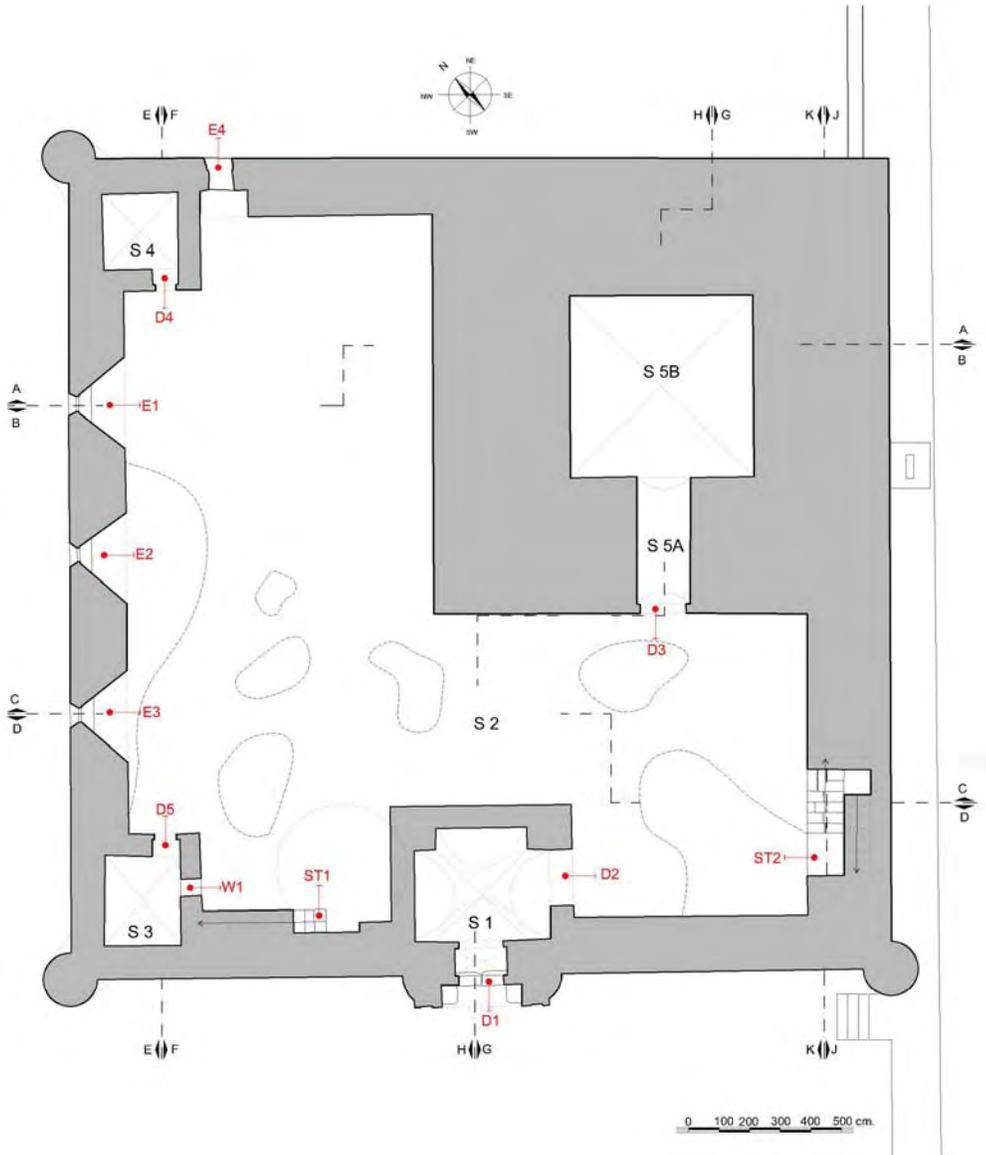


Figure 2.7. Key Plan- Ground Floor.

#### **2.3.3.1.5. SPACE S5**

Space S5 is composed of two different spaces S5a and S5b. S5a is a rectangular space which is 1.75m to 4.42m in size provides the access from courtyard S2 to the main area which is S5b. The entrance is provided by the door opening D3 which is 1.50m in length and which is located at the southwest of the space S5a.

Space S5b which can be only reached through the space S5a from courtyard is a square space that is 5.97m to 5.97m in size. There is no door opening in between the spaces S5a and S5b. Space S5a is surrounded by 4.50m thick walls on four directions.

#### **2.3.3.1.6. SPACE S6**

Space S6 where the stair ST3 is located is the only connection between ground floor and the first floor. Total length of the space is 7.02m and 5.12m of the this length of the space projects out the building.

The space is divided by two door openings (D7 and D6) which are located right on the landings of the stair ST3. Average width of the space is 1.26m. However, this dimension changes at the certain parts of the space<sup>19</sup>.

#### **2.3.3.1.7. SPACE S7**

Space S7 is a single space which covers the total area of the first floor. It is composed of a central space (S7e) and the surroundings spaces (S7a, S7b, S7c and S7d). The central space is a square space which is 5.80m to 5.80m in size. Around this space, there are surrounding rectangular spaces which are 12.28m to 1.90m in size. The central space and the surrounding spaces are separated by the piers which are carrying the vault at the top of the central space. The surrounding spaces are defined by these piers on one side, and by the walls on the other side.

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<sup>19</sup> See 2.3.3.3. WALLS-Space S6.

There are three embrasures which are totally same type are located at the southeast wall of the space S7a. The first of these embrasures (E7) is located 0.28m away from northeast corner and it is 1.42m in length. The second one is (E6) located 3.96m away and the third one (E5) is located 6.76m away from northeast corner.

There are four embrasures located on the northeast wall of the space S7b. The first one (E8) is located 0.28m away and the second one (E9) is located 3.95m away from the southeast corner of the space. The embrasures which are same type with the ones located on the southeast wall of the space S7a are 1.42m in length. The third one which is totally

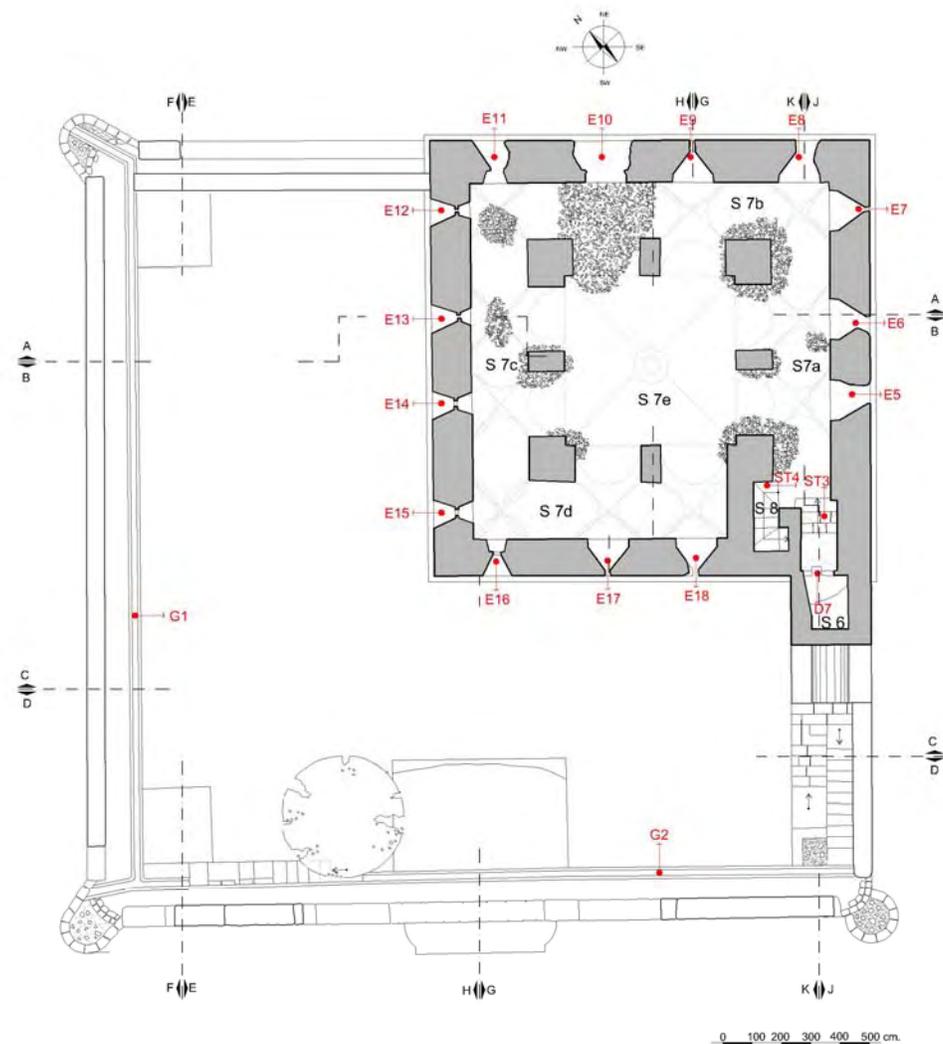


Figure 2.8. Key Plan- 1<sup>st</sup> Floor.

collapsed today (E10) is located 6.93m away from southeast corner. The last one (E11) is located 11.00m away from the southeast corner. This embrasure which is 0.62m in length is a different type than the previous embrasures. It is smaller and rectangular embrasure in comparison to the other ones.

At the northwest wall of the space S7c, there are four embrasures which are totally same type of the embrasure E11 which is located on the northeast wall of the space S7b. First embrasure (E12) is located 0.62m from northeast corner of the space. It is 0.64m in length. The second one (E13) is located 4.25m away, third one (E14) is 7.12m away and the last one (E15) is located 10.84m away from northeast corner.

There are three embrasures located on the southwest wall of the space S7d. First one (E16) is located 0.43m away from northwest corner of the space. The embrasure which is 0.65 in length is the same type of the embrasures located on the northwest wall of the space S7c. The second embrasure (E17) is located 3.91m away and the third one (E18) is located 6.94m away from northwest corner of the space. These two embrasures which are same with the ones located on the southeast wall of the space S7a are 1.42m in length.

Space S7e is a semi-open space which is surrounded by the piers on four directions. The square space is defined by three piers on each edge. The piers which are located at the corners are in L form and bigger than the ones located in the middle at each edge. The vault which is carried by these piers has an oculus at the top level which is completely closed by the stone blocks today.

#### **2.3.3.1.8. SPACE S8**

Space S8 is a rectangular transition space between second and first floors where the stair ST4 is located. It is 2.40m in length and 2.70m in width. Space S8 opens to the second floor with a door opening D8 (0.81m length) which is located at the northeast wall of the space.

There a slim and rectangular window opening W2 which is 0.17 in length and 1.11m in width is located at the southeast wall of the space.

#### **2.3.3.1.9. SPACE S9**

Space S9 is a wider wall walk which completely covers the second floor and where an octagonal space (S10) is located at the center. S9 is surrounded by the 0.75m thick walls. However, especially the walls at the northeast and northwest are totally collapsed.

There are three single stone blocks which are located at the east corner of the space S9 projecting 0.49m toward southeast, east and northeast directions. However, the upper part of these projecting blocks are collapsed and therefore it is impossible to say what these blocks were carrying above.

Apart from these, there are two stone gutters (G3 and G4) located at the southeast and the southwest walls. But because other two side walls of the space are collapsed none of the gutters could not be seen here.

#### **2.3.3.1.10. SPACE S10**

Space S10 is an octagonal space which is 8.78m in diameter and where each edge of the octagon is 2.42m in length. The thickness of the walls of the space is 1.10m. But the walls on the northwest, north and northeast directions are collapsed presently.

Space S10 is located higher than the space S9. The access from S9 to S10 is provided by the door opening D9 which is 0.70m in length and which is located at the south wall of the space. Stair ST5 which is located right after the door D9 with 5 steps leads up to the floor of the space S10.

There are two embrasures located on the southeast and southwest walls which are exactly same type. The embrasures which are located 0.70m away from the corners of the edges are getting narrower towards outside and opening with a loophole on the outer façade of the walls.

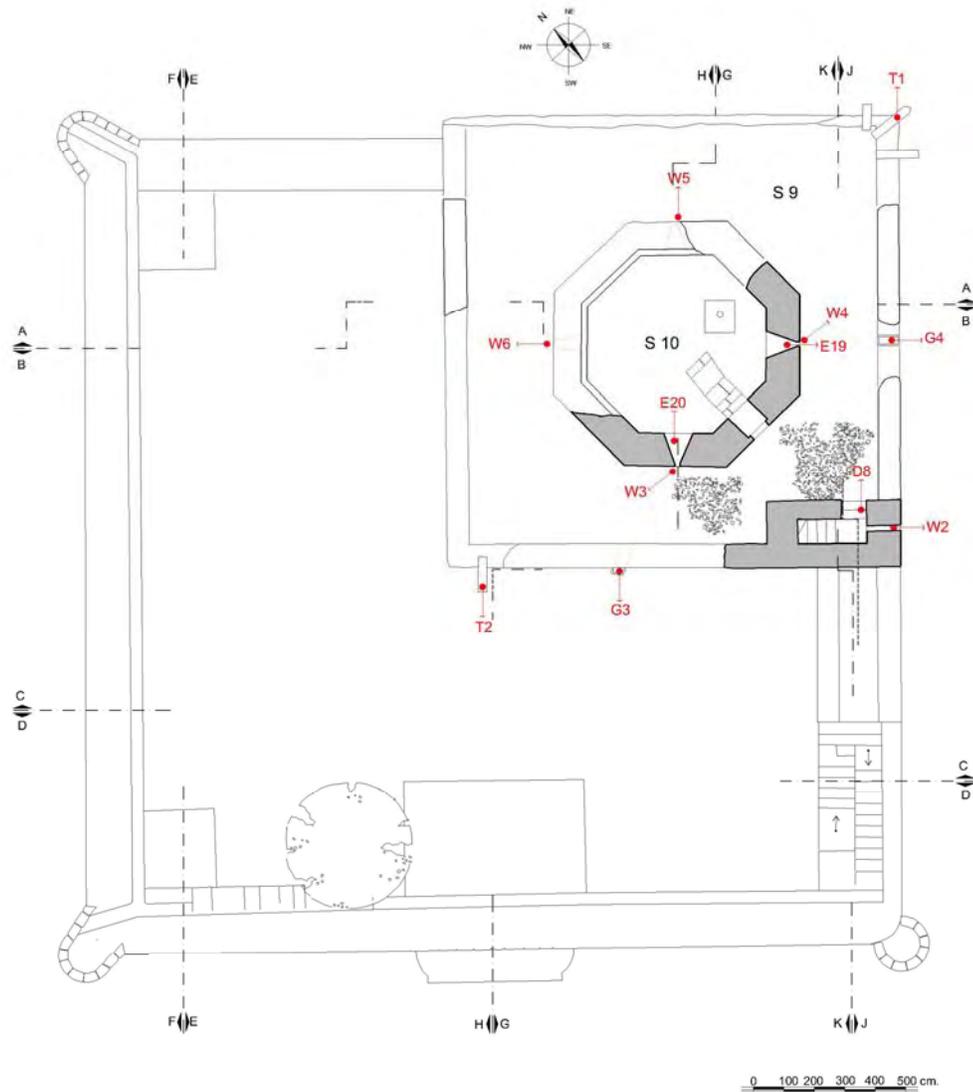


Figure 2.9. Key Plan- 2<sup>nd</sup> Floor.

There is a 6.00m high iron flag post located at the east corner of the space which is a newer addition of the municipality. Right next to the post, another iron structure is located which is probably constructed to locate the spotlights.

### **2.3.3.2. FLOORS**

#### **2.3.3.2.1. SPACE S1**

The floor of the space S1 is completely covered with earth. However it is remarkable that the level of the earth is 0.09m (-1.33m level) below the threshold of the main entrance opening located on the southwest wall of the space. In comparison to general height of the earth level in the space, the levels at the corners are 0.04-0.05m higher than center of the earth.

#### **2.3.3.2.2. SPACE S2**

A serious part of the floor of the space S2 is presently covered with earth and plants. Even though this, a 0.07m thick concrete slab is observed right under the earth. At certain areas of the courtyard, it is possible to see the remains of the concrete slab.

At the south corner of the courtyard, one of the concrete slab remains is located adjacent to the landing of the stair ST2. It starts 0.10m below the landing which is at -0.90m level and the other remains, located at the center of the courtyard, are all at -1.20m level<sup>20</sup>. And the other remains located right next to the northwest wall of the space are at -1.15m level. This shows that the highest point of the concrete slab is the south corner of the courtyard where the stair ST2 is located. Then the concrete floor level goes averagely 0.20m down towards to the center of the courtyard and then goes 0.10m up at the northwest end of the courtyard. Although the concrete slab continues at higher level at the northwest, in comparison to the straight cut stone blocks in the embrasures, these remains at the northwest end are located 0.04m lower.

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<sup>20</sup> Around 0.20m lower than the one located adjacent to the landing of the stair ST2.

#### **2.3.3.2.3. SPACE S3**

The floor of the space S3 is completely covered with earth. The highest point of the earth level is the area where the door opening of the space is located. The height level is -1.35m. Even though the earth is covering everything on the floor, between the casings of the door opening, the threshold could be followed, even a huge part of it is covered with earth and plants. Towards inside of the space, the earth level decreases down to -1.47m level. However, although the floor level is decreasing towards inside the space, the initial point of the window on the southeast wall of the space which is 0.40m above the ground level is still at -0.77m level.

#### **2.3.3.2.4. SPACE S4**

The ground of the space S4 is covered with earth. And as it was in space S3, the highest point of the earth level where the door opening D4 is located is at -1.35m level. But the threshold of the door can be seen more easily than the one in space S3.

The floor level decreases about 0.10m towards inside the space in comparison to the level at the door opening. In addition to this, there is whole which is 0.40m in diameter and 0.60m in height is located at the east corner of the space. It is most probably dug by the treasure hunters around (or in) the town. In the whole nothing but the earth could be followed. However, there are rough cut stones which are averagely 0.10m to 0.20m in size and which are carrying lime mortar remains seen around the whole.

#### **2.3.3.2.5. SPACE S5**

Both the spaces S5a and S5b are all covered with earth. But the interesting point is, as it true for all the spaces which are covered with

earth, the highest point of the earth level is the area where the door opening is located. The height level at this point is -1.16m. And the level of the earth decreases around 0.12m towards the northeast wall of the space.

#### **2.3.3.2.6. SPACE S6**

Space S6 is the transition space between the ground floor and the upper floors where the stair ST3 is located. Whilst the steps of the stairs are completely made of cut stone blocks and lime mortar as the binding material<sup>21</sup> the information about the floor is only seen on the two landings where the door openings D6 and D7 are located.

According to this, both floors of the landings which are 1.14m in length and 1.63m in width are made of flat rough cut stones and lime mortar as the binding material. Rough cut stones which are averagely 0.10m – 0.12m in thickness were directly placed on the 0.08m thick lime mortar. Because some parts of the floor tiles were detached, it is possible to see rubble stone and lime mortar infill beneath both the tiles and lime mortar. This type of infill is the same type which is also seen inside the walls.

Besides the technique, there is a very interesting detail located on both landings. It is a gap which is 0.30m in length 0.30m in width and 0.15m in height. The gap starts from the threshold of the door openings and makes a square gap towards inside the space. These gaps which are only seen here are located at the central axis of the stairs.

#### **2.3.3.2.7. SPACE S7**

The entire floor tiles of the space S7 is made of flat and thin rubble stones and lime mortar as the binding material. These tiles are constructed on the infill of the vaults of the ground floor spaces which is made of rough cut stones and lime mortar as the binder.

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<sup>21</sup> For detail information see STAIRS (ARCHITECTURAL FEATURES).

In spite of the entire floor is covered with this type of material, today it is difficult to perceive these features on the floor. Because most parts of the floor tiles are covered with the earth which both comes from outside and emerges because of the erosion of the stone blocks.

The floor level has a slight slope towards south direction of the space. At the north corner of the space, the floor level is +4.05m high and it decreases to +3.95m level at the south of the space. The slope is directing to the stair ST3 which is located at the south of the space.

#### **2.3.3.2.8. SPACE S8**

Space S8 is the transition space between the first floor and the second floor where the stair ST4 is located. Like space S6, whilst the steps of the stairs are completely made of cut stone blocks and lime mortar as the binding material the only information about the floor can be obtained from the landing of the stair. The landing which is 0.81m in length and 0.90m in width is located at +5.50m level and made of flat rough cut stones and lime mortar as the binding material. 0.10m -0.12m thick rough cut stones were directly placed on the 0.08m thick lime mortar.

#### **2.3.3.2.9. SPACE S9**

The floor of the space S9 is made of flat and thin rubble stones and lime mortar as the binding material. And it is covered with 0.02m thick lime mortar. Even though the floor tiles of this space and space S7 are all same, the difference between two floors is the lime cover on these tiles of the space S9. However today most parts of this lime mortar cover is vanished. Not only the lime cover is vanished, but is also the flat and thin rubble stone tiles. Therefore the infill which is made of rough cut stone and lime mortar as the binding material can be mostly seen on the floor.

The direction of the floor slope is from the central octagonal space toward northwest, northeast, southwest and southeast directions. The

highest point of the floor where the outer walls of the octagonal space are located is at +7.71m level and ends at 7.65m level at the surrounding walls on southwest and southeast. On the southeast and southwest end of the space, the sloppy floor ends with a stone gutter<sup>22</sup>.

#### **2.3.3.2.10. SPACE S10**

The floor of the octagonal space S10 is completely covered with a 0.20m thick concrete slab. There is also an iron flag post and an iron structure-probably for the lighting system constructed by the municipality-exists on the southeast of the concrete slab. Besides, the last two steps of the stair ST5 which are 0.35m in height are also made of poured concrete. And the lower steps are made of cut stone blocks and lime mortar as the binding material.

The concrete slab has a slight slope towards south from north. The floor level at the north is at +9.42m level and decreases to +9.37m level where the door opening D9 and stair ST5 is located.

#### **2.3.3.3. WALLS**

##### **2.3.3.3.1. SPACE S1**

The total length of the northeast wall of the rectangular space is 4.40m and the height is 3.44m<sup>23</sup>. The given dimension includes the pilasters which are projecting 0.70m forward on both sides as well (Figure 2.10.).

Both the wall and the pilasters are made of cut stone blocks on both sides and lime mortar as a binding material. There is no plastering on the surface of the wall except for the lime plaster remain located at the top end of it (+2.00m. level) and the cement plaster remain at the bottom

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<sup>22</sup> Because the northwest and northeast walls are completely collapsed, there is no information about the gutters on these walls that could be obtained.

<sup>23</sup>The height is given in reference to the ground level of the space which is at -1.33m level.

end (-1.02m level). In spite of this, almost the entire surface of the northwest pilaster of the wall is covered with cement plaster.

Average dimensions of the cut stone blocks on both wall and pilasters are 0.40m in length and 0.30m in height. However, at -0.24m level of the wall, the blocks are significantly getting smaller toward ground<sup>24</sup>. The dimensions of these blocks decrease to 0.20m in length and to 0.20m in height on the average.

The total length of the northwest wall is 3.71m which includes the 0.70m projecting northeast pilaster of the space. The height of the wall reaches up to +2.12m level.

The wall is made of cut stone blocks on both sides and lime mortar as a binding material. The surface of the wall is covered with lime plaster which is subjected to detachments that start at -0.03m level and continues towards ground level.

Average dimensions of the cut stone blocks are 0.40m in length and 0.30m in height just like the northeast wall. According to the observations on the detached parts of the wall surface, there is no change in dimension of the cut stone blocks that starts at a certain point.

Southwest wall is the wall where the main entrance door D1 of the building is located. The total length of the wall is 4.42m and it reaches up to +2.12m height level. The door opening which is 1.42 in length is located 1.55m away from southeast corner and 1.45m away from the northwest corner. The opening starts with an arch on the wall where the total height decreases to +1.85m level. The springing of the arch is located at +1.30m level. However, instead of the voussoirs of the arch, there is an arched shaped gap on the wall with 0.30m thickness. The thickness of the wall, which is also the depth of the door opening, is 1.42m. And both at the wall end and at the outer end of this area, there are 0.12m projecting door casings which are 0.10m in thickness, facing each other at the two sides of the opening. The door ends with an arch above which starts at +1.30m level. On the sidewalls of the opening, right

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<sup>24</sup> The outer side (southwest wall of S2) of the double skin wall is showing the same feature of the inner one (northeast wall of S1).

next to the casing, there are rectangular gains located at +0.00m level for the door prop.

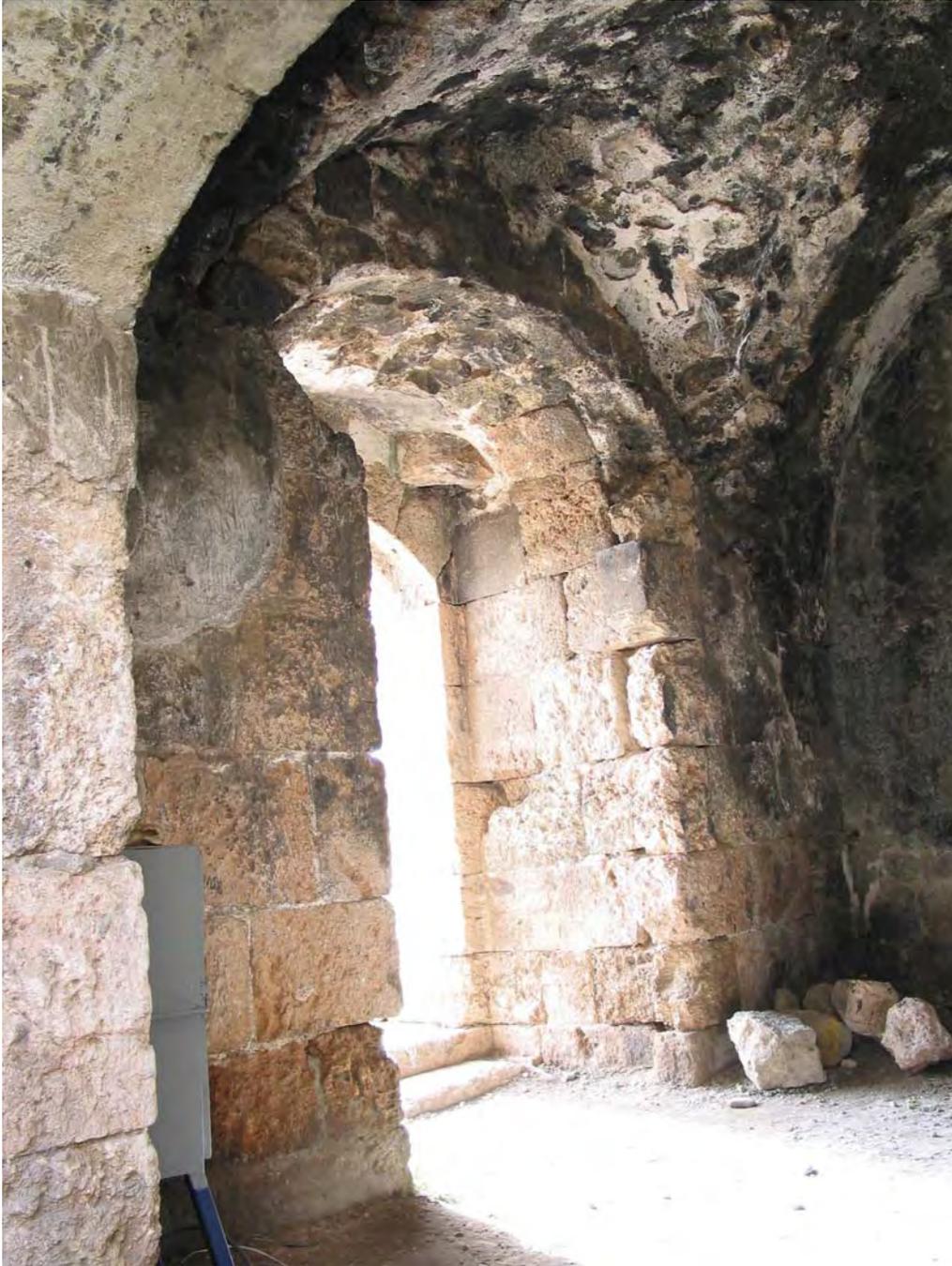


Figure 2.10. View from the entrance door of the space S1

The dimensions of the northwest gain are 0.10m (length) x 0.15m (height) and of the southeast gain are 0.09m (length) x 0.17m (height).

The wall is made of cut stone blocks and lime mortar as binder. There is a tiny lime mortar remain is existing at +1.78m level both on the northwest and southeast parts of the wall. In addition to this, on the southeast part, there are cement mortar remains followed on the surface which are located randomly.

Average dimensions of the cut stone blocks are 0.50m (length) to 0.30m (height). But right above the arch of the entrance opening on the wall, the blocks are getting smaller which are 0.30m (length) and 0.30m (height) on the average. Not only the dimensions, but also the workmanship of the wall is showing difference at this part. Instead of fine cut stones, there are rough cut stones used to construct the part between the arch and the ceiling of the space.

The height of the southeast wall is 2.90m including 0.70m projecting pilasters on the northeast wall. The height of the wall reaches to +2.12m level. The opening D2 that leads the space S1 to the space S2 (courtyard) is located on this wall. The distance from southeast corner to the beginning of the door is 1.06m and on the northeast ends with northeast pilaster of it. The span of the door is 1.83m and has a depressed arched lintel above which starts at +0.26m level.

The wall is made of cut stone blocks and lime mortar as a binding material and almost the entire surface of the wall is covered with lime plaster. However at the southwest corner of the wall, there are cement plaster remains followed both on the lime plaster and on the cut stone blocks which are 0.40m in length and 0.30m in height. These cement remains are located randomly above +0.80m height level.

#### **2.3.3.3.2. SPACE S2**

The length of the northeast façade of the building which faces to the L shaped courtyard is 12.22m. Entire façades of the two storied building are surrounded by a round molding that is exactly located at the

first floor level (Figure 2.11.). The torus molding which is 0.25m in diameter is located at +3.63m level. And above the molding, the façade ends at +8.53m height level<sup>25</sup>. Right after this level, the walls of the octagonal space on the second floor rise<sup>26</sup>.

On the ground floor façade (below the molding), a door opening (D3) which leads to the spaces S5, with a depressed arch above is located at 6.70m distance from the northwest corner. The length of the opening is 1.56m and the springers of the arch starts at +1.00m level. The arch is composed of 0.55m thick joggled voussoirs.

On the first floor façade, there are three embrasures which are all lined up at +4.49m level (0.35m above molding). However, the one at northwest (E16) direction is totally different than the other two (E17 and E18). It is located 1.29 away from northwest corner with a 1.02m length. There is a two pointed arch with 0.30m thick voussoirs located at the top of the embrasure.

The next two is in fact the loopholes of the embrasures. The first one (E17) is located 5.83m away from northwest corner. It is a rectangular opening (0.18m x 1.33m) on the wall which is rounded (0.10m in diameter) at the middle of the total height.

The last one (E18) is located 8.89m away from northwest corner. It is again a rectangular opening (0.18m x 1.33m) on the wall with round expansions in the middle.

At +4.68m level, a cement mortar line continues on both façades which are facing to the courtyard (Northwest-Southeast). The mortar line which has 0.08m thickness on the average passes through all the arched embrasures. The areas below the mortar line in the embrasures are completely filled with rubbles stones and cement mortar as a binding material.

At the northwest corner of the façade, there are 0.65m projecting stone blocks each other. The upper block projects 0.35m forward than the

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<sup>25</sup> Because the top end of the entire façade wall collapsed, the highest level on the façade is given.

<sup>26</sup> Footnote 5



Figure 2.11. View from the courtyard-S2.



Figure 2.12. View from the courtyard-S2.

lower one. The blocks which are standing 1.02m away from the northwest corner are in same dimension (0.45m height x 0.30m length). The height of the lower block is at +6.85m and the height of the top end of the projecting blocks is +7.65m which is also the floor level of the second floor.

At 5.60m distance from the northwest corner, there is a stone gutter projecting from the façade. It is located at +7.60m level from the ground and it projects 0.06m from the façade but because the block is broken presently, this measurement does not indicate the exact projection.

The façade wall, at both sides, is made of cut stone blocks and lime mortar as the binding material. Cut stone blocks which are 0.50m in length and 0.30m in height are showing a variety of workmanship. Generally this can be categorized as the ones with bossages and the ones with straight surfaces.

Total length of the southeast façade of the building is 14.94m and the highest point of the façade is located at +7.66m level. The molding that surrounds the building is located at +3.90m level. At the northeast corner of the façade, 2.03 m thick northeast courtyard wall is located. The wall rises up to 0.77m from the molding which is at +4.67m level.

At the ground floor part of the façade which is a blind wall facing to the courtyard, there are two lime plaster remains which are 0.03m in thickness located near the northeast courtyard wall.

There are four arched embrasures located above the molding. These ones are exactly the same type of the one located at the northwest direction of the northeast façade. They are all same in dimension. The 0.30m thick voussoirs are forming the pointed arch above the embrasure which is 1.00m in length and 1.60m in height. Like embrasure E16, these embrasures are getting narrower towards inside of the façade wall.

The cement mortar line on the northeast and southeast façades of the building is located at +4.68m level. It again continues through the embrasures and to do this below the mortar line at the embrasures were all filled with rubble stones and cement mortar as a binding material. However there is a 0.09m projecting piece of metal plate is located at the

northeast direction of the mortar line. This is the only place where such material is seen in the mortar line on both façades.

The double skin wall is made of cut stone blocks and lime mortar as the binder. Blocks are generally in 0.50m length and 0.30m in height. However, both the materials and the construction techniques of the rubble stone infill at the embrasures which closes half of the embrasure opening on the wall are totally different than the majority of the building. The infill is made of rubble stone blocks and cement mortar as binder.

Because of the collapse of the northeast upper corner of the façade, the infill between the double skin walls can be easily seen. According to this, it is made of rubble stones and lime mortar as the binding material.

The length of the northeast façade of the courtyard is 10.04m. The façade wall rises sloppily which the shortest height is at +3.05m level and tallest height is at +4.67m level<sup>27</sup>. Space S4 is located at the northwest corner of the façade. On the façade wall, there is an arched embrasure with 1.48m in span and 1.57 in height located adjacent to the southeast wall of S4. The embrasure with a pointed arch above which is composed of 0.30m thick voussiors, goes along the thickness of the wall (1.91m). It ends with an opening outside. However the outside blocks of the double skin wall are partly collapsed which caused the opening turn into an amorphous form.

On the façade, there are three different construction techniques are followed on different levels. The first of all is the one rises from ground level up to +1.37m level<sup>28</sup> which is made of cut stone blocks on both sides of the wall and lime mortar as the binder. These blocks are generally 0.50m to 0.30m in size which again some of them are the blocks with bossages at the centers. The second type is the one starting from +1.37m level and rising up to +2.78m level. However this type of technique continues up to 6.18m of the total length of the wall from northwest corner. It is again made of cut stone blocks on both sides and

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<sup>27</sup> The tall end of this wall rises 0.77m up the surrounding molding.

<sup>28</sup> This height is also the end of the top of the space S4.

lime mortar as binder, however, the lime mortar comes out and creates a pointing on the façade of the wall. The average size of these blocks is 0.40m to 0.20m and none of them are having any kind of bossages. The third and the last type is located above the previous types and rises up to the end of the wall. The wall is made of rubble stones and cement mortar as the binding material. There is also a cement mortar capping with 0.86m thickness on the wall. But interesting point of this wall is that there is another type of wall facing to the northeast façade from outside. This courtyard wall is constructed behind this wall with a 0.80m gap in between.

S4 is located right at the northwest corner of the façade. The space has a door opening (1.30m height-0.68m length) on the entrance wall (2.45m height-2.42m length) with a single straight stone lintel above. The wall is made of 0.50m-0.30m cut stone blocks in average and lime mortar as the binder. And here again some of the blocks have bossages as the center.

The length of the northwest façade of the courtyard is 23.50m. The wall rises up to +2.77m level and then goes 1.21m back<sup>29</sup> from the inner surface and then again rises up 0.80m<sup>30</sup> (+3.70m level) more for 0.60m along the total (1.83m) thickness of the wall.

There are three arched embrasures located on the façade. These elements which are all same in dimension have 2.50m length and 1.74m height. The arches which are composed of 0.68m thick voussiors start at -0.75m level (0.41m above the ground). The embrasures conically get narrower through the thickness of the wall towards outside and end with a 0.30m to 0.80m opening.

On the corners on both sides of the façade, there are S3 and S4 spaces exist with 2.40m to 2.45m side walls on the same direction. These similar spaces separate from each other with a window opening on the wall of S3. The opening which is located at -0.77m high is 0.54m to 0.87m in size.

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<sup>29</sup> Narrowing on the wall creates the platform for the wall walks which are 1.21m wide.

<sup>30</sup> After the wall walks, this height is the highest point that the wall reaches.

On the façade wall, at the +2.77m level, there is a gutter with 0.10m height and 0.20m width located on over all the wall walks.

The façade wall is made of cut stone blocks on both sides and lime mortar as the binding material up to +1.40m level. The blocks are 0.50m to 0.30m in size which some has bossages. However, above this level up to the end of the wall, a second technique which is made of smaller cut stone blocks and lime mortar as the binder. On the façade, the joints come out and make pointing at this part of the wall. The dimensions of the blocks which none of them has bossages are 0.40m to 0.20m in the average.

The embrasures are made of cut stone blocks and lime mortar too. However, the inner sides of the embrasures are all plastered with lime mortar. And as followed from the points where plasters fell down, the infill of the wall is made of rubble stone and lime mortar as the binder.

Total length of the southwest façade is 24.27m and the highest point of the wall is located at +3.96m level. It is divided in two by 3.78m projecting entrance space (S1). The entrance of the space S3 and the stair ST2 that leads to the wall walks exist at the northwest wing of the division.

The space S3 which is 2.31m to 2.40m in size opens to the courtyard with the door opening (0.69m height to 1.53m length). Right behind this space, the stair ST2 with 0.76m thickness and 6.10m length rises up to the wall walks. The stair which is composed of averagely 0.38m high steps, reaches up to +2.85m level above the ground. However, the initial point of the stair on the ground shows that the steps go under the ground level.

There is a tooth on the wall adjacent to the northwest wall of S1. It projects 0.25m and is 1.05m in length rises up to +2.85m level where the wall walks start.

Right next to this, 3.78m projecting space S1 is located. The length of the walls which finish 0.22m below the wall walks are 5.89m. At the southeast façade of the space, a door opening with a depressed arch above which is composed of 0.30m thick voussoirs is located. The span of the opening which ends at +0.82m level is 1.87m.

The length of the southeast wing of the divided southwest façade is 8.91m and the highest point is at +4.30m. At the southeast corner of the wall, another tooth on the wall adjacent to the stair ST1 exists. It projects 0.25m from the wall and is 1.26m to 3.69m in size.

A gutter continues along the façade which starts at +3.02m level. The gutter which is 0.10m to 0.20m in size located a little higher on the southeast end than the northwest end. It goes towards northwest with a little slope (0.08m) and meets with the other one coming from northwest wall of the courtyard.

The entrance wall of the space S3 is made of cut stone blocks on both sides (0.50m x 0.30m) and lime mortar as a binding material. There are bossaged blocks as well which are located randomly on the wall.

The same technique is also followed on the walls which rise behind S3. However, except for the projecting walls of the space S1, a different technique is followed on the over all façade that starts at +1.45m level and continues up to the end of the walls. This part of the wall is made of cut stone blocks which are 0.40m to 0.20m averagely in size and lime mortar as the binding material. However the lime mortar at the joints comes out and makes a pointing on the façade.

At the space S1, almost the entire wall is made of cut stone blocks which are 0.50m to 0.30m in size with lime mortar as the binder. But a very different technique is also followed starting from ground level (-0.89) and rising up to +0.20m level. This part of the wall is made of cut stone blocks which are averagely 0.20m to 0.20m in size and lime mortar as the binder. None of these blocks have bossage like workmanship.

And the gutter which is 0.10m to 0.20m in size is made of cement mortar with gravels. And it is constructed right on the wall walks.

The façade wall of the southeast wing is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. However this technique could be followed up to +1.47m level from the ground where the height is -1.01m. The cut stone blocks used in the wall up to this level have both bossaged and smooth surfaces which are randomly scattered around the wall. Above this level, up to the ends of the wall (+4.30m level) it is made of cut stone blocks which are 0.40m to

0.20m in size and lime mortar as the binder. But the lime mortar makes pointing on the surface of the façade wall. In addition to this none of these cut stone blocks have bossages.

Total length of the southeast façade is 9.91m. It is composed of 5.12m projecting entrance space S6 and stairs ST2. The highest point of the sloppy rising wall of the space S6 is located at +5.53m and lowest point is located at +4.18m level. Right at the point where the space S6 ends, the stair ST2 starts with two opposite directions. One direction leads up to the wall walk and the other one leads down the ground from S6. Total length of the ST2 is 3.55m and it is composed of averagely 0.33m risers and 0.38m steps. It ends with 1.37m wide landing on the ground.

The wall of the space S6 is made of cut stone blocks with averagely 0.50m to 0.30m blocks both with and without bossages and lime mortar as the binding material. The remarkable point on this façade is that of the existence of a cement plaster starting at +2.88m level above the ground level and continues up to the end of the wall.

The stair ST2 is made of the same technique; however any kind of plaster could not be followed on the surfaces of it. The wall between the space S6 and the wall walks is composed the cut stone blocks on both sides and lime mortar as the binder. The cut stone blocks are all 0.40m to 0.20m in size and lime mortar again makes a pointing on the surface of this wall. On the other hand, there is 0.05m thick cement mortar remain on this wall, starting at +4.18m and continues towards the wall walks with slope. It ends at +3.24m level.

#### **2.3.3.3.3. SPACE S3**

1.53m away from the northwest corner, the door opening of the space exists on the northwest wall which is 2.43m in length. It goes through the thickness of the wall which is 0.55m and connects outside with 0.10m projecting casings on both side of the opening. The opening is +017m high and it ends with the traces of the lintels above which are 0.10m to 0.10m in size.

The length of the northwest is 2.97 and it reaches up to +1.04m from ground level (-1.35m level). Southwest wall is 2.48m and southeast wall is 2.91m in size. 1.60m away from the southwest corner, a window opening which is 0.57m to 0.87m in size exists on the southeast wall. The opening which is 0.67m thick starts at -0.77m level (0.35m above the ground level of the space).

All the walls of the space are made of cut stone blocks which are 0.50m to 0.30m averagely and lime mortar as a binding material. However, there are some blocks were also used on the walls which are totally out of the typology that could be followed in the buildings. These blocks are 0.80m to 0.40m in size which are the biggest blocks that are used in the building.

#### **2.3.3.3.4. SPACE S4**

The dimensions of the space are 2.46m (northeast wall), 2.48m (northwest wall), 2.43m (southwest wall) and 2.47m (southeast wall). The height of the space ends at +0.92m level. 1.58m away from the northwest corner, a door opening which is 1.60m to 0.84m in size exists on the southwest wall. It again connects outside with 0.10m projecting casing on both sides of the opening.

The walls of the space are made of cut stone blocks on both sides which are 0.50m to 0.30m in size and lime mortar as the binding material.

#### **2.3.3.3.5. SPACE S5**

S5a is the rectangular corridor space connects the space S5b to courtyard S2. It is 4.45m to 1.71m in size. Total height of the space is +1.30m but the walls rise up to +1.00m. After this level a barrel vault continues over the space.

On the southwest direction of the space, a door opening exists with 0.15m projecting casings on both sides. The opening which has an arch above that it composed of 0.30m voussiors, rises up to +1.00m level.

On the northwest and southeast walls, at +1.12m level and right next to the door opening, there are two gains which are 1.22m to 0.05m in size. However, there is only one-quarter circle gain -jamb- for the leaves of the door. It is located at the southeast wall at +1.17m level and 0.15m in diameter.

The walls are all made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material.

S5b is the square space that is located after the space S5a. The dimensions of the space are 1.84m to 1.84m and the total height is +3.65m. The walls rise up to +0.69m level and are all made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binder.

#### **2.3.3.3.6. SPACE S6**

Space S6 is the entrance space with stair ST3 that connects the courtyard S2 and the building. For this reason, it is a sloppy rising space with a barrel vault above. The height at the entrance from the courtyard is +4.18m and the height at the building end is +5.33m. 5.12m of the space which is 7.02m in total length is projecting out the building.

Space is divided into two parts by a door opening D7 located right at the projection of the space. The first part which projects out is 5.12m in length, 1.26m in width and 2.82m in height. The southwest wall of the space starts with 0.17m wide casing of the door opening D6. It projects 0.15m out and then the wall vertically continues for 5.12m. Right next to the entrance opening, there is a quarter circle shaped jamb located at +3.66m level. The wall ends with a 0.50m projecting tooth of the secondary door in the space. Northwest wall of the spaces starts again with the 0.17m wide and 0.20m projecting casing of the entrance door opening D7 of the building. However, after 2.99m length, it makes 11° angle which enlarges the total width of the space from 1.26m to 1.52m.

The middle door opening of the space has 0.17m projecting casing on the northwest and 0.50m projecting casing on the southeast. Southeast door of the space continues for 2.34m more which in fact gets into the space S7a and end with a 0.20m projecting tooth on the wall.

Like the entrance door D6 of the space, there is another quarter circle shaped jamb located at this wall at +5.55m level. The northwest wall goes for 1.74m and it ends with the steps of the space S8.

Both of the walls at this space are made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as a binding material. The stone blocks were used randomly in the walls both with and without bossages.

#### **2.3.3.3.7. SPACE S7**

Space S7 is basically composed of a single and square space which is 12.24m to 12.13m in size. A central square space (S7e) which is defined by piers that are carrying the vault above and the rectangular spaces (S7a, S7b, S7c, S7d) between the piers and the side walls of the first floor are forming the space S7 (Figure 2.12.).

Space S7a is 10.82m in length, 1.96m in width and 2.67m in height<sup>31</sup>. On the southeast wall of the space, there are three embrasures are located. The first of all (E5) is located 0.30m away from northeast corner of the space. The span of the embrasure is 1.37m and the height is 2.27m. It starts at +4.41m level (0.35m above the ground level) and ends with an arch above which is composed of 0.26m voussoirs. The embrasure gets narrower towards outside and therefore the arch above gets conically narrower. It ends with a loop hole outside that is 0.18m in width and 1.22m in height. The second embrasure E6 is located 2.33m away from the first one and the third one is located 1.41m away from the second one. Both the second and third one, are exactly the same of the first one in terms of location, material and dimension. However, today the second and third embrasure's loopholes are partly collapsed. The walls between these embrasures rise up to +5.57m level and after this level, the vault of the space starts at the northwest of the space S7a, three piers that belong to the central space are located. All of these piers are rise up to

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<sup>31</sup> The height is given in reference to the ground level of the 1<sup>st</sup> floor which is +4.06m.



Figure 2.13. View from 1<sup>st</sup> floor (S7).

+5.56m level. But the one in the middle is smaller than the ones at the sides. The first pier which is located 1.93m away from northeast corner is 1.53m in width and the second one which is 0.63m in width starts 2.26m away from the first one. The third one is 1.50m in width that starts 2.30m away from the middle pier. Stair ST4 which is 0.98m in width starts from the point where the third pier ends<sup>32</sup>.

At the southwest of the space S7a, the arched opening of the space S6 is facing to the space. It is 0.97m in width and next to this opening a 0.75m thick wall continues which separates the space S6 and S8.

The southeast wall of the space S7a is made of two different types of construction techniques. The first one is seen up to +4.78m level averagely from the ground<sup>33</sup>. However, this technique, here and there,

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<sup>32</sup> The third pier is actually a pilaster that can only be seen from space S7d.

<sup>33</sup> This dimension indicates two courses of stone works above the ground of the 1<sup>st</sup> floor which is at +4.06m level.

continues above this level on the southeast wall. It is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. The color of these cut blocks differ than the ones which are seen generally on the building. These blocks differ in workmanship as well. They are fine cut stones with straight corners and smooth faces. The second type is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. This type starts at +4.78m and rises up to the end of the wall. However these blocks show similarity with the ones mostly seen on the building in terms of both color and workmanship. Both techniques include randomly used bossaged and smooth faced blocks. Embrasures are all made of the combination of these two techniques.

The piers located at the northwest of the space are made of cut stone blocks which are 0.80m to 0.50m in size and cement mortar as the binding material. These blocks are all have straight corners and none of these cut stone blocks have bossages. These blocks again differ in terms of color and workmanship.

Space S7b is a rectangular space which is 12.24m in length and 1.99m in width. The wall rises up to +5.60m level. There are four embrasures located on the northeast wall of the space. Two of these embrasures (E8 and E9) on the southeast are exactly the same with the ones in S7a. The next one (E10) is completely collapsed. And the last one (E11) which is located on the northwest corner is totally different than the others.

The first embrasure E8 which is 1.37m in length is located 0.29m away from southeast corner of the space. It starts at +4.42m level (0.35m above the ground level) and ends at +6.65m level with an arch which is composed of 0.27m voussoirs. The embrasure ends with a loophole outside which is 0.18m in width and 1.27m in height. The second embrasure is located 2.22m away from the first one which is exactly the same of the first one (E8) in terms of material, dimension and location. The third one (E10) starts 1.58m away from the second one. Even though it is completely collapsed, the initial corners of the embrasure on the wall can be seen. The distance between these corners are 1.37m which is the

same distance of the first and second embrasures of the space S7b. The fourth and last embrasure (E11) is located 2.65m away from the third embrasure. It is different than the others in terms of form and dimension. The rectangular embrasure which is 0.64m in length starts at +4.78m (0.70m above the ground) and ends at +6.22m high with a lintel. It gets narrower for 0.46m of 1.49m thick wall and then it makes casings on both sides which projects 0.11m. These casings make a loophole which is 0.18m in width and 0.67m in height. After loophole, it gets wider back which ends with an arch above on the façade.

There are three piers which all rise up to +5.56m level located at the southwest of the space S7b. The first one which is 1.53m in width is located 1.90m away from southeast corner of the space. The second one which is 0.71m in width is located 2.20m away from the first one. These middle piers are smaller than the ones located at the corners. The third pier which is 1.52m in width is located 2.27m away from the middle pier.

The northeast wall of the space is made of two different types of construction techniques. The first one is again seen up +4.78m in the average (0.71m above the ground). It is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. These blocks show the same features with the ones used in the southeast wall of the space S7a. They differ both in color and workmanship. The wall continues with another technique above this technique. It is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. However these blocks show similarity with the ones mostly seen on the building in terms of both color and workmanship. Both techniques include randomly used bossaged and smooth faced cut stone blocks.

The piers located at the southwest of the space are made of cut stone blocks which are 0.80m to 0.50m in size and cement mortar as the binding material. These blocks all have straight corners and none of these cut stone blocks have bossages. These blocks again differ in terms of color and workmanship. On some of these piers, at certain points like springing levels, cut stone blocks which are 0.50m to 0.30m in size are

seen with lime mortar. These blocks are same in color and workmanship with the stone blocks seen in the general context of the building.

Space S7c which has a rectangular form is 12.23m in length, 1.94m in width and rises up to +5.62m level. There are four embrasures located on the southwest wall of the space. These embrasures are same with the one located at the northwest corner of space S7b.

The first of the embrasures (E12) is located 0.52m away from northeast corner of the space. It has a rectangular form which is 0.56m in length and 0.76m in height. It starts at +4.78m level (0.70m above the ground level) and ends at +6.22m level with a single lintel above. It gets narrower for 0.46m of 1.32m thick wall and then it makes casings on both sides which projects 0.11m. These casings make a loophole which is 0.20m in width and 0.70m in height. Then it again gets wider back which ends with an arch above on the façade. The second embrasure is located (E13) 3.04m away from the first one. 2.31m away from the second, the third one (E14) is located on the same wall. And the last one (E15) is located 2.93m away from the third embrasure on the wall. All of these four embrasures are same in dimension, form, location and material. The only difference is today the second and the third one's loopholes are collapsed. Therefore a wider opening is seen on the embrasures.

There are three piers which all rise up to +5.56m level located at the southeast of the space S7c. The first one which is 1.66m in width is located 1.95m away from northeast corner of the space. The second one which is 0.70m in width is located 2.18m away from the first one. This middle pier is smaller than the ones located at the corners. The third pier which is 1.45m in width is located 2.24m away from the middle pier.

The northwest wall of the space is made of two different types of construction techniques. The first one is again seen up to +4.78m level (0.71m in the average from the ground). It is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. These blocks show the same features with the ones used in the southeast wall of the space S7a and northeast wall of the space S7b. They differ both in color and workmanship. The wall continues with another technique above this technique which ends at +4.78m level. It is

made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. And these blocks show similarity with the ones which mostly seen on the building, in terms of both color and workmanship. Both techniques include randomly used bossaged and smooth faced cut stone blocks.

The piers located at the southeast of the space are made of cut stone blocks which are 0.80m to 0.50m in size and cement mortar as the binding material. These blocks are all have straight corners and none of these cut stone blocks have bossages. These blocks again differ in terms of color and workmanship. On some of these piers, at certain points like springing levels, cut stone blocks which are 0.50m to 0.30m in size are seen with lime mortar. These blocks are same in color and workmanship with the stone blocks seen in the general context of the building.

Space S7d is the last and the shortest wing of the surrounding corridor spaces. It has again a rectangular form which is 8.66m in length, 1.94m in width and rises up to +5.65m level. The reason that makes this space shorter than S7a, S7b and S7c is it ends with a blind wall and right after this wall spaces S6 and S8 are located next to it.

There are three embrasures are located on the southwest wall of the space S7d. The first one (E16) which is located northwest corner shows same features with the ones ends with lintels above and below. And the rest two are showing exactly the same features with the ones with arches above. The first one (E16) which is 0.56m in length and 0.76m in height is located 0.41m away from the northwest corner of the space. It starts at +4.78m level (0.70m above the ground level) and ends at +6.22m level (1.46m above the ground level) with straight stone lintel. As exactly seen at the others, this one gets narrower along 0.46m of the 1.39m thick wall. It makes a loophole which is 0.20m in width and 0.70m in height and then it again gets wider after this loophole. It ends with an arch above on the façade of the wall outside.

The second one (E17) which is located 2.72m away from the first one (E16) is 1.37m in length. It starts at +4.42m level (0.35m above the ground level) and ends at +6.55m level (3.05m above the ground level) with an arch which is composed of 0.26m voussoirs. Like the others, it

gets narrower towards outside and ends with a loophole which is 0.12m in length and 1.19m in height. The third one (E18) is located 1.06m away from the second one. This one is exactly same with the one right next to it in terms of dimension, form and location.

There is a blind wall which is 3.23m in length and +6.89m high is located at the southeast of the space. The northeast end of the wall works as a pilaster which is 1.56m in length for the central space. The middle smaller pier which is 0.74m in length is located 2.24m away from this pilaster on the northeast side of the space. The third and the last pier is located 2.24m away from the middle one. It is 1.60m in length and rises up to 1.51m high like the others.

The southwest wall of the space is made of two different types of construction techniques. The first one is again seen up to +4.78m level (0.71m in the average from the ground). It is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. These blocks show the same features with the ones used in the southeast wall of the space S7a and northeast wall of the space S7b. They differ both in color and workmanship. The wall continues with another technique above this technique which ends at +4.78m level. It is made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. And these blocks show similarity with the ones which mostly seen on the building, in terms of both color and workmanship. Both techniques include randomly used bossaged and smooth faced cut stone blocks.

The piers located at the northeast of the space are made of cut stone blocks which are 0.80m to 0.50m in size and cement mortar as the binding material. These blocks are all have straight corners and none of these cut stone blocks have bossages. These blocks again differ in terms of color and workmanship. On some of these piers, at certain points like springing levels, cut stone blocks which are 0.50m to 0.30m in size are seen with lime mortar. These blocks are same in color and workmanship with the stone blocks seen in the general context of the building.

Space S7e is a square central space which is 5.79m to 5.80m in size and rises up to +8.80m level (4.65m above the ground level). The

piers which are bearing the vault above the space are composed L shaped ones at the corners and rectangular ones in the middle of these corner piers. Apart from the vault, these corner piers and middle piers are connected to each other with two arches above which start from the middle one and reach the corner piers which are located at opposite sides. Above these arches which are composed of 0.26m thick voussoirs the wall continues up to +8.80m level. There are four openings (W3, W4, W5 and W6) which are 0.52m in length and 0.73m in height located at the each of the four walls. These opening are located at +7.79m level (3.63m above the ground level) and they get narrower towards outside. They face to the ground floor of the second floor.

The piers of the space are made of cut stone blocks which are 0.80m to 0.50m in size and cement mortar as the binding material. These blocks are all have straight corners and none of these cut stone blocks have bossages. These blocks again differ in terms of color and workmanship. On some of these piers, at certain points like springing levels, cut stone blocks which are 0.50m to 0.30m in size are seen with lime mortar. These blocks are same in color and workmanship with the stone blocks seen in the general context of the building.

The four surrounding walls of the space are made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. These blocks are same in color with the others which are seen mostly on the building. However unlike the general features of the facades, none of these blocks have bossages at the centers. The arches above the piers on the wall are composed of 0.26m thick voussoirs and made of cut stone blocks and lime mortar as the biding material. But especially on the arches at the northeast and southeast, there are fine cut stone which are in different color than the others are located.

#### **2.3.3.3.8. SPACE S8**

Space S8 is a rectangular transition space between first and second floors which includes stair ST4. It is 2.40m to 2.70m in size. The width of the space is 0.84m which is the width of the steps as well. These

steps of the U formed stair are composed of 0.40m risers. There is a rectangular slim opening (W2) which is 0.20m in length and 0.60m in height located at +8.03m level on the southeast wall of the space.

Entire walls of the space are made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. The walls are composed of randomly scattered bossaged and smooth surfaced cut stone blocks.

#### **2.3.3.3.9. SPACE S9**

Space S9 is a wide wall walk which is also the ground of the second floor surrounded by the walls on four sides. At the middle of the space an octagonal space S10 is located.

Presently, almost entire surrounding walls are collapsed except for the ones which are located southeast and northwest that rises up to +8.53m level (0.70m above the ground level of the 2<sup>nd</sup> floor). The entrance wall of the space S8 which is 3.73m in length and at +9.50m high is located on the southwest façade. The door opening D8 of the entrance wall is 1.16m in length and 1.44m in height. It ends with a lintel above.

At the center of the space S9, the outer facades of the space S10 are facing to this space. Huge parts of walls of the octagonal space which is 4.39m in diameter and which composed of 3.40m length edges are presently collapsed. The highest point at the walls of this space is at 11.90m level (3.61m from ground level of the space S9). There are four openings (W1, W2, W3 and W4) which are 0.20m in length and 0.73m in height located at the northwest, southwest, southeast and northeast walls of the octagonal space. These opening are facing to the space S7e of the first floor. There are two loopholes (E19 and E20) located at the southeast and southwest walls of the octagonal space which are starting at +9.84m level (2.25m above the ground) and are 0.12m in length and 1.10m in height. Between these walls, there is a door opening (D9) located at the south wall of the octagonal space. The opening which is 2.11m in height and 0.60m in length starts at +7.78m level (0.20m above

the ground level) and ends at +9.91m level with a depressed arch above that is composed of 0.35m thick voussiors.

Both the surrounding walls of the space S9 and outer faces of the octagonal space S10 are made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. The outer faces of S10 are all composed of randomly scattered bossaged and smooth surfaced cut blocks. However the surrounding walls are only composed of smooth surfaced cut stone blocks.

#### **2.3.3.3.10. SPACE S10**

The floor level of the space S10 which has 1.06m thick walls is 1.82m higher than the floor level of the space S9 which is located at +7.63m level. The entrance opening of the space which is located on the south wall has 0.15m projecting casings on both sides. The opening which is 0.84m wide continues along the thickness of the wall and it ends with the stair ST5 which is composed of five steps.

There are two embrasures (E19 and E20) located on the southeast and southwest walls of the space where the inner lengths of the walls of the octagonal space are 2.46m. These embrasures start at +9.85m level (0.35m above the ground level) and ends +10.92m level with a lintel. The embrasure which are 1.46m in length get narrower towards outside (S9) and ends with loopholes which are 0.12m to 1.19m in size. There is a continuous lintel trace which is 0.24m in height and 0.18m in depth located at the southeast, east and south walls<sup>34</sup>. It is located at +11.28m level on the walls.

The southwest, southeast and south walls of the space are made of cut stone blocks which are 0.50m to 0.30m in size and lime mortar as the binding material. These walls are only walls that rise above the ground level of the space S10 and all of them are composed of smooth surfaced cut blocks. The northwest, northeast and north walls of the space are made of single row cement blocks which are rising up to 0.20m

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<sup>34</sup> Because the rest of the walls are all collapsed, other side of the trace could not be followed.

above the ground level. Cement mortar is seen as the binding material between these blocks. Below these cement block walls, walls which are made of cut stone blocks and lime mortar as the binding material exist. These walls are made of cut stone blocks which are 0.50m to 0.30m in size.

#### **2.3.3.4. CEILINGS**

##### **2.3.3.4.1. SPACE S1**

The ceiling of the space S1 is composed of a cross vault. The vault rises at +0.64m level from the southwest wall of the space and at +0.22 level on the two pilasters which are located at the northeast direction of the space.

The springing of the vault on the southwest wall is projecting 0.10m forward from the wall, and the ones on the pilasters are projecting 0.05m forward. At the pilaster end of the vault, the springing are made of 0.40m high cut stone blocks and lime mortar as the binding material. This is composed of single course of the cut stone blocks which have no bossage work. Above these blocks the vault which is made of rough cut stone blocks and lime mortar as the binding material rises. The top level of the vault reaches to +2.03m high. Even though the serious part of it is detached, 0.015m – 0.02m in thick lime plaster remains followed on the surface of the vault. And on the southeast of the vault, above the opening D2, again cement plaster exists on the vault.

##### **2.3.3.4.2. SPACE S3**

The ceiling of the space S3 is composed of a cross vault which rises directly from the four corners of the space. The vault starts at -0.88m level (0.70m above the ground level) at the west and south corners of the space and projects 0.04m forward. It starts at +0.00m level (1.37m above the ground level) and makes the same projection at the north and east corners of the space.

The vault which the top level is located at +1.08m is made of rough cut stone blocks and lime mortar as the binding material. At the west corner of the vault there is a very tiny 0.02m thick lime plaster remain exists on the surface of the vault.

#### **2.3.3.4.3. SPACE S4**

The ceiling of the space S4 is composed of a cross vault. At the north and east corners of the space, the vault starts at +0.61m level (0.75m above the ground) and at the west and south corners it starts at +0.19m level (1.55m above the ground). On four corners, the springing of the vault projects 0.10m forward.

The vault which the top level is located at +0.90m level is made of rough cut stone blocks and lime mortar as the binding material. A very huge part of the vault is covered with 0.02m thick lime plaster. And around the level of the vault, there are two iron nails exist which are corroded.

#### **2.3.3.4.4. SPACE S5**

The ceiling of the space S5 which is composed of S5a and S5b is composed of different vaults on both spaces.

Space S5a is composed of a barrel vault which starts at +1.51m level (2.25m above the ground level). The springing of the barrel vault is made of cut stone blocks which are 0.20m to 0.40m in size and lime mortar. The vault which reaches to +1.30m top level is made of rough cut stone blocks which are 0.10m to 0.30m in size and lime mortar. These blocks were all used vertically on the vault and each block is located averagely 0.05m-0.08m away from each other. At the door (D3) end of the vault, a 0.02m thick lime plaster remains exist on the surface of the vault. However, this lime plaster remain does not cover the cut stone springing blocks of the vault.

At the S5b, the ceiling is composed of a cross vault which starts at +0.69m level (1.70m above the ground level) on four corners of the

space. The top level of the vault reaches to +3.61m level. Unlike the barrel vault of the space S5a, the springing of the vault of space S5b, has neither made of cut stone blocks and nor has a projection.

The vault is made of rough cut stone blocks which are averagely 0.15m to 0.30m in size and lime mortar as the binding material. These blocks were used horizontally on the vault which are 0.10m-0.15m away from each other.

#### **2.3.3.4.5. SPACE S6**

The ceiling of the space S6 is composed of a barrel vault which is divided by the two door openings D6 and D7. The vault above the space between D6 and D7 starts at +3.92m level (2.54m above the ground level) and top level of the vault reaches to +5.09m level. However, the vault of the area between the door opening D7 and the upper floor end of the space starts at +5.55m level and reaches to +5.69m high top level. The reason for the level difference of the vaults in the same is the height of the space between D7 and the upper floor end of the space increases 0.10m more in comparison to the one between D7 and D6.

Even though entire vault is covered with 0.02m thick lime mortar, it is observed from the detached areas of lime plaster that the vault is made of rough cut stone and lime mortar as the binding material.

#### **2.3.3.4.6. SPACE S7**

The ceiling of the spaces S7a, b, c and d are composed of cross vaults. At these spaces the vaults are carried by the wall on one side and by the piers on the other side. It starts at +5.56m level (1.48m above the ground level) on the piers and the starts at 5.57m (1.55m above the ground level of the floor) on the walls. The vaults which the top levels reach up to +6.85m level are located on the piers with 0.30m high and 0.02m projecting springing blocks. These blocks are made of one single course of cut stone blocks and lime mortar as the binding material. And on the wall side, the springing of the vaults is made of again 0.30m high cut

stone blocks and lime mortar as the binding material. These springings on the wall side are also projecting 0.02m forward. The vault itself is made of rough cut stone blocks and lime mortar as the binding material. And the vault is covered by 0.02m thick lime plaster on various points of the surface of the vaults.

However both a serious part of the lime plaster and the lime mortar between the rough cut stone blocks are fallen down.

The ceiling of the central space S7e is composed of a cross vault which is carried by the piers on four directions. It starts at +5.56m level (1.50m above the ground level) and springings project 0.03m at the corners. The total height of the vault is 4.61m above the ground level.

The vault is made of rough cut stone blocks and lime mortar as the binding material. And especially at the upper levels of the vault, a 0.02m thick lime plaster is covering the vault. However, today most part of the plaster is vanished.

There is an oculus which is 0.80m in diameter is located at the top of the vault. It is defined by the 0.20m thick and 0.30m high cut stone blocks on the vault. In addition to this, the oculus is presently closed with the huge cut stone blocks.

#### **2.3.3.4.7. SPACE S8**

The ceiling of the space S8 which has 4.30m total height<sup>35</sup> is composed of flat ceiling. The ceiling is made of 0.50m thick cut stone blocks which were places on the side walls (northeast and southwest) of the space and lime mortar as the binding material. A very small lime plaster remain which is 0.02m thickness exists t the southeast end of the ceiling.

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<sup>35</sup> The height level of the floor is +4.06m.

## **2.3.4. MATERIAL ANALYSIS**

### **2.3.4.1. BUILDING MATERIALS**

The building materials are categorized in two groups according to the way they occur (Figure 2.13.).

#### **2.3.4.1.1. NATURAL BUILDING MATERIALS**

There are three different natural building stones used in the building. These are lime stones, sand stones and basalt stones.

**LIME STONE** Lime stone blocks are used in the building in two different forms which consist of cut stone blocks and rough-cut stone blocks. However, whatever the forms are used in the building, all of the lime stone blocks which are *clastic* type of *sedimentary rocks* are showing conglomerate feature<sup>36</sup>.

Almost all of the walls of the buildings are made of rectangular cut stone blocks which are averagely 0.50m to 0.30m in size (Figure 2.14. - 2.15.).

The vault and the floor tiles are made of rough-cut blocks. However, the blocks which are used in the vaults are a little bigger than the floor tiles. Apart from cut stone and rough-cut stone form of lime stone blocks, the infill of the double skin walls are made of lime stone rubbles.

**SAND STONE** Like the lime stones, sand stones are the clastic type of sedimentary rocks as well. Nevertheless, sand stones in the building do not show conglomerate features.

All of the sand stones are used as cut stone blocks which are averagely 0.50m to 0.30m in size. These blocks are only followed on the piers and the walls of the space S7 which is located at the 1<sup>st</sup> floor.

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<sup>36</sup> All stone blocks are analyzed and defined by the contributions of Inst. Dr. Fatma TOKSOY-KÖKSAL/ Department of Geological Engineering.

**BASALT STONE** Basalt stones are the *effusive* type of *igneous rocks*. Basalt stones are only followed at the northeast wall of the courtyard (S2) of the building. The form of the stones which are averagely 0.20m in length are in pebble stone form that is round and flat.

#### **2.3.4.1.2. ARTIFICIAL MATERIALS**

All of the artificial materials that are mentioned in the following titles are based on cement mixture.

**CEMENT BLOCKS.** Cement blocks are made of cement and aggregate mixture. These blocks which are all 0.40m to 0.20m in size are not solid blocks. They consist of certain sized gaps which are made during the production of these blocks like the factory bricks. These blocks are only followed on some of the walls of the space S10 which is located at the 2<sup>nd</sup> floor.

**CONCRETE SLAB.** It is the floor tile where mostly followed on the ground of the courtyard is made of cement and aggregate mixture. It is a smooth surfaced floor which is 0.07m in height.

#### **2.3.4.2. BINDING MATERIALS**

There are two different types of mortars used in the building as the binding material. These are lime mortar and cement mortar.

Lime mortar is used as the binding material both in the infill of the double skin walls and on the walls which are made of lime stone blocks. The average thickness of the lime mortar joints is 0.05m. However, both the form and therefore the thickness of the lime mortar shows variety according the location where they are used<sup>37</sup>.

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<sup>37</sup> See Construction Techniques.

Cement mortar is used in all walls which are made of basalt and sand stones. The thickness of the mortar is less than 0.01m on the sand stone walls and on the walls which are made of basalt stones, it is averagely 0.03m.

#### **2.3.4.3. FINISHING MATERIALS**

There are two different plasters used as the finishing materials in the building. These are lime plaster and cement plaster.

Lime plaster which a little amount of remains are existing today is followed on the inner surfaces of the walls of the spaces, and on all vaults. The average thickness of the lime plaster is 0.025m.

Cement plaster is only followed on the walls of the space S1 at the ground floor. The thickness of the cement plaster which is not painted or white washed is 0.02m.

#### **2.3.4.4. OTHERS**

The first group of this category is the metals. The only metal (iron) based element is the flag post and the related structures which are designed to carry the projectors to light up the flag. They are all located in the space S10 located at the 2<sup>nd</sup> floor.

The second group is the earth that covers a serious part of the courtyard floor (S2).

#### **2.3.5. WORKMANSHIP OF THE CUT STONE BLOCKS**

The aim of this study is to expose the relationship among the workmanship of only the cut stone blocks, which are used in the walls. According to this, cut stone blocks are categorized in four groups in terms of their dimensions<sup>38</sup> (Figure 2.16.).

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<sup>38</sup> All of the workmanships of the cut stone blocks are mapped stone by stone during the site survey.

**TYPE 1.** These cut stone blocks (lime stone) are averagely 0.20m to 0.20m in size. All of them are smooth surfaced blocks which are the smallest cut stone blocks used in the building. This type of cut stone blocks are only seen in the outer side of the northeast wall of the space S1 that faces to the courtyard.

**TYPE 2.** These blocks (lime stone) are averagely 0.40m to 0.20m in size. Like previous type, these blocks are all smooth surfaced blocks. They are only seen on the inner side of the courtyard walls which starts at +1.45m level and continues up to the end of the wall<sup>39</sup>.

**TYPE 3.** These cut stone blocks which are averagely 0.50m to 0.30m in size are divided into six sub groups according to their material and workmanship.

**a.** The first group consists of fine cut stone (lime stone) blocks. The blocks which have straight corners have polished surfaces. For this reason, they have extremely smooth surfaces in comparison to the similar blocks. This type of cut stone blocks are seen on the portal at the southwest façade of the building.

**b.** This group is again consists of cut stone (lime stone) blocks. However, these do not have polished surfaces. Therefore, even though they have smooth surfaces, the surfaces of these blocks are not as smooth as the previous type of blocks. This type of cut stone blocks are seen randomly and mostly in all the walls of the building.

**c.** This group is consists of cut stone (lime stone) blocks. However, the surfaces of these blocks are composed of averagely 0.02m projecting bossages at the centers which some of them are in square and some of them are in rectangular form. This type of cut stone blocks are only seen on the walls which faces to the outside.

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<sup>39</sup> The height level where type 2 blocks start is all same at the four walls of the courtyard.

MATERIAL ANALYSIS	
<p><b>1. BUILDING MATERIALS</b></p> <p>a. natural materials</p>  <p>LIME STONE (cut stone) conglomerate lime stone of sedimentary rocks (clastic)</p>  <p>LIME STONE (rough-cut stone) conglomerate lime stone of sedimentary rocks (clastic)</p>  <p>SAND STONE (cut stone) sand stone of sedimentary rocks (clastic)</p>  <p>BASALT STONE (pebble stone) igneous rocks (effusive)</p>	
<p>b. artificial materials</p>  <p>CEMENT BLOCKS consists of cement and aggregate.</p>  <p>CONCRETE SLAB consists of poured cement mortar</p> 	
<p><b>2. BINDING MATERIALS</b></p>  <p>LIME MORTAR</p>  <p>CEMENT MORTAR</p> 	
<p><b>3. FINISHING MATERIAL</b></p>  <p>LIME PLASTER</p>  <p>CEMENT PLASTER</p> 	
<p><b>4. OTHER</b></p> <p>metal</p>  <p>IRON</p>  <p>EARTH</p> 	

Figure 2.14. Material Analysis- Legend.

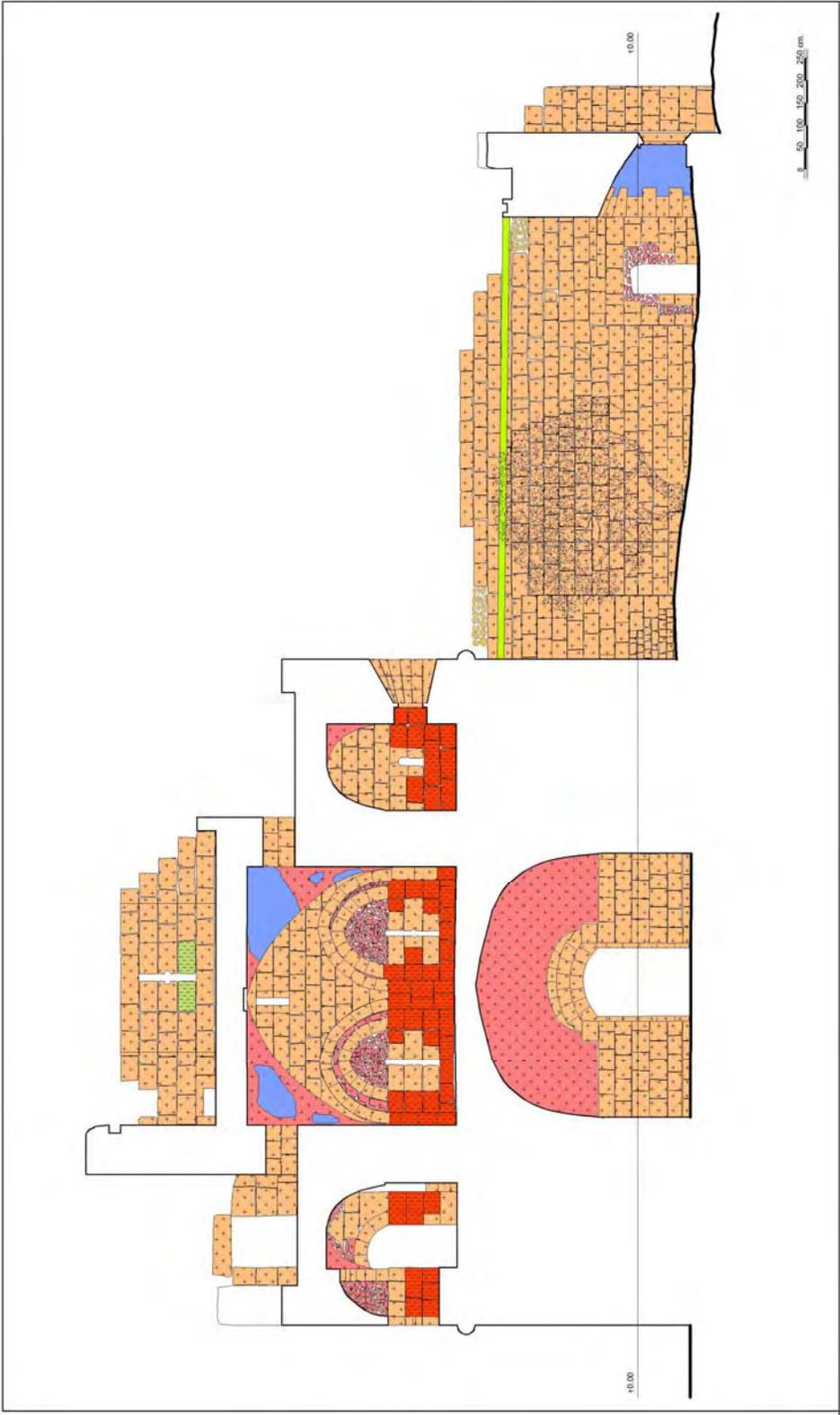


Figure 2.15. Material Analysis- Section B-B

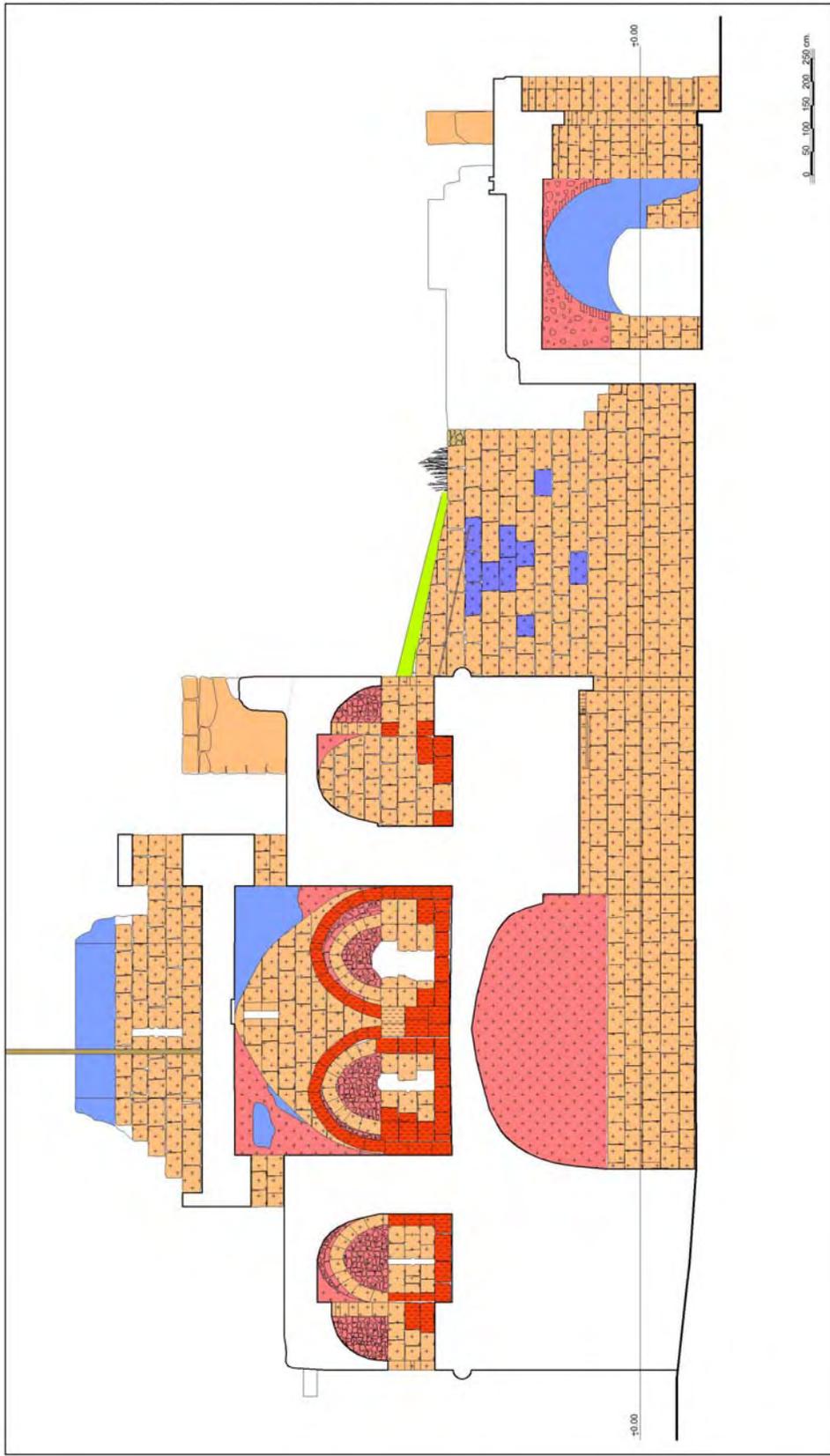


Figure 2.16. Material Analysis- Section G-G.

d. This group consists of the same cut stone blocks (lime stone) of type c. However, they differ in the form of their bossages at the center. The bossages of these blocks are composed of horizontal linear form which are projecting averagely 0.02m. This type of cut stone blocks are only seen on the walls which faces to the outside.

e. This group consists of the same cut stone blocks (lime stone) of type d. However the bossage of these blocks are composed of vertical linear form which are projecting 0.02m. This type of cut stone blocks are only seen on the walls which faces to the outside.

f. The last group consists of fine cut stone (sand stone) blocks. These blocks which have straight corners have rectangular and square bossages at the centers which project averagely 0.05m. All of these blocks are seen at the inner faces of the walls at the 1<sup>st</sup> floor of the building.

**TYPE 4.** The last type of the main categories consists of fine cut stone (sand stone) blocks which are averagely 0.80m to 0.50m in size. These blocks which have straight corners and smooth surfaces are all seen at the piers that surround the space S7e in the 1<sup>st</sup> floor of the building.

Consequently, it can be summarized as the outer sides of the walls are composed of bossaged and smooth surfaced cut stone blocks (Type 3-b, c, d and e). These blocks which are all lime stones were used randomly on the walls. Moreover, the inner sides of the walls are composed of only blocks with smooth surfaces (Type 3-b) which are again lime stones (Figure 2.17 -2.18.).

However, the walls and the piers of the first floor are all composed of sand stones. Moreover, while there are no bossaged cut stone (lime stone) blocks are facing to the inside of the spaces, the bossaged sand stone blocks (Type 3-f and Type 4) are facing to the inside of the space.

## **2.3.6. CONSTRUCTION TECHNIQUES**

### **2.3.6.1. WALLS**

The walls of the building are categorized in eight groups. Almost all of these groups are consist of averagely 0.85m thick double skin wall constructions (Figure 2.19.).

**TYPE 1.** Both sides of the double skin wall are made of cut stone blocks (lime stone) and rubble stone (lime stone) infill. Lime mortar is used the binding material both in the infill and in the cut stone skins. Another feature of this type of construction technique is the bossaged cut stone blocks were used as well at the outer skins of the walls. However, the inner skins of the walls are all of consist of cut stone blocks without bossages. Cut stone blocks at both sides are 0.50m to 0.30m in size. The walls which are all carrying the features above differ from each other with some details. These walls can be categorized under three sub groups.

- a) It is the 4.00m thick type of the above mentioned wall. These walls are the walls located at the ground floor which define spaces S5.
- b) It is the 0.85m thick type of the above mentioned wall. Almost all of the walls in the building are made of this type technique.
- c) It is again the walls which are 0.85m in thickness. However, there is a trace of a lintel which is located at a certain height of the inner face of the walls and which continues among the walls. The walls with the trace of lintel which is 0.18m to 0.27m in size are the walls that surround the octagonal space S10 at the 2<sup>nd</sup> floor.

**TYPE 2.** It is the wall which basically carrying the similar features of the wall type 1. The wall is made of cut stone (lime stone) blocks on both sides and lime mortar as the binding material. The outer skins of the walls are consist of randomly used bossaged and smooth surfaced cut stone blocks which are averagely 0.50m to 0.30m in size. However, the inner

skin of the same walls totally consist of smooth surfaced cut stone (lime stone) blocks which are 0.40m to 0.20m in size. Unlike the outer skin of the wall, on the inner skin of the walls, the lime mortar within the joints of the blocks come out and make averagely 0.02m thick pointing on the surface of the wall. This type of wall construction is only seen at the walls that surround the courtyard S2.

**TYPE 3.** The wall is made of cut stone (lime stone) blocks at both sides which are 0.50m to 0.30m in size and lime mortar. However, another technique which is made of cut stone blocks (lime stone) and lime mortar starts from ground level (-0.89m) and rises up to +0.20m level. This technique which consists of 0.20m to 0.20m cut stone blocks located at the one side of the wall. These blocks are all smooth surfaced blocks where this part of the wall is composed of randomly scattered bossaged and smooth surfaced blocks. This type of construction technique is only followed at the outer skin of the northeast wall of the space S1.

**TYPE 4.** This type of wall construction is consists of double skin masonry. Outer skin of the wall is made of cut stone blocks (lime stone) which are 0.50m to 0.30m in size and lime mortar, and the inner skin of the wall is made of cut stone blocks (sand stone) which are again 0.50m to 0.30m in size and cement mortar as the binding material. The blocks at the outer side are composed of randomly scattered bossaged and smooth surfaced cut stone blocks. However, the ones at the inner side are all composed of bossaged blocks. These blocks are fine cut stone blocks with straight corners and different color in comparison to the ones located at the other side of the wall. And the cement joints of the inner side are thinner (less than 0.01m) than lime joints at the other side. This type of technique is followed at the side walls of the 1<sup>st</sup> floor.

**TYPE 5.** The wall is made of cut stone (sand stone) blocks at both sides which are 0.80m to 0.50m in size and cement mortar as the binding material. These fine cut blocks have straight corners and have all smooth surface. The cement mortar joints are thinner (less than 0.01m) than the

general thickness of the joints which is averagely 0.015m in thickness. In addition to this, at some points of the wall, there are different techniques which are made of cut stone blocks (lime stone) that are 0.50m to 0.30m in size and lime mortar<sup>40</sup> are followed. This type of technique is only seen at the piers which are located at the 1<sup>st</sup> floor.

**TYPE 6.** This type of double skin wall is made of cut stone blocks (lime stone) which are 0.50m to 0.30m in size and lime mortar as the binding. One side of the wall is composed of randomly scattered bossaged and smooth surfaced cut stone blocks. However, the other side of the wall is composed of fine cut stone with polished surfaces and very thin joints. This technique is followed on the portal of the building which is located at the southwest façade.

**TYPE 7.** The wall is made of pebble stones (basalt) and cement mortar as the binding. It consists of random coursed of pebbles. At the top of the wall, there is a 0.05m thick cement mortar capping. This technique is followed at the northeast wall of the courtyard (S2). It starts at +1.35m level<sup>41</sup> and continues up to end of the wall.

**TYPE 8.** The wall is made of cement blocks which are 0.40m to 0.20m in size and cement mortar as the binder. This type of wall is located on the type 1-b wall. It is followed at the northeast and northwest walls of the space S10 which is located at the 2<sup>nd</sup> floor.

### 2.3.6.2. FLOORS

The floor techniques can be basically categorized in two groups.

**TYPE 1.** The floor is made of thin and flat rough cut stones (lime stone) and of lime mortar as the binder. The rough cut stones are located on the rubble stone infill as of the walls. They were placed on 0.04-0.05m

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<sup>40</sup> See legend of the Construction Techniques drawings-Walls Type 1-b

<sup>41</sup> Below part of this wall is made of Type 1-b technique.

thick lime mortar layer. The lime mortar within the blocks which is used for binding them generally covers these blocks at the surface of the floor. This type of floor technique is followed at the floors of space S7, S9, wall walks and landings of the stairs.

**TYPE 2.** It is the floor technique that is made concrete slab. This type of floor is categorized in two sub groups.

- a) It is 0.15m thick concrete slab poured on a type 1 floor. It is followed on the floor of the space S10.
- b) It is 0.10m thick concrete slab poured directly on the earth which is followed on the floor of the courtyard (S2) of the building.

### **2.3.6.3. CEILINGS**

The ceilings consist of vaults which are categorized in two groups.

**TYPE 1.** The vault is composed of cross vault. The springings are made of cut stone blocks (limes tone) which are 0.50m to 0.30m in size and lime mortar as the binding. The rest parts of the vault between these springings are made of rough cut stone blocks (lime stone) which are averagely 0.20m in length and lime mortar. These rough cut blocks were used in random coursing in the cross vault. A secondary type is the lime plastered version of the same type of cross vault. The only difference is the lime plaster on the surface of the vault.

**TYPE 2.** The vault is composed of barrel vault where it is only seen in spaces S5 and S6 in the building. Again, the springings are made of cut stone blocks (lime stone) which are 0.50m to 0.30m in size and lime mortar as the binding. The rest of the vault between these springings are made of rough-cut stone blocks (lime stone) which are averagely 0.40m to 0.20m in size and lime mortar. The coursing of the rough cut blocks goes parallel to the barrel vault with wide joints. The vault is covered with lime plaster.

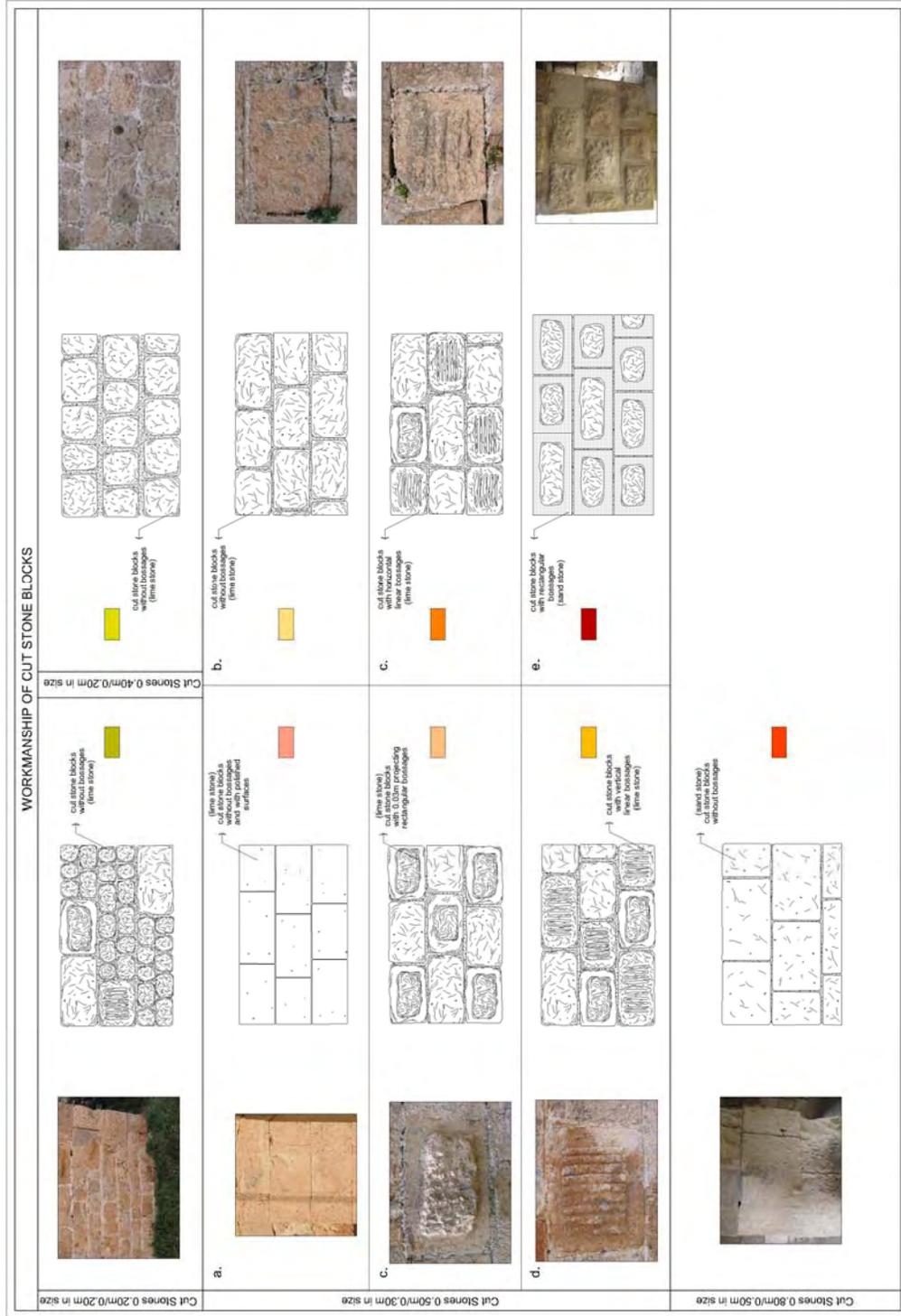


Figure 2.17. Workmanship of the Cut Stone Blocks- Legend.

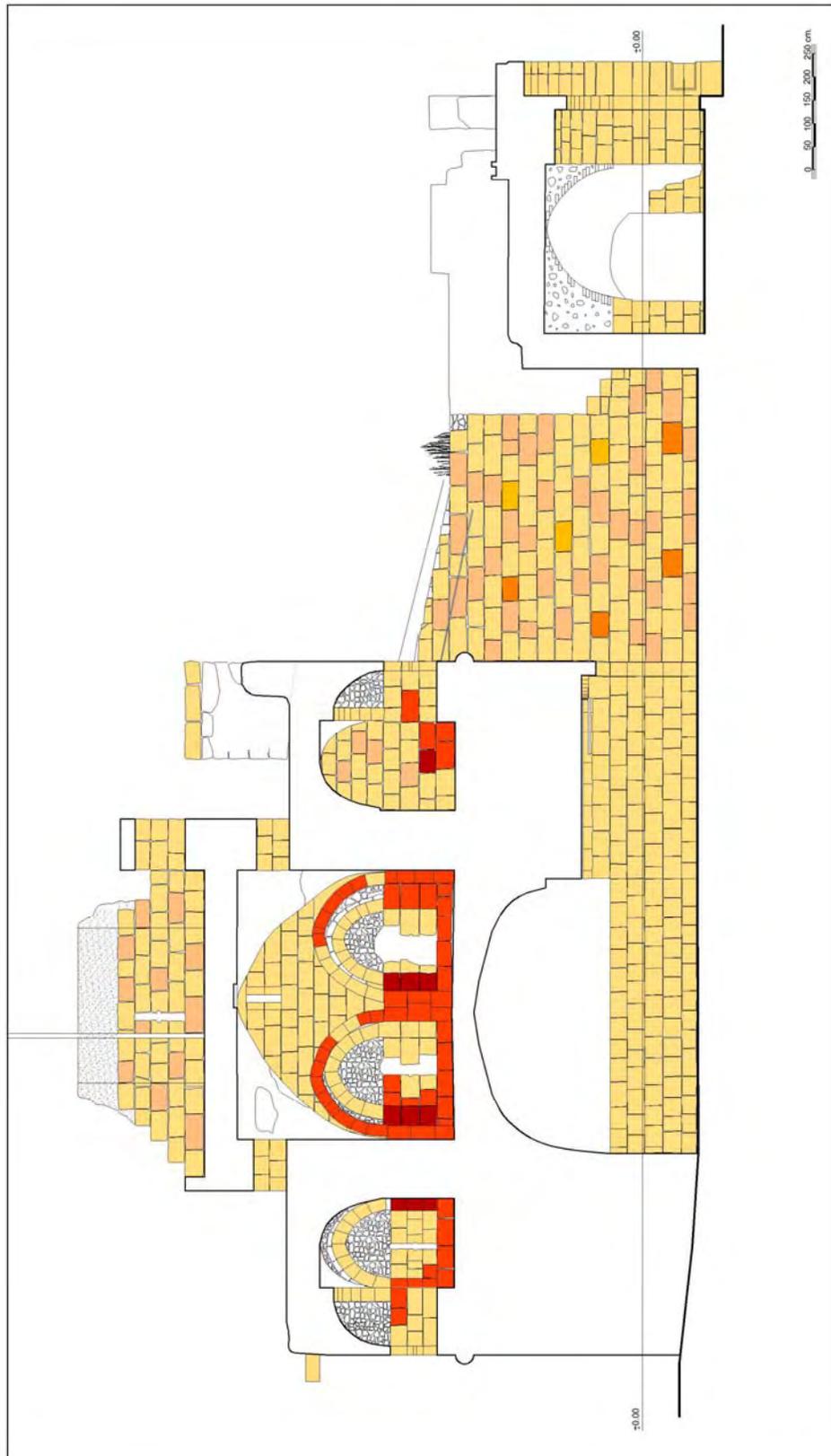


Figure 2.18. Workmanship of the Cut Stone Blocks- Section G-G.

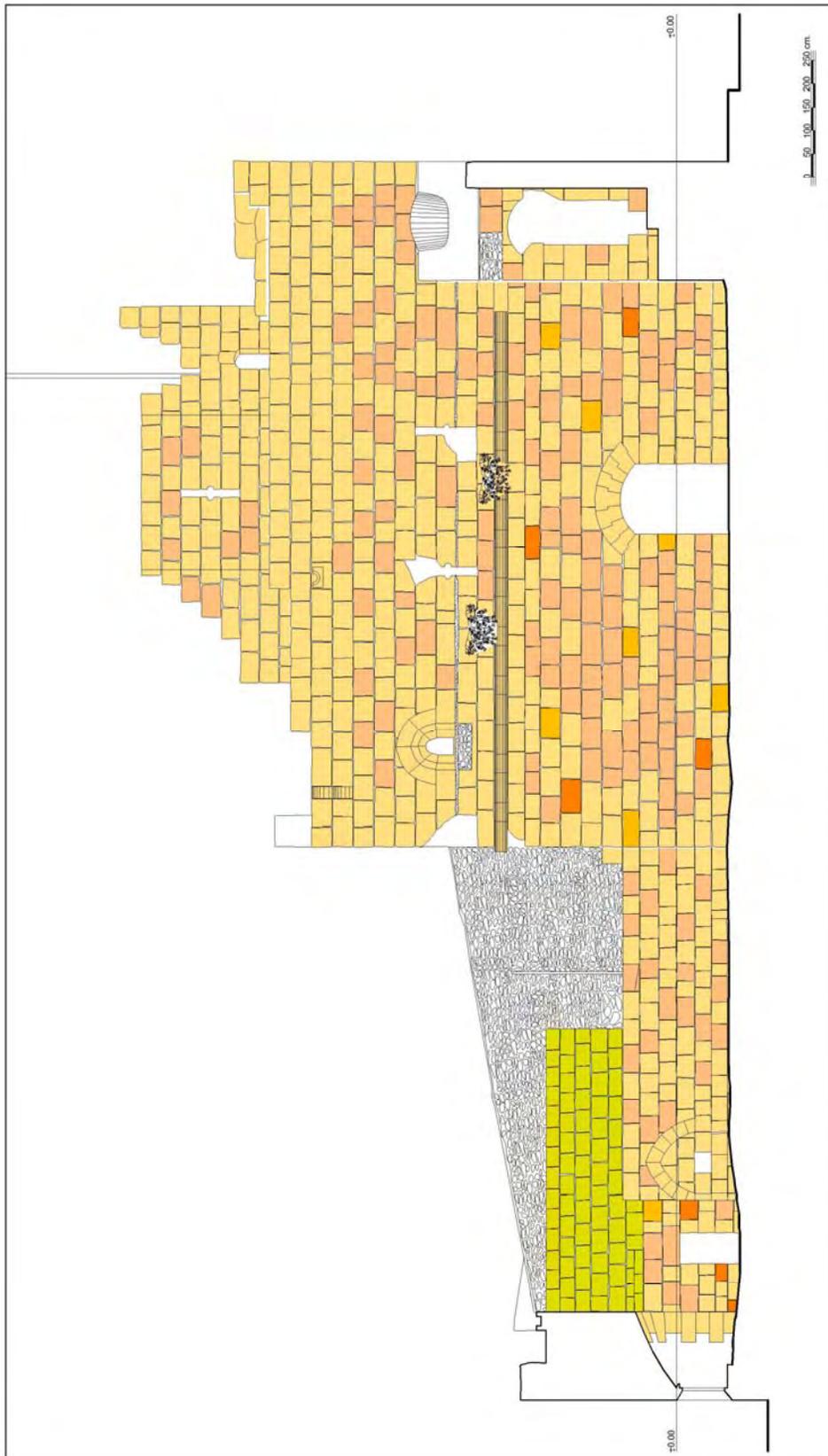


Figure 2.19. Workmanship of the Cut Stone Blocks- Section C-C

## 2.3.7. ARCHITECTURAL FEATURES

### 2.3.7.1. DOOR OPENINGS

The door openings in the building are categorized in four groups according to their architectural details. However, as a common feature of all, none of them has door leaves presently (Figure 2.22.).

**TYPE 1.** It is the door opening where the main entrance is provided by D1 in space S1. There are cut stone benches on both sides of the opening which ends with a joggled arch above (Figure 2.23.). Inside the 1.30m wide door opening, there are two gains<sup>42</sup> which are in quarter circle form for the pins that are carrying the leaves of the door. Two sockets for the door prop which are 0.10m to 0.15m in size are located at two sides of the opening<sup>43</sup>. The door opening has a cut stone threshold which rises 0.40m above the ground level.

**TYPE 2.** It is a door opening which is 0.90m in length and 2.30m in height. It starts with 0.10m high cut stone threshold at ground level and ends with a joggled arch above (Figure 2.24.). There are cut stone casings which are 0.15m in length are located at both sides of the opening. Inside the opening, there is only one pin gain is located which is same with the previous ones in terms of form, material and detail. However, this type does not involve a door prop. The door openings D2 and D3 are in this category.

**TYPE 3.** It is basically very similar to the type 2 openings. It is an opening which is 0.90m in length and 2.30m in height (Figure 2.25.). The opening starts with 0.20m high cut stone threshold at the ground level and ends with a joggled arch above. It consists of casings on both sides

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<sup>42</sup> This detail shows that the door was once consists of two wings.

<sup>43</sup> The distance between these door prop sockets and pin gains above are 0.07m. This shows that the thickness of the door leaves was 0.07m.

which are 0.15m in length. Inside the opening, two pin gains which are located at both sides which are same with the previous ones in terms of form, material and detail. In addition to this, door prop sockets which are 0.10m to 0.15m in size are located at both sides<sup>44</sup> as well. A very distinctive feature of this type is the thresholds of the openings. The threshold is made of two separate cut stone blocks and these blocks do not meet. 0.20m wide and 0.25m high gap exists between these blocks (Figure 2.26.). This gap continues for 0.40m towards inside the space. D6 and D7 openings are in this category.

**TYPE 4.** The last type of door opening is the opening which is 0.90m in length and 1.60m in height. It starts with a 0.10m high cut stone thresholds and ends with single cut stone lintel above. There is a very small hole at the top end of the opening which consists of casings on both sides. This hole which is 0.03m in diameter is the hole where the pins of the door leaves were located.

### 2.3.7.2. WINDOW OPENINGS

The window openings are categorized in two groups and like the door openings, presently none of these openings are carrying information about the leaves of the windows.

**TYPE 1.** It is the window opening which is 0.57m to 0.87m in size. The openings start and end with a single cut stone lintel. There are teeth on two sides of the opening which is 0.05m away from the inner end of the window. At one side of one of the teeth, there are circular holes which are 0.02m in diameter are located at both upper and lower end of the opening<sup>45</sup>. The opening W1 in space S1 is in this category.

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<sup>44</sup> The distance between these door prop sockets and pin gains above are 0.04m. This shows that the thickness of the door leaves was 0.04m.

<sup>45</sup> This detail shows that the window consists of single leaf.





Figure 2.21. Construction Techniques- Section C-C.

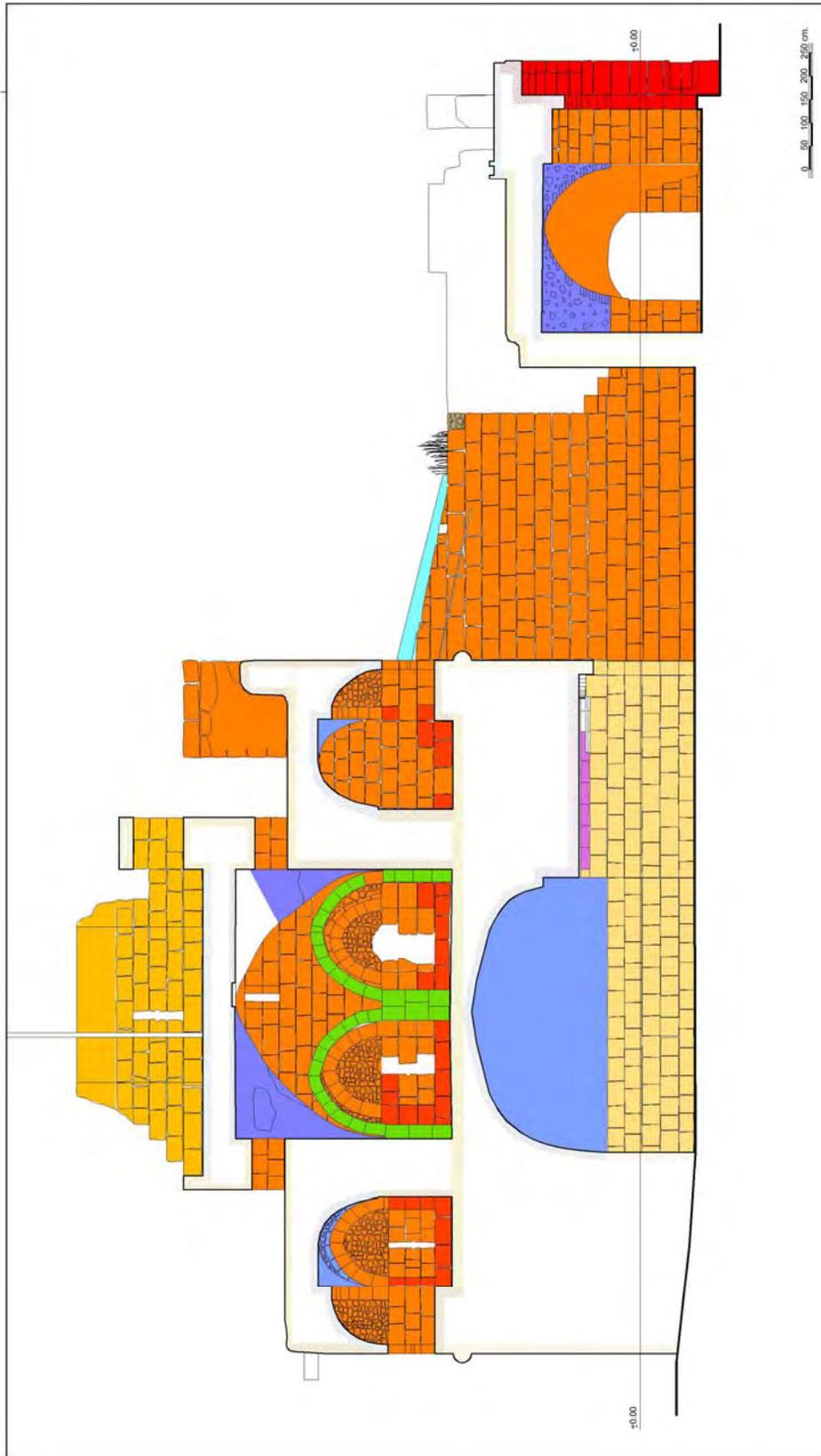


Figure 2.22. Construction Techniques- Section G-G.

**TYPE 2.** This category consists of two sub groups. The first one is 0.53m to 0.73m in size that is actually a top window without any window leaves. The opening which gets narrower towards the outside of the space ends with an opening that is 0.20m to 0.73m in size. It starts and ends with single cut stone lintels. W3, W4, W5 and W6 openings are in this category. The second group is 0.20m to 0.60m in size. It continues along the wall thickness without any change in its form. The opening starts and ends with single cut stone lintel blocks on both sides.

### **2.3.7.3. STAIRS**

The stairs are categorized in three groups according to their forms (Figure 2.22.).

**TYPE 1.** It consists of a stair with single and straight direction. There are two landings on the stair which is composed of 1.20m wide cut stone steps. These steps are averagely 0.40m to 0.35m in size. Stairs ST1, ST3 and ST5 are in this category (Figure 2.27).

**TYPE 2.** It is the stair which is in “U” form. It consists of 0.80m wide cut stone steps and each step is averagely 0.40m to 0.35m in size. The stair involves one landing which is located at the bottom end of it. Stair ST2 is in this category (Figure 2.28).

**TYPE 3.** It is spiral stairs which are composed of 0.80m wide cut stone steps. Each step is averagely 0.40m to 0.35m in size. It consists of one landing. Stair ST4 is in this category.

### **2.3.7.4. EMBRASURES**

There are three types of embrasures in the building which are categorized according to their forms. All of the embrasures get narrower either from outside towards inside or from inside towards outside.

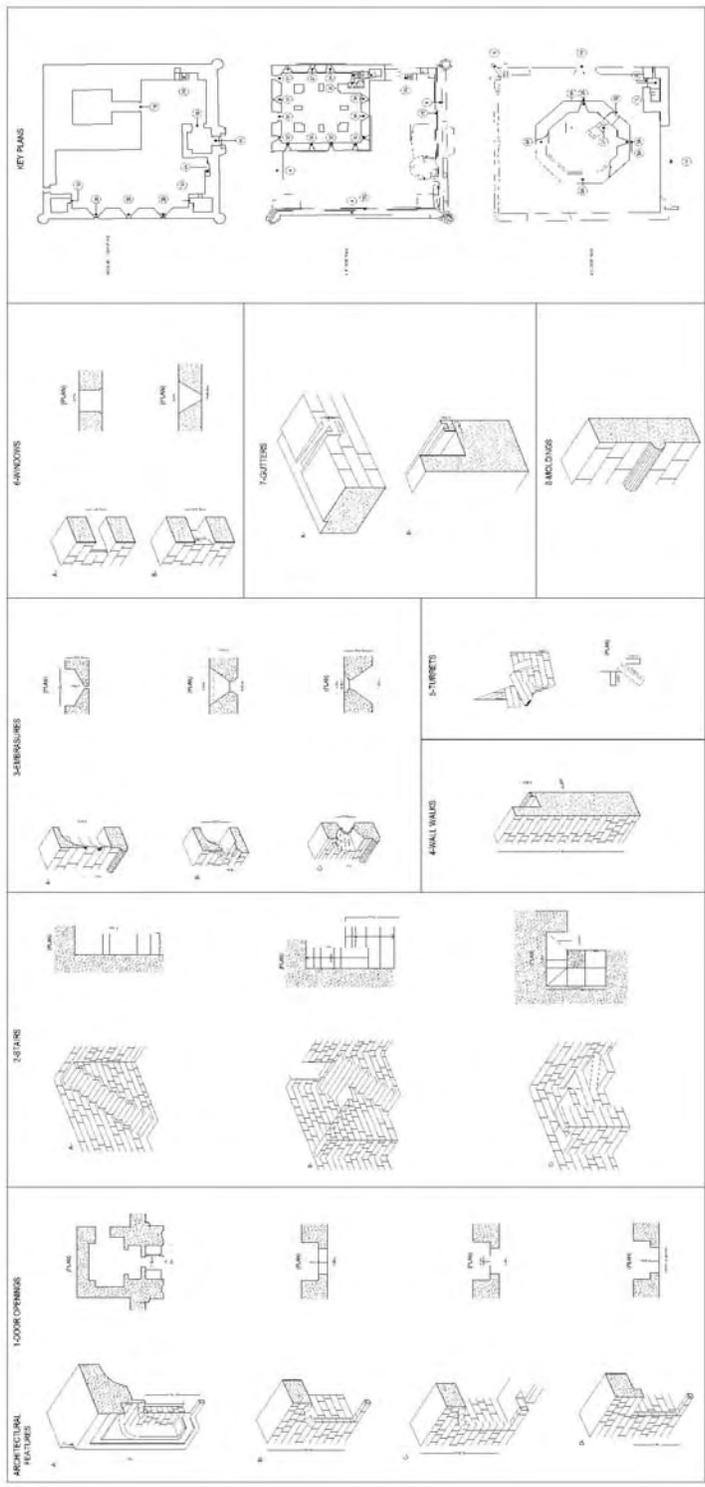


Figure 2.23. Architectural Elements of Cin Kule.



Figure 2.24. Portal of the building  
Entrance door



Figure 2.25. Entrance door of the  
space S5



Figure 2.26. Entrance door of the  
the space S6.



Figure 2.27. Detail from the door  
in space S6



Figure 2.28. View of the space S3.



Figure 2.29. View of the stair ST2 .

**TYPE 1.** These embrasures are the ones which get narrower from inside of the space towards outside. This type of embrasures which start at 0.35m above the ground are 2.00m in height. Inside the space, the embrasures end with pointed arches which are composed of 0.26m thick voussoirs. Towards outside, the embrasures continue 0.30m without any change in form. But after 0.30m, they get narrower for 37° and continue for 1.09m more. The embrasures end with loopholes outside that are 0.18m in length and 1.22m in height. The rectangular loopholes are widening in circular form at the middle. Embrasures E5, E6, E7, E8, E9, E10, E17, E18, E19 and E20 are in this category (Figure 2.29).

**TYPE 2.** These embrasures are again the ones which get narrower from inside of the space toward outside. The embrasures which start from the ground level are 2.50m in length and 1.74m in height. They end with pointed arches which are composed of 0.68m thick voussoirs. The embrasures get 38° narrower from inside and continues for 1.88m. The constriction ends with 0.05m projecting cut stone casings on both sides. The embrasures start to spread out towards outside with 61° right at the end of the casings which are 0.10m in length. And they end with a smaller opening which is 0.30m in length and 0.80m in height.

The arches above the embrasures get narrower toward outside by conical vault. The surfaces of the vaults are covered with lime plaster. Embrasures E1, E2 and E3 are in this category (Figure 2.30.).

**TYPE 3.** These embrasures are the ones which get narrower from outside towards inside of the space. The embrasures which are 1.44m in height start 0.70m above the ground level. They start and end with single cut stone lintels. The embrasures get 64° narrower from inside towards outside and continue for 0.42m. This constriction ends with 0.11m projecting cut stone casings on both sides. At this point, the casings make a loophole which is 0.18m to 0.67m in size. After the loophole it starts to spread out towards outside with 26° and continues for 0.87m more. The embrasures end with wider openings in comparison to the

inner ones. The outer openings of the embrasures are 1.02m in length and 1.60m in height. They end with pointed arches which are composed of 0.30m thick voussoirs. The embrasures E11, E12, E13, E14, E15 and E16 are in this category of window openings (Figure 2.31.).

#### **2.3.7.5. WALL WALKS**

The wall walks of the building are the courtyard (S2) walls. The walls which are 1.90m in width rise up to 2.90m above the ground level. At 2.90m level, walls make a recession which is 1.30m in width and which is the floor of the wall walks as well. At this point, the thickness of the walls decreases from 1.90m to 0.63m which is the thickness of a single course masonry wall. The single course walls rising next to the wall walks reach averagely 0.80m more above the ground level of the wall walks. The floor of the wall walks are made of rubble stone<sup>46</sup> (lime stone) and lime mortar as the binding. However, presently there is no information about the possible battlements<sup>47</sup> of the wall walks (Figure 2.32).

#### **2.3.7.6. TURRETS**

There is not very detail information about the turrets in the building. However, a little information comes from the projecting single cut stone blocks (T1) located at the east of the 2<sup>nd</sup> floor. These blocks (lime stone) project averagely 0.80m from the building. The blocks end with a profile. The eastern block gives more information that the projection is provided by two corbelling cut stone blocks. The lower one is shorter than the upper one where the profiles of each of them seem as if they are one single blocks (figure 2.33.). However, the other two are collapsed where there are no upper blocks exist now.

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<sup>46</sup> See Construction Techniques-Floors-Type 1.

<sup>47</sup> HASOL, 1993. Also known as "Crenellations".

### 2.3.7.7. GUTTERS

Gutters are categorized in two groups.

**TYPE 1.** It is a cut stone (lime stone) block which is 0.72m in length and 0.34m in width. It starts right at the floor level and continues with a 10° constriction. At the building façade, it projects<sup>48</sup> from the building for 0.08m. Gutter G3 and G4 are in this group (Figure 2.34.).

**TYPE 2.** It is the concrete gutter (G1 and G2) located on the wall walks of the building. These gutters are in “U” form which is 0.20m in height and 0.20m in width (Figure 2.35).

### 2.3.7.8. MOLDINGS

It is a half circular molding that is carved on a 0.35m high single cut stone (lime stone). The round form of the molding starts at 0.05m distance from the upper and lower end of the block. The molding which is 0.25m in diameter is located right at the floor level of the 1<sup>st</sup> floor. It surrounds the square building from all façades (Figure 2.36.).

### 2.3.8. CONDITION OF MATERIAL

The conditions of the materials are determined considering to basic deterioration types and their damage categories<sup>49</sup> (Figure 2.37.). The most significant problem of the building material is the *loss of material*. Loss of material occurs in two forms which are *break-out* and *alveolization*. Break out which is both loss of entire block and loss of compact material fragments is mostly followed at the embrasures of the spaces S7 located at the 1<sup>st</sup> floor and the spaces S9 and S10 located at

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<sup>48</sup> Since the end of these gutters are broken, it is impossible to give the exact information about how far were they projecting from the building.

<sup>49</sup> Even though the structural survey is applied to the building like *cracks, collapse of structural elements, displacements* etc., none of the structural problems could be followed in Cin Kule.

the 2<sup>nd</sup> floor (Figure 2.38.-2.39.). The other form of loss of material is the alveolization which is a kind of relief in the form of closely spaced cavities. It is seen almost all of the lime stone blocks which are the main building material. However, none of the blocks in the spaces S5 located at the ground floor are subjected to this problem; even though they are all lime stone blocks.

The second basic problem of the materials is the *detachments*. Detachments occur in two forms which are *granular disintegration* and *blind detachment*. Most of the sand stone blocks where all of them are located at the 1<sup>st</sup> floor are having the problem of granular disintegration into sand. It is the detachment of small individual grain or small grain aggregates (stone sand). This problem has been damaging the sand stone blocks very seriously. Blind detachment which is composed of continuous small cracks on the surfaces is mostly followed on the lime plastered vaults of the space S1, S6 and S7. It is also seen on the cement plaster on the walls of the space S1.

The last basic problem is the *discoloration/deposits*. This problem occurs in different forms as *colonization by plants*, *microbiological colonization*, *discoloration*, *corrosion* and *man made actions*. On the floor and on the entire walls of the courtyard which are facing outside, colonization by plants is followed. This problem that occurs because of the presence of trees, flower or any other plants that has taken roots in the building material. Particularly, serious part of the floor of the courtyard (S2) and flat ceilings of the spaces S3 and S4 are subjected to this problem. Microbiological colonization which the green deposit was produced by the microbiological plants is mostly seen on the surfaces of the vaults of the spaces. Discoloration which is a kind of darkening on the surface of the material in comparison to the original color is followed on the walls and vaults of the spaces S5 (ground floor) and S7 (1<sup>st</sup> floor). On the entire metal elements like flag post located in the space S10 are corroded.



Figure 2.30. Embrasure type 1.



Figure 2.31. Embrasure type 2.



Figure 2.32. Embrasure type 3.



Figure 2.33. View from the wall walks



Figure 2.34. View from the  
Projecting stone blocks of turret.



Figure 2.35. View from the  
concrete gutter.



Figure 2.36. View from the cut stone gutter.



Figure 2.37. View from the torus molding.

The last problem which is mostly seen in every space of the building is the man made actions. As a result of this problem, paintings, graffiti and soot deposits which are caused by setting up fire in the spaces are followed on the surfaces.

Consequently, breaking out, alveolization, granular disintegration and colonization by high plants which are the mostly seen problems are the severe damages that might cause the worst result which is the loss of the material. Therefore, the materials which are subjected to this category of damages require an immediate intervention. Microbiological colonization, discoloration, blind detachment and man made actions which are partly damaging the materials are the moderate damages that require the secondary immediate interventions. Corrosion which is a surface problem of the metals is the slightest damage.

### **2.3.9. CHANGES IN THE BUILDING**

The building has been changed in time by means of alterations, additions and missing of elements. In order to reflect the originality of the present situation of the building, it is analyzed under four titles; alteration, addition, missing elements and unidentified elements. However, in order to prevent any misunderstandings about the terms used in this study, the meanings that these terms refer to are as followed:

Alteration refers to the removal of the original elements and placement of a new one that is same in dimension with the older one.

Addition refers to the placement of totally a new element that was not the part of the original phase of the building.

Missing element refers to any removals or missing of a known element.

Unidentified elements are the elements that could not understood and could not find a place in above mentioned categories.

The alterations and additions are all determined according to the difference in material, construction technique and detail of the elements (Figure 2.40-2.41).

### **2.3.9.1. ALTERATIONS**

- . Southwest wall of the space S1 that faces to the courtyard is partly altered. Because, the construction technique of this part of the wall is different than the general technique of the building.
- . The piers that carry the central vault of the 1<sup>st</sup> floor of the building are all altered. Material and construction technique changes are followed at these parts.
- . Some parts of the side walls of the 1<sup>st</sup> floor are altered with different type of technique of walls.
- . The walls of the octagonal space S10 of the 2<sup>nd</sup> floor are altered with concrete blocks.

### **2.3.9.2. ADDITIONS**

- . The concrete floor of the courtyard is an addition.
- . The inner side of the southeast wall of the courtyard is the addition.
- . Entire concrete gutter located on the wall walks are additions.
- . The concrete cover of the outer ceiling of the space S6 is an addition.
- . The cement plasters on the northwest and southeast walls are additions.
- . The concrete floor of the space S10 at the 2<sup>nd</sup> floor is an addition.
- . The iron flag post and the concrete base of it in the octagonal space S10 are additions.

### **2.3.9.3. MISSING ELEMENTS**

- . Entire door wings are the missing elements of the building.
- . The entire battlements of the wall walks and the 2<sup>nd</sup> floor are missing.
- . Upper parts of the corner towers located at the outside of the courtyard walls are missing.
- . The floor tiles of the courtyard are missing.

- . Some parts of the floor tiles of the 1<sup>st</sup> floor are missing.
- . A huge part of the northeast façade of the 1<sup>st</sup> floor is missing.
- . Some parts of the floor tiles of the 2<sup>nd</sup> floor are missing.
- . Some of the stone gutters located at the 2<sup>nd</sup> floor are missing.
- . The turret at the east corner of the 2<sup>nd</sup> floor is missing.

#### **2.3.9.4. UNIDENTIFIED ELEMENTS**

The only unidentified element is the projecting stone block at the southwest of the 2<sup>nd</sup> floor. It is a single block and there are no any traces of other blocks like the ones located at the east corner of the same floor.

Consequently, even though the building has been used throughout the history and has been subjected to several alterations and additions, the original plan and façade organization can easily be read. However, among the entire categories the missing elements is the most serious problem of the building.

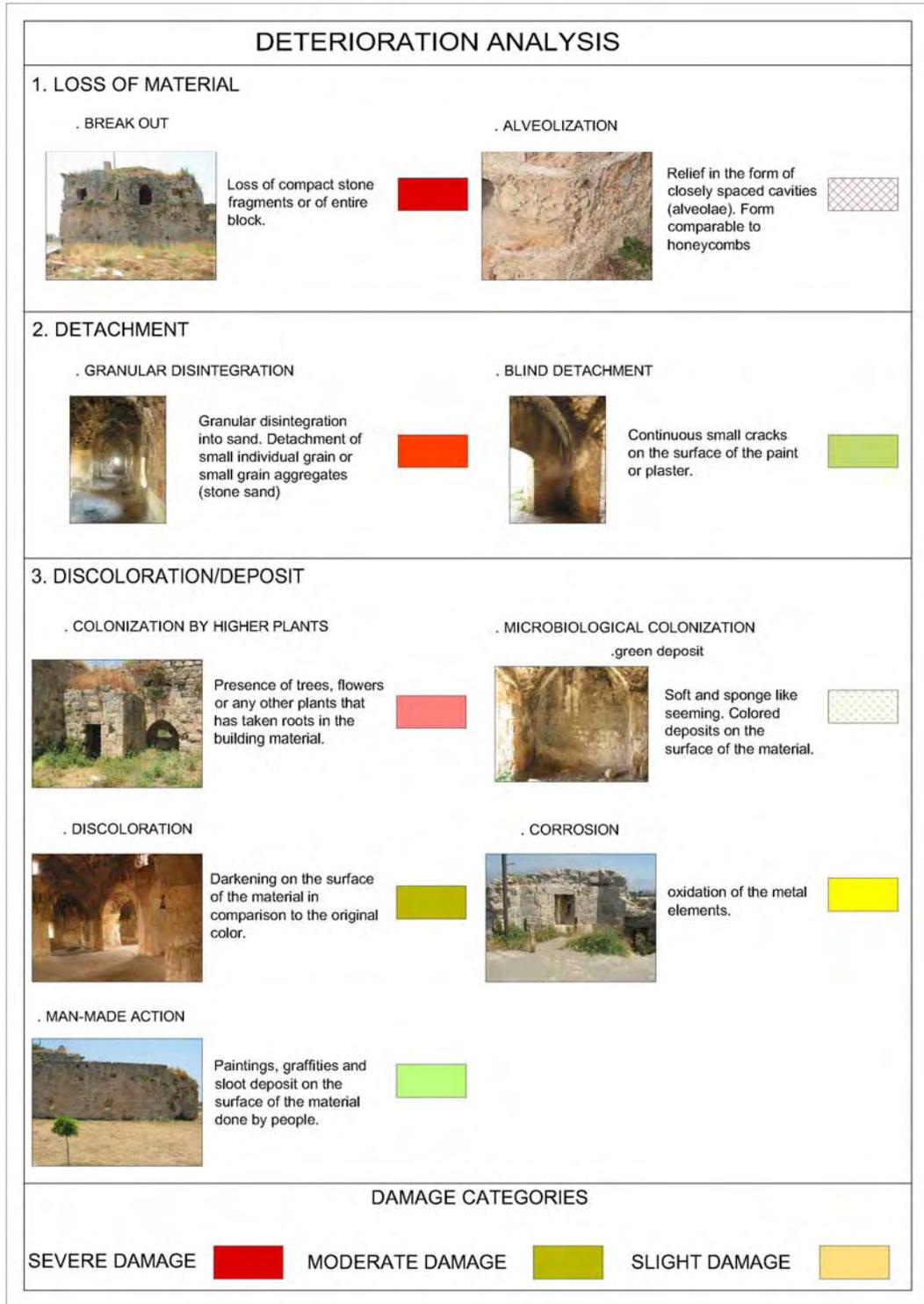


Figure 2.38. Deterioration Analysis- Legend.

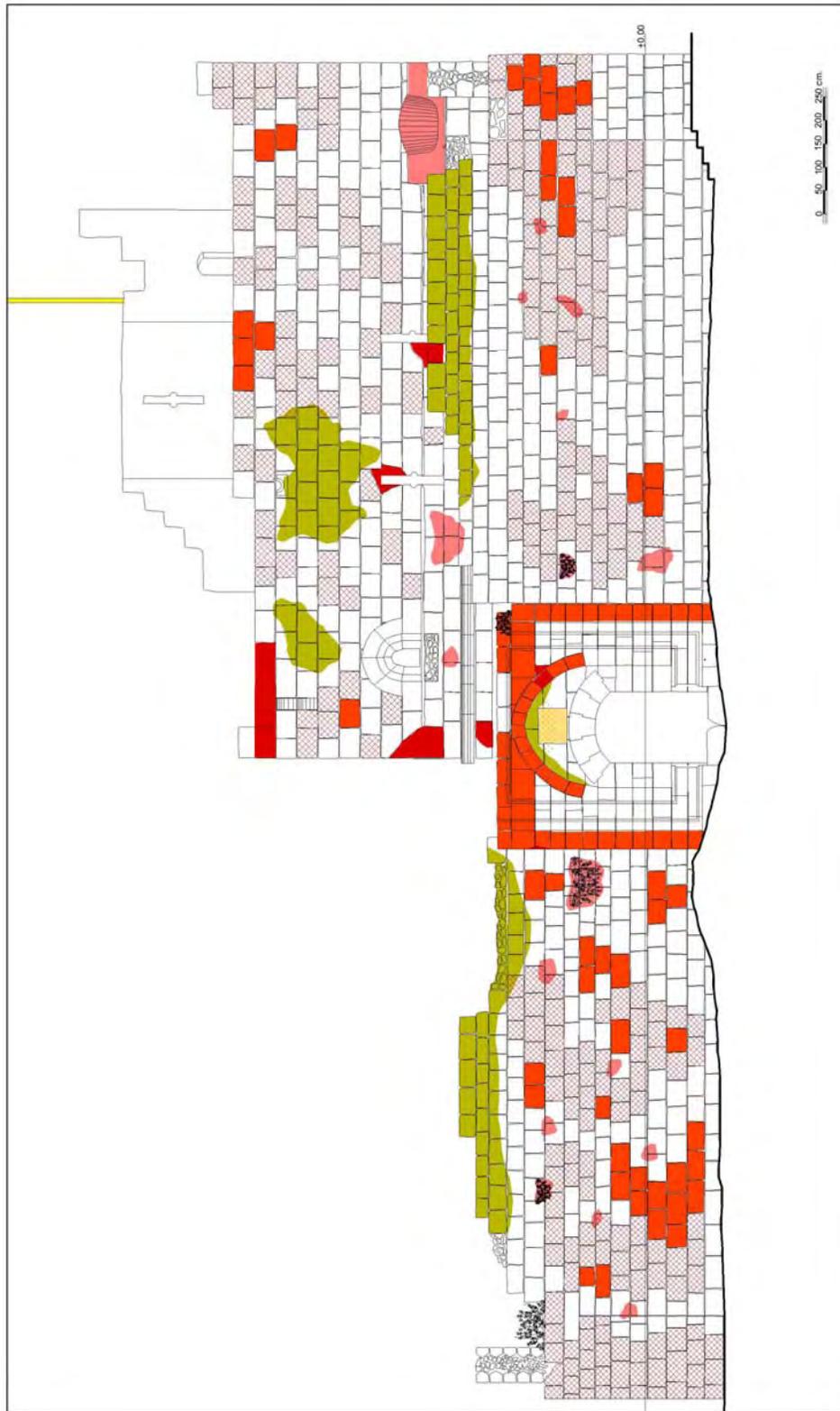


Figure 2.39. Deterioration Analysis- Southwest Façade.

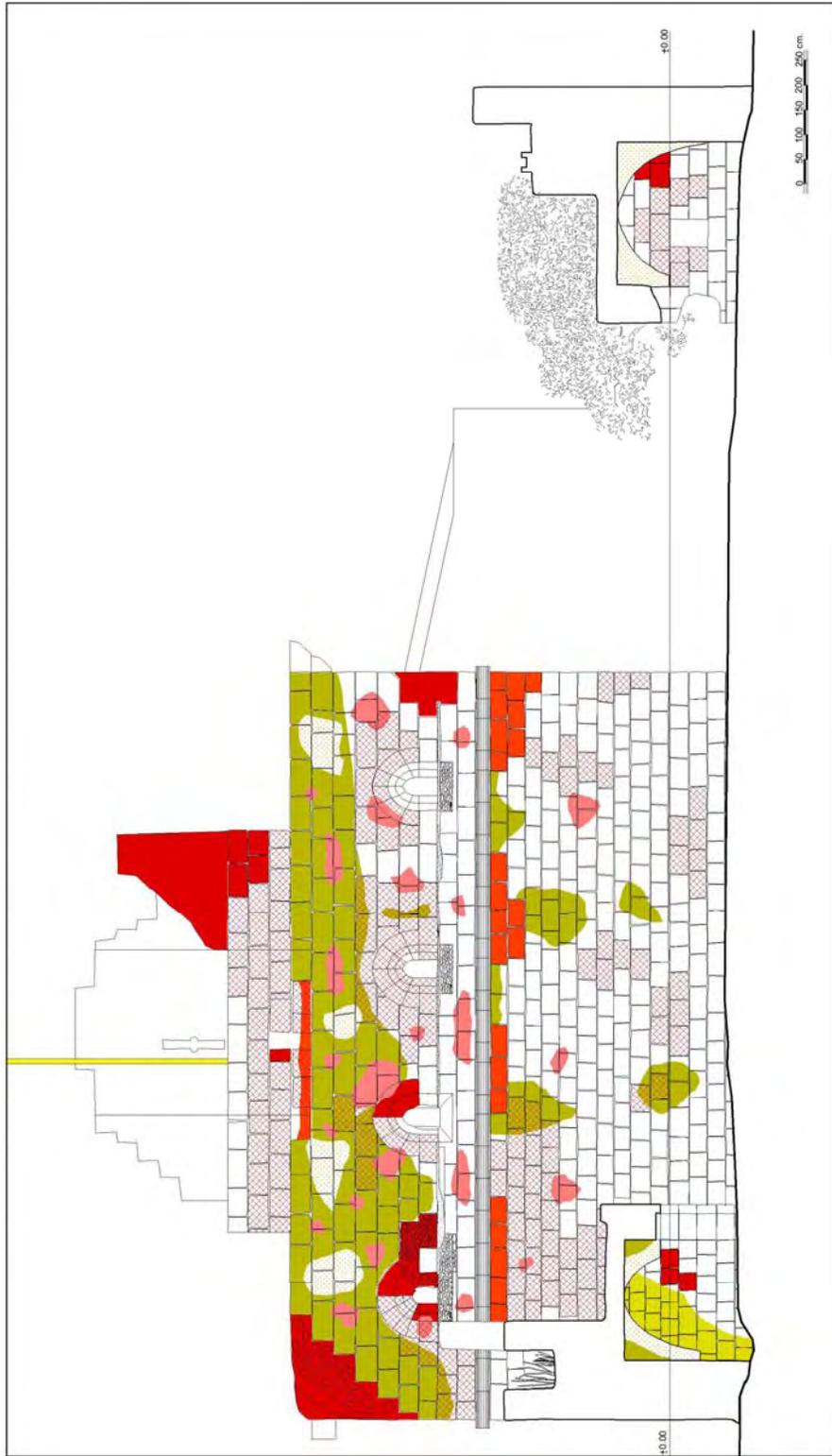


Figure 2.40. Deterioration Analysis- Section E-E.



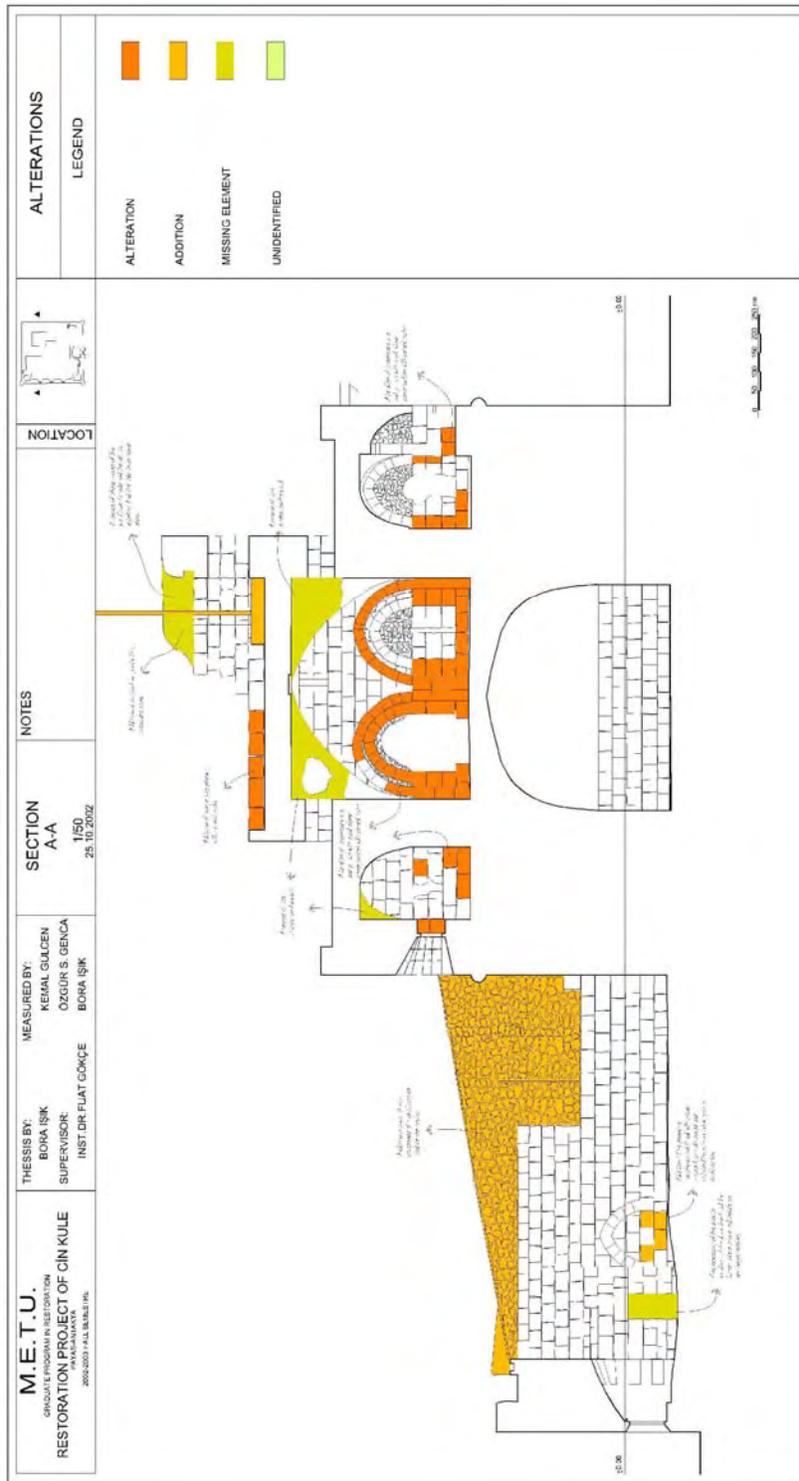


Figure 2.42. Changes in the Building- Section A-A.

## CHAPTER 3

### HISTORICAL RESEARCH

#### 3.1. HISTORY OF PAYAS- PRE OTTOMAN PERIOD

Both in ancient and Arab sources, Payas which is presently called Yakacık is used to be called as “Bayas”, “Beyyas”, “Baiai” before Ottoman period<sup>50</sup>.

Payas is located on a very important road which unifies Middle East and Anatolia that is even used in antique period. Payas and its nearby environment are subjected to both raids and civilizations of Hittites, Persians, Greeks, Hellenistic, Roman, Byzantine, Umayyad, Abbasid, Anatolian Seljuks, Crusaders, Principality of Antioch, Armenia Minor and ultimately it is conquered by Ottoman Sultan I.Selim after the war Mercidabık (1516-near Kilis) between Mamluks and Ottomans<sup>51</sup>.

Although the lack of the sources about both Payas and its nearby environment, it should not be ignored that Payas is located right across Ayas<sup>52</sup> which was one of the most important cities of Cilicia where the colonies of Italian city states were located during the principality of Armenia Minor<sup>53</sup>.

With the campaigns of the crusaders started at the first quarter of the 12<sup>th</sup> century, the settlements like Payas on the pilgrims' road became very important. The Templars order of the crusaders which is a group of warriors composed of monks is emerged to protect both Jerusalem and pilgrims' road. Therefore, Templars built or occupied serious amount of

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<sup>50</sup>DARKOT, 1964 p.531

<sup>51</sup>DARKOT, 1964 p.531

<sup>52</sup>Present name is Yumurtalık.

<sup>53</sup>MÜDERRİSOĞLU, 1993 p.578

castles which are located on the holy road<sup>54</sup>. Payas castle which is also mentioned in the original Ottoman documents as “pre-ottoman” building was most probably built by the Templars<sup>55</sup>.

Payas and the settlements around were started to be ruled by Mamluks after the war between Crusaders and Mamluks in Antakya (1268)<sup>56</sup>. However, the Mamluk occupation negatively effected the coastal settlements like Ayas. The harbors of these coastal cities were all destroyed during Mamluk reign<sup>57</sup>. This caused an economic regression for the settlements like Ayas which was once a very important trade center.

As a result of Mamluk policy, the frontiers of the Mamluk states were settled by Turkmens. Özer tribe of these Turkmens is settled around and in Payas<sup>58</sup>.

### **3.2. HISTORY OF PAYAS- OTTOMAN PERIOD**

Payas started to be dominated by Ottomans after Merçidabık war (1516) near Kilis. In this period, Payas became a very important settlement because of dense development activities. As a result of these activities, it also became one of the important stations between Adana-Halep (Aleppo) which is located on a very important road that was called “Anadolu Sağ Yolu” or “Şam-I Şerif”. This road was used by military campaigns, pilgrims, merchants and postmen during Ottoman reign<sup>59</sup>.

Payas which is mostly used by pilgrims is assigned as a station point that was related to “derbent teşkilatı”<sup>60</sup>. Therefore, under the rulership of II.Selim (1566-1574), one of the important sadrazam of Ottoman Empire, Sokollu Mehmet Paşa made this small settlement a city

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<sup>54</sup> MOLIN, 2001 pp.186-188

<sup>55</sup> AKYEL, 1966 p.9

<sup>56</sup> TEKİN, 2000 p.62

<sup>57</sup> AYALON, 1977 p.23

<sup>58</sup> GÜL, 1996 p.42

<sup>59</sup> MÜDERRİSOĞLU, 1993 P.578

<sup>60</sup> ORHONLU, 1990 p.13

“...in addition to the official army of the state, Derbent Teşkilatı consists of local people who work as police (derbentçi). Those who serve as derbentçi used to be awarded by exempting them from certain taxes.”

by spending his own money. 732 families of inhabitants of Payas were assigned as derbentçi<sup>61</sup>. In order to increase the security and to protect the sea and pilgrims' road, Payas became a derbent center of the region. Therefore, to encourage people who became a derbentçi, derbentçi families are excused from paying certain taxes.<sup>62</sup>

The sociological development in Payas is supported by building activities for several purposes. By the contributions of Sokollu Mehmet Paşa and the Empire, at the last quarter of the 16<sup>th</sup> century, a dock, customs building, shipyard and a watchtower were built around the coast, a castle and a huge menzil complex were built approximately 800 meters away from the coast<sup>63</sup>. Besides the importance for the pilgrims and military campaigns, by building the marine buildings, Payas attracts attentions by being a very important coastal settlement as well. Payas which is located on the sides of Amanos Mountains became very important harbor for both sea transportation and for building ships<sup>64</sup>. Towards the end of the 16<sup>th</sup> century, as a result of competition with Europe in terms of naval power, Ottoman budget was mostly used to empower the navy<sup>65</sup>. This proves the importance of Payas where a big shipyard is located and which has rich timber resources provided by Amanos Mountains.

Towards the end of the 18<sup>th</sup> century, as one of the results of the weakening of the Empire, Payas is subjected to several sieges of the bandits. This problem which is emerged by the leadership of a tribe leader named Küçük Ali and his sons, stopped both sea and land trade. As the result of the siege, pilgrims started to use ships from Adana to reach holy lands. Even though the region was secured after a couple unsuccessful attempts, this could not stop Payas losing its importance<sup>66</sup>.

As the administration, Payas and a part of Syria recognized as "Vilayet-I Arap" after the war against Mamluks. However, after a very short while, by the recognition of Halep (Aleppo) and Şam (Damascus) as

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<sup>61</sup> ORHONLU, 1990 pp. 63-66

<sup>62</sup> ORHONLU, 1987 p. 116

<sup>63</sup> AKYEL, 1966 pp. 6-7

<sup>64</sup> TEKİN, 2000 p.62

<sup>65</sup> TANYELİ, 1996 p.85

<sup>66</sup> ŞAKIROĞLU, 1991 p.4

states, Payas and nearby settlements were started to administrate by Halep under the name of “Üzeyr Sancağı”<sup>67</sup>. This administrative situation continued until 19<sup>th</sup> century and then it is administrated by “cebel-i bereket sancağı” (osmaniye) of Adana state. During French mandate of Hatay, Payas became a town of Adana. After the unification of Turkey and Hatay in 1939, Payas became a town of Hatay and have been administrated by Dört Yol<sup>68</sup>.

### **3.3. HISTORY OF PAYAS- REPUBLIC PERIOD**

At the beginning of the 20<sup>th</sup> century, Hatay became a French mandate in 1918. This caused to separate Hatay from Turkey. Therefore, Özer River which divides Payas in two, became a natural boundary between these nations. Payas became a frontier settlement of Turkey which made it again very important for military purposes.

However, in a very short while by the unification of Hatay and Turkey, Payas became a town administrated by Dört Yol. Especially after establishing İskenderun Demir-Çelik (to process iron and steel) factory in Payas at the beginning of the republic, Payas which is presently called Yakacık became an industrial settlement.

### **3.4. HISTORY OF THE 16<sup>TH</sup> CENTURY MONUMENTAL BUILDINGS IN PAYAS**

#### **3.4.1. PAYAS CASTLE**

The castle of Payas is the first building among the ones built in the 16<sup>th</sup> century. To protect Payas which is used as a station point by the ships ever since, it was ordered to put guardians in it and to repair the existing castle which was in ruin condition<sup>69</sup>.

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<sup>67</sup> The name “Üzeyr” comes from Özer Turkmens settled by Mamluks.

<sup>68</sup> GÜL, 1996 p.42

<sup>69</sup> MÜDERRİSOĞLU, 1993 p.602

By an order given in 1567, the repair of the castle was initiated by providing money from the treasure of Halep state. However, after a while by noticing the structural weakness of the castle, the foundations of the existing castle were removed and the new castle was built on the same location<sup>70</sup>. Thus the construction of the new castle is accomplished in 1571. After the castle, in 1580, the existing moat which surrounds the castle was repaired by the leadership of the architects sent from İstanbul. After completing the repair of the moat, by another order, five cannons from Cyprus Castle and four cannons from Mamuriye (Anamur) Castle were brought to Payas Castle<sup>71</sup>.

Evliya Çelebi who visited Payas in the 17<sup>th</sup> century described the castle as:

“...it is a masonry castle in rectangular form and located near the sea. It has eight strong towers and there are cannons in several sizes in these towers. At the highest tower, balyemez (long ranged) cannons are located to protect the harbor. Since Payas is the seaport of Halep, the security is like of the borders. The circuit walls are two storied and the towers are very strong. At the east side, there are double sided iron doors at the entrance and a timber draw bridge located above the moat. There are approximately 300 houses located in the castle. Castle is protected by 70 castle soldiers. The perimeter of the castle is 800 feet...”<sup>72</sup>

As the present situation, the castle is located on a flat land which is 800m away from the sea. It has heptagonal plan with seven towers located on the corners and a gate house tower on the east. A heptagonal moat which is approximately 10m in width surrounds the castle. Although today there is an immobile concrete bridge on the moat that provides the entrance access, Evliya Çelebi describes the bridge as “ there is a draw bridge like of medieval castles”. At the end of the bridge, an entrance with

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<sup>70</sup> AKYEL, 1966 p.8

“...In the written orders some of the dimensions of the castles were also given. According to this; despite the towers and circuit walls were constructed 12 arşın in height, it was ordered to construct them up to 16 zirai height level, and ordered not to built the width of the wall walks less than 2 zirai. Such dimensions were also given for the moat. It was ordered to build the moat 6 arşın in height and 8 arşın in width.” – Baş. Arş. Mühimme Def. 7, sf. 935, sıra 2570.

<sup>71</sup> AKYEL, 1966. p.9

<sup>72</sup> EVLİYA ÇELEBİ, 1982 p.9

a portal is located, and the secondary gate house is attached to the circuit wall after wards. Castle consists of storages and dormitories at the ground floor, and of towers and wall walks at the upper floors. Today there are remains of a mescid and barracks which are probably built in the 19<sup>th</sup> or 20<sup>th</sup> century<sup>73</sup>, located in the empty courtyard of the castle.

Between 1938-1939 when Hatay was a separate republic, the castle was used by a large garrison and before 1919, it was used as a prison. In this respect, when one of the famous poets Namık Kemal was exiled to Cyprus (Famagusta), he was prisoned for a while in Payas Castle<sup>74</sup>.

The castle belongs to the Ministry of Culture and Tourism presently. Therefore, the restoration attempts in 1960's by both Vakıflar Genel Müdürlüğü and Ministry affected Payas as well. During these restorations, almost entire battlements of the castle were renewed.

### 3.4.2. SOKOLLU MEHMET PAŞA MENZİL COMPLEX

After completing the repair of the castle, right across it, a menzil complex is built about 30m away from the castle. According to the foundation charter<sup>75</sup> and the inscription panel of the complex, the donor of the building is Sadrazam Sokollu Mehmet Paşa. The complex is built in 1574 which is the biggest and most important building dedicated by Sokollu.

The complex which consists of a hamam, arasta, dar-ül talim, medrese, cami, kervansaray, tabhane and imaret is one of the most important menzil complexes<sup>76</sup> on the pilgrims' road, Anadolu Sağ Yolu<sup>77</sup>.

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<sup>73</sup> MÜDERRİSOĞLU, 1993 p.9

<sup>74</sup> ASLAN, 1999 p.25

<sup>75</sup> Başbakanlık Vakıflar Genel Müdürlüğü Arşivleri, İstanbul Sadis 43, (translation), 2104 Def., 442 sf., 323 sıra.

<sup>76</sup> METU, Faculty of Architecture, Department of Restoration-Archives, report of the project (The Restoration Project of the İmaret Section of Sokollu Mehmet Paşa Menzil complex in Payas) 2000.

<sup>77</sup> MÜDERRİSOĞLU, 1993 p.24

*"...it is the road that goes to hicaz and that passes through Üsküdar, Gebze, İzmit, İzmit, Eskişehir, Konya, Adana and Antakya...İstanbul-Holy Lands road or Anadolu Sağ Yolu which serves for military, trade, pilgrimage and postal purposes is mostly used by pilgrims."* It is also used by when the Ottoman army was on campaign to Iran, Iraq, Syria and Egypt...."

**HAMAM-** The hamam (bath) which is located on the west side of the complex and adjacent to arasta is rectangular in plan and consists of two caldariums. The entrance of the hamam is provided by the door in the arasta.

**CAMİ MEDRESE-** Cami (mosque) which has a T plan is located on the southwest corner of the complex. The last congregational space which has an asymmetrical plan opens to the courtyard. The courtyard is surrounded by medrese (school of theology) rooms from three sides. There are 21 rooms that surround the courtyard and they all open by the rewaqs. However, these rewaqs are all collapsed today.

**DAR-ÜL TALİM-** It (school) is located on the west side of the complex and located adjacent to the tepidarium of the bath. It consists of two rectangular rooms that opens to the courtyard by rewaqs.

**ARASTA-** Arasta (market) is a rectangular space where the historical Adana-Halep/Şam road passes through. There are 48 shops located in the arasta. There is a “dua kubbesi”<sup>78</sup> located at the middle of it and in front of the portal that opens to the kervansaray.

**KERVANSARAY-** It is located at the east of the complex. It surrounds a rectangular courtyard where a fountain is also located at the center. The kervansaray spaces open the courtyard by rewaqs.

**TABHANE-** Tabhanes (guest rooms) are located at the east of the complex facing to the courtyard. There are 12 rooms in the tabhane. These rooms separate each other by making 4 units. Each unit consists of small courtyards.

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<sup>78</sup> An area defined by a dome above. The area is used to pray below the dome.

**İMARET-** İmaret (kitchen) is located at the southwest of the kervansaray courtyard and consists of the two inner courtyards. The spaces which are gathered around the front courtyard open to the secondary courtyard by a corridor located on the east. A closed door is located on the east wall of the secondary courtyard that opens directly to outside.

### 3.4.1. DOCK, SHIPYARD AND CUSTOMS BUILDINGS

Although none of these buildings exist at present, from Evliya Çelebi and original documents, it is understood that there were a harbor, dock, shipyard and customs buildings at the end of the 16<sup>th</sup> century Payas.

As the other buildings, harbor and dock were constructed by Sokollu Mehmet Paşa and the cost of these buildings are supported by the income of Sokollu's own properties. In 1568 it is ordered to build a shipyard and several shops around the harbor in Payas<sup>79</sup>.

After completing the construction of these buildings, at the fourth quarter of the 16<sup>th</sup> century, it is ordered to provide timbers for the construction of 20 ships from Amanos Mountains and ordered to built 10 of these ships at the shipyard in Payas<sup>80</sup>.

However, some ships from Cyprus of Lusignans which could not conquered yet in those days, were seen close to the coast. This showed the lack of security of these coastal buildings In case of any attacks from the sea side. Therefore, strongholds and soldiers are placed around the harbor and shipyard<sup>81</sup>.

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<sup>79</sup> MÜDERRİSOĞLU, 1993 p.611

<sup>80</sup> <sup>80</sup> AKYEL, 1966 p.15

Although any trace of these buildings could not be seen during the survey, Akyel claims that he saw the traces of some of the buildings in 1960's.

*"...today at the end of the road that goes to the tomb, there are remains of walls that goes under the sea. The 3m thick remains continues by making 45° curves in reference to the coast line. This remains show us the harbour and therefore the shipyard was built here"*

<sup>81</sup> MÜDERRİSOĞLU, 1993 p.612

Even though the precautions taken for any kind of attack to the harbor, the reputation of the important harbor of Payas on the eastern Mediterranean coast could not survive for a very long time. A very interesting comment from Evliya Çelebi who visited the area in the 17<sup>th</sup> century again supports this statement.

“...this was a very beautiful harbor in the past days; however, it is not well kept now. Some ships stop here. Most of the big ships just cast anchors in the sea. It is a kept harbor from eight winds.”<sup>82</sup>

### 3.5. HISTORY OF CİN KULE

A secondary military building known as Cin Kule is a watchtower which is located near the coast and on a flat land that provides a wide sight. According to the sources, it is completely an Ottoman building built in the 16<sup>th</sup> century as the last building after the castle, menzil complex, dock and the shipyard.

Even though Cyprus Island is conquered by Ottomans in 1571, some pirate ships were still able to attack the harbor and the shipyard. A secondary concern about the security of these building was the insufficient protection of Payas castle in case of any attacks from the sea. Therefore, in 1577 Babiâli<sup>83</sup> ordered to build a tower on a land where the harbor could be protected easily<sup>84</sup>. It is also ordered to build the tower with a similar style of Kız Kulesi right across Sarayburnu of İstanbul<sup>85</sup>.

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<sup>82</sup> EVLİYA ÇELEBİ, 1982 p.9

<sup>83</sup> The Sublime Porte ( the central office of the Ottoman government)

<sup>84</sup> The reason that necessities to built Cin Kule is in fact brings certain questions about the construction process of Payas Castle. As mentioned before, in the documents it says that the castle is built directly from the foundations. If it is true then “why it is built on the same land” is a remarkable question mark. Because all of these buildings are built almost at the same time. Therefore, the security of the harbor and shipyard should have also been considered before starting the construction of the castle unless it is really built from the foundations. The difference in the construction technique of the embrasures, vaults and the other architectural elements of the castle supports the idea that the castle is a re-used building by repairing certain points of the existing one instead of building a new one on the same location.

<sup>85</sup> AKYEL, 1966 p.20

“Halya Payas’da ihdas olunan liman ağzında İstanbul’da Saray mukabelesinde Kız Kulesi üslubunda bir muhkem kulle bina olunmak lazım olmağın buyurdum ki...Kız Kulesi üslubunda bir muhkem kulle bina ettirib içine dört nefer topçu ve muhafaza için kifayet miktarı hisar eri koyup Payas kalesi düşman canibinden ve sair zarar mürettep olmaktan koruyup gereği gibi hıfz harasette olub ihtimam eyliyesiz.”

Baş. Arş. Mühimme 33, s.202, sıra 410.

Evliya Çelebi who visited the area in the 17<sup>th</sup> century describes the tower as: “...İskele Castle is a strong and circular tower building where castle soldiers watch day and night, because the duty is located here...”<sup>86</sup>

By Evliya’s expression about the customs when he was mentioning Cin Kule, it is impossible to bring a definite location for the customs whether it was a space in Cin Kule or a separate unit near Cin Kule. However, according to Evliya’s comments about Payas, it might be said that these building were functioning with a full capacity in the 17<sup>th</sup> century.

The regression of Payas accelerated in the 18<sup>th</sup> century by the skirmishes of bandits and Ottoman army. The bandits and their leader Halil Bey –one of the sons of Küçük Ali Bey- were finally besieged in Cin Kule by Ottoman army. During the siege, Cin Kule has been seriously damaged<sup>87</sup>.

Consequently, Cin Kule was used as a storage building by the company called Pano (Payas Harbor Enterprise) until 1940’s. Presently, Cin Kule, like the other buildings, is an empty building.

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<sup>86</sup> EVLİYA ÇELEBİ, 1982 p.9

<sup>87</sup> ŞAKİROĞLU, 1991 p.30

## CHAPTER 4

### COMPARATIVE STUDY

Since the antique period, most of the military buildings which are very important for the settlements and for their defense have been preserved until the present day by repairs and some additions. The reason for this was probably the strategical importance of these buildings. Therefore most of these buildings had been served for different users from different cultures.

Particularly, because it is not very wise to build completely a new castle in terms of economical reasons, these buildings were always subjected to interventions. So it is very difficult to notice one single architectural style of a certain period in these buildings.

However, more than the architectural styles, military buildings were primarily formed by the military technology. Therefore the aim of the first stage of the comparative study is to understand the basic features of the military architecture and their reflections on the plan layouts. A general architectural and some how military principles for castles and watch towers are presented at this stage (Tables 4.1- 4.2) The second comparative study is presenting a typological approach to the architectural elements which are followed in certain castles and watch towers. In this study, 8 castles and 6 watchtowers are used as case studies. All of these buildings, except for Cezayirli Hasan Pasa watchtower, are located in Cilica.

The third and the last comparative study aims to frame a general architectural feature of the three buildings, Cin Kule, Payas Castle and Sokollu Mehmet Pasa Menzil Complex which were all built at the same period that is 16<sup>th</sup> century.

## **4.1. COMPARATIVE STUDY OF PLAN LAYOUTS**

### **4.1.1. LOCATION**

Location is the primary factor that affects the general plan of both castles and watch towers. According to this, the castles were built on the lands which are very difficult to be reached because of geographical obstacles. On the other hand, depending on the basic function of these buildings, some of them were located on the flat lands which are not geographically secured. In this case, to reduce the negativity of the land, a moat or a ditch was definitely constructed around the castles<sup>88</sup>. (Tables 4.3- 4.4)

This situation is totally different for the watch towers. Because the basic criteria that affect the selection of the land is the opportunity of wide range of sight. These buildings are located on flat lands or high hills depending on the points that are watched. The geographical obstacles are not something that are considered during the selection of the land. Therefore, the artificial obstacles like moat or ditch can not be seen around these buildings.

According to these, Cin Kule which is located on a flat land that provides a wide range of sight, presents a very similar principle that affected the selection of location of other watch towers.

### **4.1.2. CIRCUIT WALLS & WALL WALKS**

Almost all of the castles that were built on top of hill were formed organically. The circuit walls are following the topography of the site; therefore, it is impossible to see a geometrical design of these forming walls. However, the ones that were built on the flat lands definitely have designed walls in terms of form<sup>89</sup>.

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<sup>88</sup> See Payas and Corycus Castles.

<sup>89</sup> The circuit wall of the Payas Castle has a heptagonal plan.

The circuit walls are the plan elements that form the general layout of the castles. Depending on the scale of the castle, there may be more than one circuit wall which gets concentrically smaller<sup>90</sup>. They provide a closed life in the castles. These thick walls end with wall walks above which are the main defense areas. All wall walks have battlements<sup>91</sup> in different forms.

However, it is impossible to see a circuit wall and therefore wall walks above in the watch towers. All of the watch towers consist of single buildings that have square or rectangular plans. But all the top floors of these buildings are open spaces that are defined by lower walls. These walls consist of battlements. So it is possible to say that the top floors of the towers were used as large wall walk spaces. (Tables 4.5- 4.6)

Cin Kule separates from the watch towers by its surrounding circuit wall and wall walks above. On the other hand, the square building shows exactly the same features of the watch towers. Top floor of Cin Kule was also used as an open space and wide wall walk space.

#### **4.1.3. TOWERS – BASTIONS**

The strength and the protection of the circuit walls which are the most important elements in defense buildings is the most serious problem that must be considered. Therefore, in military architecture there are types of towers developed for this. The first is a tower that projects out the circuit wall. The ground floors of these towers consist of very thick walls. The upper floors consist of thinner walls that open outside by embrasures. These towers were placed densely along the circuit walls. This type of towers is all seen in the castles.

The second type of towers are the solid towers that completely serve as buttresses. The weakest points of a building during an attack by a ballista machine are the corners. Therefore, these towers were all placed at the corners of these buildings.

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<sup>90</sup> See Silifke, Kozan and Toprak Castles.

<sup>91</sup> Also known as “crenellation”.

In Cin Kule, there are only three towers on the corners of the square circuit wall. The fourth corner is protected by the building. However, two of these three towers (north and west ones) are solid circular towers up to a certain level. Above this level, their form get widen and turn into a “U” form. This widening shows that these towers were also used as a defense space.

The third tower on the south has no such widening. Because of this, it is so small for a soldier to get inside. This shows that the third tower was completely a solid tower.

#### **4.1.4. ENTRANCES**

The only connection between outside and the inside of the castles which are surrounded by the circuit walls are the entrances that are important and critique points of defense. Therefore, to increase the strength of these points of the castles, there are two types of entrances that were used. The first is the gate house entrance. It is an entrance that provides a straight access. Because the access is linear, the entrance is protected by the towers located at two sides. The second type is the entrance that provides 90° bent access. The directional access disables the enemy seeing inside the entrance.

For the watch towers, there is no such design at the entrance spaces. All of the entrances of the watch towers consist of single doors. However, to take a little control of the entrances, some of the towers have their entrances on the first floor instead of ground floors. These entrances are all reached by a ladder.

However, the presence of the entrance space with a bent access was designed completely for the military purposes, again separates Cin Kule from all other watch towers.

#### **4.1.5. CISTERNS & STROGES**

Cisterns and storages are the most important spaces of the passive defense. Because the most important problem of the castles is

the besieging. In order to keep the strength of the soldiers in a castle that is besieged, food and water must be provided permanently. For this reason, there are many cisterns and storages were built in the castles. Almost entire ground floor spaces of the castles serve as cisterns and storages. This solution also enables to build more solid circuit walls at the ground floors.

The existence of these spaces in the watch towers depends on the location of these buildings. If there is no settlement nearby the watch towers than these spaces are provided<sup>92</sup>.

Since Cin Kule is located at the center of the settlement there is no cistern was provided in the building.

## **4.2. COMPARATIVE STUDY OF THE ARCHITECTURAL ELEMENTS OF CASTLES and WATCH TOWERS.**

### **4.2.1. CONSTRUCTION TECHNIQUES**

The construction techniques of fourteen buildings are categorized under 4 types. This typology is emerged by a general list which consists of construction techniques that are followed as the most common and probably the original techniques for each building.

In the graphical description of the comparative study of the construction techniques, both the façade and section views of each type are presented. However, in the sections because the inside of the walls could be seen completely, the exact detail of the walls could not be given. (Table 4.7)

All of the presented types of techniques have common features. According to this, all of the walls consist of double skin masonry and inside of the walls were filled with rubble stone and lime mortar infill.

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<sup>92</sup> See Cezayirli Hasan Paşa, Sinap and Tece watch towers.

**TYPE 1.** It is made of cut stone (lime stone<sup>93</sup>) blocks that are averagely 0.50m to 0.80m in size and lime mortar as the binding material. Lime stone rubbles and lime mortar were used as the infill of the wall

**TYPE 2.** It is made of cut stone blocks (lime stone) that are averagely 0.50m to 0.30m in size and lime mortar as the binding material. All of the cut stone blocks have bossages at the centers.

**TYPE 3.** It is made of cut stone (lime stone) blocks that are averagely 0.50m to 0.30m in size and lime mortar as the binding material. Lime stone rubbles and lime mortar were used as the infill of the walls.

**TYPE 4.** It is made of cut stone (lime stone) blocks which are averagely 0.50m to 0.30m in size and re-used marble blocks which are in several form. Lime mortar was used as the binding material. All of the lime stone cut stone blocks that are used on the walls have no bossages.

As the result of this typological study of the construction techniques, type 1 and type 2 techniques are the mostly followed techniques among fourteen buildings. In Cin Kule, type 2 technique is the dominant and original construction technique. Therefore, Cin Kule presents a similar feature with the rest of the buildings in terms of their construction techniques.

#### **4.2.2. EMBRASURES**

In all of the buildings, the embrasures are categorized in 4 main groups according to their form, material and general dimensions. (Table 4.8)

**TYPE 1.** It is the embrasure that gets narrower towards inside with a reverse V form and afterwards, opens outside with a loophole which is 0.10m in width. Among these buildings, the upper end in the interior of the embrasures ends with two elements that are arches and single cut stone lentil blocks.

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<sup>93</sup> All of the materials are categorized according to the observation during the site survey.





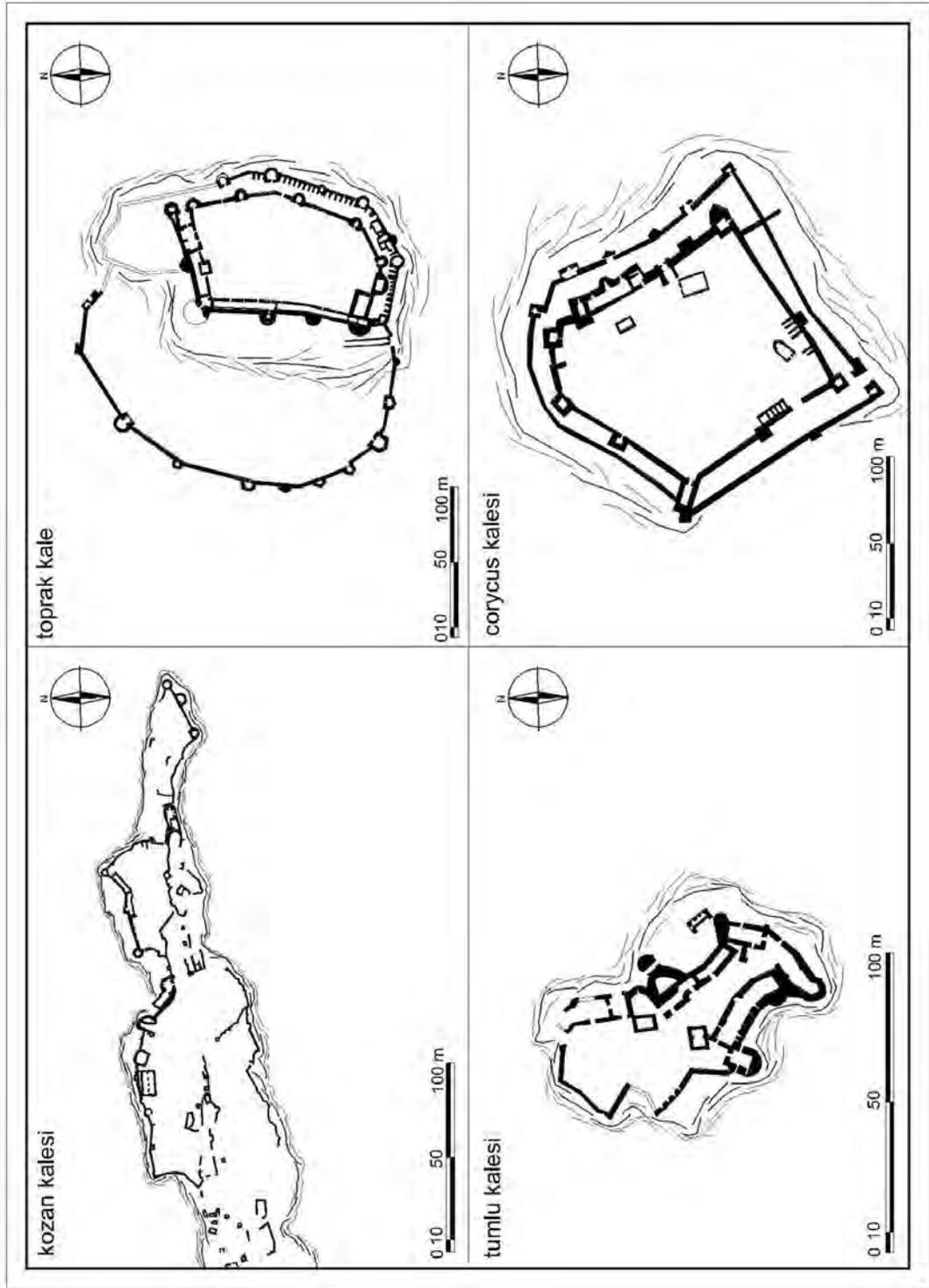


Table 4.3. Plans of the Castles.

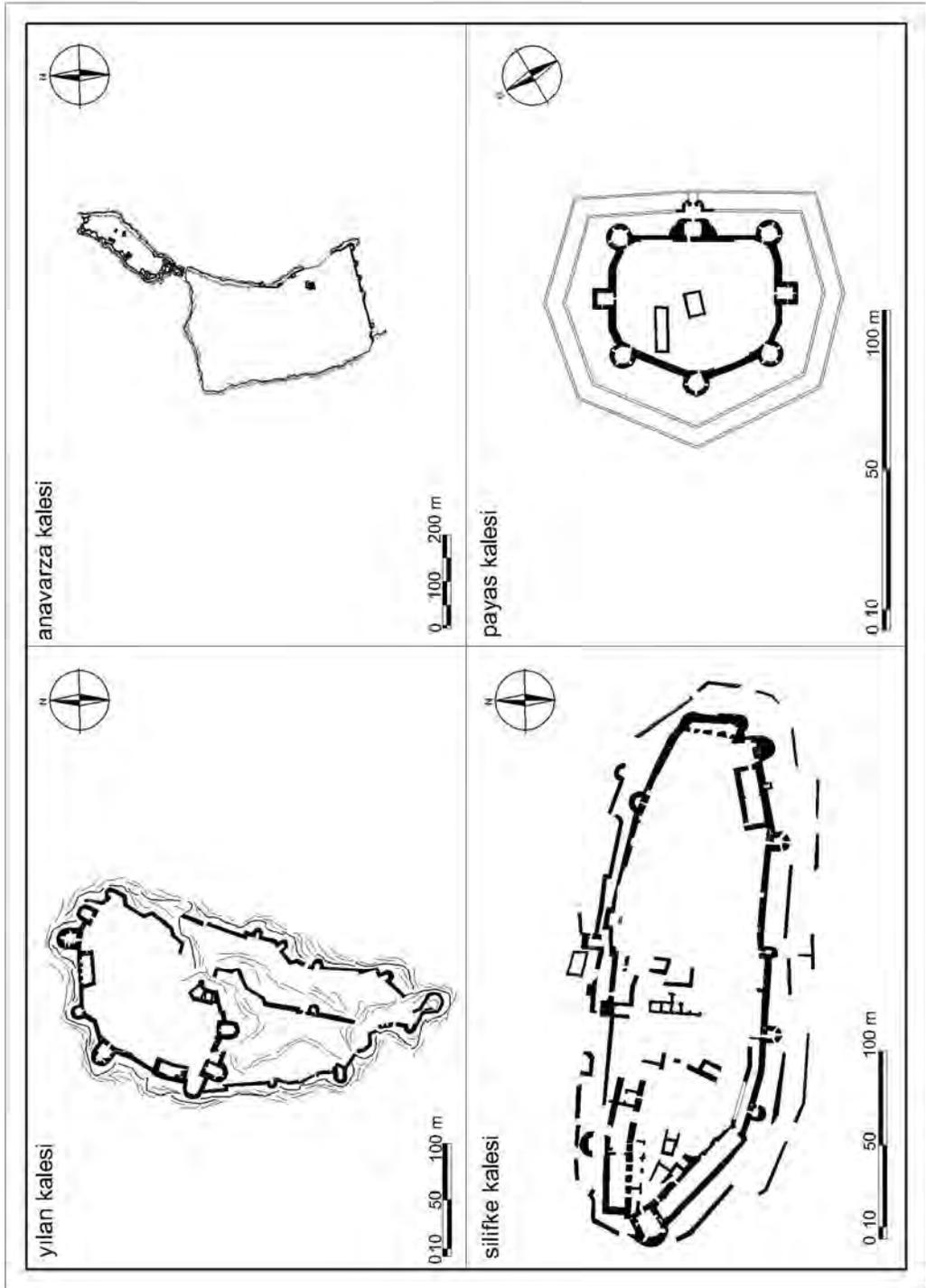


Table 4.4. Plans of the Castles.

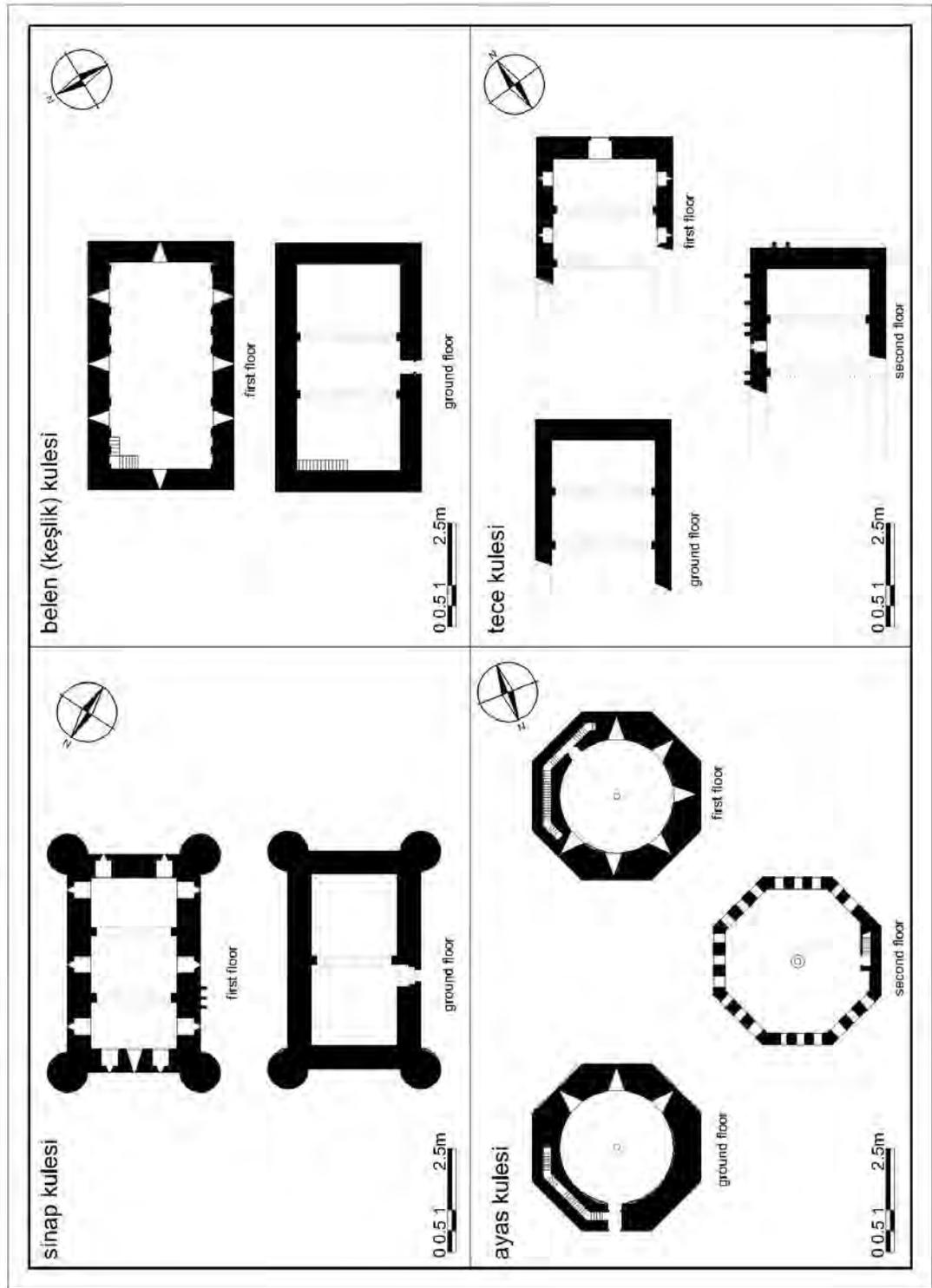


Table 4.5. Plans of the Watch Towers.

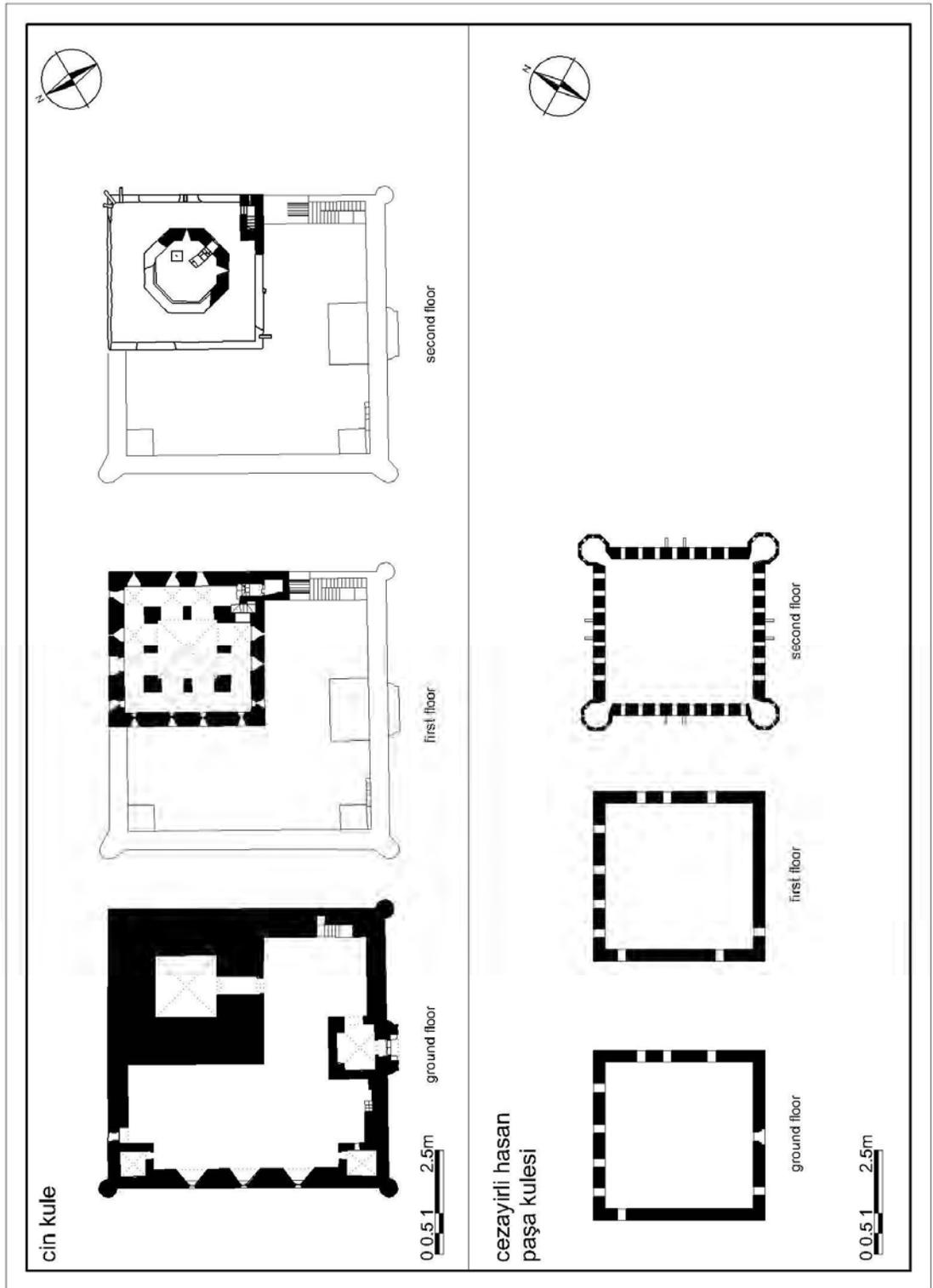


Table 4.6. Plans of the Watch Towers.

**TYPE 1.** It is the embrasure that gets narrower towards inside with a reverse V form and afterwards, opens outside with a loophole which is 0.10m in width. Among these buildings, the upper end in the interior of the embrasures ends with two elements that are arches and single cut stone lentil blocks.

**TYPE 2.** The second type is the embrasure that goes vertically towards inside the wall and then makes same reverse V form like the embrasure type 1. And it opens outside with again a 0.10m wide loophole. This type has two different endings for the upper end<sup>94</sup> of the interior of embrasures as well that are again arched and single cut stone lentil versions.

**TYPE 3.** This type of embrasure directly gets narrower with reverse V form and it again gets wider with V form towards outside. A 0.30m wide arched loophole is located at the intersection point of getting narrower and wider.

**TYPE 4.** This type is the widest embrasure among the entire types. It directly gets narrower conically towards the inside of the wall and opens with 0.50m wide arched loophole towards outside. The arched shape loophole gets wider for 0.15m towards outside and makes a wider arch on the façade of the wall.

Consequently, each building has more than one type of embrasures. Although this, embrasures type 1 and type 2 are most common embrasures seen in the buildings. However, even though Cin Kule has embrasure type 2, it also has embrasure type 3 and type 4. Another result is these types are only seen in Cin Kule, not even in Ayas tower and Payas castle which are all built in the same period with Cin Kule. Therefore, it is possible to say that while Cin Kule is presenting a similar feature by having embrasure type 2, it also differs from the rest of the buildings with it's type 3 and 4 embrasures.

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<sup>94</sup> The reason for these widenings are all discussed in the evaluation of the comparative study.

### 4.2.3. WALL WALKS AND BATTLEMENTS

All of the wall walks are categorized under 3 types according to their material, form and dimensions. (Table 4.9)

There are common features among 3 types. These are; the average width of all wall walks is 1.00m. The cut stone battlements which are rising from the side of the wall walks, starts averagely 0.70m above the floor level of wall walks and rises again averagely 1.30m high. All of the floors of the wall walks were made of flat and thin lime stone rubble stones and lime mortar as the binding material. The typology of the wall walks are mostly shaped by the cappings of the battlements.

**TYPE 1.** This type of battlement ends without a capping. Rectangular battlement rises and ends straightly.

**TYPE 2.** The battlements end with 0.60m high round capping which were made of small lime stone rubbles and lime mortar as the binding material.

**TYPE 3.** This type of battlements end with a 0.40m high triangular capping which were again made of small lime stone rubbles and lime mortar as the binding material.

As the result of this typology, type 1 wall walk and battlement is the most common architectural element among fourteen buildings. However, since the battlements of Cin Kule were all collapsed, it is impossible to put it in one of the categories. But the with the dimension and construction techniques of the wall walks, it is very similar to the rest of the buildings.

### 4.2.4. DOOR OPENINGS

Door openings are categorized as 2 main types according to their form and architectural details. In this categorization, similar door openings are grouped under several sub-types.

As the common feature of all door openings, none of them have door wings at present. (Table 4.10)

**TYPE 1A.** As their planimetric features, this type of door opening which have cut stone casings on both sides are averagely 0.90m in width. All of the sub-types of type 1 have the same plan features.

In type 1a door openings, there are gaps on both sides of the door which are 0.15m to 0.15m in size for the door props. The last feature of this type is the cut stone jambs that work as the hinges of the door wings. These jambs which are all quarter circle in form are located at the inner side of the door openings.

**TYPE 1B.** This type carries all of the features of type 1a door openings. The only difference is that none of these door openings have gaps on both sides of the inner walls of the opening for the door props.

**TYPE 1C.** The last sub type of type 1 has neither the side gaps for the door props nor the cut stone jambs for the door wings. Moreover, these door openings are only openings without any wings.

**TYPE 2.** Type 2 is like type 1c, has no door prop gains and no door wings jambs. These doors haven't even got a threshold. Therefore, it is possible to say that these doors wings and located at the upper floors where they are only reached by a mobile ladder.

As the result of the typological study of the door openings, the most common ones are the ones that are grouped as type 1a, b and c. Type 2 is only seen in one building. The openings in Cin Kule are all in type 1 group. Therefore, the architectural features of Cin Kule in terms of door openings are very similar with the other 13 buildings.

#### **4.2.5. MACHICOLATION & TURRETS**

The turrets and machicolations which are designed to protect the building or the circuit walls are the projecting elements that are grouped under four types. (Table 4.11)

**TYPE 1A.** This type of machicolations are located above the primary or secondary entrances of the castles and watch towers. From the entrance façade, they project averagely 0.80m or 1.00m further. All of these elements have gaps to drop the missile in order to protect the entrances.

**TYPE 1B.** This type of machicolation is 1.00m projecting pit room from the building. It has a 0.15m wide gap to pour the liquid downwards.

**TYPE 1C.** It is the same type of machicolations of type 1b. However, these pits have completely open floors to drop missiles. Some of them have flat ceilings and some of them have none.

**TYPE 2.** These pits are corner elements that again projects 1.00m from the building and has a room for maximum 1-2 people. It has small loopholes on the walls.

In many of the buildings, type 1c machicolation is the most common elements that could be followed. However, in Cin Kule none of the machicolation types could be seen. In spite of this, at the second floor of Cin Kule, there are three projecting single cut stone blocks are located on the south corner. These elements were probably carrying a turret once. Because the same turret with same details are seen in Cezayirli Hasan Pasa tower; they are described as the remains of a turrets.

#### **4.2.6. OCULUS**

Oculus are categorized in two types according to their location and form. (Table 4.12)

**TYPE 1.** As the location, they are always located between a defense space and a cistern. They are the only connection of these two spaces. However, they are always seen without parapet walls around. They are mostly circle and square holes on the floors.

**TYPE 2.** It carries the same features of the type 1 but they only differ in terms of their locations. These oculus are located between two defense spaces probably for communication or transferring the goods or arms.

In all of the building, both types are mostly followed. However, in Cin Kule only the type 2 is seen between the 1<sup>st</sup> and 2<sup>nd</sup> floors.

### **4.3. COMPARATIVE STUDY OF 16<sup>th</sup> CENTURY MONUMENTAL BUILDINGS IN PAYAS**

The last study is done to present a brief information about the 16<sup>th</sup> century architectural styles and therefore some related details of the buildings in Payas. So Cin Kule, Payas Castle and Sokollu Mehmet Paşa Menzil Complex which were all constructed almost at the same time are presented.

#### **4.3.1. ENTRANCES**

The categorization of the entrances of all three buildings consists of two basic types. These types separate from each other according to their material and ornamentation. However, all these types including the sub-types, have common architectural features. The first of these is all of the entrances are the entrances with a portal. The portals are framed by a relief molding and ending with cut stone side benches on both sides. These benches are 0.50m to 0.80m in size. The entrance doors that are in the portals are all end by joggled arches. There are inscription panels in various sizes located above these joggled arches of the entrance doors in portals (Table 4.13). The distinctive features of each type are described in the following typology.

**TYPE 1.** The portal was made of cut stone (lime stone) blocks. However, unlike the other lime stone blocks that were used in the building where the portal is located, the outer faces of these cut stone blocks are all coated. Therefore, these blocks have smoother and flatter surfaces than the rest of the blocks.

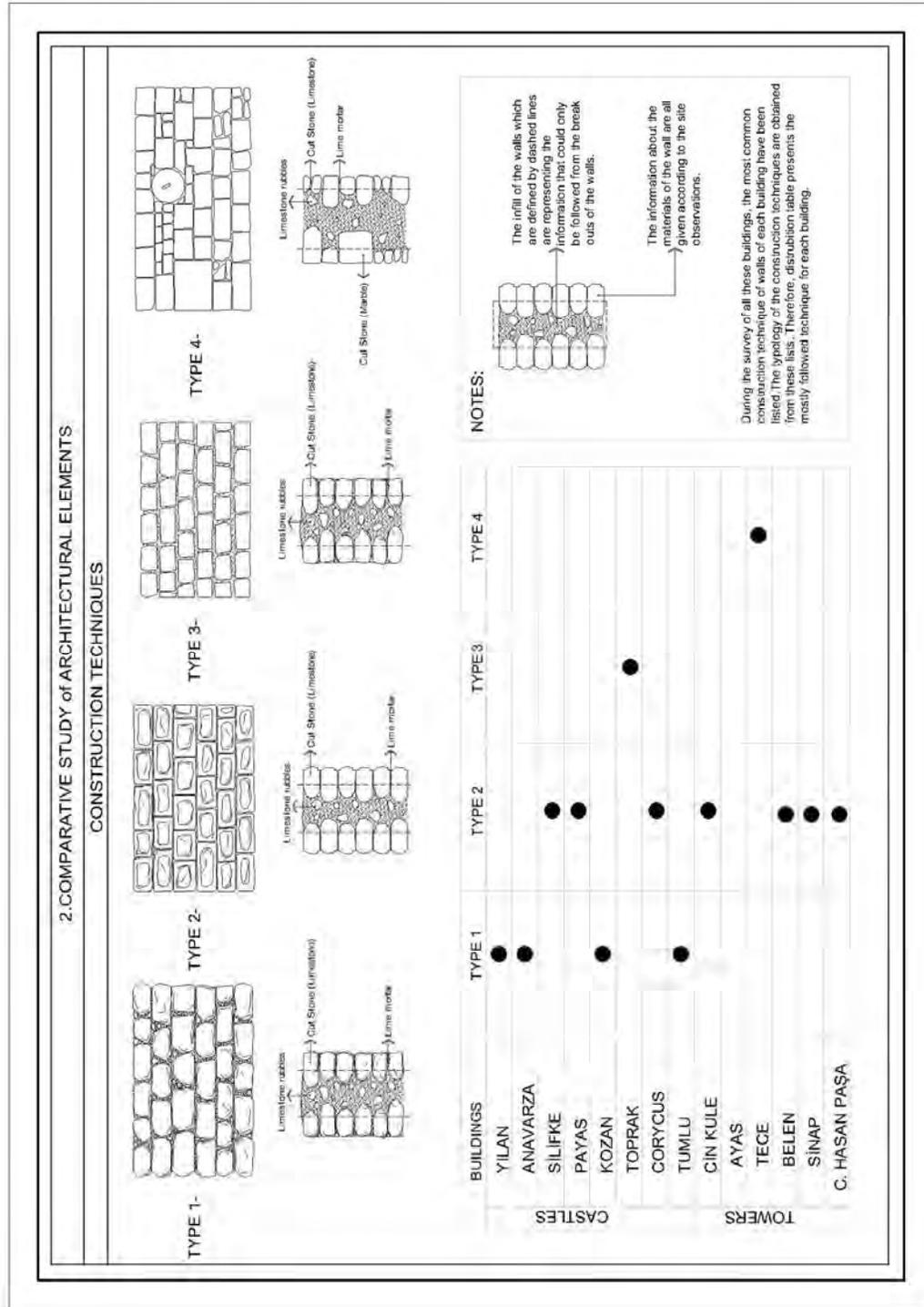


Table 4.7. Typology of the Construction Techniques of the Walls of the Buildings.



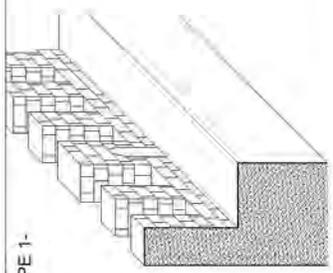
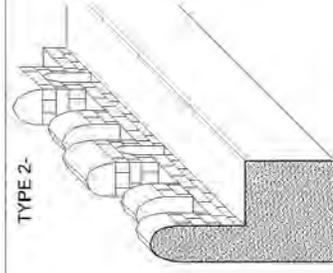
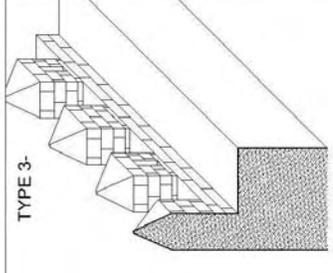
2.COMPARATIVE STUDY of ARCHITECTURAL ELEMENTS BATTLEMENTS and WALLWALKS			
	TYPE 1-	TYPE 2-	TYPE 3-
			
BUILDINGS			
YILAN			●
ANAVARZA	●		
SILIFKE	●		
PAYAS	●		
KOZAN			
TOPRAK	●		
CORYCUS	●		
TUMLU			
C'IN KULE			
AYAS	●		
TECE	●	●	
BELEN			
SINAP			
C. HASAN PAŞA			●
CASTLES			
TOWERS			
<p><b>NOTES:</b>            The wall walks and their battlement are almost all same. The only difference is on the caps of the battlements. This can vary in several forms. However, the remarkable point of these wall walks are their dimensions. All of the wall walks have same dimension. The height where the battlement starts is averagely 0.70-0.75m. The height of the battlements are averagely 1.-1.0m.</p>			

Table 4.9. Typology of the Wall Walks of the Buildings.





OCULUS of CASTLES																																															
TYPE 1.		TYPE 2																																													
TYPE 2.																																															
	<table border="1"> <thead> <tr> <th>BUILDINGS</th> <th>TYPE 1</th> <th>TYPE 2</th> </tr> </thead> <tbody> <tr> <td>YILAN</td> <td>●</td> <td>●</td> </tr> <tr> <td>ANAVARZA</td> <td>●</td> <td>●</td> </tr> <tr> <td>SILIFKE</td> <td>●</td> <td>●</td> </tr> <tr> <td>PAYAS</td> <td>●</td> <td>●</td> </tr> <tr> <td>KOZAN</td> <td>●</td> <td>●</td> </tr> <tr> <td>TOPRAK</td> <td>●</td> <td>●</td> </tr> <tr> <td>CORYCUS</td> <td>●</td> <td>●</td> </tr> <tr> <td>TUMLU</td> <td>●</td> <td>●</td> </tr> <tr> <td>CIN KULE</td> <td>●</td> <td>●</td> </tr> <tr> <td>AYAS</td> <td>●</td> <td>●</td> </tr> <tr> <td>TECE</td> <td>●</td> <td>●</td> </tr> <tr> <td>BELEN</td> <td>●</td> <td>●</td> </tr> <tr> <td>SINAP</td> <td>●</td> <td>●</td> </tr> <tr> <td>C. HASAN PAŞA</td> <td>●</td> <td>●</td> </tr> </tbody> </table>	BUILDINGS	TYPE 1	TYPE 2	YILAN	●	●	ANAVARZA	●	●	SILIFKE	●	●	PAYAS	●	●	KOZAN	●	●	TOPRAK	●	●	CORYCUS	●	●	TUMLU	●	●	CIN KULE	●	●	AYAS	●	●	TECE	●	●	BELEN	●	●	SINAP	●	●	C. HASAN PAŞA	●	●	
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SINAP	●	●																																													
C. HASAN PAŞA	●	●																																													
		<p><b>NOTES:</b></p> <p>The oculi are used either to provide the communication between the defence spaces or to provide an access to the cistern which is located right at the bottom of the defence space.</p> <p>In all cases, none of the oculi has rising paraphet walls around the oculi.</p>																																													

Table 4.12. Typology of the Oculus of the Buildings.

In this type of portal, two lion relieves which are averagely 0.20m to 0.20m in size are located at the left and right end of the outer arch of the portal.

**TYPE 2A.** The portals which are mentioned in type 2 category were made of marble blocks. These marble blocks were used in two different colors that are black and white. Apart from these, type 2 has three sub-types that are formed according to the type of the arches and of the voussoirs of them.

Type 2A portal has a two centered pointed arch which was made of black and white marble voussoirs in sequence. There are two arches located above the entrance door in the portal. Both of these arches depressed joggled arches that are again made colored marble voussoirs. The difference between these two arches is the type of the voussoirs of each; the bottom arch was made of Z shaped marble joggled voussoirs but the one above was made of more ornamented joggled voussoirs which have complex form.

**TYPE 2B.** The outer arch of the type 2B portal is a three foiled arch which again consist of colored marble blocks. The entrance door in the portal ends with a depressed joggled arch above. The arch was made of Z shaped colored marble voussoirs.

**TYPE 2C.** The outer arch of the type 2C portal is a two centered horse shoe arch which has colored marble voussoirs. The entrance door in the portal, unlike the others, ends with a single marble lintel. There is another lintel located above this lintel as well. The upper one was made of colored joggled voussoirs. The voussoirs are extremely ornamented and have complex form.

Consequently, type 1 entrance and therefore portal is only seen in Cin Kule. As mentioned before, it separates from other type and sub-types by its material that is the coated lime stone blocks. These coated blocks are only seen at this part of Cin Kule. The reason for the coating of the lime stone block is to provide a marble like surface on the blocks

which were used in the portal. And the reason for using the coated lime stone blocks instead of original marble blocks might probably be the economical reasons of transporting marbles to site.

#### **4.3.2. CONSTRUCTION TECHNIQUES OF FLOORS**

There are three types of floor techniques are presented for three buildings. In this typology, they are categorized according to the techniques of the floors and the materials. (Table 4.14)

**TYPE 1.** There is hardcore level beneath the floor tiles that was made of rough cut lime stone blocks and lime mortar as the binding material. Above this, there are smaller, flat and smoother lime rubble stones and lime mortar were used. This technique is seen at the upper floors.

**TYPE 2.** The floor tiles are again located above the hardcore level that was made of rough cut lime stone blocks and lime mortar as the binder. The cut stone (lime stone) floor tiles that are averagely 0.30m to 0.20m in size are located above the hardcore. Lime mortar was again used as the binder. This technique is followed at the ground floor spaces.

**TYPE 3.** This technique was made of a leveling concrete that is 0.15m in thickness located on the natural soil. This technique is followed in the courtyards.

Finally, the most common technique of all three buildings are the type 1 and type 3 techniques. Type 1 is an original technique that is seen in all the buildings. Therefore, as the floor techniques, these buildings are very similar to each other. Moreover, the type 3 technique is an alteration that is a result of 60's restoration projects. Therefore, it is possible to say that all these buildings are repaired or restored at the same time.

### 4.3.3. CONSTRUCTION TECHNIQUES OF WALLS

The construction techniques of the walls of the three buildings are categorized in 6 groups. The presented typology is emerged from the list of all techniques in each building and then re-categorized according to the originality and percentage of use of each technique in each building.

Even though these 6 types differ from each other, they also present some common features. According to this, all of the wall types are double skin masonry walls and have infills within. This infill was made of lime stone rubbles and lime mortar as then binder. All of the cut stone blocks used in the walls are averagely 0.50m to 0.30m in size and the average thickness of the lime joints on the wall is 0.01m.

Apart from these, the particular features of each type are presented in the following typology. (Table 4.15)

**TYPE 1.** The wall was made of cut stone blocks (lime stone) and lime mortar as the binding material. The outer side of the double skin wall was made of bossaged cut stone blocks that averagely project 0.05m from the block's itself. The bossages have rough workmanship. The other side of the wall was made cut stone blocks (lime stone) which have no any bossage. The average thickness of the wall is 0.90m.

**TYPE 2.** The wall was made of cut stone blocks (lime stone) and lime mortar as the binding material. The blocks on the outside of the wall are bossaged cut stone blocks. The cut stone blocks located on the inside of the wall are smaller than the others and have no bossages. Besides, the lime joints on this side of the wall make a pointing that is 0.03m in thickness on the surface of the wall. The average thickness of the wall is 0.90m.

**TYPE 3.** The outer side of the wall was made of bossaged cut stone (lime stone) blocks and lime mortar as the binding. However, the other side of the wall was made of fine cut lime stone blocks and cement

mortar as the binder. The thickness of the cement joint in this part of the wall is less than 0.01m and the average thickness of the wall is 0.90m.

**TYPE 4.** Both sides of the wall were made of same technique that is made of bossaged cut stone blocks (lime mortar) and lime mortar as the binding material. The average thickness of the wall is 0.90m.

**TYPE 5.** Both sides of the wall were made of same technique that is made of cut stone blocks (lime stone) without bossages and lime mortar as the binder. However, one side of the wall was made smaller cut stone blocks. The average thickness of the wall is 0.90m.

**TYPE 6.** The outer side of the wall was made of cut stone (lime stone) blocks without bossages and lime mortar as the binder. The other side of the wall was made bossaged fine cut stone blocks and cement mortar. The bossages on the cut stone blocks are also fine cut bossages that are projecting 0.02m forward. Thinner cement joint was used in this part of the wall that is less than 0.01m. The average thickness of the wall is 0.90m.

Consequently, all of the types excluding type 4 are followed in Cin Kule. Besides, as a general result, type 1 and 3 are followed in all three building as the common types. Therefore, it is possible to say that the dominant construction technique of the walls of Cin Kule is also the dominant technique for the other two building. For this reason, all these three buildings are very similar to each other in terms of the construction techniques of the walls.

#### **4.3.4. CONSTRUCTION TECHNIQUES OF CEILINGS**

The vault types of the buildings are categorized in 2 main groups according to their types of vaults. The first type is the cross vaulted type and the second is the barrel vaulted. Both types are categorized under two sub-types for each. (Table 4.16)

**TYPE 1A.** The vault is carried by both the wall and the piers that were made of cut stone (lime stone) blocks which are averagely 0.50m to 0.30m in size. The springing of the vault which projects 0.03m forward was made of same type of cut stone blocks. However, above this level, the vault was made of rough cut lime stone blocks and lime mortar as the binding material. The surface of the vault is lime plastered.

**TYPE 1B.** The entire vault was made of cut stone (lime stone) blocks and the springers of the vault are projecting 0.05m forward.

**TYPE 2A.** The barrel vault is carried by the wall that was made of 0.50m to 0.30m in size. The vault was made of rough cut lime stone blocks and lime mortar as the binding material. The rough cut stone blocks are located parallel to the barrel vault and there are wide joints in between each course of blocks. The surface of the vault was lime plastered.

**TYPE 2B.** The vault is carried by the same type of wall of type 2a, however, the vault was made of bricks.

As a result, type 1A and type 2A vaults are the only common types that are followed on all three buildings. Therefore, Cin Kule has again very similar to the other 16<sup>th</sup> century buildings in Payas in terms of construction technique of the ceilings-vaults. The rest types in the typology are only followed in Payas Castle that probably belong to the pre-ottoman period of the building<sup>95</sup>.

#### **4.3.5. WORKMANSHIP OF THE CUT STONE BLOCKS**

The cut stone blocks are categorized in 8 types according to their workmanship. In these types, there are both the original and new-repair blocks are presented together. However, the new blocks are mentioned separately in the typologies. (Table 4.17)

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<sup>95</sup> The pre-ottoman period of Payas castle is discussed in the historical research chapter.

**TYPE 1.** They are the lime stone cut stone blocks that are averagely 0.50m to 0.30m in size. There are no any bossages on the outer faces of the blocks.

**TYPE 2.** They are the lime stone cut stone blocks that are averagely 0.50m to 0.30m in size. There are rough formed bossages projecting 0.04m forward on the outer faces of the blocks.

**TYPE 3.** They are the lime stone fine cut stone blocks that are averagely 0.50m to 0.30m in size. There are rough formed bossages projecting 0.04m forward on the outer faces of the blocks.

**TYPE 4.** They are the sand stone fine cut stone blocks that are averagely 0.50m to 0.30m in size. There are rough formed bossages projecting 0.04m forward on the outer faces of the blocks. These blocks are not original stone blocks. They are the additions of 60's restorations.

**TYPE 5.** They are the sand stone fine cut stone blocks that are averagely 0.80m to 0.50m in size and have no any bossages on the outer faces.

**TYPE 6.** They are the lime stone cut stone blocks that are averagely 0.50m to 0.30m in size and have 0.04m projecting bossages. However, the bossages are either vertical or horizontal linear in form.

**TYPE 7.** They are the lime stone cut stone blocks that are averagely 0.30m to 0.40m in size and have no bossages.

**TYPE 8.** They are the lime stone cut stone blocks that are averagely 0.50m to 0.30m in size and have 0.02m projecting bossages. Both the bossages and the blocks have fine cut workmanship. These blocks are again not original stone blocks. They are the additions of 60's restorations.

Consequently, types 1, 2, 5, and 6 are common workmanships that are followed in all three buildings. However, type 5 and 8 are the repairs that are added by the 60's restorations. Therefore, Cin Kule has a very similar workmanship with of Payas castle and of Sokollu Methmet Paşa menzil complex in terms of both original and additional-repair blocks.

#### **4.4. EVALUATION OF THE COMPARATIVE STUDY**

More than the location or the period of the military buildings, the main factor that affects the formation of the spaces and the architectural elements of these buildings is the war technology at a certain era. So that it is possible to see that Cin Kule which was built in the 16<sup>th</sup> century has the same entrance with the ones that Vitruvius has mentioned<sup>96</sup>. His descriptions are also same for the dimension of the wall walks of Yılan.

Castle (11<sup>th</sup> century) which is known as a Crusader castle or the distance between the bastions of Anavarza castle.

Therefore, even though the presented buildings in the comparative study were all built in different periods, it is possible to obtain important results about both for general architecture of military buildings and Cin Kule.

According to this, the first stage of the comparative study where the table of general military elements and plan layouts are presented resulted as; the plan layout of Cin Kule that is mentioned as a watch tower, has a courtyard that is defined by a circuit wall and has wall walks on this circuit

walls. There are embrasures located on the circuit walls that face to the courtyard. In addition to this, the entrance is located on the circuit wall as a space which has projecting portal. With all these features, Cin Kule separates from other watch towers. Because in terms of plan layout, without a doubt, defense is the basic concept of the general design of Cin Kule which none of the other watch towers have. Besides, in terms of its

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<sup>96</sup> Vitruvius, 1998 p.15

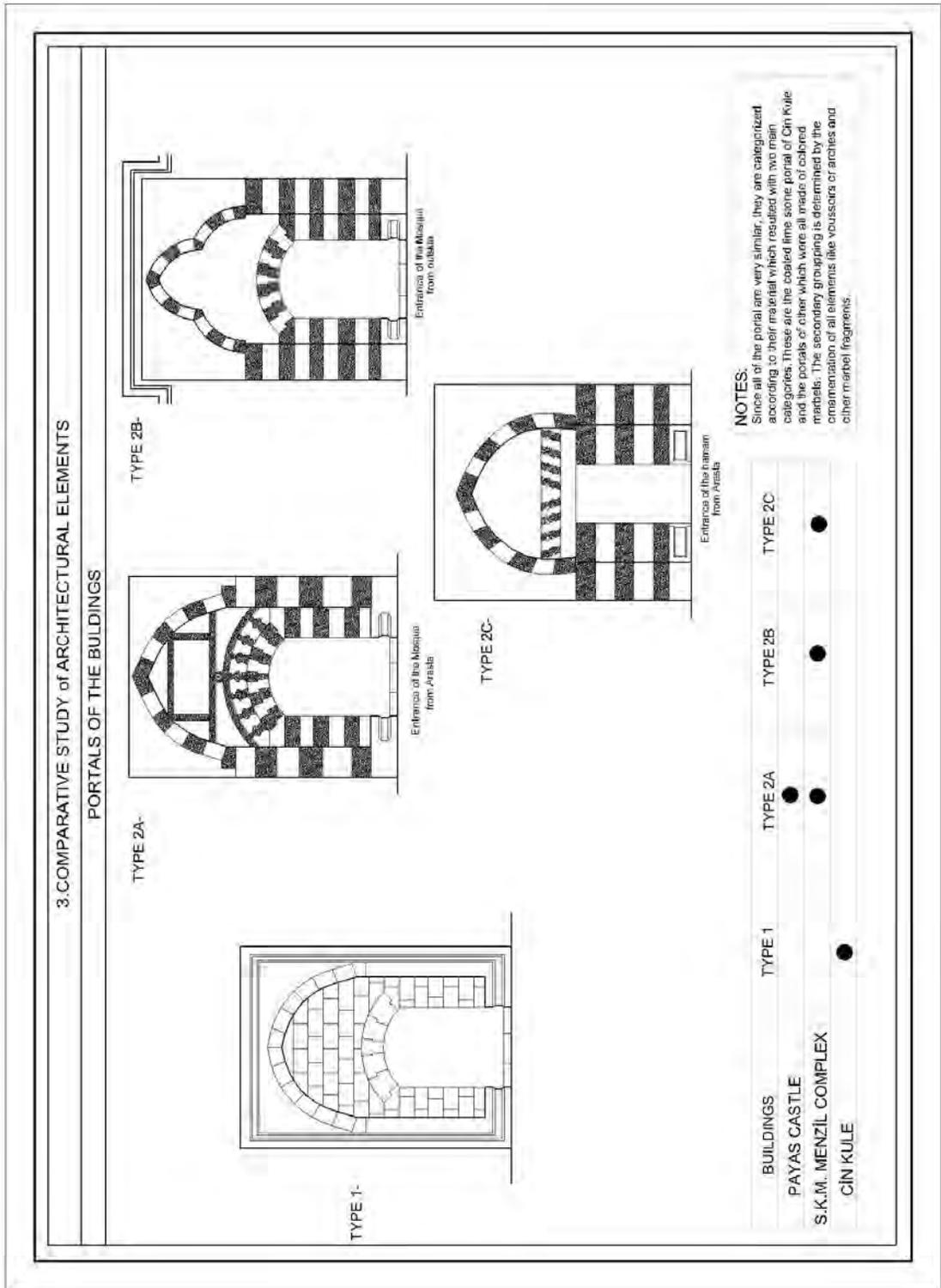


Table 4.13. Typology of the Portals.

3.COMPARATIVE STUDY OF ARCHITECTURAL ELEMENTS  
CONSTRUCTION TECHNIQUES OF FLOORS



NOTES:

Another information about the techniques is the place of use. According to this, type 1 floor technique in all of the buildings is followed on the floors of upper floors. Type 2 is followed on courtyards and on the floors of some spaces which are all located at the ground floor. The last type is obviously the later additions of restorations during 60's.

BUILDINGS	TYPE 1	TYPE 2	TYPE 3
PAYAS CASTLE	●		●
S.K.M. MENZİL COMPLEX		●	●
C/İN KULE	●	●	●

Table 4.14. Typology of the Construction Techniques of the Floors.

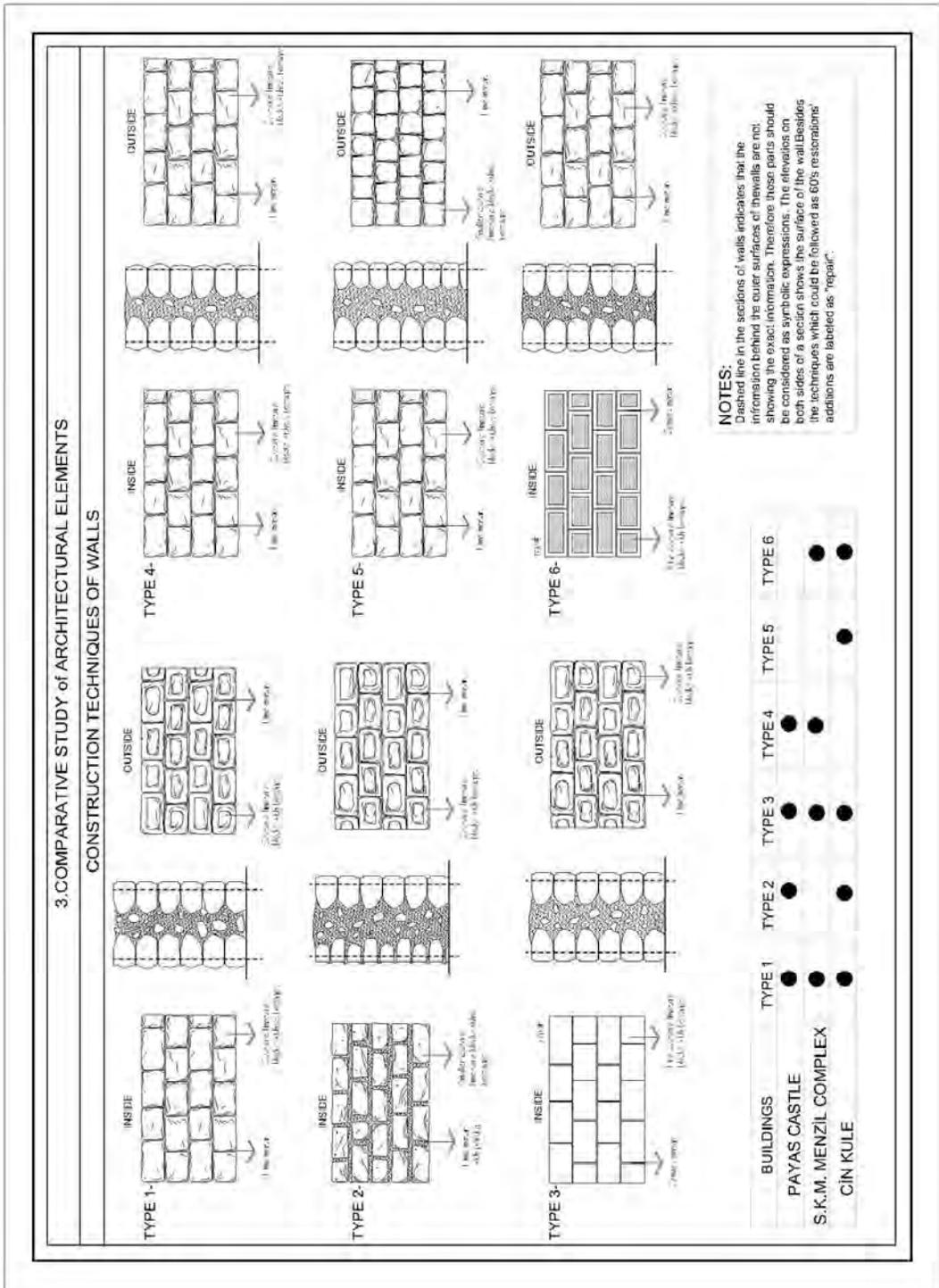


Table 4.15. Typology of the Construction Techniques of the Walls.

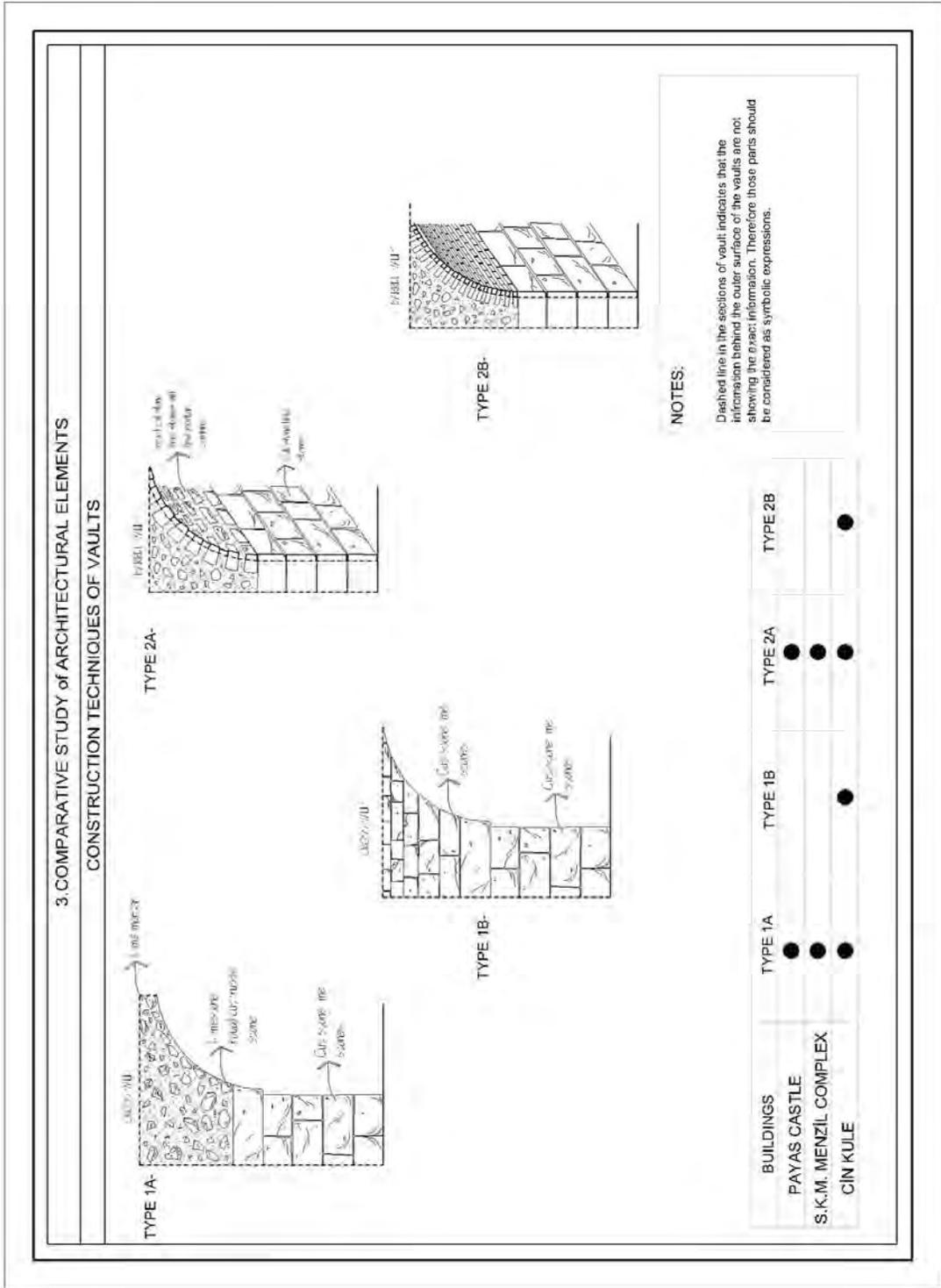
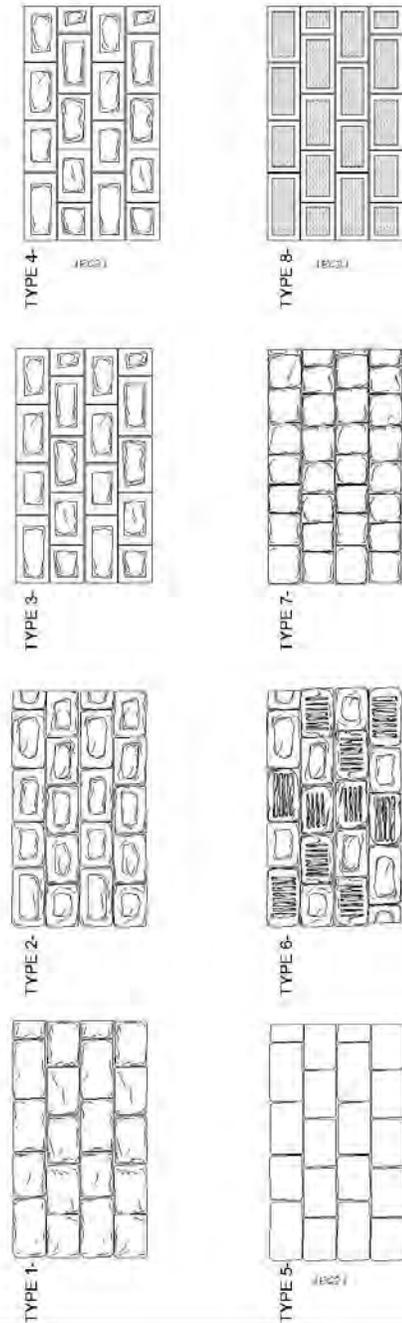


Table 4.16. Typology of the Construction Techniques of the Ceilings.

3.COMPARATIVE STUDY of ARCHITECTURAL ELEMENTS  
 TYPES OF WORKMANSHIP OF THE CUT STONE BLOCKS



NOTES:

The presented workmanship of them cut stone blocks are categorized according to the complete list of workmanship of each buildings. According to this, there are certain workmanships that is categorized as repairs which are additions of 60's restorations in Payas. This result mainly obtained from the survey of Sokollu Mehmet Paşa Menzil Complex in 2000.

BUILDINGS	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7	TYPE 8
PAYAS CASTLE	●	●		●	●	●		●
S.K.M. MENZİL COMPLEX	●	●			●	●		
CIN KULE	●	●	●		●	●	●	

Table 4.17. Typology of the Workmanship of the Cut Stone Blocks.

scale, it is unlike the castles as well. Therefore, it is possible to say that Cin Kule has such plan layout that separates it from both castles and watch towers.

At this point, to discuss the some of the information presented in the historical research chapter again will probably reveal some of the information about the general function of Cin Kule.

The most important reason that caused to build Cin Kule is the concern about the security of both the harbor and the shipyard. Because Payas castle is quite far to undertake this serve. Therefore, to protect these buildings against the attacks from the sea was the main duty of Cin Kule.

The idea of defense behind the general design of Cin Kule is probably this duty. However, according to the sources, even though the primary attacks were generally expected from the sea, Cin Kule should have been protecting these buildings against the attacks from the ground. Therefore, more than a watch tower, it was probably serving as a castle in smaller scale like a police station. This theory is also supported by another reality that Payas, in the 16<sup>th</sup> century, was one of the derbent centers in the region.

At the second stage of the comparative study, in terms of architectural elements, it is exposed that Cin Kule has very common features with the castles and watch towers located in the same region.

The architectural features like the entrances, wall walks and construction techniques and materials are almost same in all the buildings including Cin Kule. However, one of these elements totally separates from all other buildings; that are the embrasures of Cin Kule.

There are three different types of embrasures in Cin Kule. The difference of these embrasures is not a result of an architectural style but of the war technology.

The embrasures type 4 are located at the courtyard has loop holes which are 0.50m to 0.80m in size. This was not definitely designed for shooting arrows. The reason of the large loop holes is that these embrasures were designed for cannons. The ones (type 3) located at the

northwest wall of the 1<sup>st</sup> floor have again wider loop holes. These embrasures unlike the rest of the embrasures in Cin Kule get narrower towards inside and ends with a loop hole that is 0.30m to 0.50m in size. This size is not big enough for cannon and very big for shooting arrows. These embrasures probably designed for soldiers who were using rifles. The reason of the narrowing towards inside is to provide easiness to rotate or move the long barreled rifles.

At this point a very serious reality is exposed that the use of cannons in the war fields was started in the late 14<sup>th</sup> early 15<sup>th</sup> centuries<sup>97</sup>. Therefore, unlike Payas castle, Cin Kule which was mentioned that it was built in 1577 in the original documents can not be built before the invention of the firearms, especially cannons.

The architectural features of Cin Kule will probably be understood clearly when the 16<sup>th</sup> century buildings in Payas are analyzed. As a result of the last presented stage of the comparative study, Cin Kule with its all architectural features is almost same with the complex and the castle. Moreover, another interesting result is obtained as well. The profiled frame on the outer façade of the portals, highly ornamented voussoirs of the joggled arched entrances, and side benches are the typical Mamluk entrances<sup>98</sup>. At this point, it is possible to mention the Mamluk influence in all of the monumental buildings that are built in the 16<sup>th</sup> century.

However, another question about Cin Kule is the reason of the cut stone bossaged blocks of the masonry walls. At this point, Edwards claims that in the Armenian military architecture, it is a typical workmanship of cut stone blocks that are used on the outer faces of the double skin masonry walls. Because of this, he defined Cin Kule as an Ottoman building built by the Armenian masons<sup>99</sup>. However, this definition about Cin Kule is a superficial statement for the overall architecture in Payas. The influence in Payas in 16<sup>th</sup> century is totally Mamluk influence. Therefore, the reason of the workmanship of these blocks is probably lies under an economic reason. As mentioned before,

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<sup>97</sup> DE VRIES, 1992 p.38

<sup>98</sup> BURGOYNE, 1987 p.95

<sup>99</sup> EDWARDS, 1986 p.203

a very serious amount of monumental buildings were constructed in the 16<sup>th</sup> century in Payas. Therefore, instead of quarrying the stones, all these buildings were built by re using the stone blocks taken from earlier settlements around.

## CHAPTER 5

### RESTITUTION

#### 5.1. PHASES

Since Cin Kule has been built in 1577, both because of its military function<sup>100</sup> and earthquakes<sup>101</sup>, it's been subjected to many repairs. Some of these repairs are very similar to the original construction techniques. Therefore, the question of "when exactly" Cin Kule was built has come out. But although this, the original plan and façade order of the building can be easily read.

Mainly, the building has subjected to three periods or phases throughout its history. The last phase is considered as the existing situation of the building by 2004<sup>102</sup>. The second phase of the building is the period when the building was used by the Payas Harbor Enterprise named PANO in the republic period. And the first period which indicates the original plan scheme is the period that the building was used a police station. However, except for the original period, the exact dates of the rest two phases are not known.

#### 5.2. RESTITUTION SCHEMES

Since the last phase -existing phase- is completely described in measured drawings stage therefore it is not mentioned here.

For the two stages, one of these is the original phase of the building- only the possible changes are indicated in this study. For this reason, for the parts that are not mentioned in any of the stages should be considered as they are mentioned in the description.

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<sup>100</sup> In the historical research part, it is mentioned that how seriously Cin Kule was damaged during Kucuk Ali rebellion.

<sup>101</sup> In 1822, a very strong earthquake in Iskenderun was damaged all over the region.

### **5.2.1. PHASE 1**

The original situation of the building as a police station is described in this stage. Every detail is mentioned one by one in site plan, floor plans and façades.

#### **5.2.1.1. SITE PLAN**

**GROUND LEVEL.** The site that the building is located is averagely 0.80m lower than the existing earth level especially at the northwest side of the building. Besides, the sharp level difference at the northwest direction of the building lot is sharper than the present one.

**SURROUNDING BUILDINGS.** None of the buildings that can be seen at 1/500 site plan has either a trace or any remains at present except for the remains of the masonry dock that is located starting from the concrete ramp of the Police compound.

The second important building is the shipyard that is located at the east of the original dock. And several shops are located at the east of the shipyard. (Figure 5.1)

#### **5.2.1.2. PLANS**

##### **5.2.1.2.1. GROUND FLOOR PLAN**

**GROUND FLOOR LEVEL.** For the first phase of the restitution of the building, it is understood that the existing ground level of the courtyard is averagely 0.50m higher than the original one. For this reason none of the thresholds of the door openings can be seen at present. The original ground level starts at -1.35m level right next to the landing of the stair ST2 and slopes downwards the northwest wall of the courtyard where it ends at -0.58m height level.

The original level of the ground also shows that the landing of the stair ST2 is averagely 0.30m above the ground level. The same level difference comes up between the embrasures floors and ground floor.

**GROUND FLOOR COVER.** The floor of the entire courtyard and the spaces around are all covered with cut stone blocks which are averagely 0.35m to 0.20m in size and lime mortar as the binder. But the floor tiles of the three embrasures on the northwest wall of the courtyard are different than of the courtyard. They are made of rough cut lime stones, rubbles and lime mortar as the binder. (Figure 5.2)

**FOUNTAIN.** At the northeast wall of the courtyard, right next to the space S4, there is a fountain which is 1.57 to 0.84m in size. At the bottom of the fountain, it ends with a basin which is 0.15m above the courtyard floor level.

**VAULTS.** All of the vaults in the building are covered with lime plaster. However, the cut stone springings of these vaults are not plastered like the walls.

**DOOR OPENINGS.** All of the door openings which have door wings have 0.15m high cut stone thresholds. However, unlike the others, the one at the entrance gate has 0.40m high threshold.

**DOORS.** Even though there are two door openings in S1, entrance space, the one in the portal has door wings. The door consists of double wings that are 0.75m in length and 0.12m in thickness. There is a timber door prop which is 0.15m to 0.10m in size behind the door. Both wings are fixed by the hinges at the jambs on both sides.

In space S3, there is a single winged door which is 0.73m in length and 0.07m in thickness. It is again fixed by a hinge which 0.05m in diameter. The door has not any door props behind.

In space S4, there is a single door that carries exactly the same features of the space S3.

At the first door of space S6 which faces to the stair ST2, there is a door which is 0.90m in length and 0.10m in thickness. It is a single winged door where again there is no door props behind. The second door of the same space which is located in the middle consists of single wing

that is again 0.90m in length and 0.10m in thickness. However, there is a 0.10m to 0.10m timber door prop behind the door toward the space S7.

#### **5.2.1.2.2. 1<sup>st</sup> FLOOR PLAN**

**FLOOR TILES.** The floor tile of the first floor is made of small and flat rubble stones (lime stone) and lime mortar as the binding material. However, the floor of the space S6 is made of cut stone blocks (lime stone) 0.35m to 0.20m in size and lime mortar as the binding material.

The floor of the wall walks that surround the courtyard are made of exactly the same floor tiles of the 1<sup>st</sup> floor space.

**VAULTS.** The cross vault of the central space, the depressed vaults that surround the central space are all covered with lime plaster excluding the cut stone springings. The conical vaults of the embrasures of this floor are also covered with lime plaster. However, the cut stone oculus on the central vault of this space is not plastered.

**TOWERS.** The south tower of the three towers that are located at the corners of the courtyard is a solid and complete circular tower. However, the rest two towers starts rising in circular form and 0.70m below the floor level of the wall walks, they turn into a U form towers which enlarges the area of the towers. Therefore, these towers, at wall walk levels are used a space for 1-2 people where three arrow slits are located. The bottom parts of these towers are solid towers,

#### **5.2.1.2.3. 2<sup>nd</sup> FLOOR PLAN**

FLOOR TILES. The second floor consists of two different spaces. These spaces are space S9 and S10 which are both open spaces. Both the space S9 and S10's floors are made of small and flat rubble stones and lime mortar as the binding material.

WALLS. The surrounding walls of the spaces S9 consists of battlements. In addition to this, at the east corner of the space there is a turret which projects 0.65m further and which is attached to the

surrounding battlements. In the turret there are three arrow slits located on the walls of this space.

**CONSOLE.** 2.50m above the floor level of space S10, there is a 0.65m projecting timber console that continues all the way around the octagonal space. Above the console, the walls of the octagonal space rise 1.70m more. (Figure 5.3)

**EMBRASURES.** There are type 2 embrasures located at 7 sides of the octagonal walls of S10.

**OCULUS.** At the center of the octagonal space, there is an oculus which is 1.00m in diameter. It has 0.90m rising parapet walls around which are 0.20m in thickness.

**DOORS.** At the door opening of the space S10, there is a single wing that is 0.97m in length and 0.08m in thickness. The door is supported by a door prop behind which is 0.10m to 0.15m in size.

**STAIR.** There are 5 cut stone steps between the floors of the spaces S9 and S10.

**GUTTERS.** At the four sides of the space S9, there are cut stone gutters located at each. They project 0.08m outer than the walls. Because of this, the floor of the space S9 slopes downwards these gutters.

### 5.2.1.3. FAÇADES

**PORTAL.** There is a relief frame surrounding the portal and ends with cut stone benches on both sides. Above the outer arch of the portal, there are two lion relieves on both sides. (Figure 5.4)

Above the entrance door of the portal, there is a marble inscription panel which is 0.75m to 0.60m in size.

**WALLS.** Behind the portal, the walls rise up to +4.79m level and end with battlements. The battlements start 0.70m above the floor level of the wall walks behind and rise 1.20m more. The width of the battlements is 0.75m and the distance between each battlement is 0.55m. All of the façade walls end with the same type of battlements.

The courtyard part of the northeast façade walls rises up to the bottom end of the surrounding round molding and again end with battlements at +4.53m level.

**EMBRASURES.** There are four embrasures located on the northeast façade where one of these embrasures is different than three. Three of these are type 1 embrasures and the fourth one is type 2 embrasure. (Figure 5.5)

## **5.2.2. PHASE 2**

The second stage when the building was used by Pano is described in terms of planimetric and façade features.

### **5.2.2.1. PLANS**

#### **5.2.2.1.1. GROUND FLOOR PLAN**

**FLOORS.** The entire floor of the courtyard is covered with leveling concrete that is located 0.35m above the original ground level of the building.

The other ground spaces' floors are all covered by natural soil that caused to make the entire thresholds invisible.

**WALLS.** The upper part of the northeast wall of the courtyard is rebuilt by using rubble stone (basalt stone) and cement mortar as the binding material.

**COURTYARD.** The entire courtyard is covered by a standing gable roof that starts from the middle of the 1<sup>st</sup> floor's embrasures and ends at the wall walk level. (Figure 5.6)

#### **5.2.2.1.2. 1<sup>st</sup> FLOOR PLAN**

EMBRASURES. All of the embrasures at the northwest wall of the 1<sup>st</sup> floor are closed by infill that start from the bottom end of them and rise

up to the middle. The infill is made of rubble stone (lime stone) and cement mortar as the binding material. (Figure 5.7)

**WALL WALKS.** The entire battlements are collapsed and a concrete gutter is build that is 0.20m to 0.20m in size. The concrete gutter is located on the northwest and southwest walls of the courtyard.

#### **5.2.2.1.3. 2<sup>nd</sup> FLOOR PLAN**

**OCULUS.** The oculus in the octagonal space S10 is closed by big cut stone blocks.

**FLOORS.** The floor of the space S10 consists of leveling concrete that is 0.20m in thickness. Two concrete steps are added to the original cut stone (lime stone) steps and an iron flag post is located at the middle of the concrete floor of the space S10.

#### **5.2.2.2. FAÇADES**

The entire façades are carrying exactly the same features of the existing situation. Because the façades are presented in the measured drawings, they are not described here.

### **5.3. RELIABILITY DEGREES OF RESTITUTION PHASES**

The reliability degrees are presenting the reasons for each restitution proposals for both phases of the building. Like in the restitution stage, each proposal is presented with the evidences. These evidences are also supported by the name of the study that resulted to emerge these evidences.

#### **5.3.1. PHASE 1**

##### **5.3.1.1. SITE PLAN**

**GROUND LEVEL.** One of the most important principles behind the design of Cin Kule which is a military building is the security. Therefore,

the building is expected to protect both itself and the surround building by its location. However, according to existing height level, it is impossible to state that the building is located on a very secured area. For instance, presently it is very easy to access the inside from outside by climbing from the embrasures on the northwest wall of the courtyard. This can not be something designed in the general design principles of the building.

A similar question mark about the height level is again emerging at the portal of the building. The threshold of the entrance door and the side benches are remaining +0.40m below the existing earth level. This can be followed at certain part of the benches.

If 0.40m level difference is continued up to the northwest wall of the building in considering the general slope of the land, than at the embrasures the original earth level should be 0.80m above the existing earth level which prevents intruders to get inside from the embrasures.

Consequently, the information about the height levels are mostly obtained from the architectural necessities where these information are matching with the ones comes from the existing situation of the building.

**SURROUNDING BUILDINGS.** There are no remains or any trace are found at the site presently. But it is possible to estimate both the location, size and numbers of these buildings in reference to the documents that are written by the researcher who are visited Payas before.

Akyel who has visited the site in 1960's mentions the remains of the original dock<sup>103</sup>. He has seen the cut stone remains that are continuing toward the sea by making 45° angle from the coast. These remains are covered by the concrete ramp of the police compound. In addition to this, around the mentioned spot of the site, Mūderrisoğlu has also seen some of big stone posts that were used to tie the ships up.

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<sup>103</sup> AKYEL, Salih, 1966. p.12

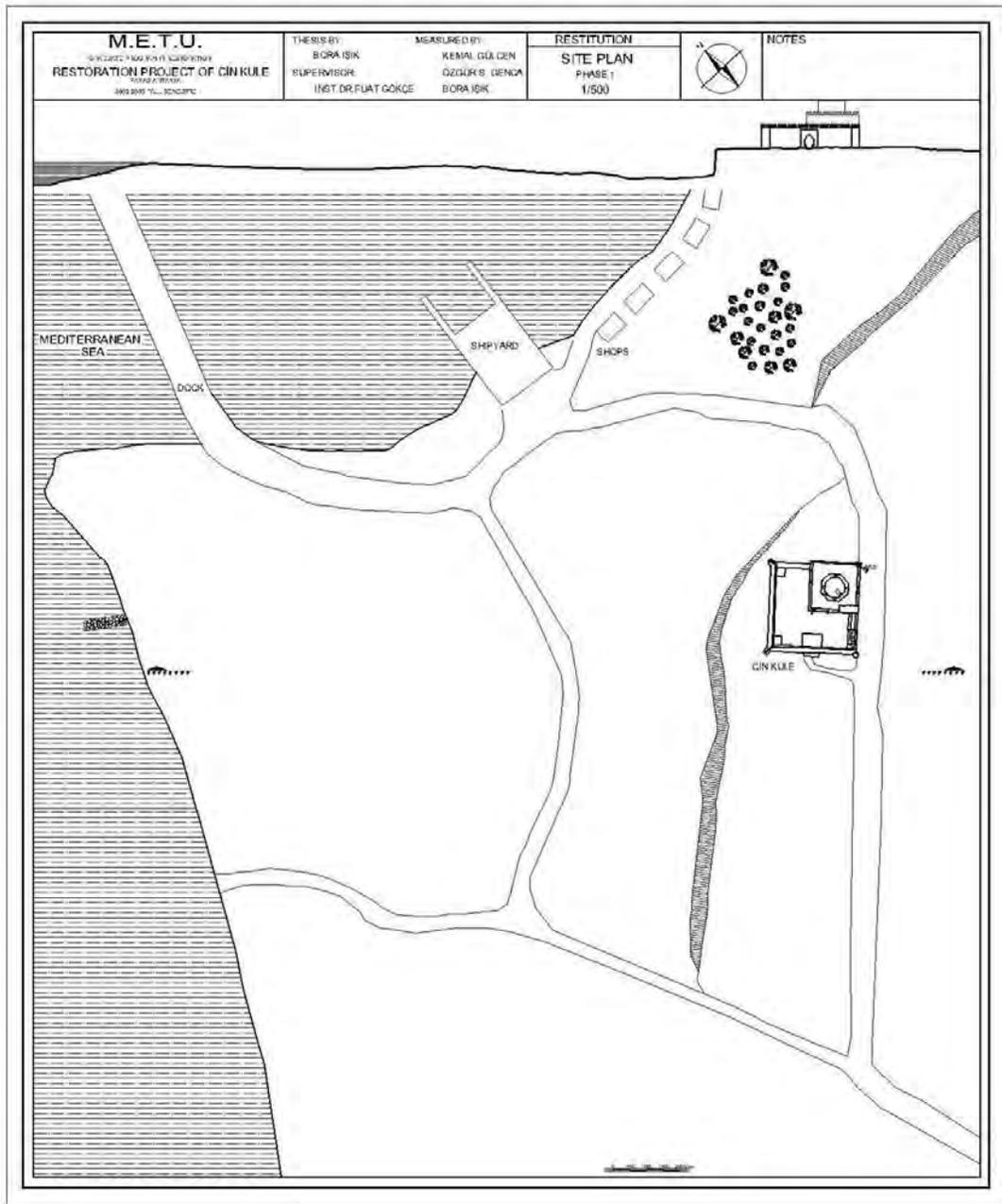


Figure 5.1. Site Plan- Restitution Phase 1

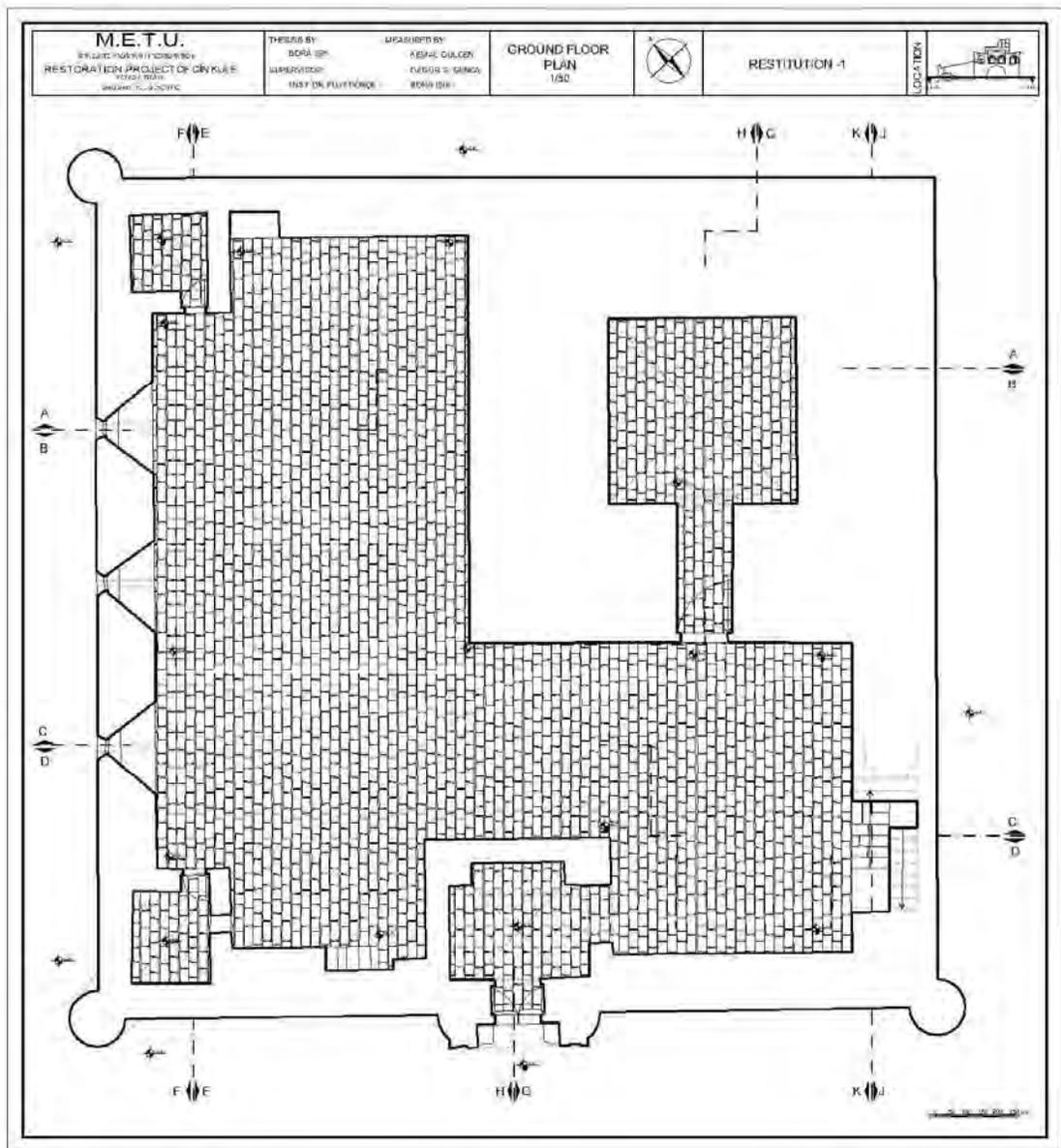


Figure 5.2. Ground Floor Plan- Restitution Phase 1

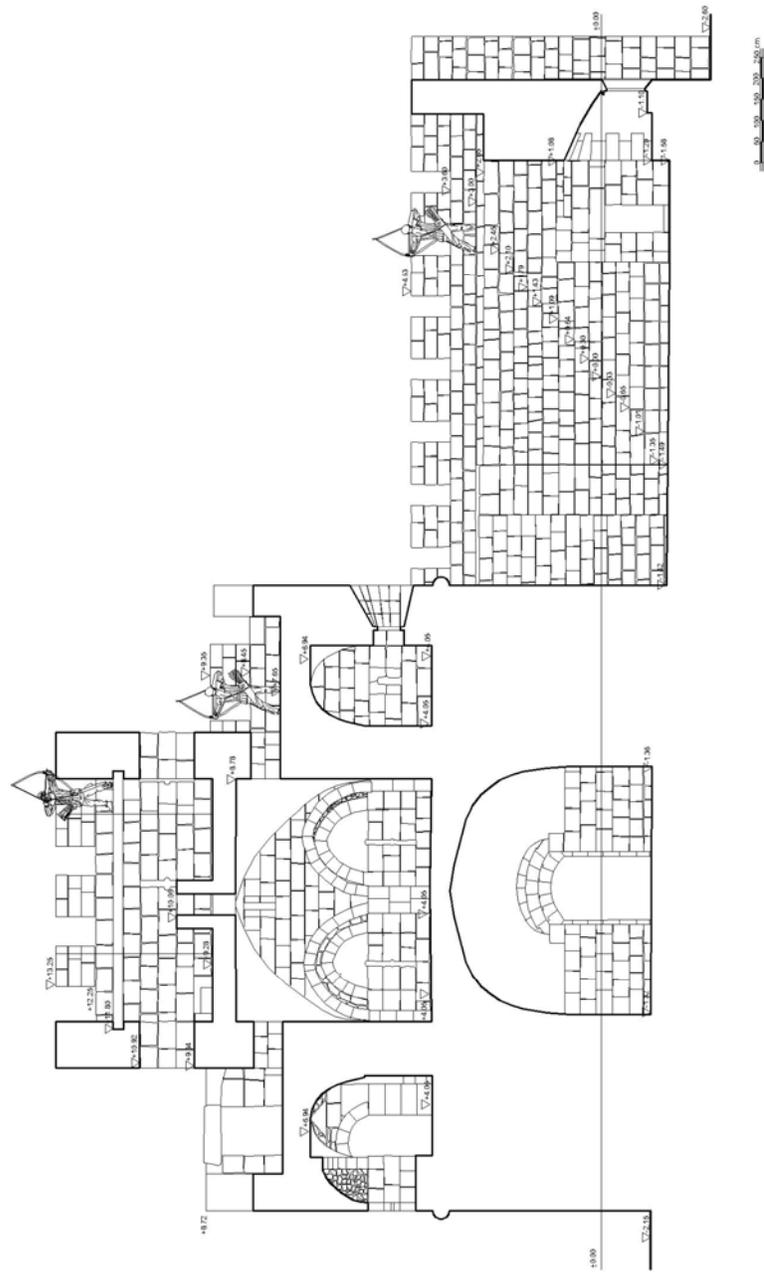


Figure 5.3. Section B-B- Restitution Phase 1.

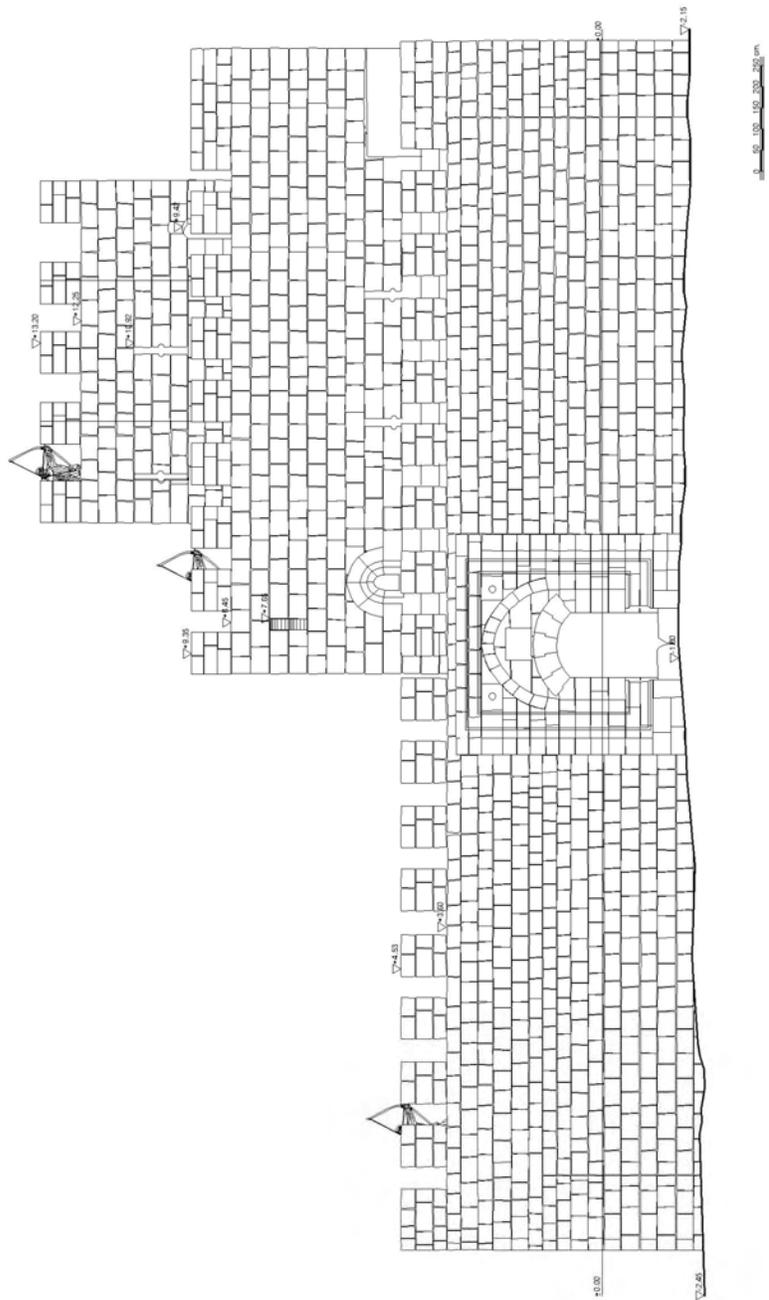


Figure 5.4. Southeast Façade- Restitution Phase 1.

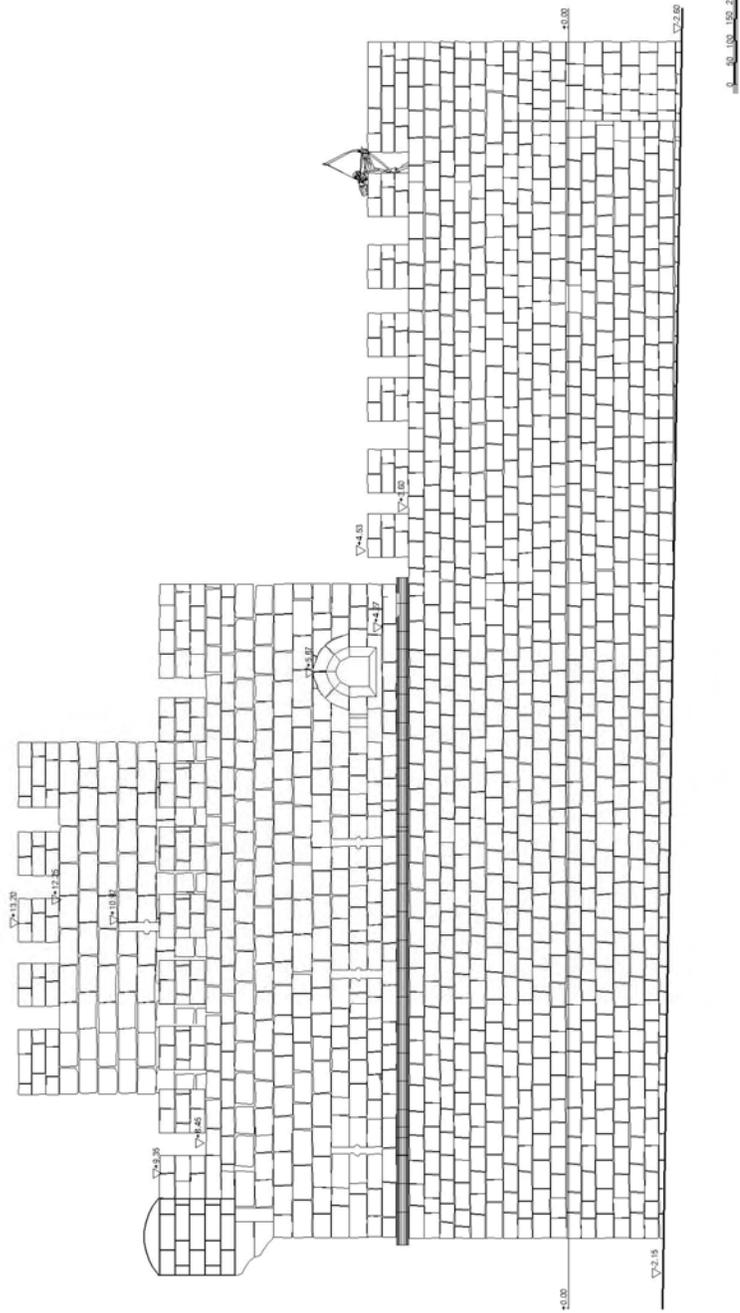


Figure 5.5. Northeast Façade- Restitution Phase 1.

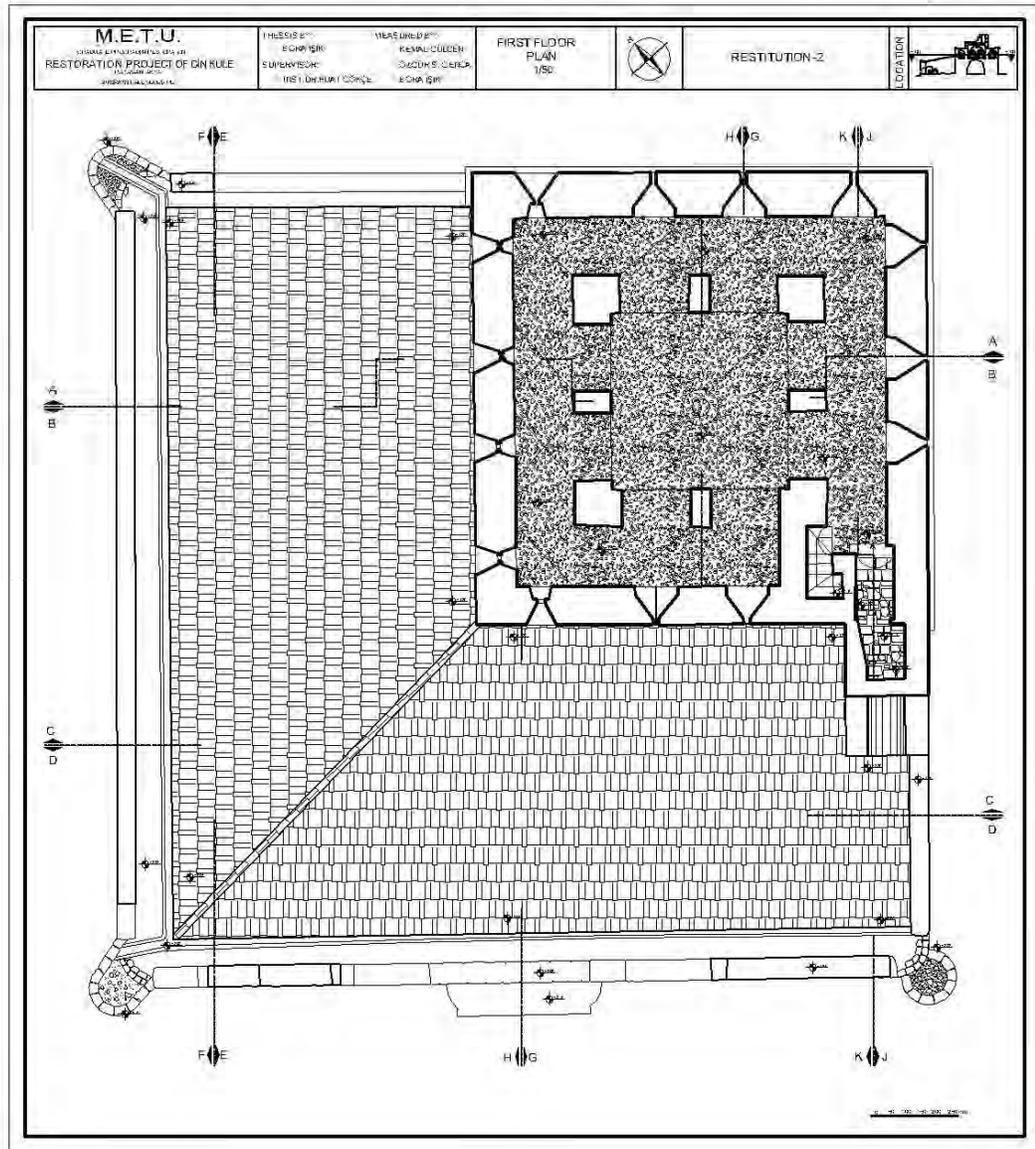


Figure 5.6. 1<sup>st</sup> Floor Plan- Phase 2.

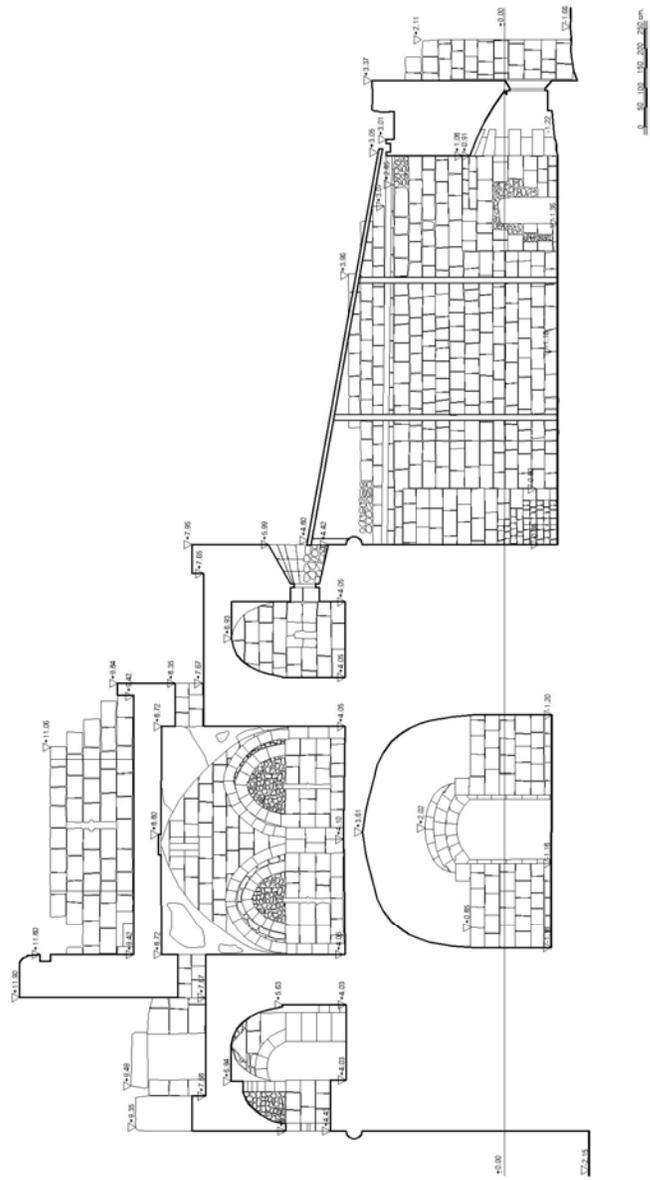


Figure 5.7. Section A-A - Phase 2.

big stone posts that were used to tie the ships up. Therefore, it is proposed that the original dock was starting from the concrete ramp with a 45° angle and continues towards the sea. Akyel again mentions very important information about the shops of the harbor. He saw some of them that have been using as a storage at that time. These storages were located at the east of the remains of the original dock. However, there are no information found about the both the sizes and the numbers of these shops.

The last proposal is the shipyard of Payas harbor. Again there are no information found about this building too. However, if Cin Kule is considered as the building where the security of the dock and shipyard is provided, then it might be said that the shipyard must locate at a close spot to Cin Kule. Therefore, this building is proposed between the original dock and the shops.

Consequently, the information about the buildings that are located around Cin Kule is reached by the secondary written sources. At this point the gap that could not be reached by these sources are completed according to the architectural needs.

### **5.3.1.2. PLANS**

#### **5.3.1.2.1. GROUND FLOOR PLAN**

**GROUND FLOOR LEVEL.** None of the thresholds of the door openings can be seen now. But most of the doors in the ground floor have casings which show that there were threshold at the bottom.

The other question mark is the height of embrasures located on the northwest wall of the courtyard. All of them start at the same level of the existing ground floor level. But if they were as short as the existing ones then it was almost impossible to use them for the canons.

The last question is the landing of the stair ST2. It is again at the same level with the ground floor of the courtyard. However, if there was a landing in the stair then it should at least be a step tall.

These questions are all gathered around a 0.40m height level. If all these parts and therefore the floor level of the courtyard decreases 0.40m above the existing level, then all of these elements become more logical in terms of architectural design principles.

Consequently, all of the evidences about the floor level of the ground floor spaces are obtained from the building's itself.

**GROUND FLOOR TILES.** Almost in all of the comparative studies, no information about the floor tiles could be obtained. The reason for this is they are all covered with earth presently. The same problem's seen at the ground floor spaces of Cin Kule. However, almost in all of the courtyards of Sokollu Mehmet Paşa Menzil complex which was again constructed in 1574, there are remains of floor tiles both for courtyard and for the ground floor spaces.

Besides, as a result of comparative study 2-embrasures, it is known that the courtyard embrasures of Cin Kule were all designed for canons. Therefore, the existence of floor tiles for the courtyard should have been provided in order to move and rotate the heavy canons.

Finally, even though the information about the floor tiles of the ground floor spaces come from comparative study, it is also supported by the other related information about Cin Kule.

The floor tiles of the embrasures at the ground floor are different than of the courtyard and other ground floor spaces. The one at the north side of three embrasures on the northwest wall of the courtyard has floor tile remains that are located inside.

**FOUNTAIN.** It is the most questionable point of the courtyard. Because there is no information about a fountain that could be followed at this part. However, the niche-fountain- is so small for being an embrasure or a window. Besides, this element on the wall is defined as a fountain by Müderrisoğlu who saw the building at the beginning of 90's. Therefore it is accepted as fountain which is completely formed by the secondary written sources.

**VAULTS.** There are lime plaster remains located on the surfaces of every vault in the building. Therefore, the entire information about the vaults are taken from the building itself.

**DOORS.** All of the information about the doors are taken from the building itself, like the thickness, height and so on. However, the material is the result of the secondary written sources.

#### **5.3.1.2.2. 1<sup>st</sup> FLOOR PLAN**

**FLOOR TILES.** The entire information about the floor tiles of the 1<sup>st</sup> floor is obtained from the building itself. Today, at certain points of the 1<sup>st</sup> floor, it is possible to follow the remains.

**EMBRASURES.** All of the information about the closed and partly collapsed embrasures are taken from the building itself. Since they are not very damaged, the remaining parts have enough information to complete the rest.

**WALL WALKS.** The existing floor tiles of the wall walks are either covered by plants, natural soil or the concrete gutter. However, at some points, it is possible to follow the original floor tiles. Therefore, this information is taken from the building itself.

**TOWERS.** The west and the north towers of the courtyard are circular in form up to +1.45m level, however, above this level both towers turn into U form. This change in form at a certain level was done to provide larger spaces in the towers. Therefore, if there were not any space in the towers above this level in form, then there were no need to change the form of the towers.

Although this change in form of two towers, the last one at the south corner has no changes. Even though it is a partly collapsed tower, today it is standing above +1.45m level which is the level of change in form for the north and west towers. The south tower continues in circular form up to its total height. Therefore it must have been used only as a structural solid tower. In reference to the legend of the graphical documents of this stage, the information about the change in form is totally taken from the building itself. However, the arrow slits and the cut stone ceiling of these spaces are the result of comparative studies.

### 5.3.1.2.3. 2<sup>nd</sup> FLOOR PLAN

**FLOOR TILES.** As the floor tiles of the first floor, the information about the floor tiles of 2<sup>nd</sup> floor is obtained from the building itself: from the remains of original floor tiles. The floor tile of the space S10 is the same floor type of space S9. The information about the floor tile of the space S10 is obtained from the cracked points of the present concrete slab.

**FLOOR LEVEL.** The original slopes from the octagonal space S10 toward the cut stone gutters which are located on four sides of the space S9. This information is obtained from two existing cut stone gutter of the space.

The original floor level which can be seen easily from outside is lying under the concrete slab in space S10. Therefore, the information about the level of the floor is obtained from the building itself.

**WALLS.** The walls of the octagonal space where 70% of the walls are standing and the rest is completed according to the information obtained from the building.

**TURRET.** From the three projecting cut stone blocks on the south corner of the 2<sup>nd</sup> floor, it is understood that there is a turret on these blocks. Because Cezayirli Hasan Paşa tower in Ezine (Çanakkale) has exactly the same detail with these blocks. Therefore, the turret is completed according to the information taken both from the building and the comparative study.

**OCULUS.** The existing oculus is closed both by the concrete slab of the space S10 and the big cut stone blocks from the space S7 of 1<sup>st</sup> floor. However, according to the information taken from the comparative study, it is proposed as an open oculus. The parapet wall around the oculus that rises 0.90m above the ground level of it, is an architectural necessity even though that there is no information about a parapet wall of oculus could be taken.

**CONSOLE.** At +2.60m level from the ground level of the space S10, there is continuous beam trace existing on the octagonal walls. The height of the beam trace is 0.27m and above this trace the octagonal

walls continue rising. This shows that there were once, either a surrounding timber beam or a projecting element on these walls. However, 0.27m thickness is architecturally too much for a single beam. If it is not going to carry something projecting then there is no need to use a 0.27m thick beam. And as it was mentioned that the walls are rising above the trace, there should be platform above the ground level of the space S10 where the real watching duty was done. According to these, a timber beamed projecting platform or console presented which is formed by the information taken from the building and by the general architectural principles.

### **5.3.1.3. FAÇADES**

**PORTAL.** The proposal about the portal in restitution is formed by the information directly comes from the building itself. The relief frame that surrounds the portal is partly collapsed. However, the same type of portal and the same frame is also used in the castle and in the menzil complex. Therefore, it is completed according to information from both the building itself and comparative study.

One of the lion relieves are presently existing on the portal however the one on the other side is eroded. It is completed according to the information comes from the building.

The last element on the portal is the inscription panel. The information about the size comes from the building itself, however, the material –marble- is the result of the comparative study.

**BATTLEMENTS.** All of the battlements both at the 2<sup>nd</sup> floor of the building and the surround wall walks of the courtyard are re-erected according to the information comes from the comparative study.

**TOWERS.** The heights of the towers are all ended at the battlement level which is taken from the comparative study.

## **5.3.2. PHASE 2**

### **5.3.2.1. PLANS**

#### **5.3.2.1.1. GROUND FLOOR PLAN**

**FLOORS.** The remains of concrete slab on the original courtyard floor are located at certain points of the courtyard. And the traces of concrete slab can also be followed at the edges of the courtyard walls. Therefore all the information about the courtyard floor is taken from the building itself.

**WALLS.** The upper part of the northeast wall of the courtyard has the same construction technique that of the infills of the embrasures at the 1<sup>st</sup> floor that are used to put the gable roof of the courtyard.

**COURTYARD.** All the embrasures on the northwest wall of the 1<sup>st</sup> floor are closed by infills up to the middle of the entire heights of them. From these infills, along the courtyard walls, a cement mortar line continues down to the concrete gutters on the wall walks. And the upper part of the northeast wall is following the same slope. This shows that the gable roof starts from the middle of the embrasures at the 1<sup>st</sup> floor and ends at the gutters on the wall walks and covers all the courtyard. Therefore, all the information about the courtyard roof is taken from the building itself.

#### **5.3.2.1.2. 1<sup>st</sup> FLOOR PLAN**

**EMBRASURES.** The infill of the embrasures on the northwest wall of the 1<sup>st</sup> floor was made of with the same technique of the upper part of the northeast wall of the courtyard. Therefore, this information is totally taken from the building.

**RELIABILITY DEGREES OF RESTITUTION I**  
LEGEND

<p><b>1. DEGREE</b></p> <p>The information about location, location lines, dimensions, material and other details of the element can be obtained from the building book.</p>	<p><b>2. DEGREE</b></p> <p>Information about the location, location lines and dimensions of the element is obtained from the building book. The information about the material and other details of the element is obtained from comparable works.</p>	<p><b>3. DEGREE</b></p> <p>Information about the location, location and the form of the element is obtained from the building. Other information about dimensions and material of the element is obtained from comparable works.</p>	<p><b>4. DEGREE</b></p> <p>All the information about location, location lines and dimensions of the elements obtained from comparable works.</p>	<p><b>5. DEGREE</b></p> <p>There is no information found in both building book and comparable works. But suggest for element is an obviously member.</p>	<p><b>6. DEGREE</b></p> <p>All of the information is obtained from the secondary or other sources.</p>
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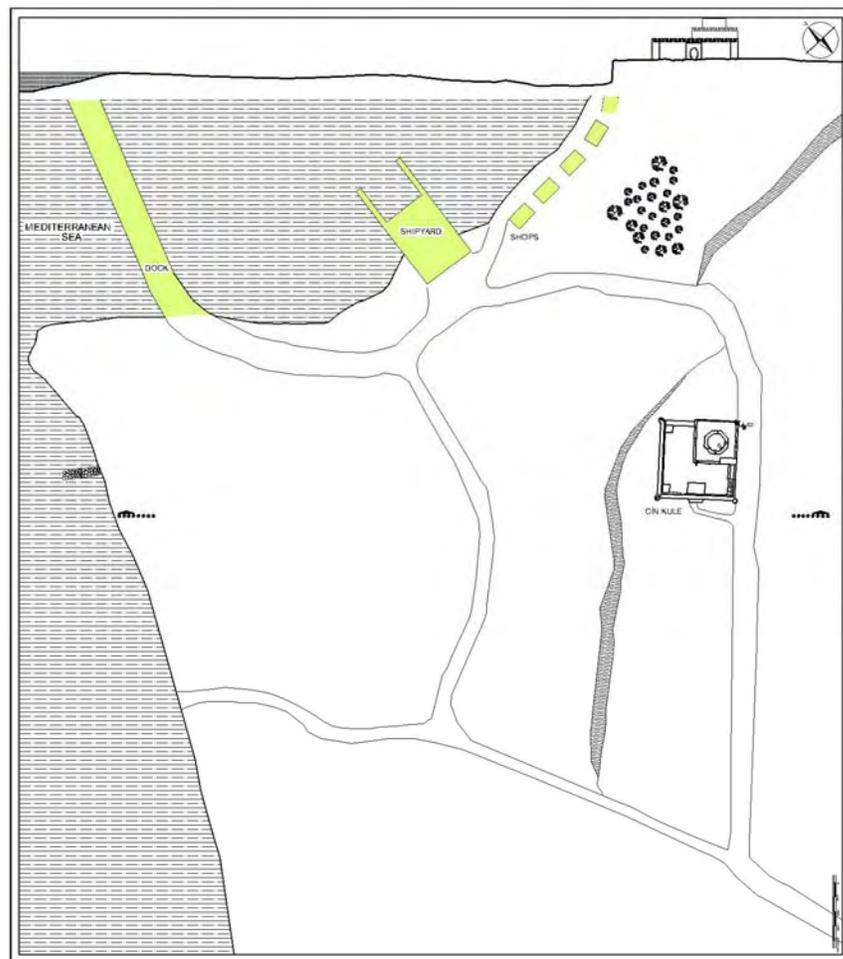


Figure 5.8. Site Plan- Reliability of Restitution Phase 1



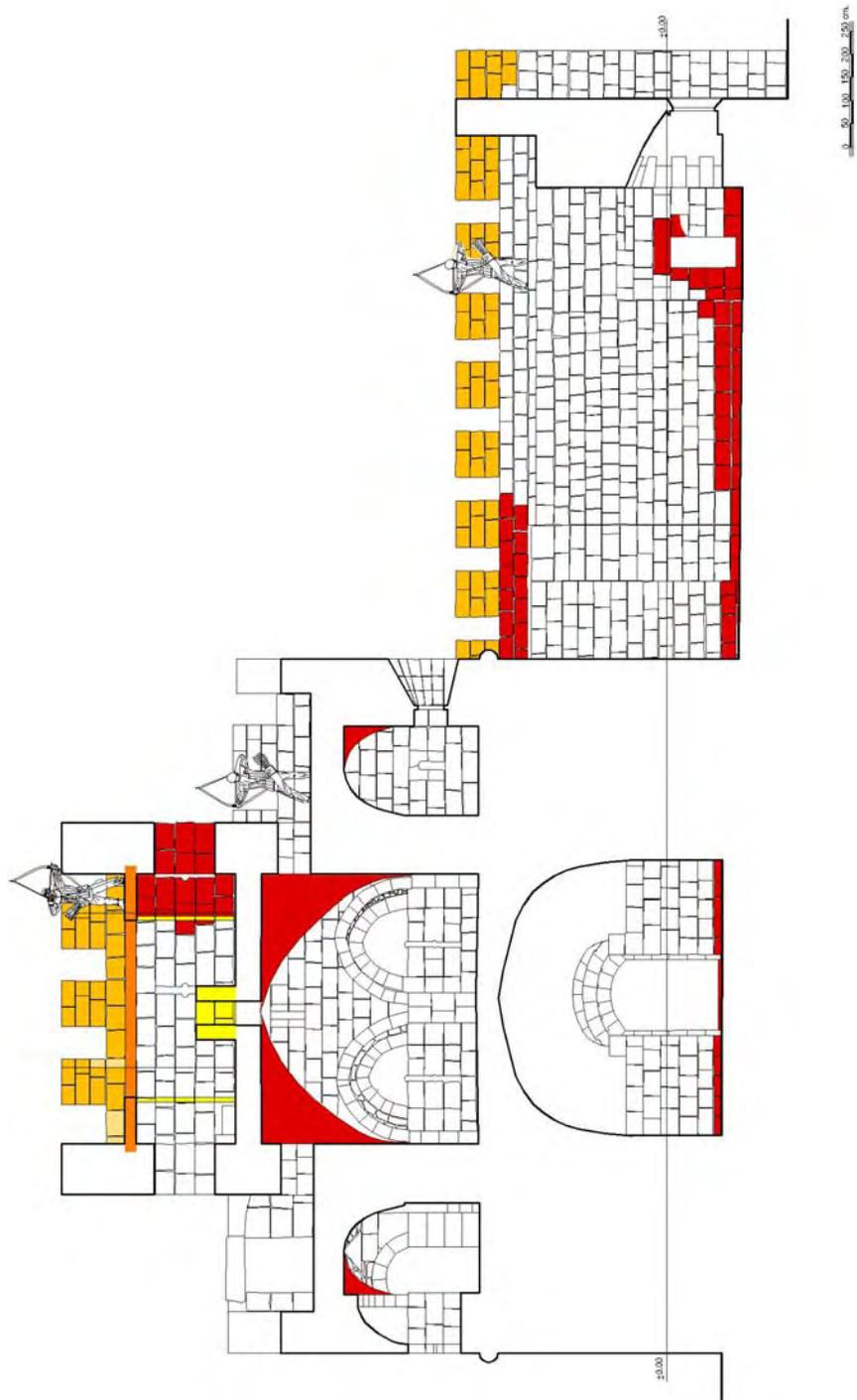


Figure 5.10. Section B-B- Reliability of Restitution Phase 1.

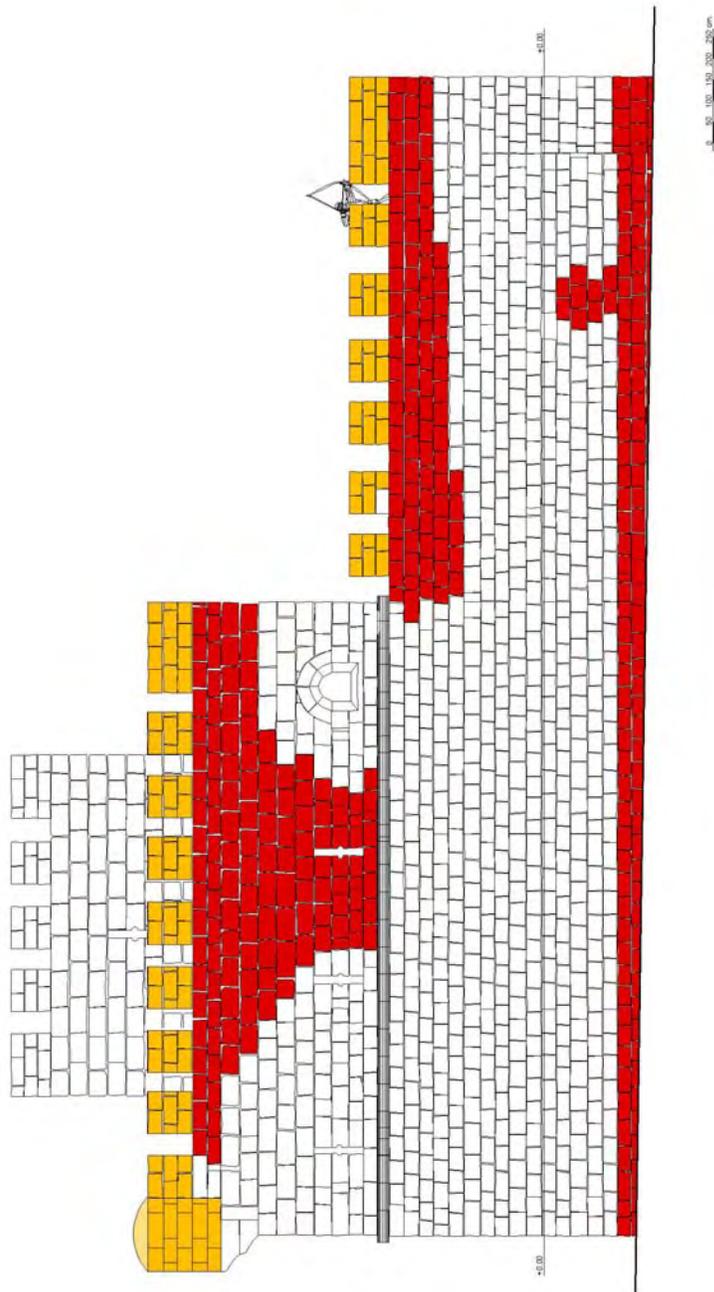


Figure 5.11. Northeast Façade- Reliability of Restitution Phase 1.

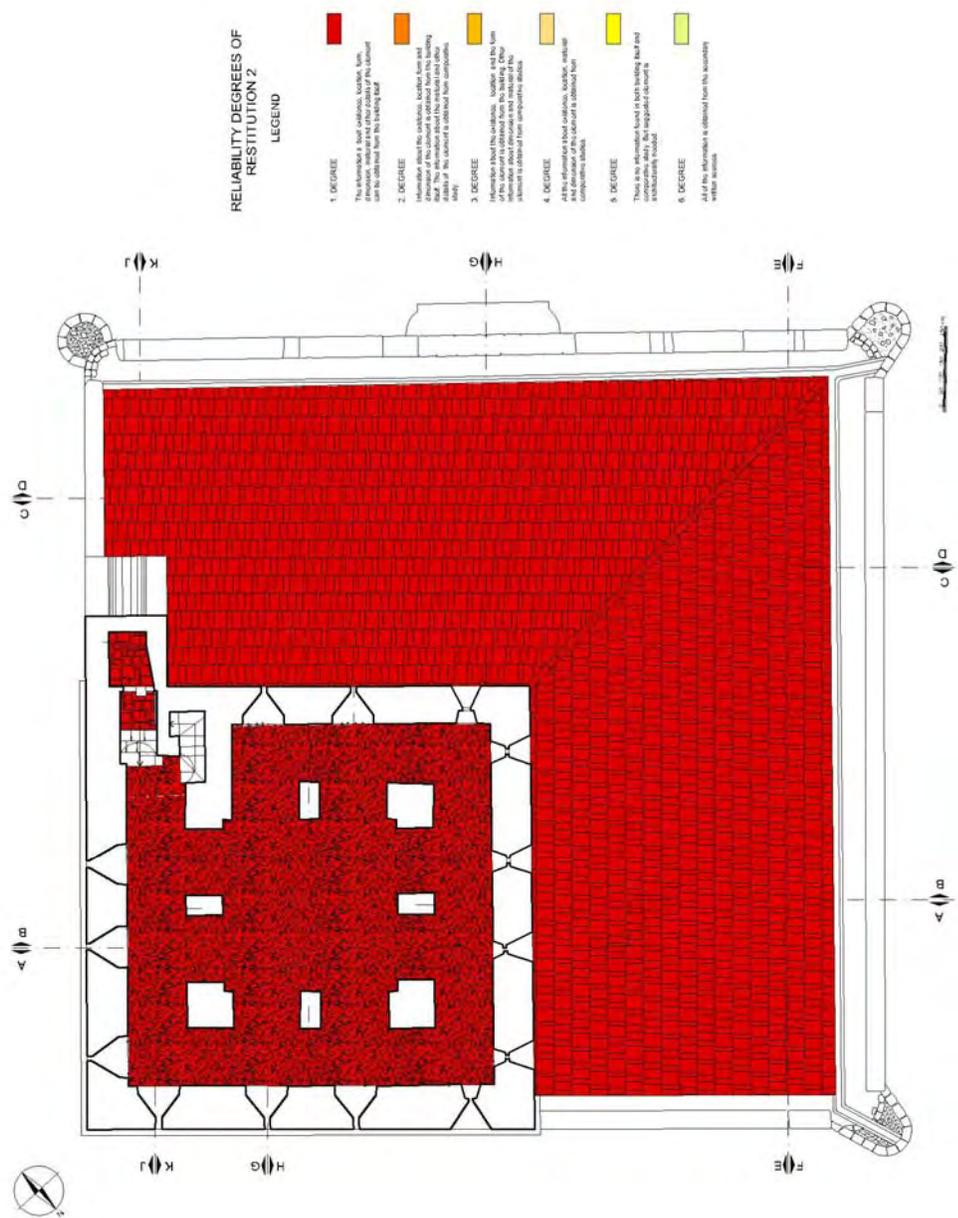


Figure 5.12. 1<sup>st</sup> Floor Plan- Reliability of Restitution Phase 2.

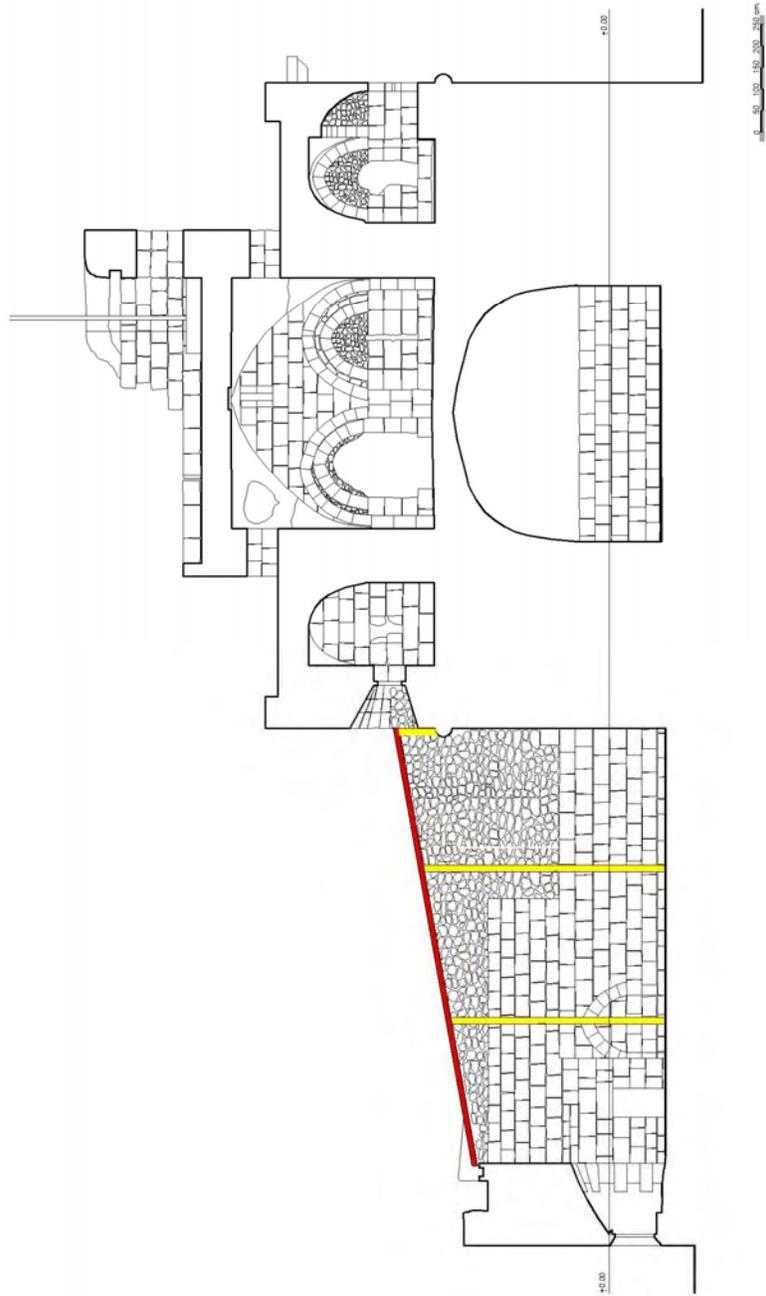


Figure 5.13. Section A-A - Reliability of Restitution Phase 2.

**WALL WALKS.** The concrete gutters are built to collect the water comes from the gable roof. The slope that can be followed by the cement mortar line in the courtyard wall supports this idea. This information is again completely taken from the building.

#### **5.3.2.1.3. 2<sup>nd</sup> FLOOR PLAN**

**OCULUS.** The oculus is closed by the concrete slab of the octagonal space S10. It presently exists in space S10, therefore this information is taken from the building itself.

### **5.4. FUNCTION PROPOSAL FOR THE ORIGINAL LAYOUT**

The proposal for the functions of each space is prepared in reference to the original lay out of the building. Each function for the related space is presented in this stage.

**ENTRANCE GATE.** One of the most common features of the castles are the entrance gates or the gate houses. Here in Cin Kule, a very typical portalled entrance gate in Payas was used; the side benches, framing relief and the inscription panel. The general orientation of this space is also presenting a typical principle of the military architecture that is the bent entrance which is used to surprise the enemy who could achieve to open the doors of the building. Therefore, according to the information that is obtained from both the comparative studies and the building itself, it can be said that the space S1 is an entrance space where we can also see architectural precautions in terms of warfare.

**GUARDIAN ROOMS.** From the previous chapters, it is clearly known that there were several canons and soldiers placed right after the construction of the building. Besides, it is also known from the comparative study that the embrasures at the courtyard are designed for the canons.

Therefore, many soldiers should have been walking in the courtyard where 3 big canons were located. There should also be soldiers who are patrolling on the wall walks.

Because of this reason, apart from the ones located at the 1<sup>st</sup> and 2<sup>nd</sup> floors, the courtyard should have been serving to serious amount of soldiers.

Space S3 and S4 are the most suitable rooms to serve these guardians (Figure 5.14). The aim of these spaces should be to serve the guardians as common rooms like to change the watching duty, to change the clothes, to have some rest or to gather with the others. S4 which is completely a closed and smaller space must be more private room. However, space S3 should be less private. Because it is a little bigger and has a window that opens to the courtyard.

**STORAGE.** Space S5 is named as a storage space. There are several architectural reasons that makes the space a storage. First of all, it has 4.00m thick walls around. During its construction, it was obviously thought to be a very secured space. For this reason, the space is reached by a 4.00m long barrel vaulted corridor.

The second reason is that there are no openings in the space. This shows that this space was not used by the guardians. The door of the space supports this idea that no one were using this space as a living space. The single winged door has no door props behind where all the other ones have. This shows that this door was not designed to resist against the attacks to protect the people inside the space.

Consequently, it is a well protected space from outside the building, and oppositely has an easy access from the courtyard of the building. Since there must have been an ammunition storage for both the canons and the soldiers, this space S5 is the most suitable space for the storage function.

**WALL WALKS.** The courtyard walls and the space S9 of the 2<sup>nd</sup> floor consist of wall walks. The ones on the courtyard wall are the narrow walk ways that are protected by battlements. However, space S9

of 2<sup>nd</sup> floor is a wider wall walk space that is composed of a single open floor surrounded by the battlements again.

**DEFENSE SPACES.** This is the main floor of the building which is a completely closed space. It only opens outside by several types of embrasures. This floor was used by different armed soldiers. This information comes from the existence of several types of embrasures. It is also a space to watch the sea. (Figure 5.15)

**WATCH TOWER.** The space S10 which is the highest space and which is provided by a wide angle range of both the sea and the land. Even though it is supported by the embrasures, the main function is to watch or control the sea and land. The oculus between this space and space S7 of the 1<sup>st</sup> floor provides easy communication in case of any alarms. (Figure 5.16).

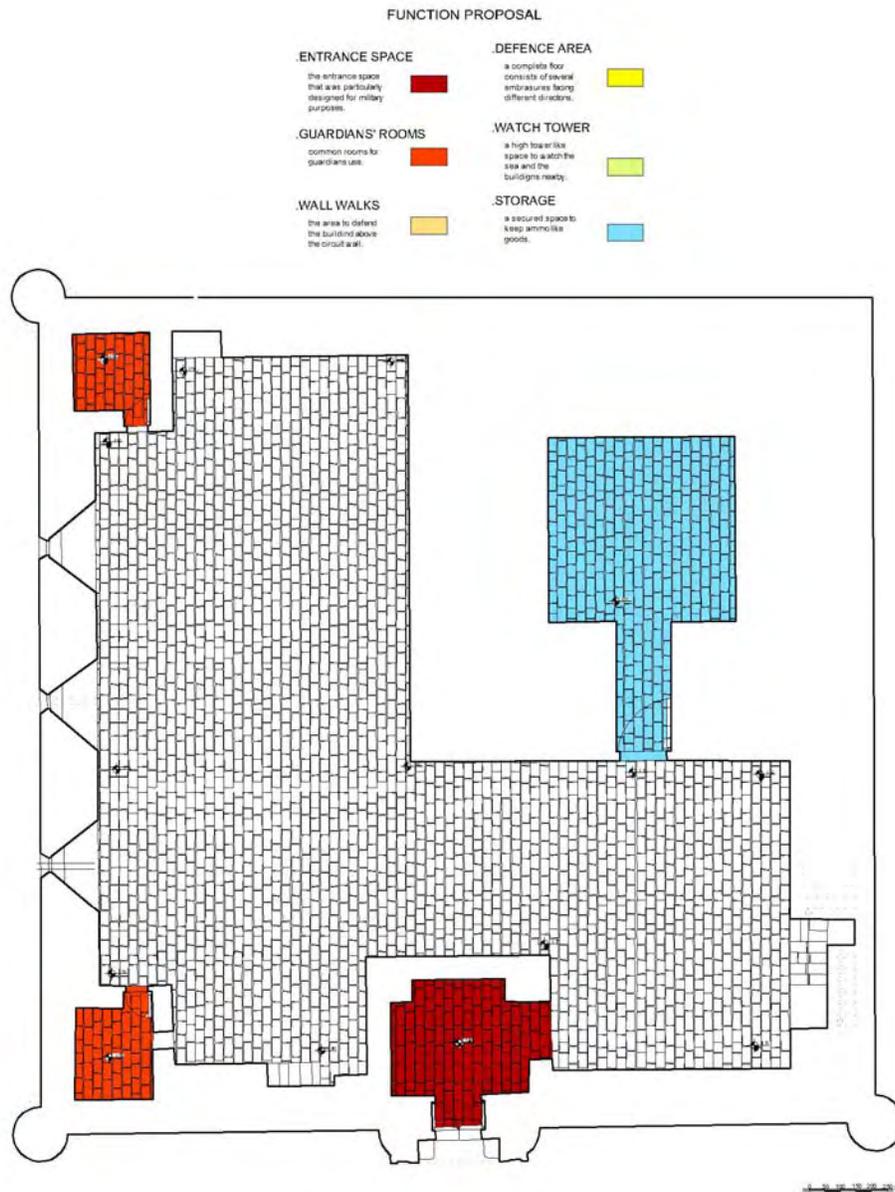


Figure 5.14. Ground Floor Plan – Distribution of the Original Functions of the Spaces.

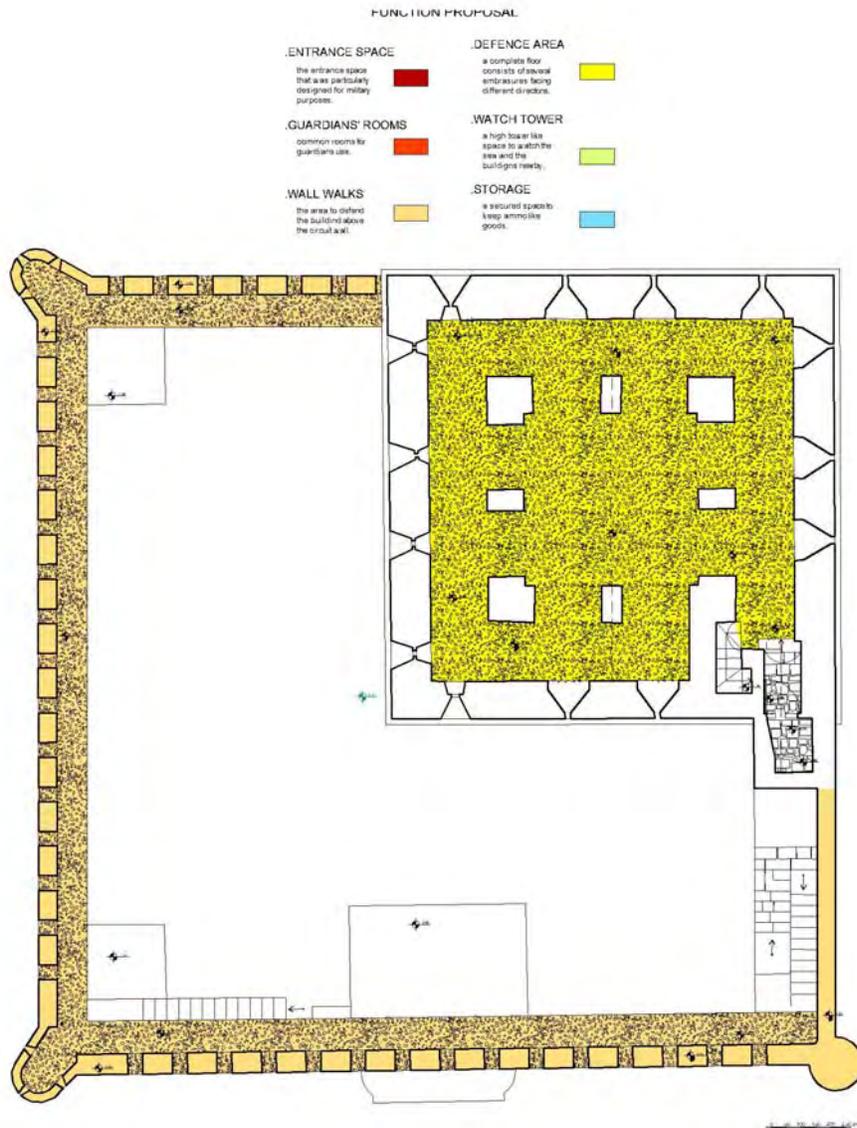


Figure 5.15. 1<sup>st</sup> Floor Plan – Distribution of the Original Functions of the Spaces.

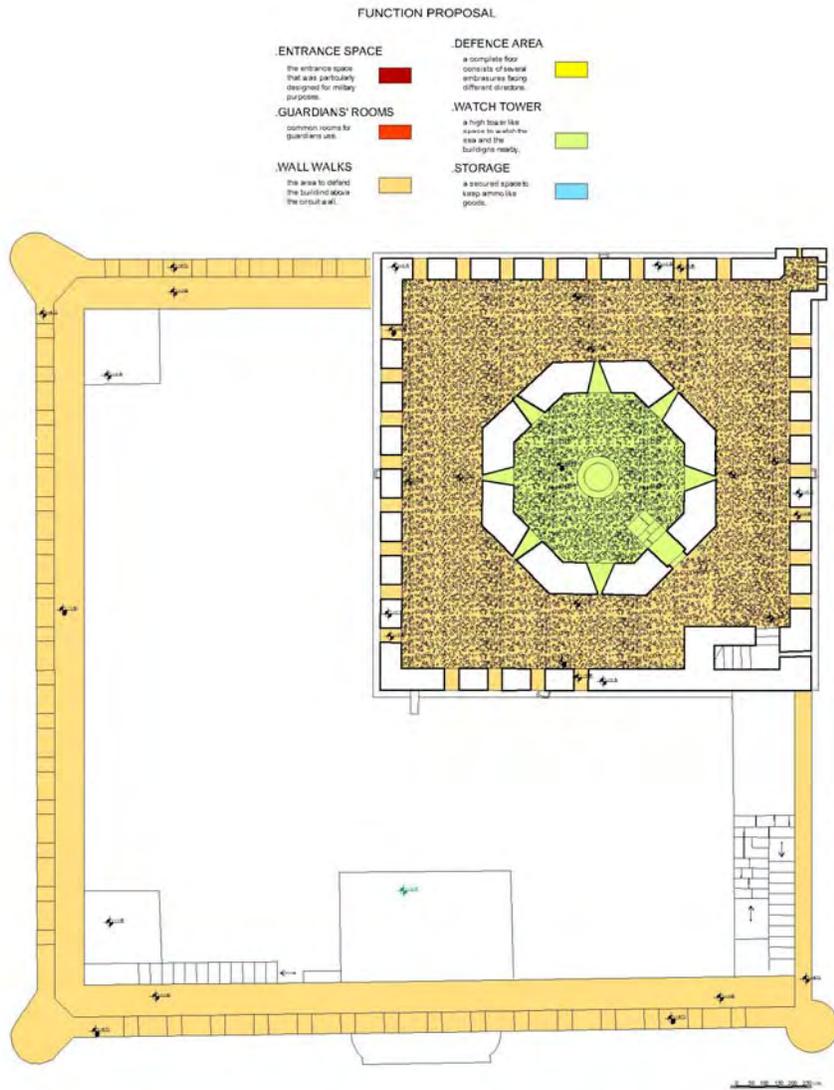


Figure 5.16. 2<sup>nd</sup> Floor Plan – Distribution of the Original Functions of the Spaces.

## **CHAPTER 6**

### **RESTORATION**

#### **6.1. EVALUATION OF THE PRESENT SITUATION OF THE BUILDING**

##### **6.1.1. EVALUATION OF THE ENVIRONMENT OF THE BUILDING**

Cin Kule is located at the end of the street named Sahil Yolu that starts from the city center and goes parallel to the sea. The most important feature of this street is that it is the only tourist axis of the city. In other words, Sokollu Mehmet Paşa Menzil Complex that is 500m away from the city center, Payas Castle that is right next to the menzil complex, 10<sup>th</sup> Anniversary Park that is across the castle and a historic tower house next to the park are all located on this street. This axis ends with Cin Kule at the coast side of the street (Figure 6.1).

Besides, the new development areas of the city have been slid towards the coast side of the city where there is no dense group of building at present. Therefore, apart from being on the tourist axis of the city, being at the new direction of development of the city is another important event for the building itself.

Through out the visits on site since 2000, it is noticed that there are serious construction activities was started especially on Sahil yolu street. The street was completely reconstructed and flourished with city furnitures and therefore the street became one the important axis of the city. In addition to the construction activities in this area, the empty building lot of Cin Kule has been converted to large recreation area.

It has been noticed that at this part of the city, new and high apartment blocks have started rising. These blocks definitely affect the

relationship between the city and the sea. They also affect the perception of the historical buildings<sup>104</sup>.

Therefore the restoration project of Cin Kule did not only focus on a single building but also focused on both the other historical buildings and the city.

### **6.1.2. EVALUATION OF THE CHANGES OF THE BUILDING**

As also mentioned in the “CHANGES in the BUILDING” section of the chapter 2, the basic problem of the building is the “missing elements”. In this study the changes that are caused by man-made interventions are discussed. The changes are categorized in two basic groups: alterations and additions. These two forms of change don't result a serious difference in the original plan layout of the building. However, the values that have come and/or gone by these interventions are categorized in two groups.

#### **A. ALTERATIONS THAT CAUSE STRUCTURAL OR MATERIAL PROBLEMS**

- The piers that are carrying the central cross vault and some parts of the side walls of the space S7 in the 1<sup>st</sup> floor were altered with sandstone blocks. However, almost all these blocks have been subjected to serious alveolization and granular disintegration (into sand). Therefore, these blocks have been losing their structural features in the general context of the building.

#### **B. ADDITIONS THAT CAUSE DIFFICULTIES TO PERCEIVE THE ORIGINAL ARCHITECTURAL ELEMENTS**

- The leveling concrete in the courtyard is located averagely 0.6m above the original floor level. For this reason, the information

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<sup>104</sup> There is no information obtained about the development plan of Payas both in Municipality and İller Bankası.

about the original floor level and the tiles have been hidden by this addition.

- The northwest, northeast and southwest walls of the space S1 in the ground floor are covered by cement plaster.
- There is a wall that was made with a different construction technique was added to the northeast wall of the courtyard. The information about the wall walk and the wall have been hidden by this wall.
- The entire embrasures of the northwest wall and the north embrasure of the southwest wall of the space S7 at 1<sup>st</sup> floor were closed on infill that was made of rubble stones and cement mortar as the binding material.
- The entire floor of the octagonal space S10 at 2<sup>nd</sup> floor is covered by 0.15m thick concrete slab. Therefore, both the information about the floor of the space and oculus that opens the central place of S7 at the 1<sup>st</sup> floor were hidden.

### **6.1.3. EVALUATION OF THE SPACES IN THE BUILDING**

To understand the specific features and architectural quality of each space, the entire spaces of the building are analyzed in four main groups that are types of spaces and circulation layout, authenticity of spaces, wealth of the architectural elements in the spaces and source and quality of light entering the spaces.

#### **6.1.3.1. TYPES OF SPACES AND CIRCULATION LAYOUT**

There are mainly two types of spaces in Cin Kule; open and closed spaces. Open spaces which refer to a space that is only designed by walls and a floor gather under three sub-categories (Figure 6.2.).

According to this, the first type of open spaces is the courtyard. The term courtyard refers to an open circulation space that is defined by high walls and is located at the ground floor of the building. Here in Cin

Kule, the L shaped courtyard (S2) is in the first type of the categorization. The second type of open spaces is the terrace-or wide wall walk-space that is defined by lower walls and located at the top floor of the building. The space S9 of 2<sup>nd</sup> floor of the building is in this category. The last type of the open spaces is the tower which is a narrower space and defined by high walls is located at the top floors. According to this, the octagonal space (S10) of 2<sup>nd</sup> floor is in this category.

The second main category is the closed spaces. The term closed spaces refers to the spaces that are defined by walls, floors and ceilings. This category has two sub-types. According to this, the first type of closed space is the space that consists of single space. Spaces S1, S3, S4, S5, S6 and S8 of the building are all in this category. The second type is the space that consists of multi spaces that are defined by walls and colonnades. Space S7 of the first floor of the building is in this group of spaces. It is a space that is interrupted by colonnades which divides the space into two sub-types (Figure 6.3.).

As a result of this study, although the entire spaces of the building are very few in amount, the building consists of various types of spaces which creates a quality in terms of architecture.

To understand the relation of the types of spaces with general circulation layout, another study about the circulation layout is presented in the previous study. According to this, the spaces are re-grouped according to the type of changes. For each floor plan, a general scheme is presented by red lines to show the relation between the spaces and the main entrance for each floor. In addition to this, the direction of the entrances of each space is also presented in a typological method. In this typology, there are two categories indicating the entrances. The first category is the space that has a direct entrance from an open circulation space like a courtyard or a terrace. Space S1, S3, S4, and S10 are in this category of spaces. The second type is the space that has an entrance from a transition space like a corridor or a space where a stair is located. Spaces S5 and S7 are in this category of spaces (Figures 6.4. and 6.5.).

Consequently, spaces S2 and S9 which are mentioned as type 1 and type 2 of open spaces are the main circulation spaces of the building.

According to this, 456 m<sup>2</sup> of the total area (714 m<sup>2</sup>) of the entire spaces, are the open circulation spaces. 29 m<sup>2</sup> of the same total area is the closed circulation spaces like corridors. As a result, 485 m<sup>2</sup> of 714 m<sup>2</sup> (total area) is occupied by circulation spaces which makes %67. For this reason, the spaces not only presenting an architectural variety, but also functioning as circulation spaces. This result which is difficult to read only from plans and section is the original design of the building was based on the mobility in the spaces, which will be considered in the re-functioning of the building.

### **6.1.3.2. AUTHENTICITY OF THE SPACES**

One of the most important features of the building is that none of the interventions affect the authenticity of any space in regarding to the general plan layout of the building (Figure 6.6.) However, some of the interventions on the architectural elements are partly destroying the authenticity of these elements. This change in the element, less or more, affects the authenticity of the space where the related architectural elements are located. These elements and the interventions are mentioned in the following list.

- The floor of the octagonal space S10 at the 2<sup>nd</sup> floor was closed or covered by a 0.15m thick concrete slab. Therefore, this space has partly lost its authenticity because of its hidden floor.
- The same concrete slab is also closing the oculus which is located between the space S7 and S10. This element is closed from both spaces. Therefore, its authenticity has completely lost. The authenticity of the spaces S7 and S10 have also effected from the loss of authenticity of the oculus.
- Four embrasures on the northwest wall and north embrasure of the southwest wall of the space S7 at the 1<sup>st</sup> floor are closed by infill up to the middle of their total height.

- The floors of the wall walks which are 1.00m in width were occupied by 0.20m thick continuous concrete gutters. Therefore, wall walks have partly lost their authenticity.
- The floor of the L shaped courtyard (S2) of the building is covered by leveling concrete. Therefore, there is no information about the original floor that could be followed.

### **6.1.3.3. WEALTH OF THE ARCHITECTURAL ELEMENTS IN THE SPACES**

Because the building is a small military building, it has less ornamented architectural elements that are different than of other 16<sup>th</sup> century civil buildings. To find the distribution of these architectural elements among the spaces and the hierarchy of these spaces are the aim of this to study. The architectural elements are listed as: wall walks, gutters, floor tiles, turrets, oculus, top windows, windows and embrasures. For each spaces are indicated (Figure 6.7.).

Space S7 at the 1<sup>st</sup> floor is the richest space among the others. It has both more and various elements than of the others. 14 embrasures, 4 top windows, 1 oculus are located in this space including the original floor tiles. The second richest spaces often space S7 are the spaces S9 and S10 of 2<sup>nd</sup> floor and space S2 of the 1<sup>st</sup> floor. There are two embrasures and an oculus located in space S10 and two gutters, a turret and original floor tiles in space S9. There are two wall walks, three embrasures located in the courtyard (S2) at the ground floor. The spaces S1, S3, S6 and S8 are the spaces which have the least amount of architectural elements.

According to this, there are richer spaces in term of architectural elements at the upper floors. The ground floor spaces, excluding the courtyard, have not even any of the mentioned architectural elements.

#### **6.1.3.4. SOURCE AND QUALITY OF LIGHT ENTERING THE SPACES**

The spaces are categorized in five groups in terms of the quality of daylight (Figure 6.8.). In this categorization, the door openings are not considered as lighting elements like windows or embrasures. For this reason, some of the spaces are categorized as dark spaces-spaces that can't receive daylight- even though they have door openings. In the following typology, types of spaces according to the quality of light are listed from the most lighted space towards the darkest one.

- TYPE 1.** The open spaces that receive direct daylight. Courtyard (S2) at the ground floor, space S9 and S10 at the 2<sup>nd</sup> floor are in this category of spaces
- TYPE 2.** The spaces that receive direct daylight from several embrasures and top windows. Space S7 at the 1<sup>st</sup> floor is the only space in this category
- TYPE 3.** The spaces that receive direct daylight from only one window or an opening like an arched pass way-spaces S1 and S3 at the ground floor are in this category.
- TYPE 4.** The spaces that receive daylight only from a top window. However, this type of spaces also receives indirect daylight from the main space where the mentioned spaces are located adjacent to space S8 and S6 are in this category of spaces.
- TYPE 5.** The spaces that can not receive daylight. Space S5 and S4 at the ground floor are in this category.

In conclusion, again the spaces are presenting a variety in terms of the quality of light. Besides the variety of the spaces, it is also possible to follow logic behind the distribution of these spaces. According to this, the spaces that are located at the 2<sup>nd</sup> floor are the open spaces that receive direct daylight. The spaces at the 1<sup>st</sup> floor are the spaces that receive direct daylight from different sources. Therefore, those spaces have the

most qualified light inside. Transition spaces have the second most qualified light inside. Apart from the courtyard, the spaces that are located at the ground floor have the least light inside. In other words, these spaces can be considered as the darkest spaces in the building.

#### **6.1.4 EVALUATION OF THE PHYSICAL CONDITION OF THE BUILDING**

As the result of the study on the deterioration of the building, Cin Kule has not a structural problem like cracks or deformations at present. The entire problems focus on the fabric. However, some of these problems may turn into structural problems in case of ignorance.

The main problem is the missing elements due to break outs. Lack of maintenance and choice of wrong materials during the restoration can be considered as the basic reason for this problem. The same reasons can also be considered for the slighter damages on the fabric.

However, a second source of problem must be considered as the reason for the severe damages on the fabric. It is one of the largest factories in the region: İskenderun Demir Çelik Fabrikası (Steel Factory). The basic reason that triggers the alveolization and loss of material afterwards is the air pollution that contains a serious amount of acid. The problem of alveolization is the typical result for the lime based stone, like sand stone or lime stones. Therefore, whether it is a new block or not, a periodically maintenance program on these blocks must be developed for this problem.

Since the building is empty and not protected by the guardians, several parts of it were subjected to vandalism, man-made damages like paintings or graffiti. Occupation of plants is the result of same reason as well



Figure 6.1. Evaluation of the Nearby Environment of the Building.

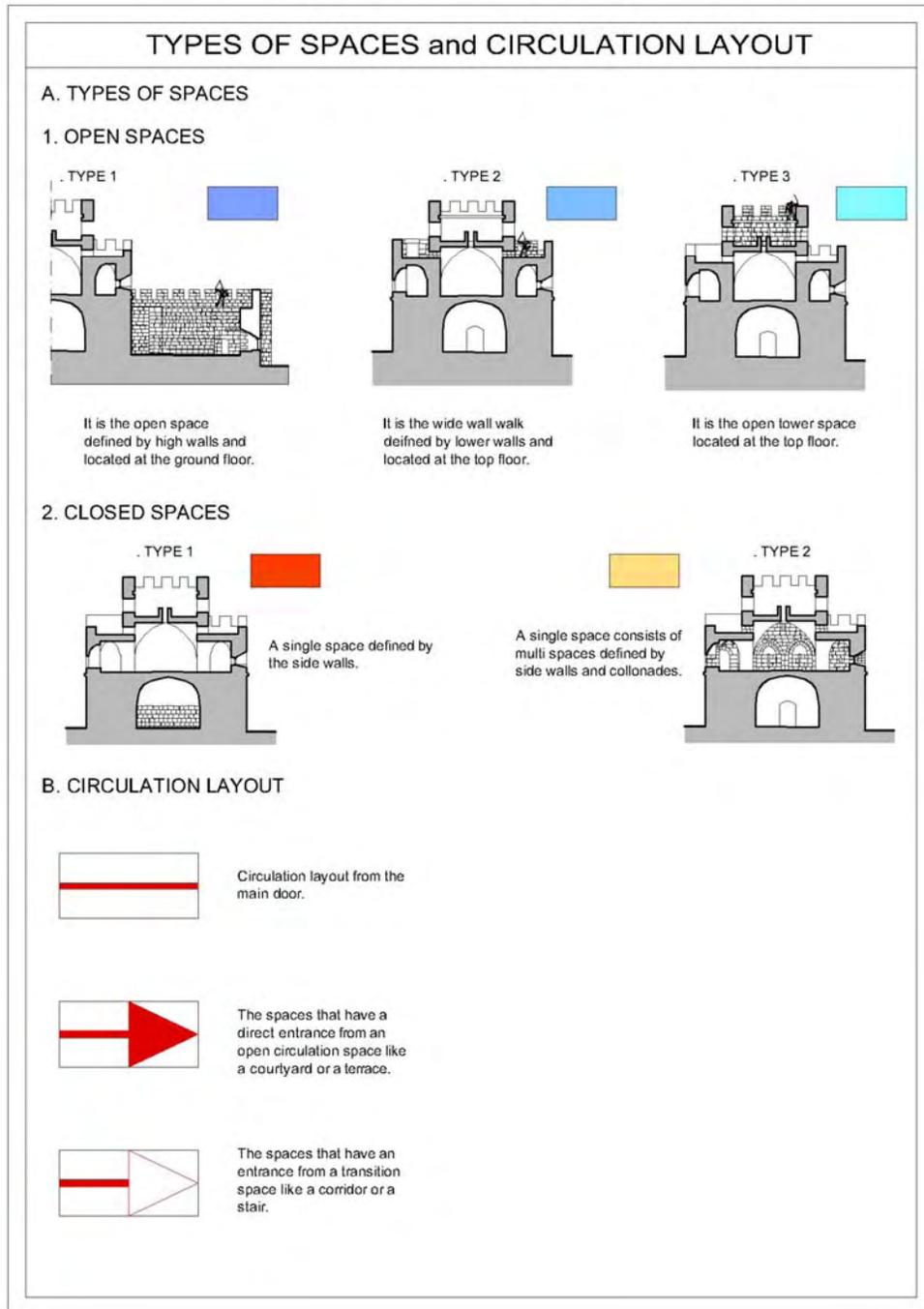


Figure 6.2. Types of Spaces and Circulation Layout- Legend.

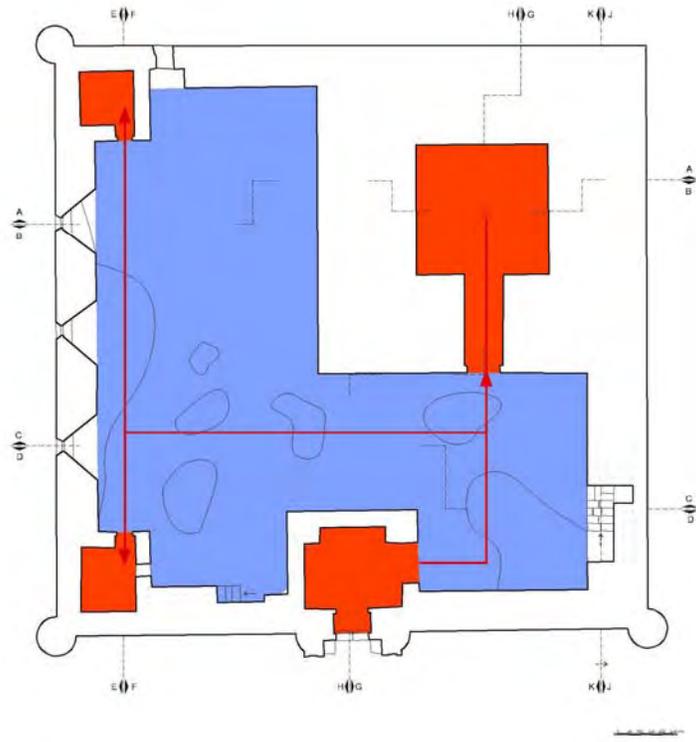


Figure 6.3. Types of Spaces and Circulation Layout- Ground Floor Plan.

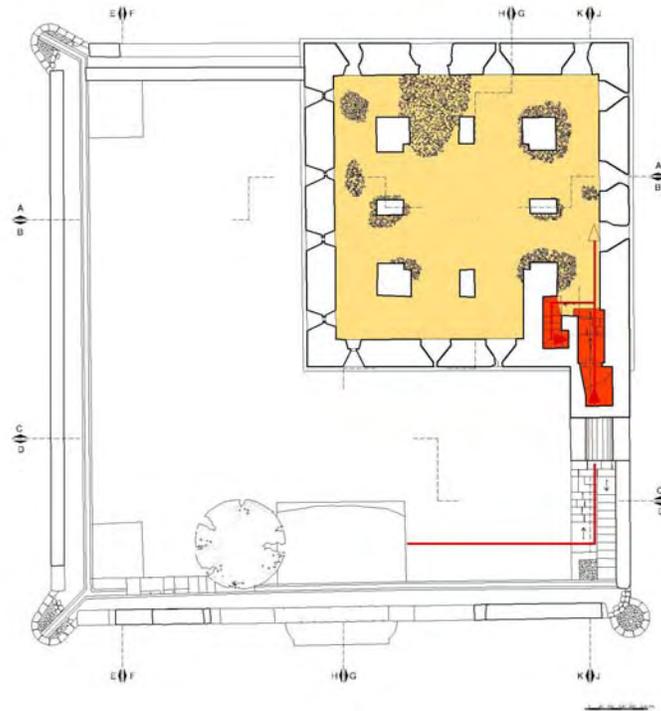


Figure 6.4. Types of Spaces and Circulation Layout- 1<sup>st</sup> Floor Plan.

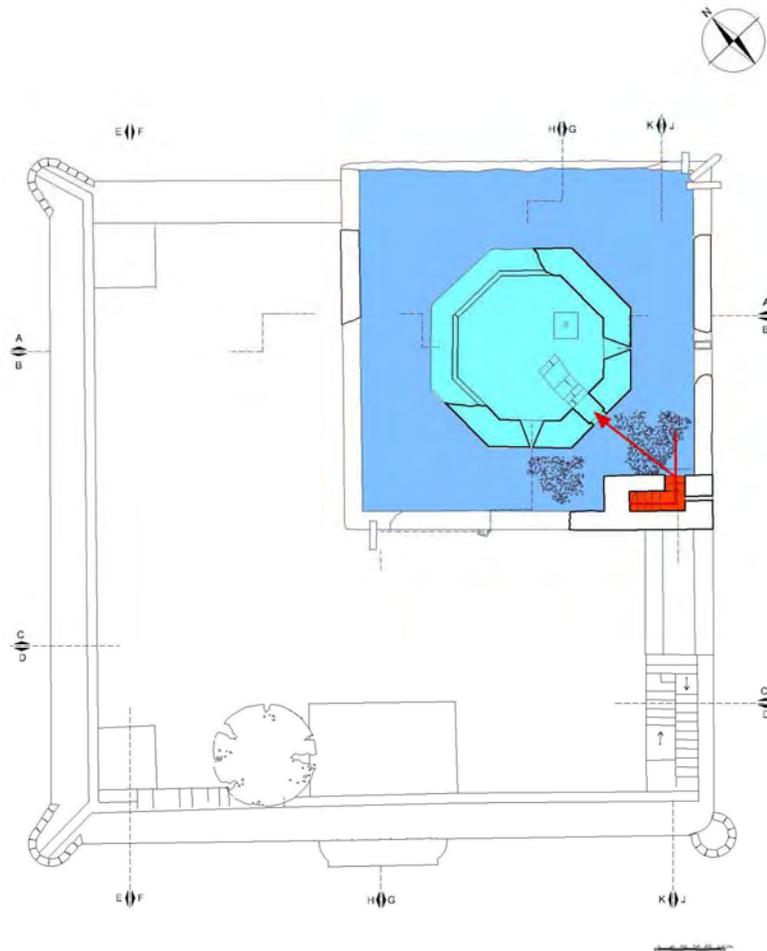


Figure 6.5. Types of Spaces and Circulation Layout- 2<sup>nd</sup> Floor Plan.

## 6.2. GENERAL RESTORATION PRINCIPLES

As a result of all the previous studies, Cin Kule, with its original plan layout, façade features and architectural elements, is a unique example of the military architecture. The architectural features that the building presents do not only make it unique in the context of military architecture, but also make it for the 16<sup>th</sup> century Ottoman Architecture, especially in the Eastern Mediterranean. For this reason, the building must be restored and must be provided a suitable function to stand for the future generations.

To determine the basic frame of the interventions during the restoration process, group of restoration principles are presented below. However, the entire restoration project is based on an estimation that is the provision of non limited financial support for the project.

### **The Restoration Principles**

The original plan layout, façade orders, façade and plan element, structure and the material make Cin Kule a very unique building. Therefore, all these original features must be exposed and conserved.

1. The proper function must be assigned to the building in order to provide periodical maintenances and/ or repairs to transfer it to the next generations. During the process of selection of the function of the building, not only the features of the building are considered, but also the features of nearby environment are considered as well.
2. The area where the historical buildings are located (mentioned on Sahil Yolu and in nearby environment) must be preserved. The control of new buildings and the preservation of these historical buildings will be provided.
3. The uniqueness of the building comes from its original features, which is described in restitution phase 1. Therefore all of the interventions must be based on the reliability degrees of the restitution phase 1. The elements that are mentioned as 1<sup>st</sup> degree reliable will be completed with their original material, technique, dimension and etc.
4. The elements that are mentioned as 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> degree reliable proposals in the restitution phase 1 will not be completed or re-constructed. The reason for this attitude is that none of these proposals are obtained from the building itself. Therefore, these proposals might be categorized as speculative proposals. At this point, a kind of completion which is based on the reliability degrees of the restitution phase 1 definitely damages the originality of the

building. However, at these points, minimal solutions that can easily be separated from the original in perception will be used if any intervention is necessitated because of the new function of the building.

5. All of the additions that are due to the new function of the building will be made of new and different techniques.
6. All of the alterations that contain architectural information about the period when the building was built will be conserved unless it physically damages the building.
7. All of the alterations and/or additions that damage the building in terms of physical and aesthetical aspects and that creates difficulties to perceive the original architectural elements must be removed.
8. All of the additions in the building that have been applied by the Municipality of Payas since 2000 will be removed.
9. There must be an excavation organized at certain points of the courtyard and of other ground floor spaces. According to the results of the excavations, the floor level and tiles must be reconsidered in relation to the reliability degrees. The same excavation will also be done on the areas where the coastal buildings<sup>105</sup> were located.

### **6.3. INTERVENTIONS**

#### **6.3.1. PRESERVATION OF THE SITE**

Even though all of the historical buildings around Cin Kule are registered buildings, the area must be preserved as well. Both for the historical buildings and for the city, the construction of new and high apartment blocks on the critical sites must be prevented.

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<sup>105</sup> Dock, shipyard and the stores.

AUTHENTICITY OF THE SPACES IN THE BUILDING

LEGEND

 The spaces that keep their authenticity

 The spaces that have partly lost authenticity because of the interventions on some of the architectural elements of them.

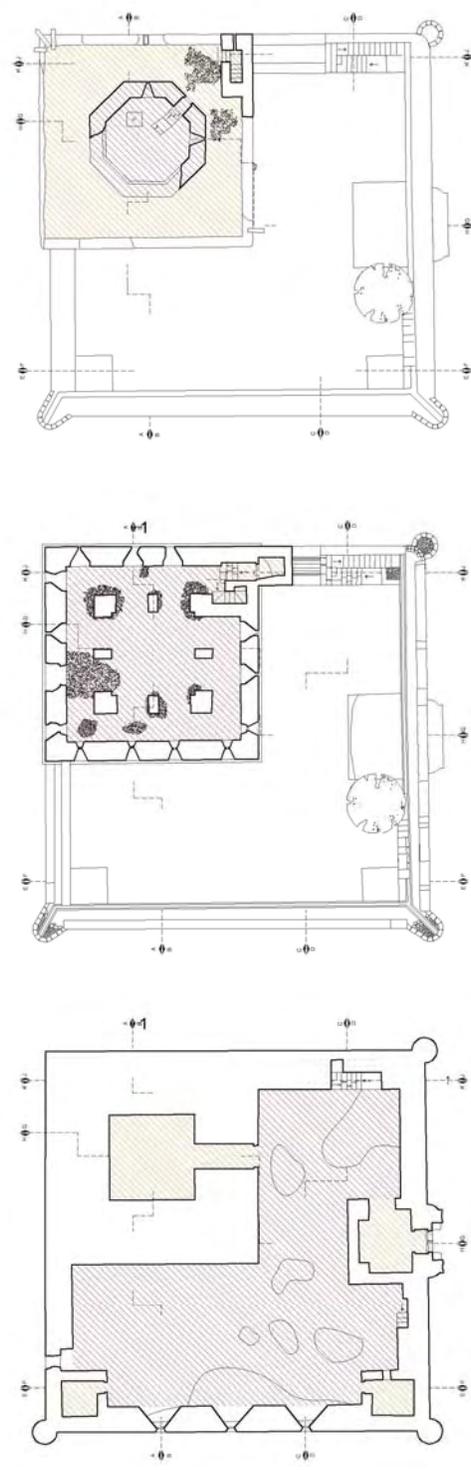


Figure 6.6. Authenticity of the Spaces- Floor Plans.

WEALTH OF ARCHITECTURAL ELEMENTS IN THE SPACES

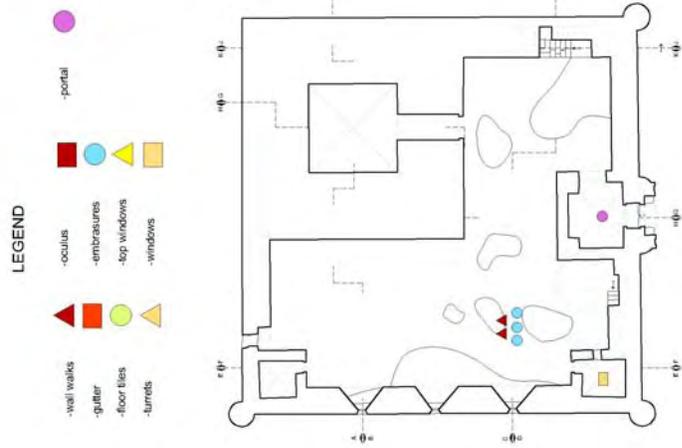


Figure 6.7. Wealth of Architectural Elements in the Spaces- Floor Plans.

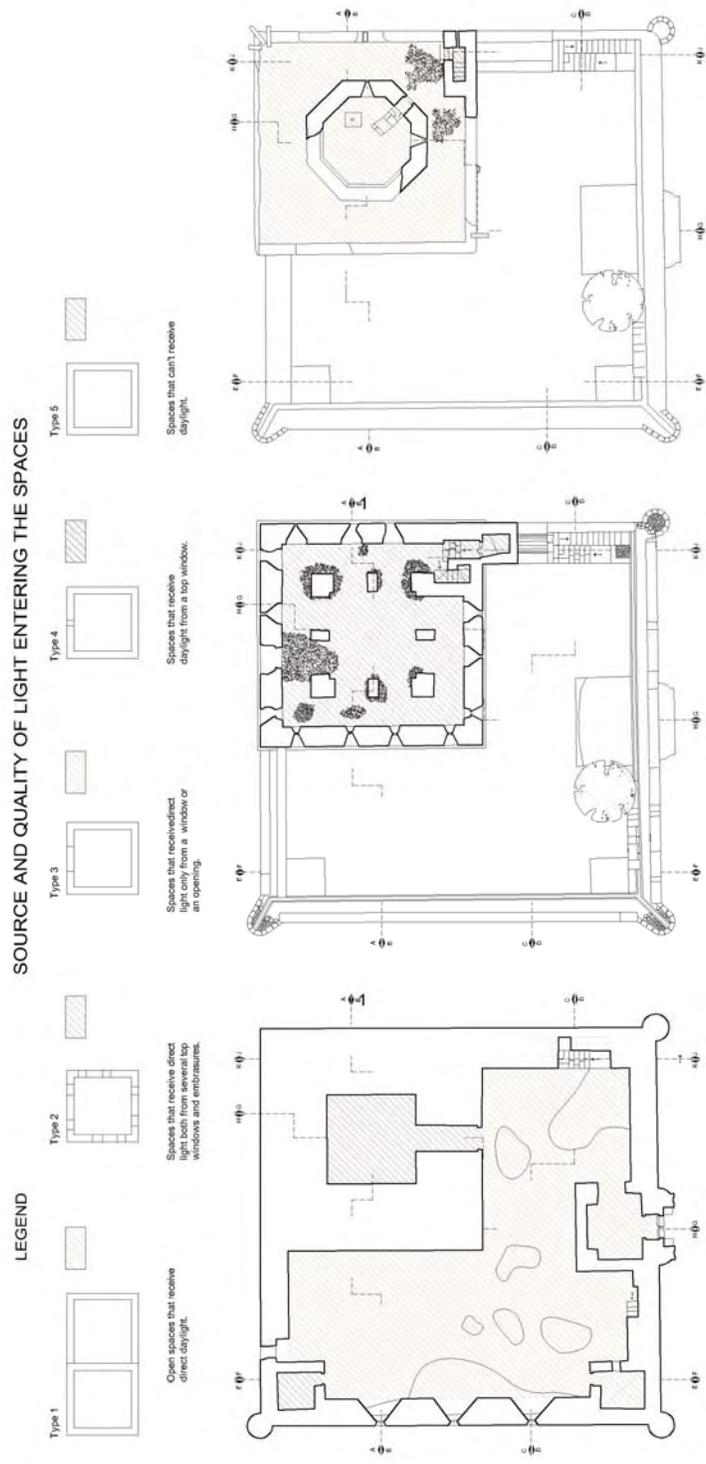


Figure 6.8. Source and Quality of Light Entering the Spaces- Floor Plans.

Therefore, the area that includes all these historical buildings<sup>106</sup> will be registered as 1<sup>st</sup> degree archaeological site. It starts 1km away from each building (Figure 6.9). According to this protection, very close constructions to the sea side will be prevented. However, only one building that damages historical buildings and the general architecture of the city must be demolished. It is the police compound building located right next to the sea and located on the remains of the historical dock.

### **6.3.2. PRESERVATION OF THE BUILDING**

All of the interventions are categorized under three main groups: completions/consolidations, removals and alterations<sup>107</sup>. (Figure 6.10.)

#### **6.3.2.1. COMPLETION**

**A.** The elements that will be completed as it is described for the 1<sup>st</sup> degree reliable proposals. According to this the completion must reflect the information of original material, location, form, construction technique and dimensions. However, to distinguish the completed part from the original, the new parts of the completed element will be located 0.05 backwards than the original level.

1. The floors of three embrasures on the northwest wall of the courtyard will be completed according to the floor remain in the north embrasure of three.
2. The broken or completely collapsed embrasures in the 1<sup>st</sup> floor will be completed as their original.
3. All of the collapsed parts of the walls of the façades, especially of northeast façade, will be completed as their originals.
4. All of the vaults in the spaces will be plastered with lime mortar. However, the plasters will not include the projecting cut stone springers.

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<sup>106</sup> It also includes the buildings mentioned in the restitution phase 1.

<sup>107</sup> Another category of interventions which is named as "ADDITIONS" in functioning stage is described and explained separately from this group.



Figure 6.9. Proposal for 1<sup>st</sup> Degree Archaeological Site.

5. The circuit wall that forms the courtyard and attached towers on the corners will be completed up to the point where the reliability degree shifts from 1<sup>st</sup> to 3<sup>rd</sup>.

### **6.3.2.2. CONSOLIDATIONS**

**A.** The elements that are mentioned as the 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> degree reliable proposals will be consolidated. After analyzing the problems of each element in the labs, they will be conserved as they are and not any addition or alteration will be allowed.

1. The entire battements of the building will be consolidated.
2. The collapsed turret at the east corner of the 2<sup>nd</sup> floor will be consolidated.
3. The console in the octagonal space S10 will be consolidated.

### **6.3.2.3. REMOVALS**

**A.** The presented additions and/or alterations in the restitution phase 2 will be entirely removed.

1. The 0.15m thick leveling concrete in the courtyard of the building will be removed.
2. The cement plaster on the walls and vault of the space S1 at the ground floor will be removed. Some parts of the northeast wall of the courtyard were altered with completely different techniques. These parts of the wall will be removed.
3. The outer side of the barrel vault of the space S6 was covered with cement 0.05m thick plaster. This element will be removed.
4. All concrete gutters located on the floors of the wall walks will be removed
5. The embrasures on the northwest wall of the 1<sup>st</sup> floor and the one on the west corner of the southwest wall are partly closed by rubble stone infills. These infills will be removed.

6. The 0.12m thick concrete slab in the octagonal space S10 will be removed.
7. The concrete steps in the same space will be removed.

**B.** The entire additions of the Municipality of Payas that have been continuing since 2000 will be removed.

1. The pavement outside the building is located adjacent to the southeast façade. The pavement is also covering an area on the façade that starts from the original façade floor and rises up to 1.00m above this level. The pavement will be removed
2. The iron flag post and other iron elements related to the post in the octagonal space S10 will be removed.
3. The entire electricity installation will be removed.

#### **6.3.2.4. ALTERATIONS**

**A.** The entire original blocks of the elements that are categorized in “SERIOUS DAMAGE” group will be altered. The alteration of single blocks will again be done according to the interventions described for the 1<sup>st</sup> degree reliable elements.

1. The entire sand stone<sup>108</sup> and lime stone blocks that have alveolization problem and granular disintegration problem will be altered.

**B.** The alterations that do create physical and aesthetical problems in the building will be altered with the technique mentioned for the 1<sup>st</sup> degree reliable elements.

1. The northeast wall of the courtyard-that is also mentioned in the REMOVALS part-will be altered with a 1<sup>st</sup> degree reliable wall.

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<sup>108</sup>These sandstone blocks are described as the alteration 60's restorations in the previous chapter.

### **6.3.2.5. RESEARCHES**

The floor of the courtyard of the building must be excavated from certain points to find any information about the original floor of the space. According to the results of the excavation, the restitution proposal for the courtyard floor must be re-evaluated in terms of the reliability degrees. And one of the before mentioned intervention types must be applied. Apart from the serious damage category, both causes and effects of the moderate and slight damage group must be analyzed in labs and according to the results, cleaning project of each block must be developed.

Same excavations will be done around coast where the naval buildings were described in the historical researches chapter.

## **6.4. FUNCTIONING**

### **6.4.1. NEW FUNCTION OF THE BUILDING**

Cin Kule presents very valuable information about the 16<sup>th</sup> century military technology, 16<sup>th</sup> century Ottoman architecture and about the eastern Mediterranean policy of Ottoman Empire. Therefore, the new function of the building must not make the building lose its original features that provides these informations Therefore, this building must be preserved with its' all original features and must be open to everybody.

When considering the amount, the quality and other architectural features of the spaces in the building, it can be said that none of the modern functions can be afforded by Cin Kule. Besides to provide a function to the building which is very unique might damage the plan layout or façade order.

Consequently, the wise way of presenting the building with its all features is to re-function it as a *museum building*. However, in this museum, only Cin Kule is presented. Cin Kule is going to function as a building to visit for the tourists and researchers.

New function of the building will also serve for the benefit of the city. An axis of historical buildings to visit is provided starting from Menzil

complex, Payas Castle, 10<sup>th</sup> anniversary park tower house ending at Cin Kule. The control and protection of the building will be provided by guards and visitors will be allowed inside the building by tickets.

In the building, to easy the perception of the original phase and use of the building, illustrations will be provided at certain points of the building.

#### **6.4.2. ADDITIONS NEED FOR THE NEW FUNCTION**

As it is mentioned before, the control of the building is provided by guards. The aim of these guards are to let inside and control the visitors who paid the ticket. Therefore, a cubical (2m x 3m) is placed out of the building where the control of visitors can be achieved. Basalt floor covers are also used in some of the ground floor spaces.

As it is mentioned, these spaces are dark spaces. So to make them seen by the visitors, lighting elements are used in these spaces.

One of the important features of the building is the three embrasures that were particularly designed for the canons. To exhibit this information to the visitors, there are three canons located in these embrasures.

Another addition for the visitors is the boards where several illustrations about the original phase of the building are presented. Several pictures, engravings and drawings are held here for the visitors.

As a general need, toilets are needed for the visitors. However, instead of building a new one, the public toilet located<sup>109</sup> very close to the building renewed and will serve for this function.

#### **6.4.3. INSTALLATIONS**

Electricity is the only supply in the building. As the general intervention for any installation, at the ground floor, building is separated from the earth by a 0.20m wide gap that is filled with gravels. These gaps

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<sup>109</sup> It is a buried public toilet at the retaining wall that is right across Cin Kule.

also provide space for the installations as well. The building will be illuminated from four façades at nights. Therefore, projectors that provide yellow light will be buried at four façades of the building.

## TYPES OF INTERVENTIONS

### 1. COMPLETION

The elements that will be completed as it is described for the first degree reliable restitution proposals.



### 2. CONSOLIDATION

The elements that will be consolidated and conserved as they are at present.



### 3. REMOVALS

A. The entire additions or alterations described in restitution phase 2 will be removed.



B. All of the additions of the municipality will be removed.



### 4. ALTERATIONS

The elements that will be altered as it is described for the first degree reliable restitution proposals.



### 5. RESEARCHES

A. Areas that will be excavated.



B. Surfaces that will be cleaned after lab analysis.



Figure 6.10. Types of Interventions- Legend.

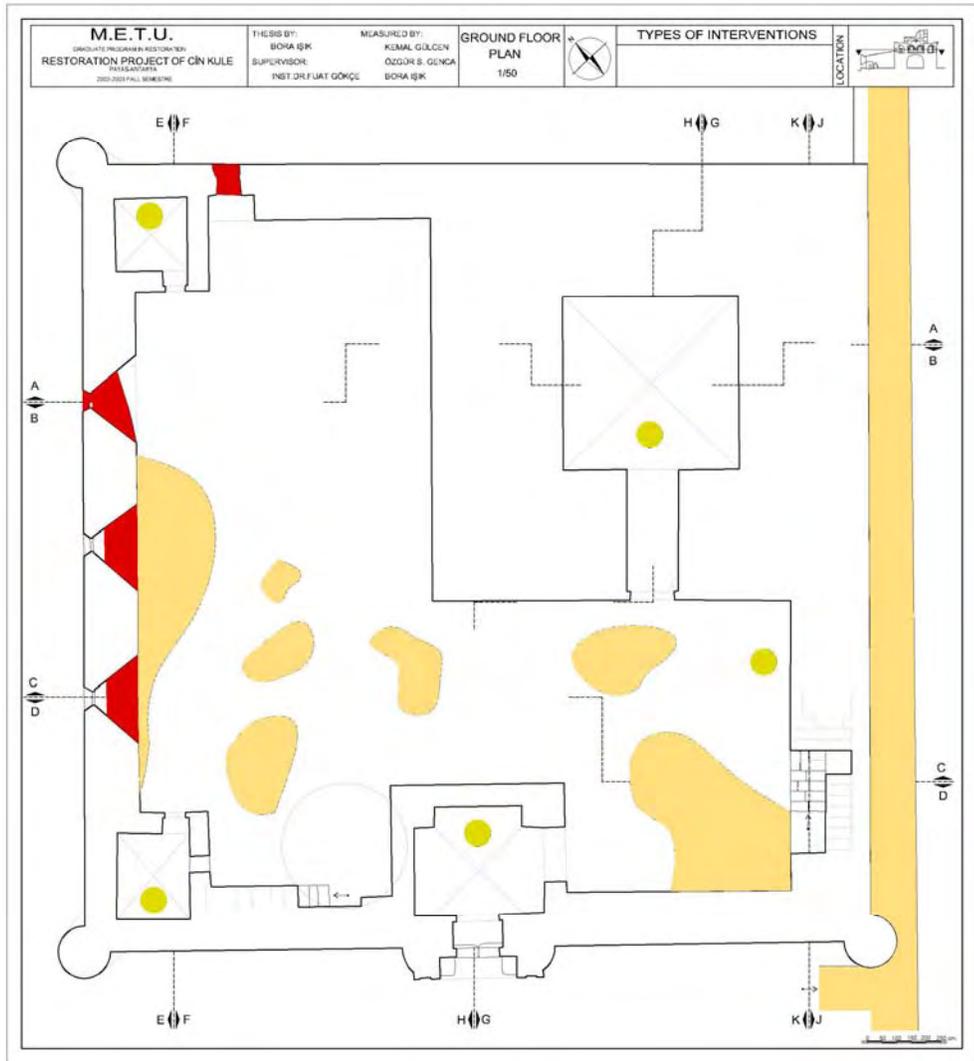


Figure 6.11. Types of Interventions- Ground Floor Plan.

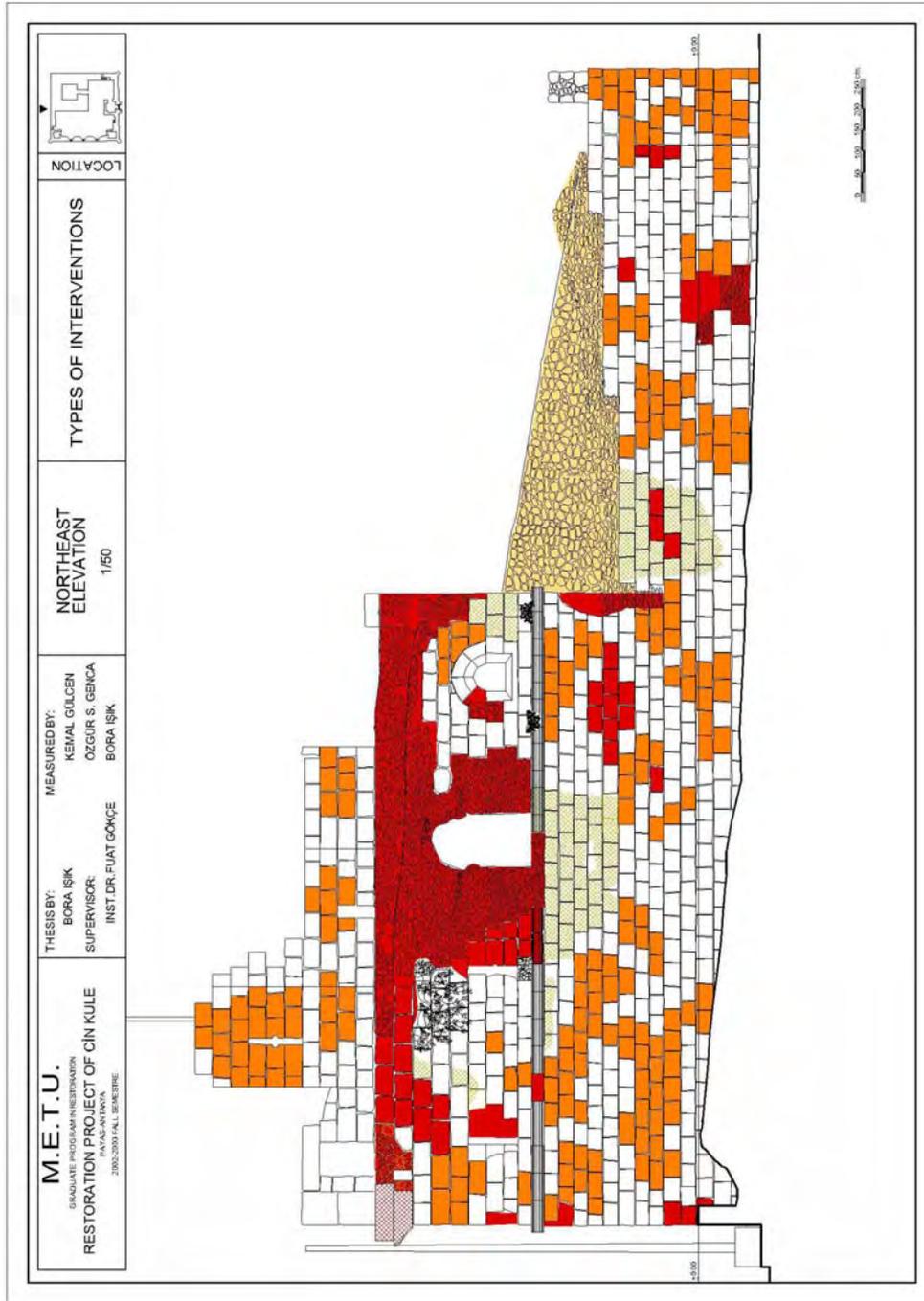


Figure 6.12. Types of Interventions- Northeast Façade.

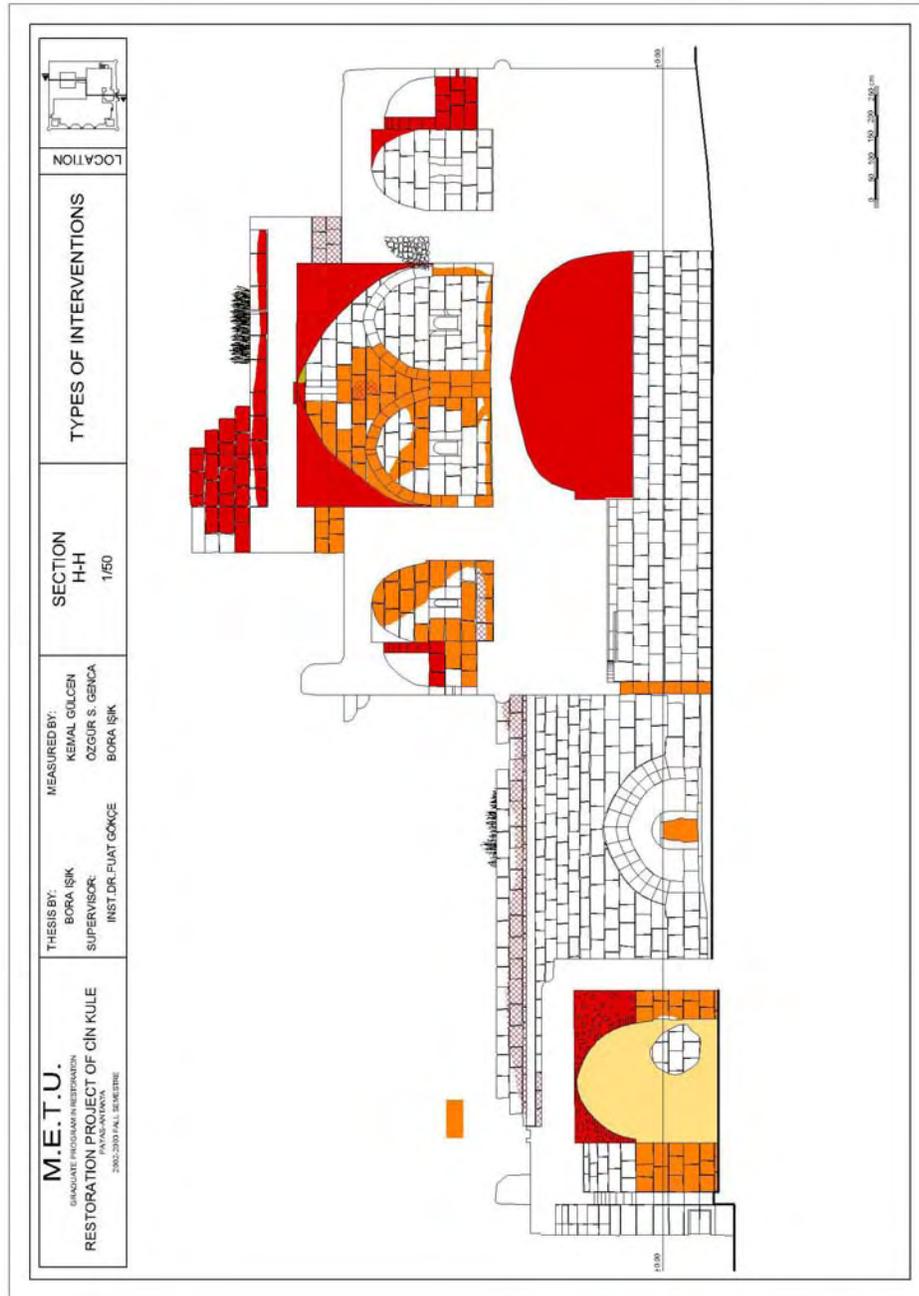


Figure 6.13. Types of Interventions- Section H-H.

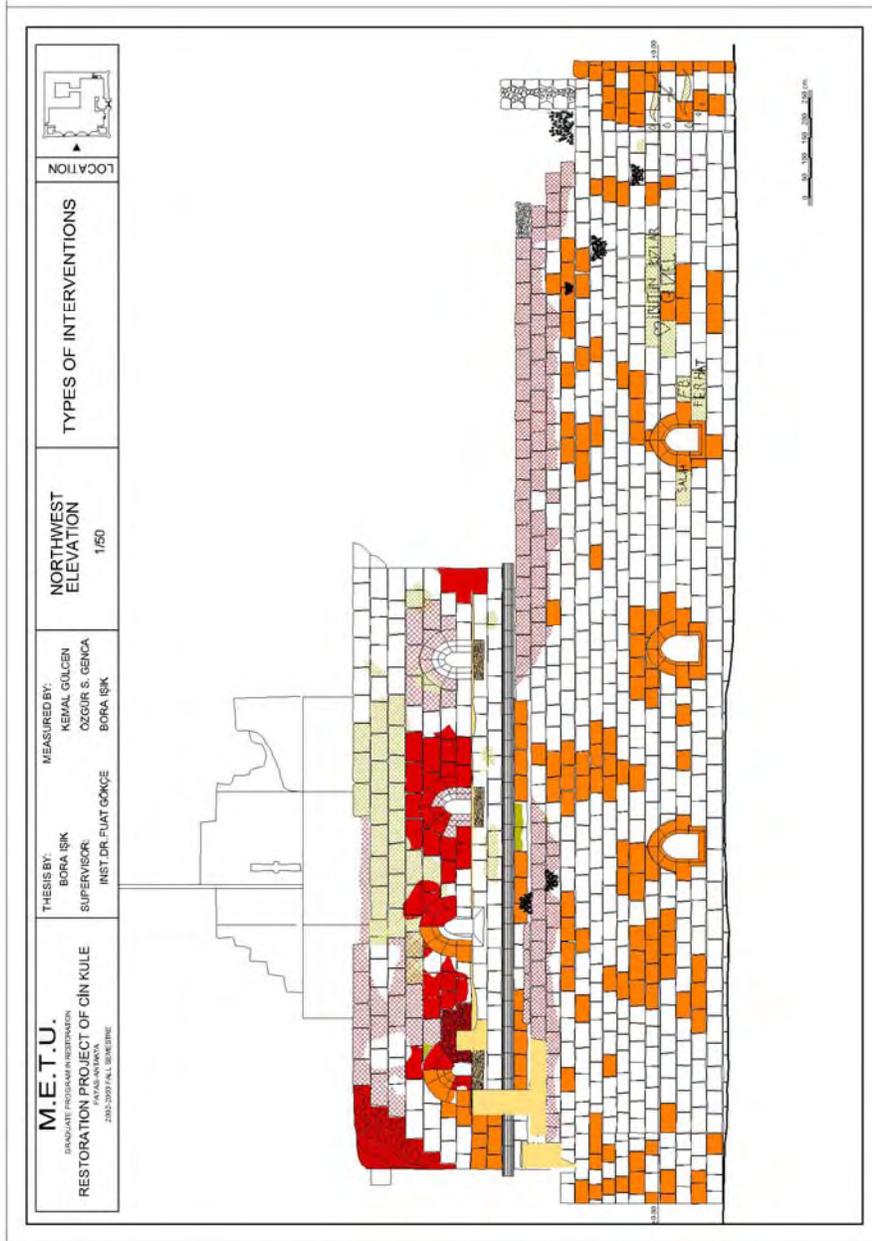


Figure 6.14. Types of Interventions- Northwest Façade.

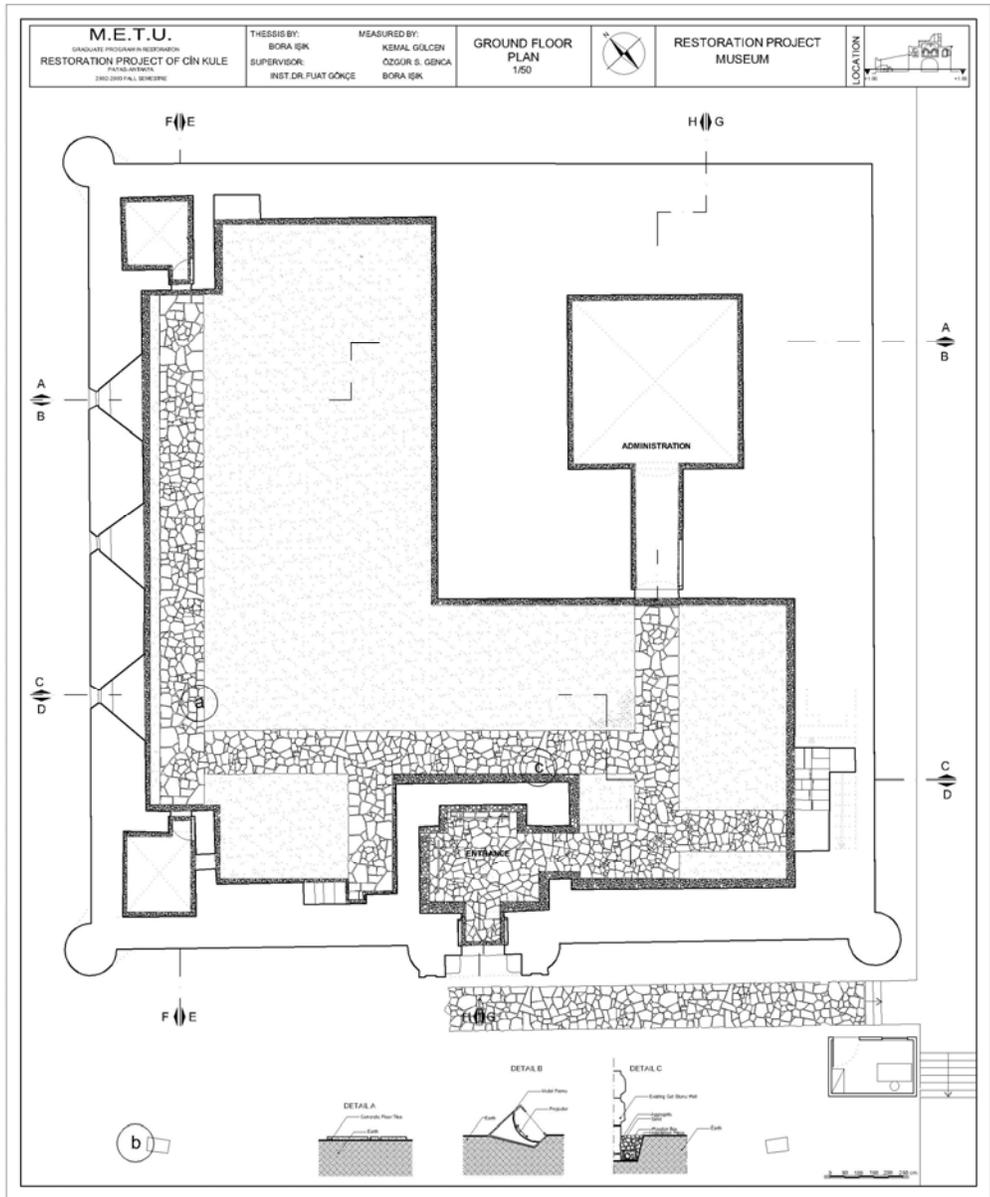


Figure 6.15. Restoration Project- Ground Floor Plan.

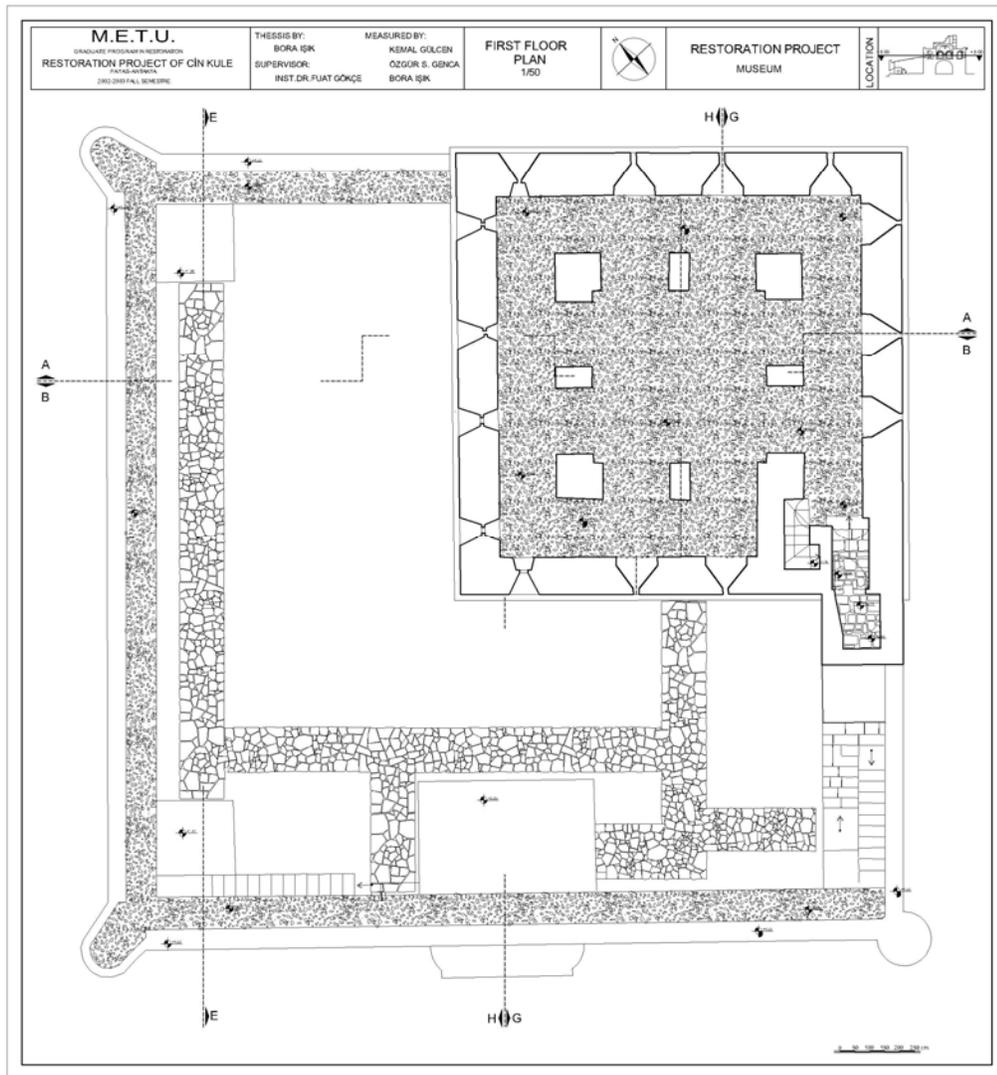


Figure 6.16. Restoration Project- 1<sup>st</sup> Floor Plan.

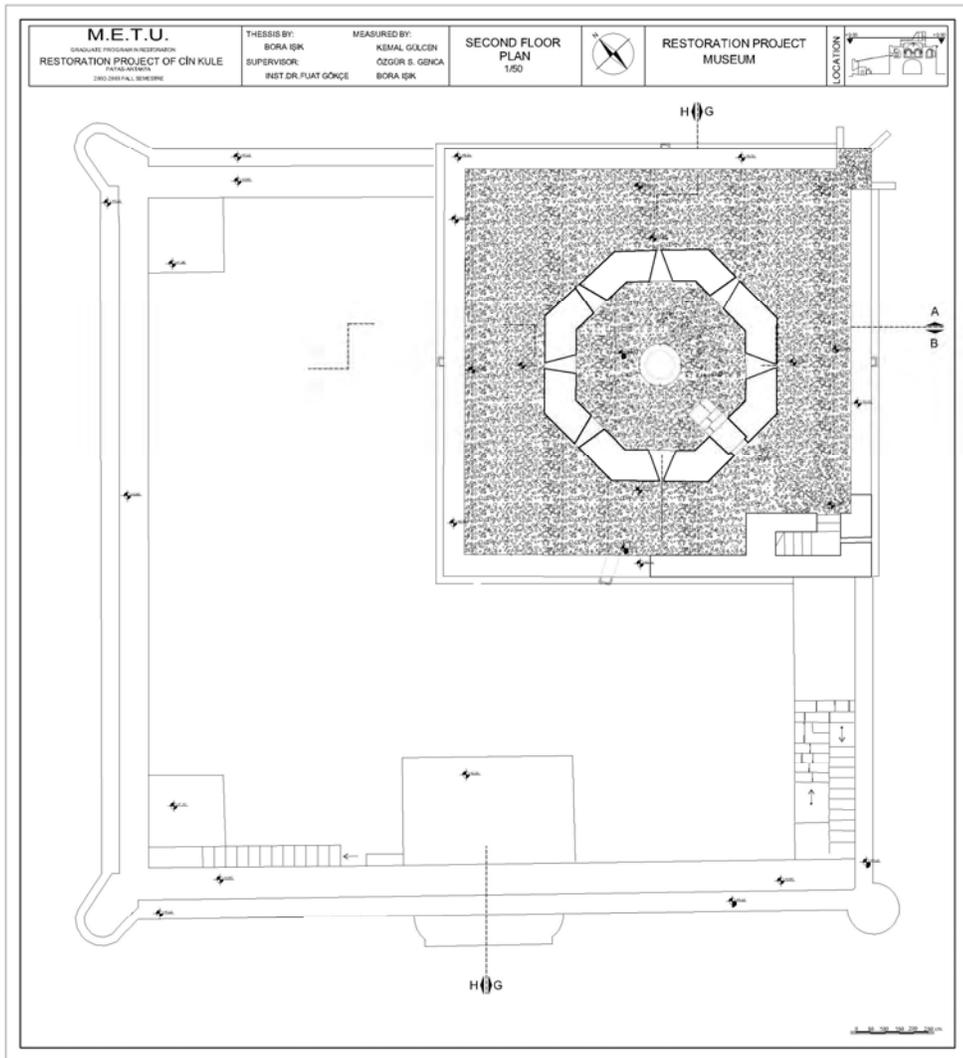


Figure 6.17. Restoration Project- 2<sup>nd</sup> Floor Plan.

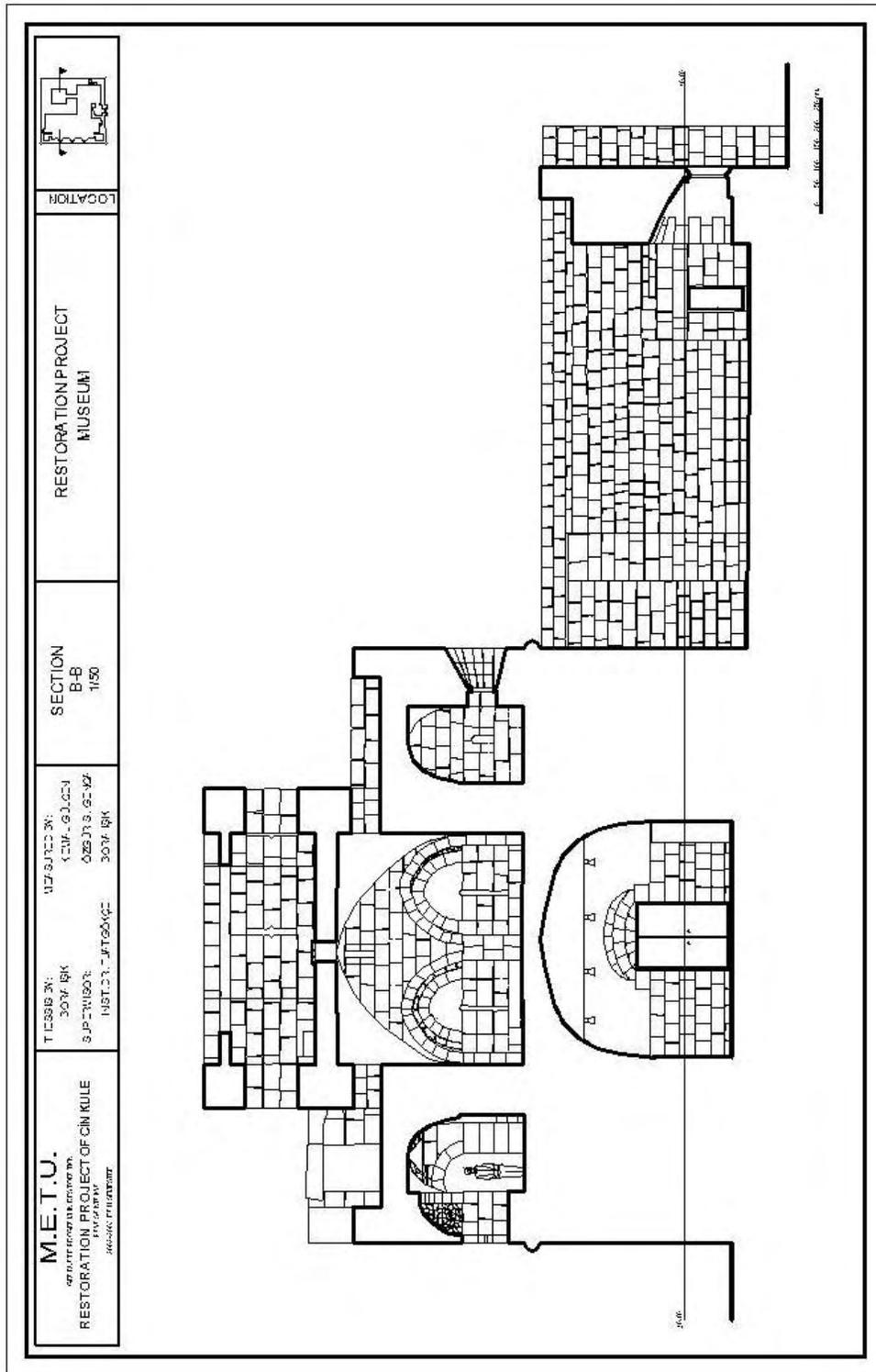


Figure 6.18. Restoration Project- Section B-B.

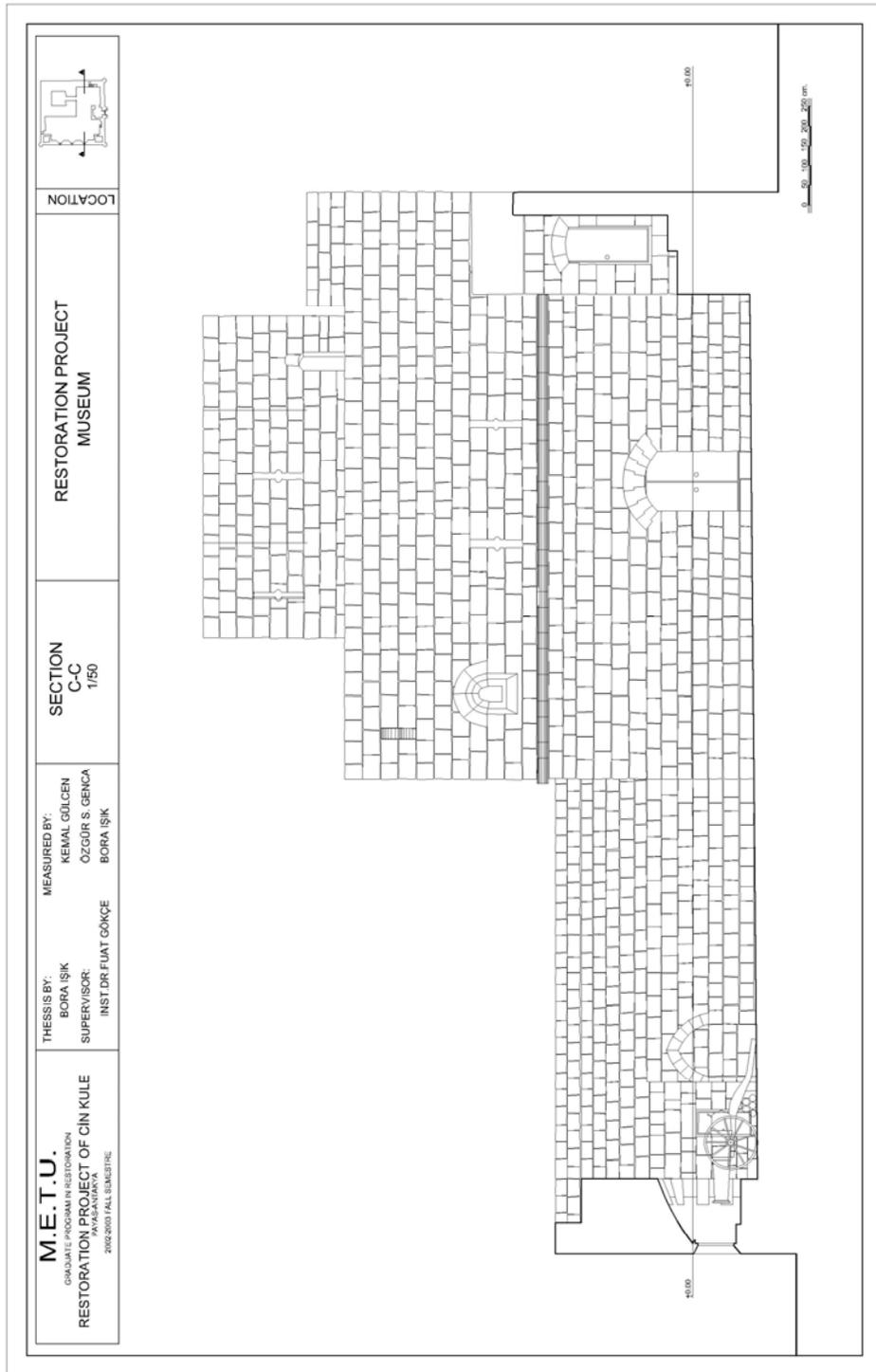


Figure 6.19. Restoration Project- Section C-C.

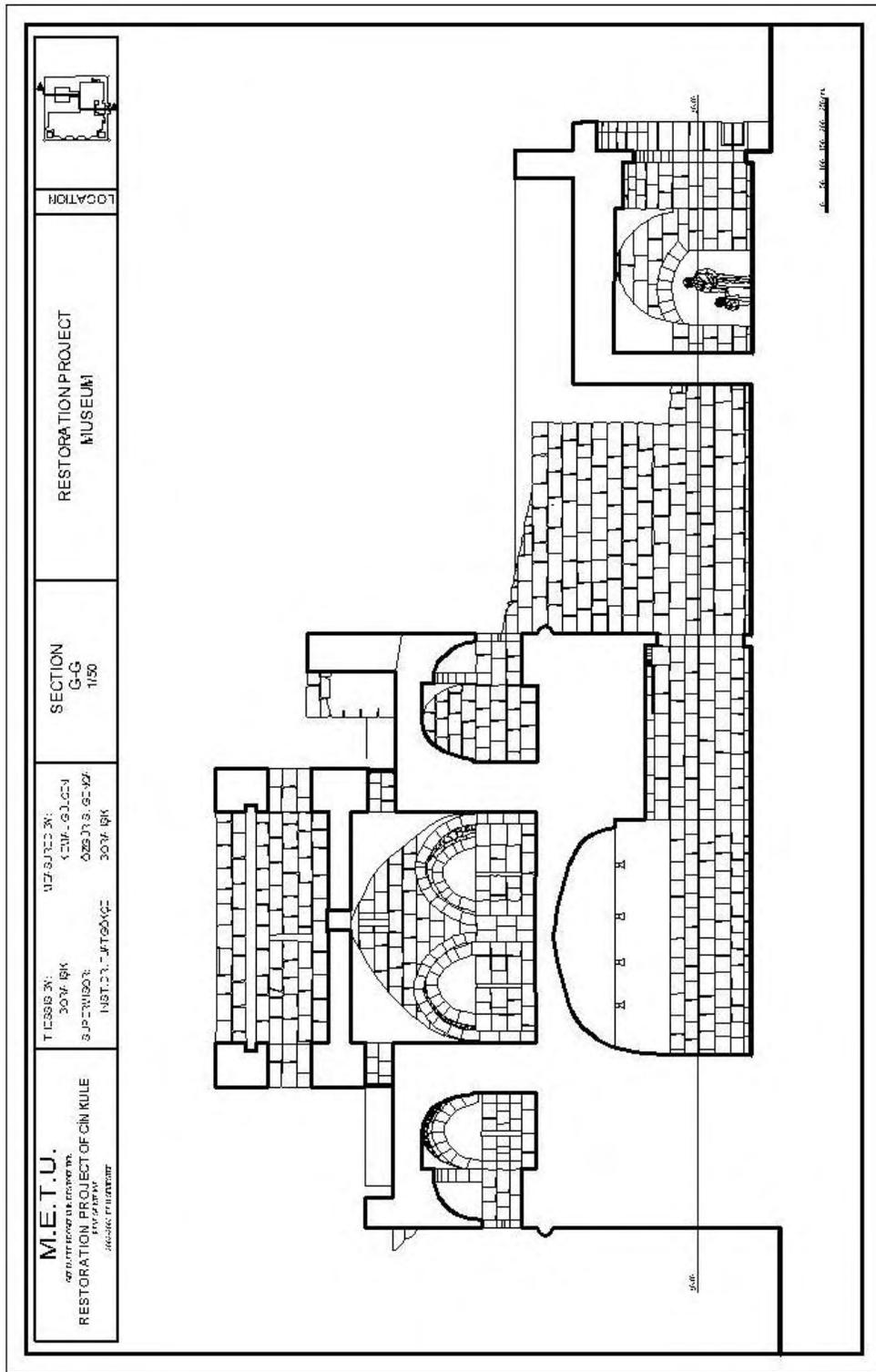


Figure 6.20. Restoration Project- Section G-G.

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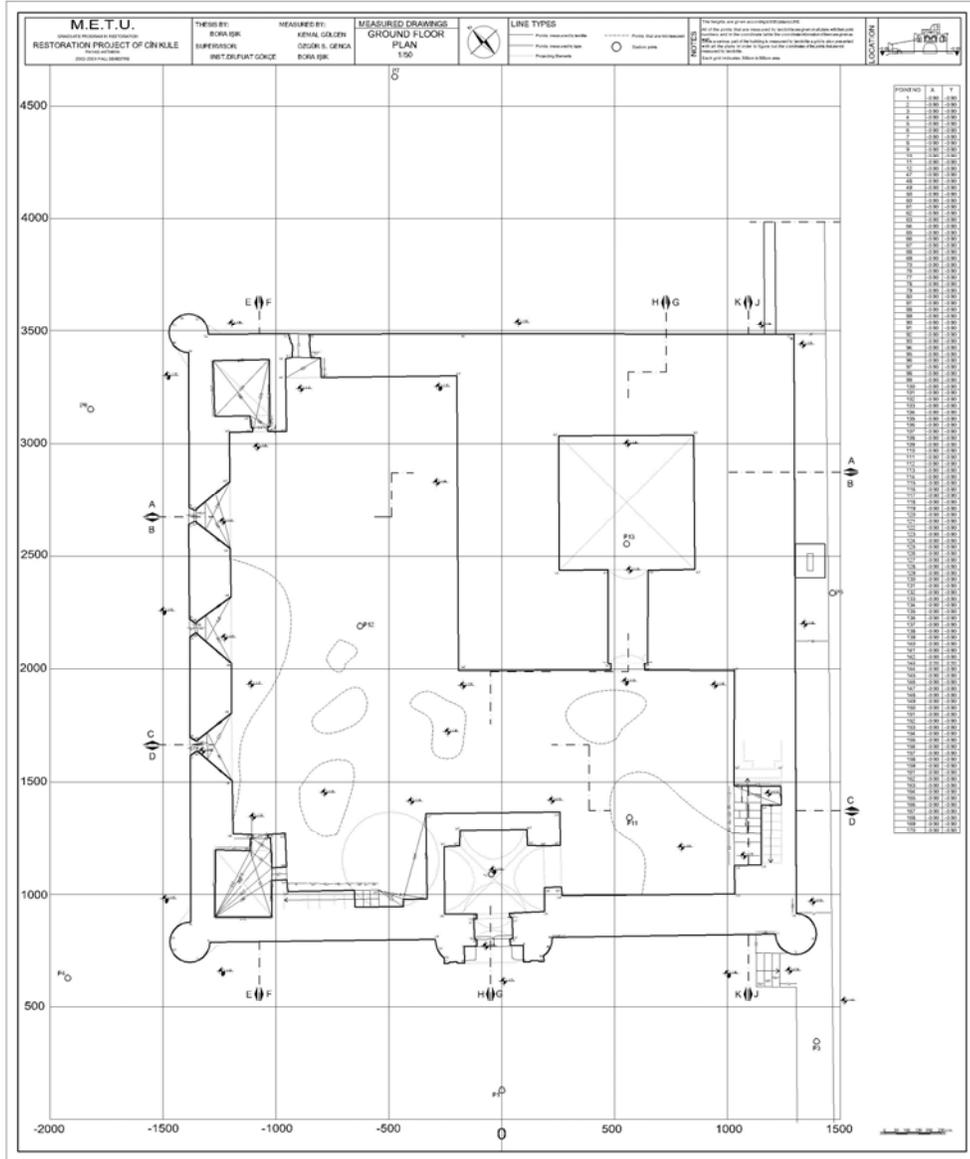
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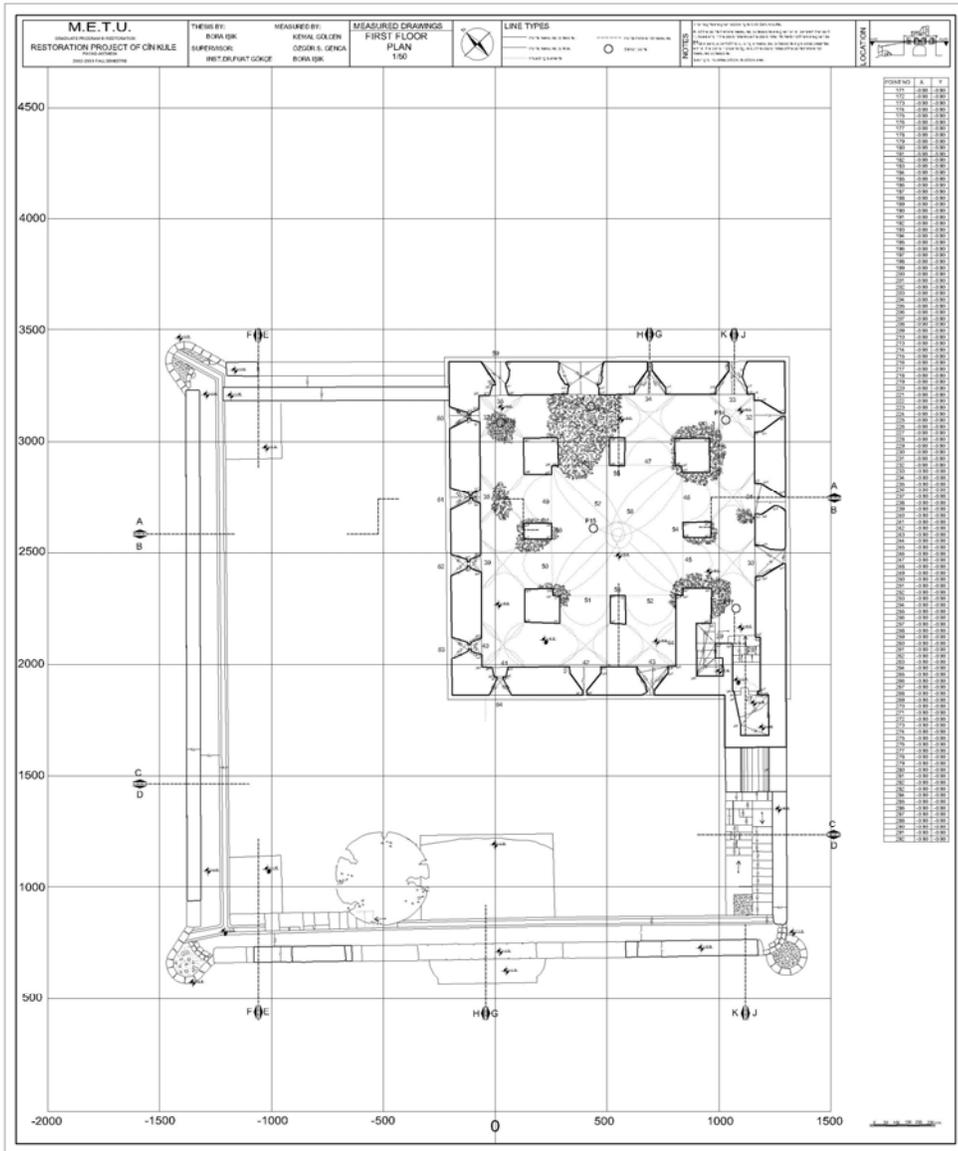
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**APPENDIX A**

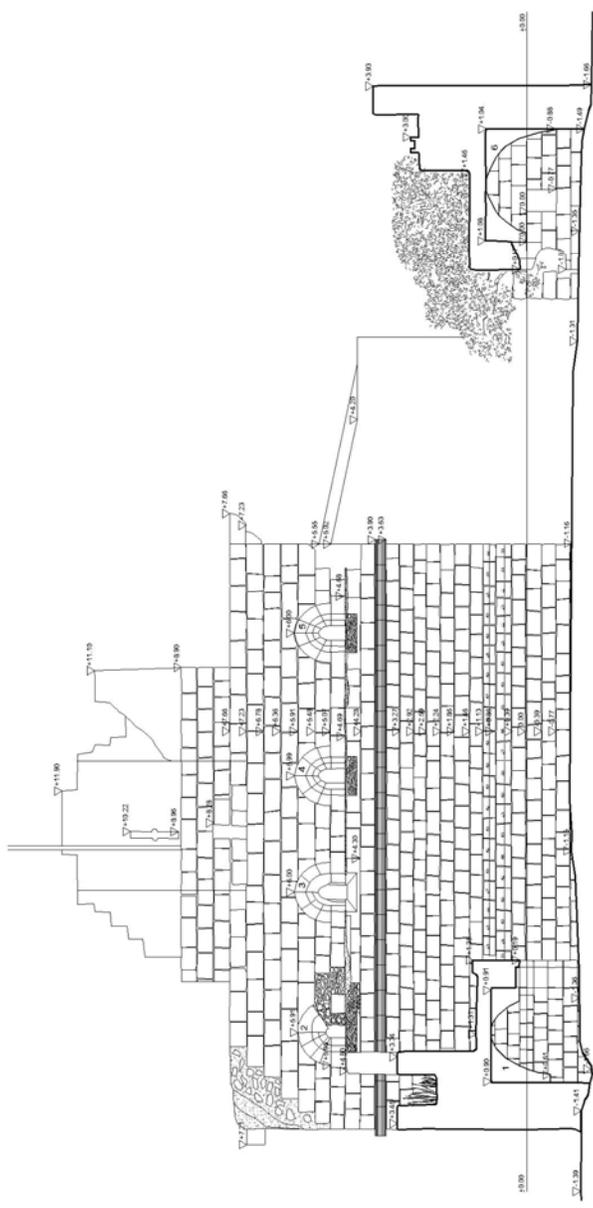
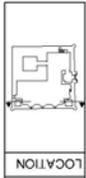
**MEASURED DRAWINGS**



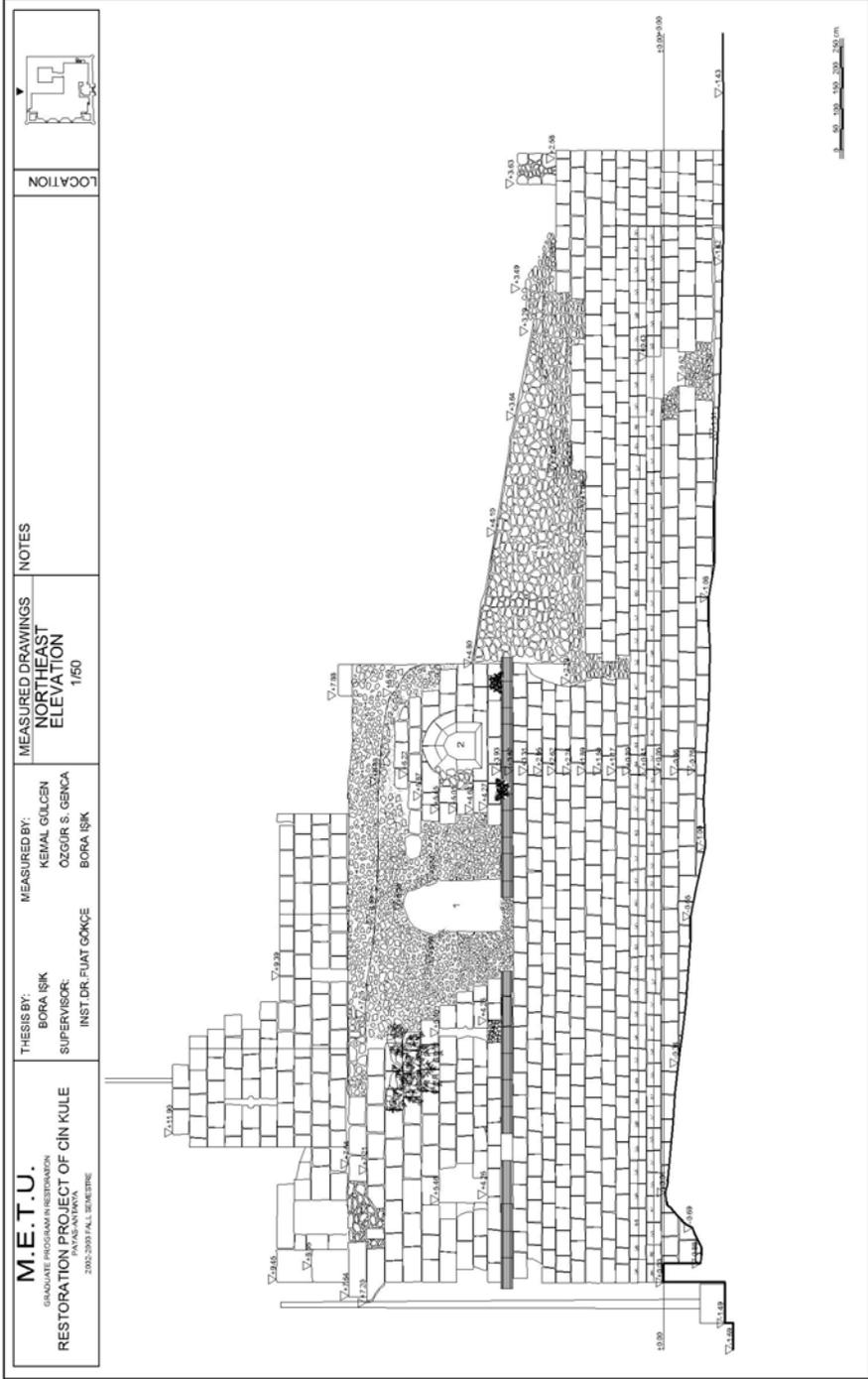


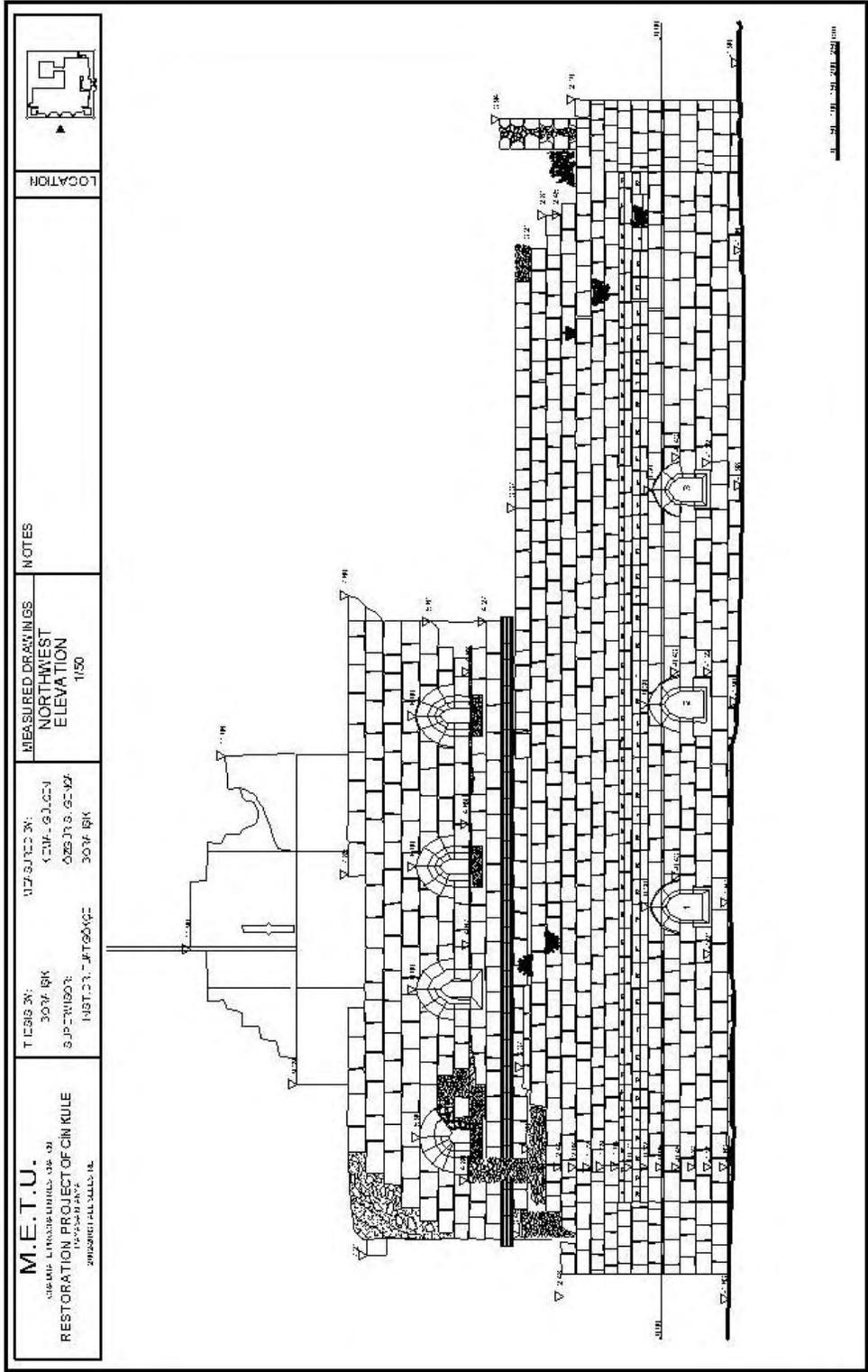


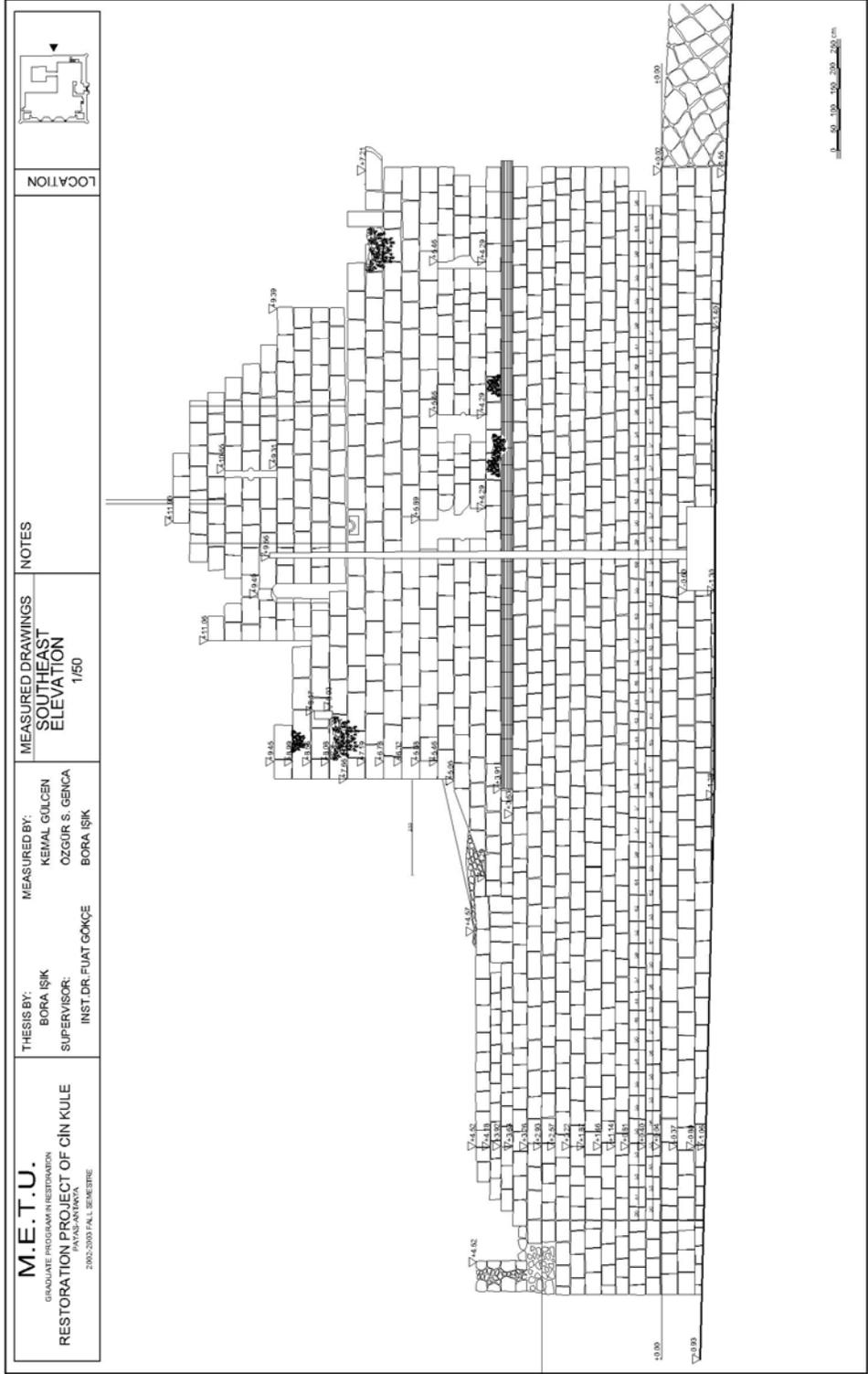
<p><b>M.E.T.U.</b> GRADUATE PROGRAM IN RESTORATION <b>RESTORATION PROJECT OF ÇIN KULE</b> 2002-2003 FALL SEMESTER</p>	<p>THESES BY: BORA İŞİK SUPERVISOR: INST.DR.FUAT GÖKÇE</p>	<p>MEASURED BY: KEVAL GÜLÇEN ÖZGÜR S. GENKA BORA İŞİK</p>	<p>MEASURED DRAWINGS SECTION E-E 1/50</p>	<p>NOTES</p>
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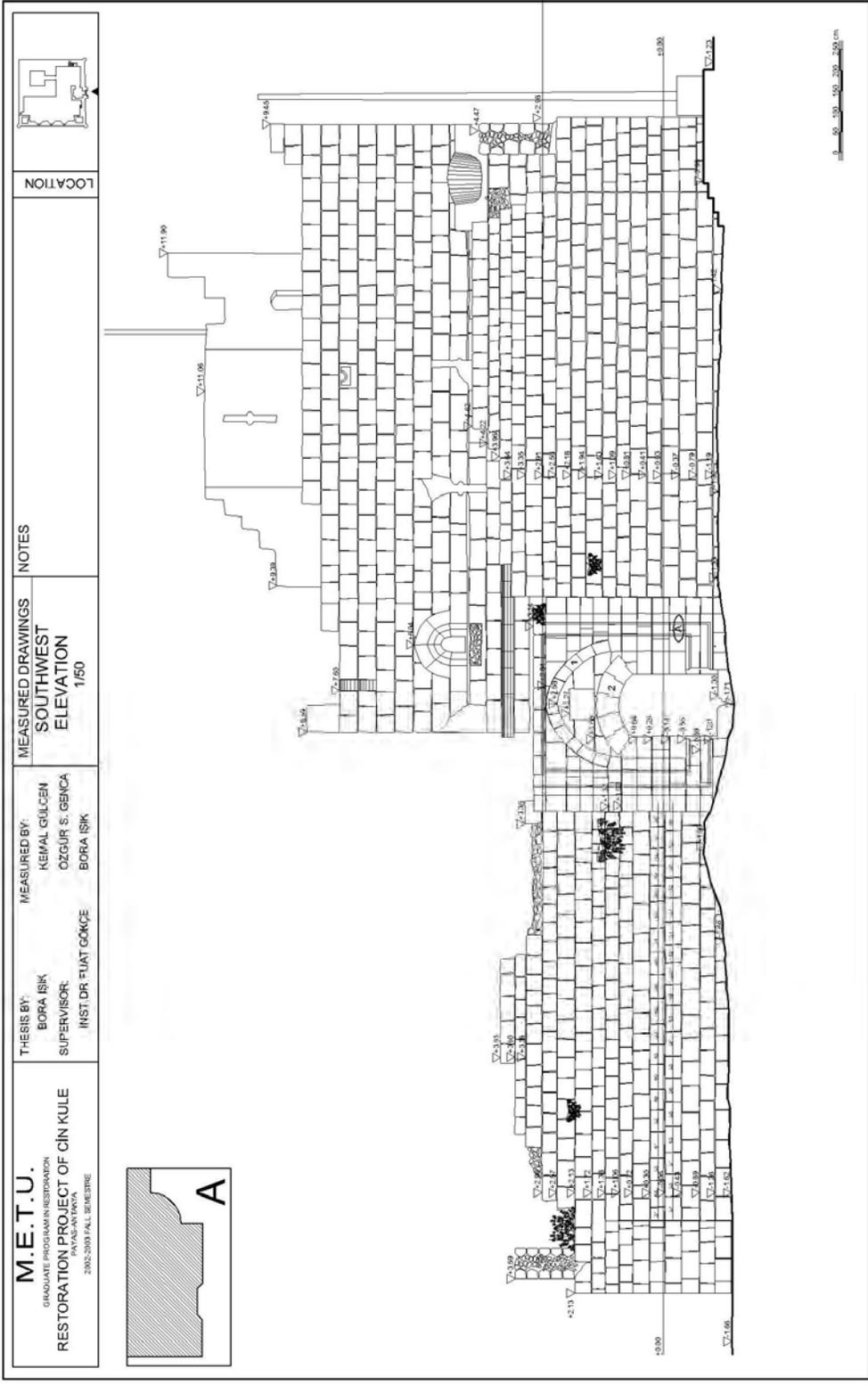




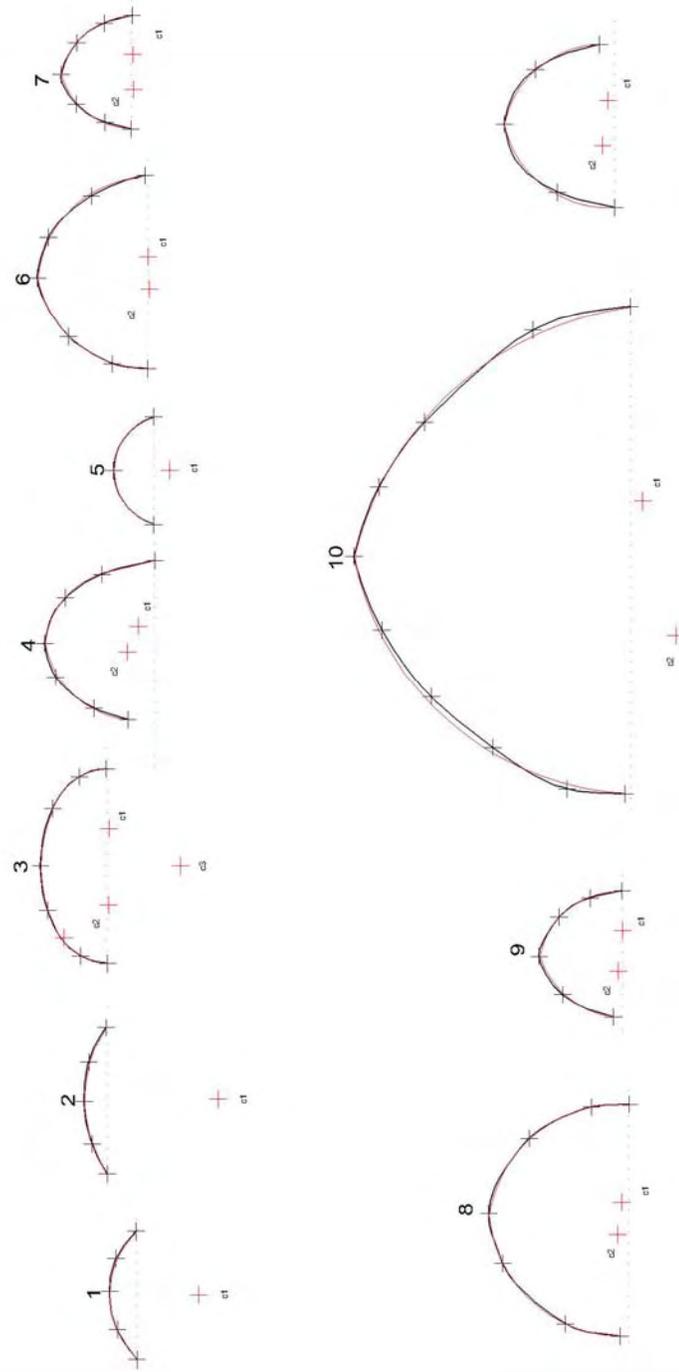








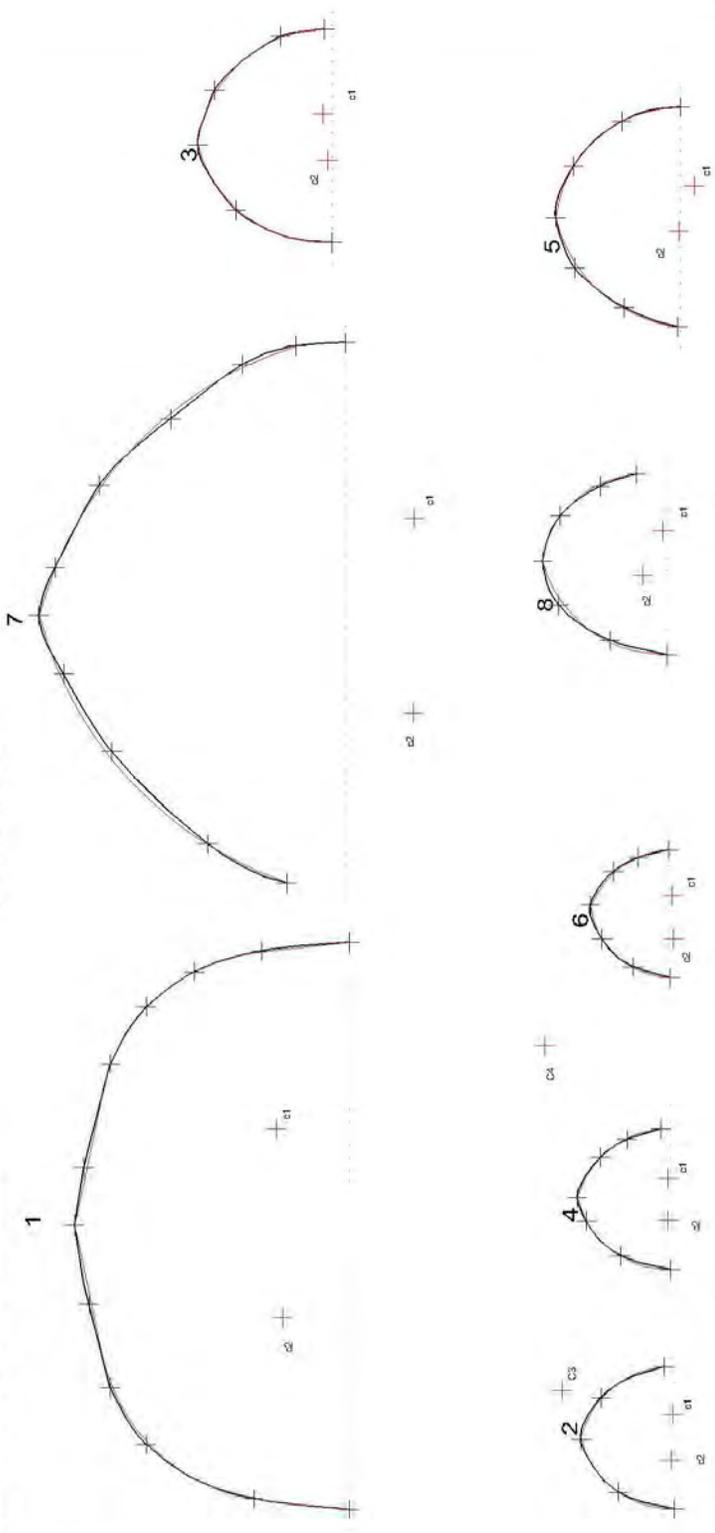
PROFILES OF THE ARCHES and VAULTS



0\_60\_100\_160200\_260 cm.

PROFILES OF THE ARCHES and VAULTS

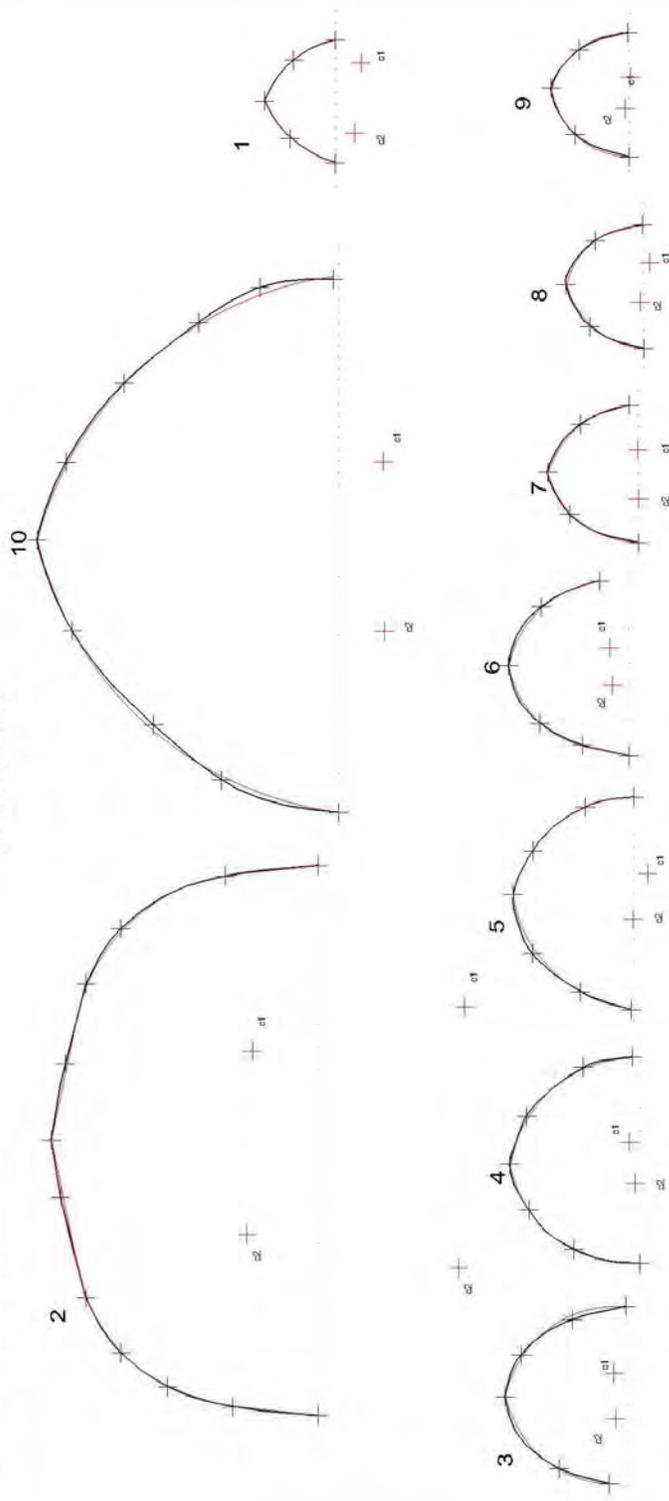
SECTION G-G



0 50 100 150 200 250 cm.

PROFILES OF THE ARCHES and VAULTS

SECTION A-A



0 50 100 150 200 250 cm.

## APPENDIX B

### GLOSSARY

- **Allure or Wall-walk:** passage behind the parapet of a castle wall
- **Arcading:** rows of arches supported on columns, free-standing or attached to a wall (blind arcade)
- **Arrow Loop:** A narrow vertical slit cut into a wall through which arrows could be fired from inside
- **Ashlar:** blocks of smooth, squared stone of any kind
- **Bailey or Ward:** defended courtyard within the walls of the castle
- **Ballista:** engine resembling a crossbow, used in hurling missiles or large arrows
- **Barbican:** an outwork or forward extension of a castle gateway
- **Barmkin:** Scottish term for defended courtyard of a castle, smaller than a ward or bailey
- **Bartizan:** overhanging corner turret
- **Bastion:** a small tower at the end of a curtain wall or in the middle of the outside wall
- **Battlement:** a narrow wall built along the outer edge of the wall walk to protect soldiers against attack
- **Belfry:** tall, movable wooden tower on wheels, used in sieges
- **Berm:** flat area between base of wall and edge of ditch or moat
- **Bore:** iron-tipped battering ram for attacking masonry
- **Castellation:** battlements, implying use as decoration
- **Concentric:** having two sets of walls, one inside the other
- **Corbel:** projecting stone (or timber) feature on a wall to support an overhanging parapet, platform, turret, etc.
- **Crenelation:** a notched battlement made up of alternate crenels (openings) and merlons (square sawteeth)

- **Curtain wall:** a castle wall enclosing a courtyard
- **Donjon:** the inner stronghold (keep) of a castle
- **Drawbridge:** a wooden bridge leading to a gateway, capable of being raised or lowered
- **Dungeon:** the jail, usually found in one of the towers
- **Embrasure:** the low segment of the alternating high and low segments of a battlement
- **Enceinte:** enclosure or courtyard
- **Escalade:** scaling of a castle wall
- **Forebuilding:** a projection in front of a keep or donjon, containing the stairs to the main entrance
- **Gate House:** the complex of towers, bridges, and barriers built to protect each entrance through a castle or town wall
- **Hoarding:** covered wooden gallery affixed to the top of the outside of a tower or curtain to defend the castle
- **Inner Ward or Inner Bailey:** open area in the center of a castle
- **Keep:** the inner stronghold of the castle
- **Loophole:** slit in wall for light, air, or shooting through
- **Machicolation:** a projection in the battlements of a wall with openings through which missiles could be dropped on besiegers
- **Mangonel:** stone-throwing machine worked by torsion, used as a siege weapon against castles
- **Merlon:** part of a battlement, the square "sawtooth" between crenels.dendan ların arasındaki boşluk
- **Meurtriere:** arrow loop, slit in battlement or wall to permit firing of arrows or for observation
- **Moat:** a deep trench usually filled with water that surrounded a castle
- **Motte:** an earthwork mound on which a castle was built
- **Oilette:** a round opening at the base of a loophole
- **Oubliette:** a dungeon reached by a trap door
- **Parapet:** protective wall at the top of a fortification, around the outer side of the wall
- **Pit prison:** underground cell, with access through hatch in ceiling only

- **Portcullis:** vertical sliding wooden grille shod with iron suspended in front of a gateway, let down to protect the gate
- **Postern Gate:** secondary gate or door
- **Putlog Hole:** a hole intentionally left in the surface of a wall for insertion of a horizontal pole
- **Ram:** battering ram
- **Revet:** face with a layer of stone, stone slabs etc., for more strength. Some earth mottes were revetted with stone.
- **Sapping:** undermining, as of a castle wall
- **Springald:** war engine of the catapult type, employing tension
- **Trebuchet:** war engine developed in the Middle Ages employing counterpoise
- **Turning Bridge:** a drawbridge that pivoted in the middle
- **Turret:** a small tower rising above and resting on one of the main towers, usually used as a look out point
- **Wall Walk:** the area along the tops of the walls from which soldiers could defend the castle.

## APPENDIX C

### LIST OF THE SUBMITTED MATERIAL OF THE THESIS

- **Text:** 244 pages.
- **Measured Survey Drawings:** Opaque plotter printout, uncolored- 21 sheets. (Scale 1/50, 1/20)
- **Typology of Architectural Elements:** Opaque plotter printout, uncolored- 1 sheet.
- **Types of Arch Profiles:** Opaque plotter printout, colored- 1 sheet (Scale 1/50).
- **Material Analysis:** Opaque plotter printout, colored- 15 sheets. (Scale 1/50)
- **Construction Techniques:** Opaque plotter printout, colored- 17 sheets. (Scale 1/50)
- **Material Deterioration Analysis:** Opaque plotter printout, colored- 12 sheets. (Scale 1/50)
- **Changes in the Building:** Opaque plotter printout, colored- 12 sheets. (Scale 1/50)
- **Comparative Study:** Opaque plotter printout, uncolored- 17 sheets. (Scale 1/50)
- **Restitution Project:** Opaque plotter printout, colored- 25 sheets. (Scale 1/50)
- **Analysis of the Environment and Spaces of the Building:** Opaque plotter printout, colored- 6 sheets. (Scale 1/50)
- **Restoration Project:** Opaque plotter printout, uncolored- 8 sheets. (Scale 1/50)
- **Photograph Album**