

ANNEX 1 - DESCRIPTIONS & SPECIFICATIONS

Remarks:

The contractor will have 1 week to mobilise and 2 weeks to implement the activities.

All health safety elements must be followed and implemented strictly.

Contractor will have a site supervisor during the activities.

The site will be used by the contractor for the project activities only:

- Propping up of the apsis arch inside the church
- Filling the voids on apsis and east walls with wooden frames and osb boards

Nothing else unless instructed in writing will be implemented.

1-Condition Assessment

I-Description :

Ag. Georgios Church is located in Ardana/Ardahan, Cyprus. The apses area where heavy deteriorations are seen is constructed with two leaved wall system. The internal wall is curved and the external wall is polygonal. Main arch before the half dome is 4 meters in diameter. The half dome is 2.7m meters in diameter and the thickness of the walls vary from 1 meter to 70 cm.

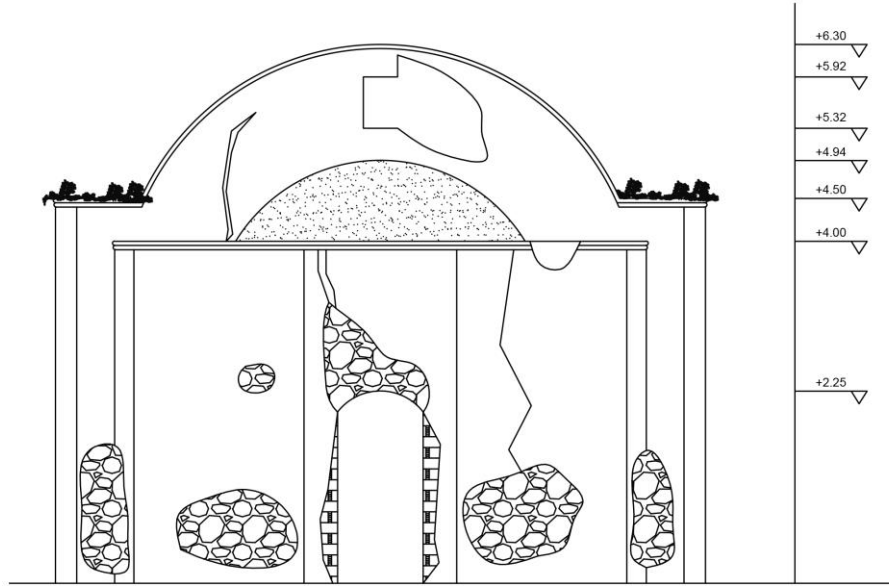


Figure 1 East Elevation

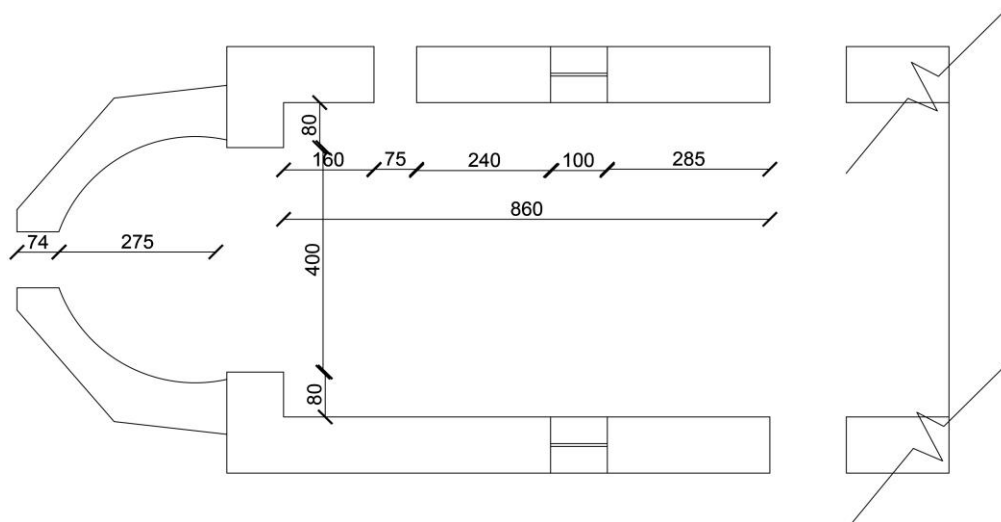
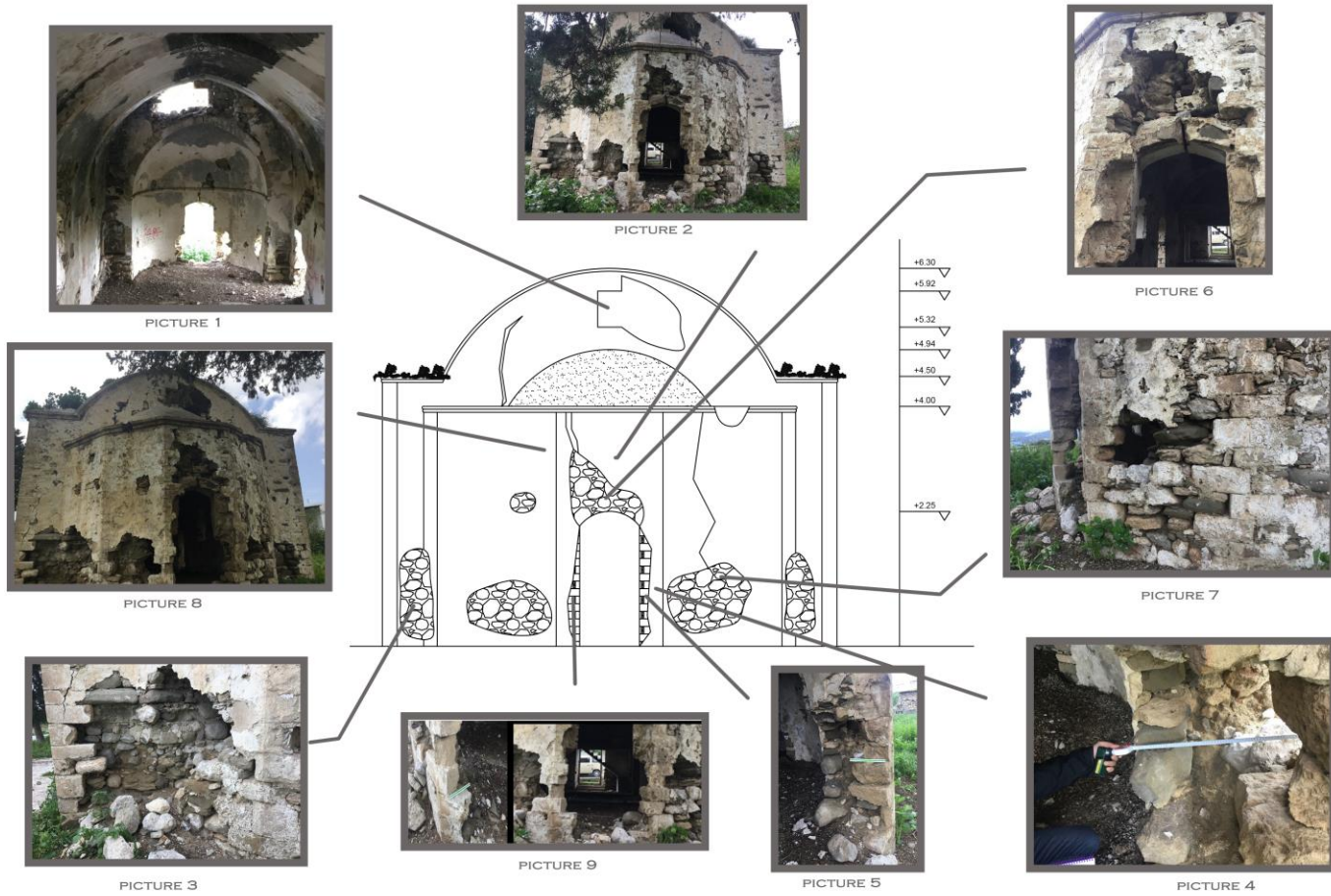


Figure 2 Plan view-Apses Area

The construction materials are local cut limestone, rounded river stones, infill material consisting of earth and stone fragments, and past plaster repairs. Internal stones and the infill stones are rounded “river rocks” with minimal friction and the external stones are cut limestone. The infill material contains earth and stone fragments.

II- Assessment:





Picture 1

The arch of the apses has a dislocated key stone and deformation in shape especially on the right side of it when looking from west.

There is extensive material loss from the infill material above the arch and the half dome.



Picture 2

Extensive stone and infill material loss are present 4 different locations on the apses wall and 2 locations on the eastern wall of the main church.



Picture 3

Stone and infill material loss seen at South side of the eastern wall and the south wall of the apses









Picture 4

Complete loss of infill material between the two leaves of the apses wall. The internal wall is curved and the external wall is polygonal. The infill material contains earth and stone fragments.



Picture 5

Internal stones and the infill stones are rounded "river rocks" with minimal friction and the external stones are cut limestone. The infill material contains earth and stone fragments.

		<p>Bottom part of the Eastern apses window is completely collapsed. External wall stones and infill material loss is present above the keystones of the Eastern window</p>
	<p>Picture 6</p>	<p>Stone and infill material loss seen at North side of the eastern wall and the north wall of the apses.</p>
	<p>Picture 7</p>	<p>Critical stone deterioration (approximately 50%) is present on the south and east of the opening under the eastern window.</p>
		<p>Picture 8</p>
	<p>Picture 9</p>	

Conclusion:

The apses area of the church exhibits several structural problems that need immediate supporting to avoid any more damage before any restoration work is undertaken. The supports will be constructed in two styles; namely prop supports and wooden infill with mortar.

These are supporting by iron structural elements and filling the voids by wood and mortar as temporary measures until further action is taken.

2- Proposal:

I. Support and infill works:

A support system is proposed for the gap under the arch and under Eastern window. Ring lock scaffold system with supports will be used as indicated in the drawings. For the diagonal supports cuff system complying with standard EN74-1 10BM have to be used. All scaffold set up and materials used have to comply with EN 12811. Connection details of the supports and scaffolds are also provided.

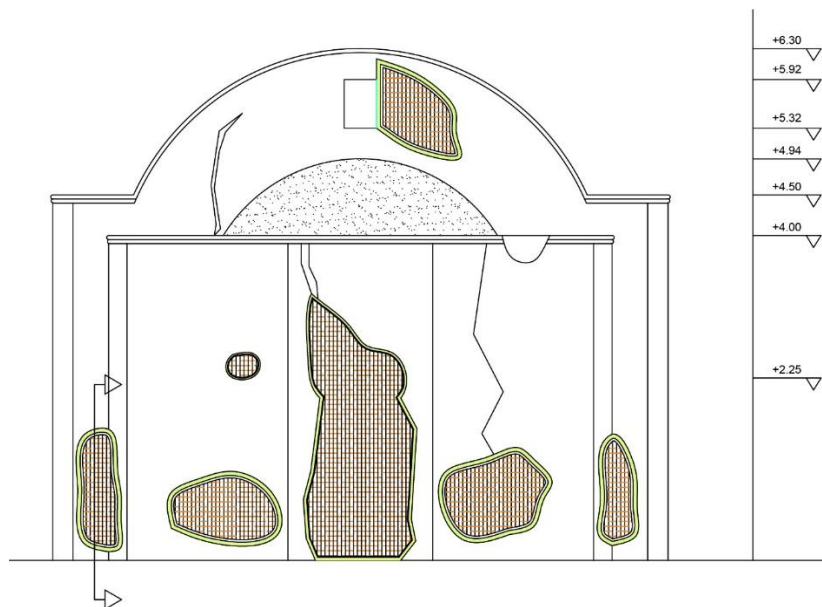


Figure 3 South Elevation with supports and infill work

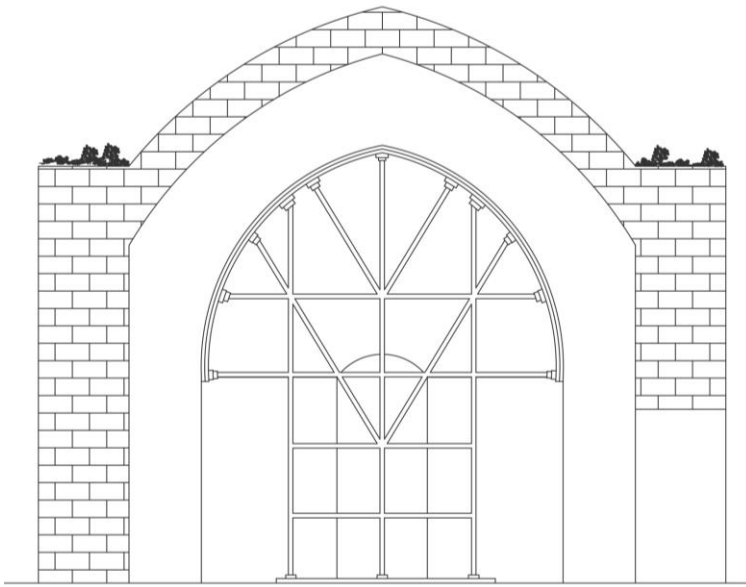


Figure 4 Cross Section looking east-with arch supports

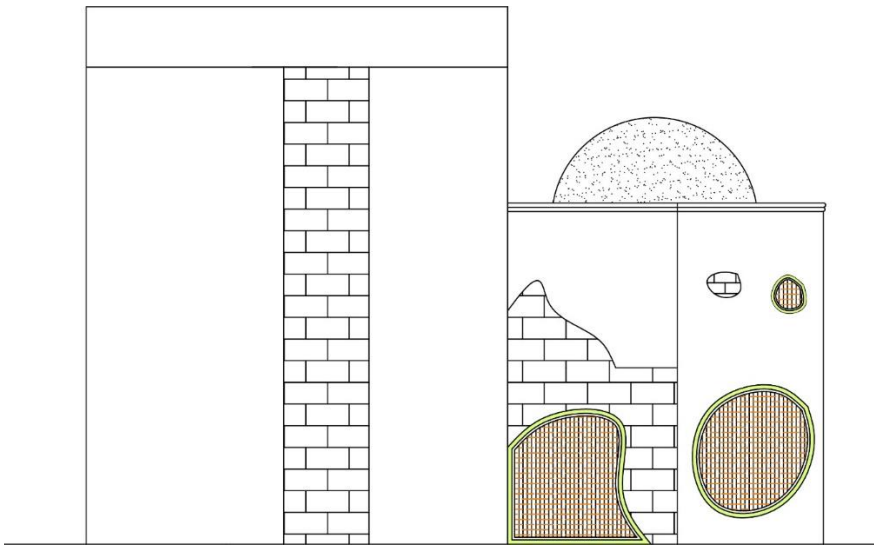
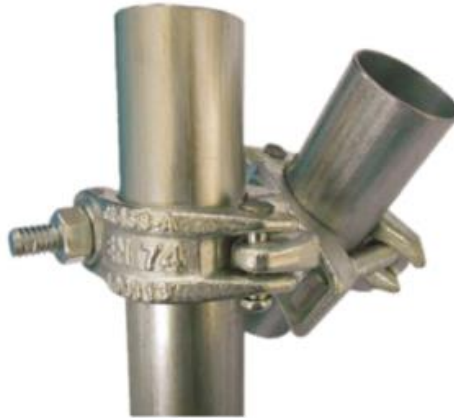
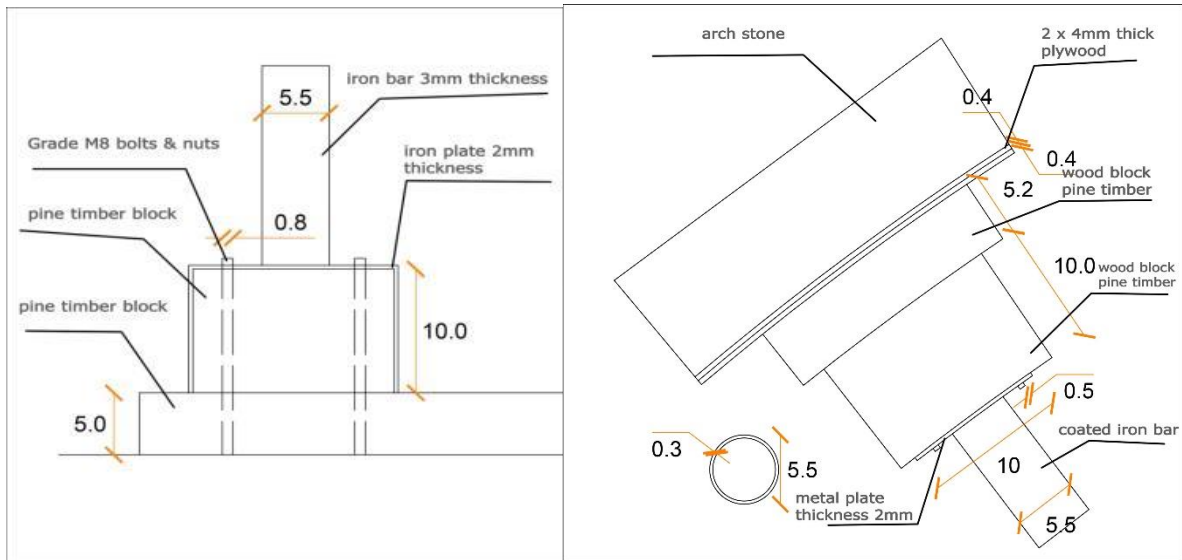


Figure 5 South Elevation-infill works



Description of Works:

No:	Work Item	Description
1	Site mobilization	<p>Mobilization consists of preparatory work and operations necessary for the movement of personnel, equipment, supplies, scaffolds and health & safety elements and incidentals to the project site.</p> <p>Employers liability insurance to the amount of Euro 25,000 for the duration of the works.</p> <p>Once the works are completed the site will be cleaned and contractor shall remove all items.</p>
2	Support and Scaffold setup and its material treatment	<p><u>The Arch of Apsis</u></p> <p>The arch of the apses has a dislocated keystone and deformation in shape especially on the right side of it when looking from west. There is extensive material loss from the infill material above the arch and the half dome.</p> <p>In this area; iron support systems will be placed to stabilize and prop the arch. Wooden board/s will be used to distribute load to the ground from the props.</p> <p>Ring lock scaffold system will be used as indicated in the drawings. For the diagonal supports coupler system complying with standard EN74-1 A have to be used.</p> <p>All scaffold set up and materials used have to comply with EN 12811.</p>
3	Infill Works	<p><u>Apsis and Eastern Walls</u></p> <p>Extensive stone and infill material loss are present 4 different locations on the apsis wall and 2 locations on the eastern wall of the main church these locations are indicated in proposal drawings. The discontinuity of the walls in shown areas disrupt the uniform load transfer. In order to transfer load to the ground, the voids will be filled with wooden elements.</p> <p>Stones lying under the voids and interfering with the installation of base board will be removed and piled next to the place.</p> <p>Wooden infill will be made with verticals of 4x4inches Romanian soft wood painted with dark coloured sylvanol, at every 20cm. Verticals will be connected to wooden base boards on the ground.</p> <p>Struts to connect the verticals will be 4x2 and 2x2 Romanian softwood and painted again with dark coloured sylvanol. Struts can be put at every 30cm.</p> <p>On both sides (inside and outside) 6mm OSB will be affixed with nails. No treatment of the OSB will be required.</p> <p>Nails must be galvanized.</p> <p>If needed, interface of verticals with the walls will be filled with lime mortar. No portland cement will be used.</p>

Photo Album



