

Damage analysis of “Süleymanpa a” case study bath structure:

Table 7.7: Damage analysis of “Süleymanpa a” case study bath structure, “Cell A”






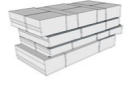




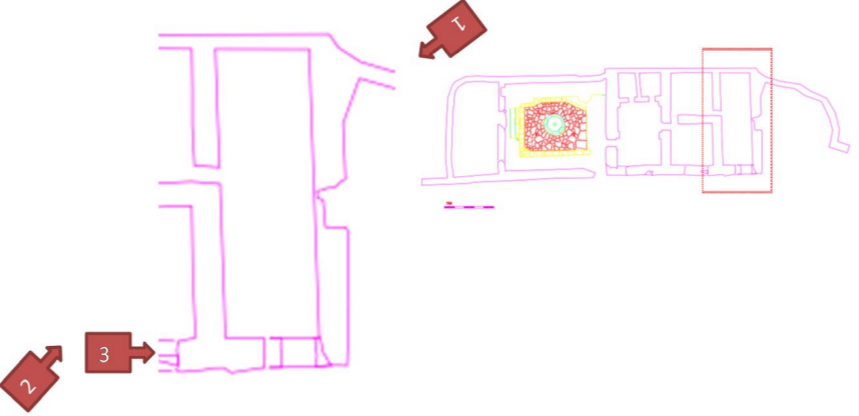
Damage Analysis of "Süleymanpaşa Bath"												
Damaged Part Number	Damaged Parts of Case Studies	Quality of Masonry	Construction Characteristics				Cracking and Instability					
			Structural Discontinuities	Degradation of structural elements	Conditions	General Description	Physical Damage	Geometrical Modifications	Loss of verticality	General Description		
Cell "A"		Vertical A B C	Fig: All 	Fig: All 	Conditions 	Between the masonry walls there is a consistency of the structure. The masonry structure is three leafed.	Fig: 2,3 	Geometrical Modifications	Loss of verticality	In figure 1,2,3: The most of the structure is collapsed. However some parts of the structure is still standing. Cell "A" is part of this structures. The masonry walls were deteriorated highly.		
	Out of Plane A B C	Fig: 2,3 									Fig: All 	Fig: 2 
	In the Plane A B C	In detail cell "A"; masonry structure is composed with various sizes and irregular shapes of stones. On the sections of the masonry wall, small pebbles and stones could be seen. The fabric is chotic. It was not respected to the horizontal rows or offset the vertical joints. Diatone stones are not used inside of the masonry stone wall.										
												
												

Table 7.8: Damage analysis of "Süleymanpa a" case study bath structure, "Cell B"








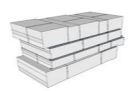

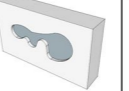
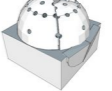

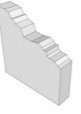

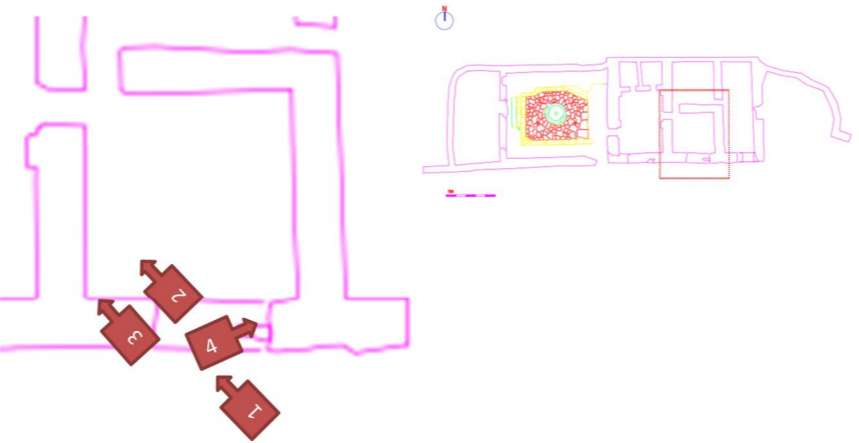
Damage Analysis of "Süleymanpaşa Bath"										
Damaged Part Number	Damaged Parts of Case Studies	Quality of Masonry		Construction Characteristics			Cracking and Instability			
				Structural Discontinuities	Degradation of structural elements	Conditions	General Description	Physical Damage	Geometrical Modifications	Loss of verticality
Cell "B"		Vertical A B C	Qualitative methods of for evaluation is rated, "C" in vertical, out of plane and in plane actions.  In detail cell "B"; masonry structure is composed with various sizes and irregular shapes of stones. On the sections of the masonry wall, small pebbles and stones could be seen. The fabric is chotic. It was not respected to the horizontal rows or offset the vertical joints. Diatone stones are not used inside of the masonry stone wall.	Fig: All 	Fig: All 		Between the masonry walls there is a consistency of the structure. The masonry walls of the cell"B" is constructed by stones. The masonry structure is three leafed. Transitional elements of the structure is made up of brick material.	Fig: 3,4 	Fig: 3 	In figure 1,2,3: The closure of the cell"B" is broken down. Top of the masonry walls is deteriorated and partly collapsed. The top of the wall structures is not on the plumb. There are some cracks on the top of these walls. In figure 4: The section of the masonry wallis seen. The adhesion of the stones and the mortar is very weak. The seperation of the leaves of the masonry wall is started.
		Out of Plane A B C		Fig: All 	Fig: All 	Fig: All 		Fig: All 		
		In the Plane A B C		Fig: All 						
										

Table 7.9: Damage analysis of "Süleymanpa a" case study bath structure, "Cell C"

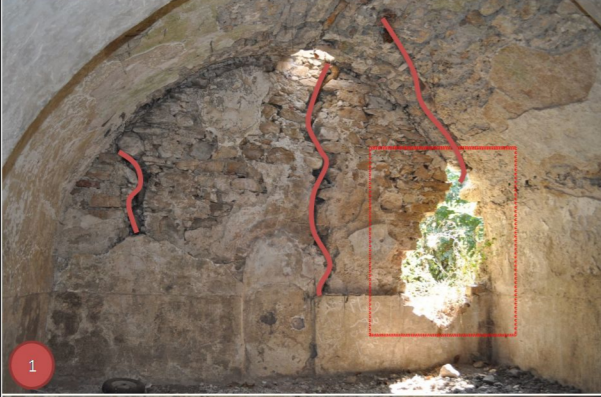

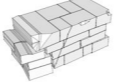



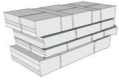






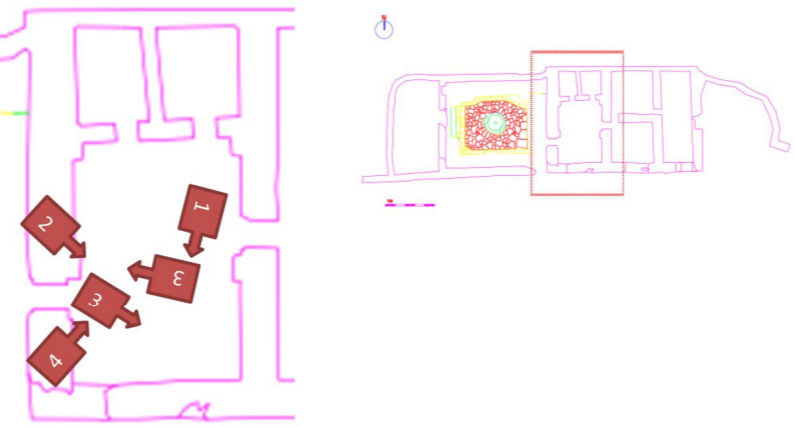
Damage Analysis of "Süleymanpaşa Bath"																		
Damaged Part Number	Damaged Parts of Case Studies	Quality of Masonry	Construction Characteristics				Cracking and Instability											
			Structural Discontinuities	Degradation of structural elements	Conditions	General Description	Physical Damage	Geometrical Modifications	Loss of verticality	General Description								
Cell "C"		Vertical A B C	Fig: All 	Fig: All 	Fig: All 	Between the masonry walls there is a consistency of the structure. The masonry walls of the is constructed by stones. The masonry structure is three leafed. Transitional elements of the structure is made up of brick material. The dome rested on the vault structure and the vault structure is supported by masonry walls and the brick arches.	Fig: All 			In figure 1,2,3: There are big cracks on the structure cell "C". Side wall of the structure is damaged highly. The cracks is started from the wall and continue to the vault. Part of the wall was collapsed. The brick arches which were supporting the vault is also damaged. In figure 4,5: There are some localized damages on the cell. The walls partly damaged, the slab structure is partly collapsed.								
		Out of Plane A B C									Fig: 2 	Fig: 1,3 	Fig: 1,2,3,4 					
		In the Plane A B C  In detail cell "C"; masonry structure is composed with various sizes and irregular shapes of stones. On the sections of the masonry wall, small pebbles and stones could be seen. The fabric is chotic. It was not respected to the horizontal rows or offset the vertical joints. Diatone stones are not used inside of the masonry stone wall.									Fig: 1 							
																		
																		
																		

Table 7.10: Damage analysis of “Süleymanpa a” case study bath structure, “Cell D, C” elevation



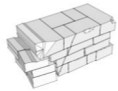

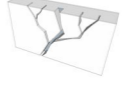
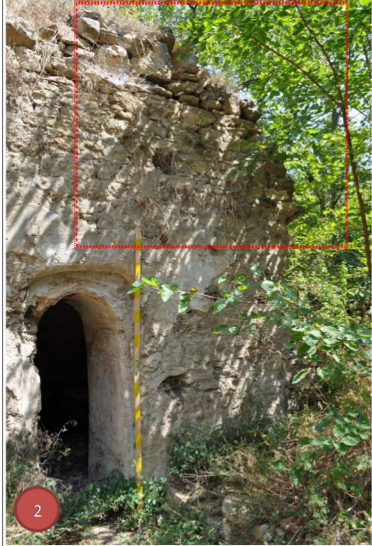
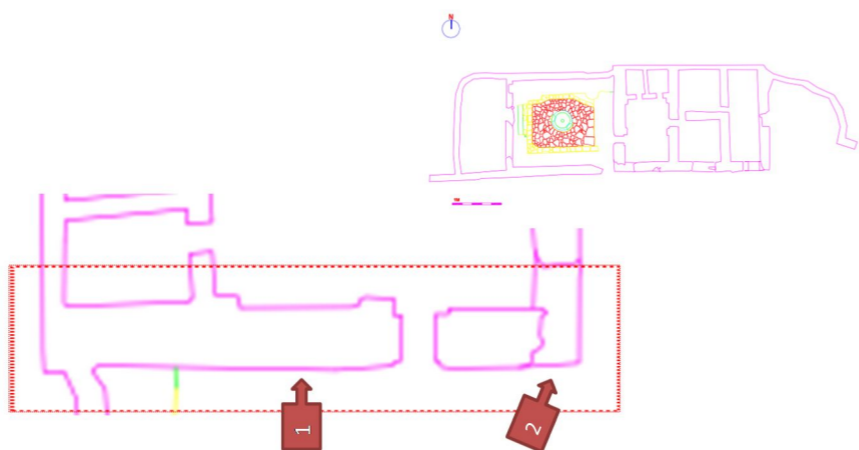







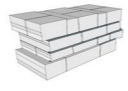


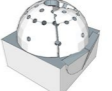

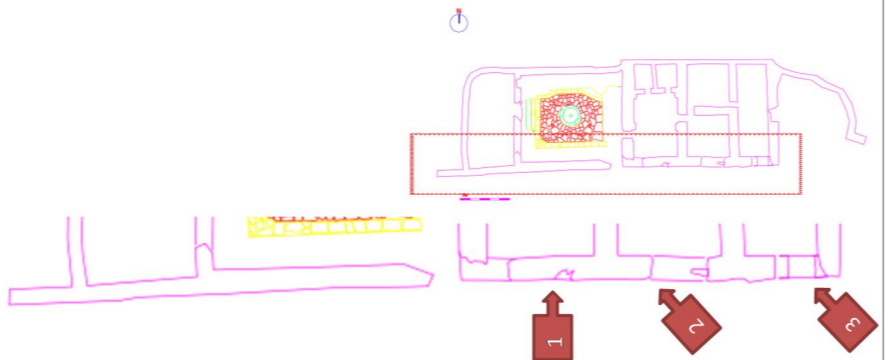

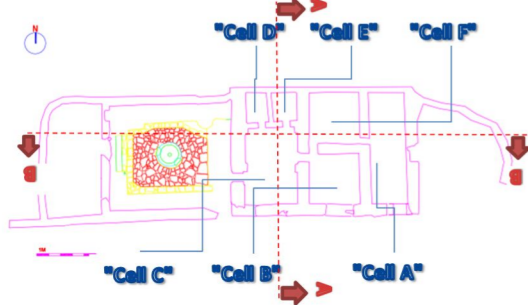
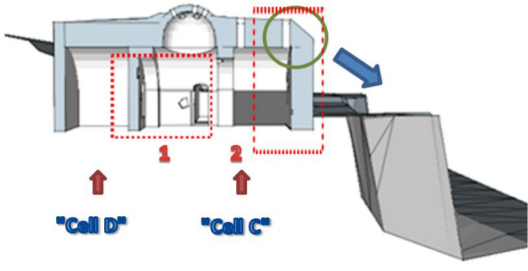
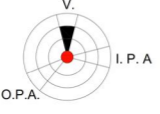

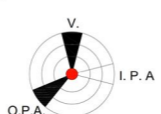
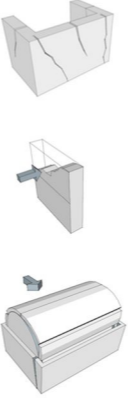
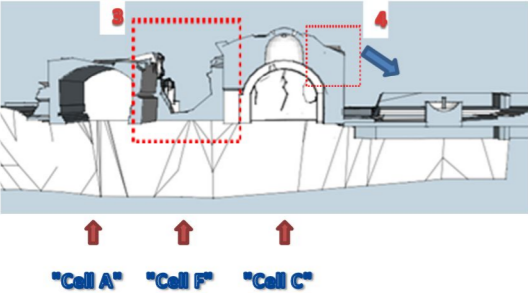
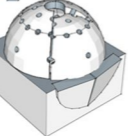
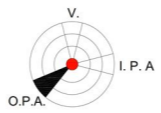

Damage Analysis of "Süleymanpaşa Bath"										
Damaged Part Number	Damaged Parts of Case Studies	Quality of Masonry	Construction Characteristics				Cracking and Instability			
			Structural Discontinuities	Degradation of structural elements	Conditions	General Description	Physical Damage	Geometrical Modifications	Loss of verticality	General Description
Cell "D,C" Elevation		<p>Vertical</p> <p>A</p> <p>B</p> <p>(C)</p>	<p>Fig: All</p> 	<p>Fig: 1</p> 		<p>Between the masonry walls there is a consistency of the structure. The masonry walls of the is constructed by stones. The masonry structure is three leafed. Transitional elements of the structure is made up of brick material. The dome rested on the vault structure and the vault structure is supported by masonry walls and the brick arches.</p>	<p>Fig: All</p> 			<p>In figure 1: On the elevation of "D,C" the joints of the stone masonry is deteriorated. The top of the masonry structure was damaged highly. There is no adhesion between the stone and mortar. In figure 2: The corner of the masonry wall is partly collapsed.</p>
		<p>Out of Plane</p> <p>A</p> <p>B</p> <p>(C)</p>								
	<p>In the Plane</p> <p>A</p> <p>B</p> <p>(C)</p>	<p>In detail cell elevation "D,C"; masonry structure is composed with various sizes and irregular shapes of stones. On the sections of the masonry wall, small pebbles and stones could be seen. The fabric is chotic. It was not respected to the horizontal rows or offset the vertical joints. Diatone stones are not used inside of the masonry stone wall.</p>								

Table 7.11: Damage analysis of “Süleymanpa a” case study bath structure, “Cell C, B, A” elevation

Damage Analysis of "Süleymanpaşa Bath"											
Damaged Part Number	Damaged Parts of Case Studies	Quality of Masonry		Construction Characteristics			Cracking and Instability				
				Structural Discontinuities	Degradation of structural elements	Conditions	General Description	Physical Damage	Geometrical Modifications	Loss of verticality	General Description
Cell "C,B,A" Elevation		Vertical A B C	Qualitative methods of for evaluation is rated, "C" in vertical, out of plane and in plane actions.  In detail cell elevation "C,B,A"; masonry structure is composed with various sizes and irregular shapes of stones. On the sections of the masonry wall, small pebbles and stones could be seen. The fabric is chotic. It was not respected to the horizontal rows or offset the vertical joints. Diatone stones are not used inside of the masonry stone wall.	Fig: All 	Fig: All 		Between the masonry walls there is a consistency of the structure. The masonry walls of the is constructed by stones. The masonry structure is three leafed. Transitional elements of the structure is made up of brick material.	Fig: 2 	Fig: 2 		In figure 1: On the elevation of "C,B,A" the joints of the stone masonry is deteriorated. The top of the masonry structure was damaged highly. There is no adhesion between the stone and mortar. In figure 2:The part of the wall is collapsed. The wall is out of plumb. In figure 3: Deteriorated stones and joints were seen on the figure.
		Out of Plane A B C		Fig: 1 	Fig: All 	Fig: 2 		Fig: 2 			
		In the Plane A B C						Fig: 2 			

Collapsed analysis of “Süleymanpa a” case study bath structure:

Table 7.12: Collapsed analysis of “Süleymanpa a” case study bath structure, Section A-A

Collapse Analysis of Critical Damaged Parts of "Süleymanpaşa" bath						
<p>Plan and sections</p> 		<p>Details</p>				
<p>Section A-A</p> 		<p>Detail 1</p>		<p>Detail 2</p>		
<p>Symbolic Description of Action Analysis</p>		<p>Symbolic Collapse Mechanism</p>	<p>Description of Collapse Analysis</p>	<p>Symbolic Description of Action Analysis</p>	<p>Symbolic Collapse Mechanism</p>	<p>Description of Collapse Analysis</p>
<p>Middle risk of collapse if this element is under vertical actions.</p> 			<p>Detail 1; Inside of the cell, on the side masonry walls damaged by users. Especially the damage happen near the door entrance could be starting mechanism for the collapse of the door entrance and also the stability of the structure. The crack on the door entrance is big. However it is on the jamb of the door opening. The possible collapse mechanism shown in symbolic description.</p>	<p>Very high risk of collapse if this element is under vertical and out of plane actions.</p> 		<p>Detail 2; The outside corner of the masonry wall, stones and mortar adhesion is very weak. Some pieces are broken down. On the other hand big cracks are divided inside of the wall surface. On base corner of the masonry wall, partial part is collapsed. The cracks which are started inside of the wall surface are continued to the vault structure. The possible symbolic collapse mechanism is shown.</p>
<p>Section B-B</p> 		<p>Detail 3</p>		<p>Detail 4</p>		
<p>Symbolic Description of Action Analysis</p>		<p>Symbolic Collapse Mechanism</p>	<p>Description of Collapse Analysis</p>	<p>Symbolic Description of Action Analysis</p>	<p>Symbolic Collapse Mechanism</p>	<p>Description of Collapse Analysis</p>
<p>No risk of collapse.</p>			<p>Detail 3; The closure and the part of the surrounding walls of the structure are collapsed. Is assumed that the front wall of the structure is collapsed according to the collapsed mechanism of the dome. The emptiness of the structure will affected the stability of "Cell A" and "Cell C".</p>	<p>Very high risk of collapse if this element is under out of plane actions.</p> 		<p>Detail 6; The corraption out side of the masonry wall, lose of adhesion of the stone and the mortar and the high thickness plantation or soil on the upper dome made the structure unstable for the out of plane actions.</p>