Kurdistan Region - Iraq
University of Cihan – Sulaymaniyah
Department of Architectural Engineering

Stitching Cracks in a Historical Buildings

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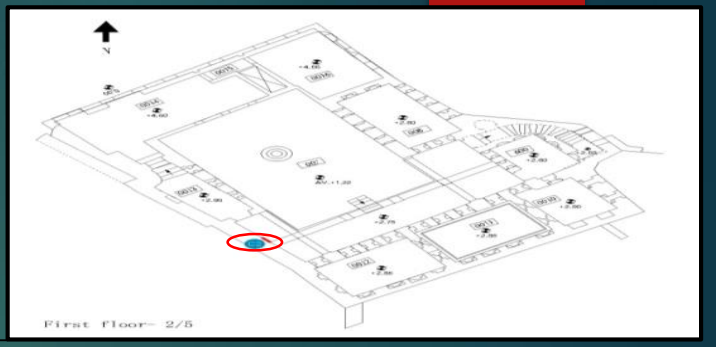
CORSE BOOK – YEAR: BUILDING REHABILITATION- 5TH STAGE

ACADEMIC YEAR: 2022-2023

Stitching Cracks

-Clearing out the damaged bricks along the crack.
-Placing horizontal wooden joists 1 m length at every 1 m height inside the cracked brick wall.
(The wooden joists are treated against termite and insects).
-Rebuilding the crack area by brick and lime mortar;
(1 lime:1 sand: 0.75 stone dust)



Crack No. C2

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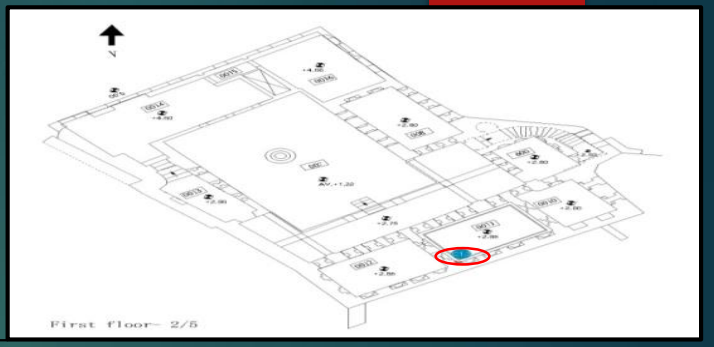
Stitching Cracks

-Clearing out the damaged bricks along the crack.
-Placing horizontal wooden joists 1 m length at every 1 m height inside the cracked brick wall. (The wooden joists are treated against termite and insects).
-Rebuilding the crack area by brick and lime mortar;
(1 lime:1 sand: 0.75 stone dust)



Crack No. C13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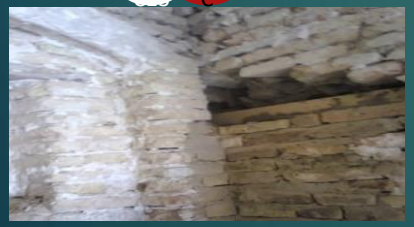
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Stitching Cracks

-Clearing out the damaged bricks along the crack.
-Placing horizontal wooden joists 1 m length at every 1 m height inside the cracked brick wall.
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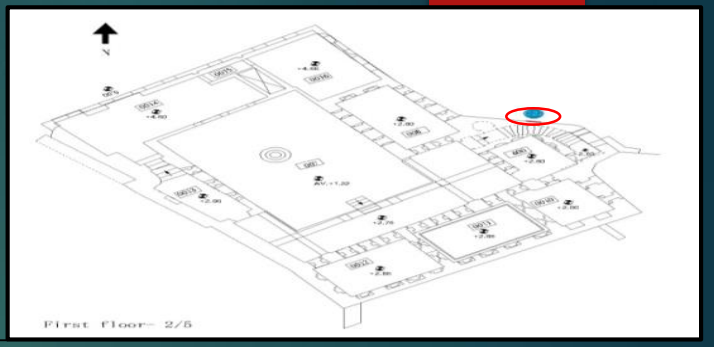
-Rebuilding the crack area by brick and lime mortar;
(1 lime:1 sand: 0.75 stone dust)



Crack No. C22

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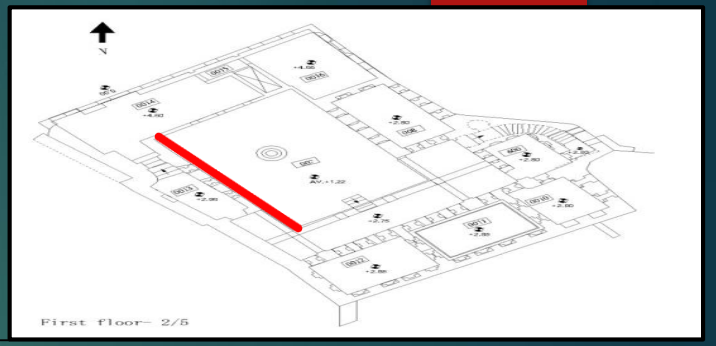
Repairing Brick Wall

-Repairing the brick wall by replacing the detiorated brick with new bricks using the lime mortar :
(1 lime:1 sand: 0.75 stone dust)
-Inserting treated wooden joist for consolidating
-Cleaning the brick surface.



Courtyard Wall (North East Façade)

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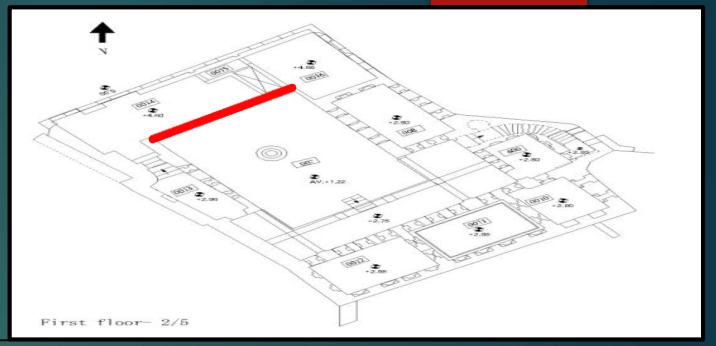
Repairing Brick Wall

-Repairing the brick wall by replacing the deteriorated brick with new bricks using the lime mortar mixture :
(1 lime:1 sand: 0.75 stone dust)
-Inserting treated wooden joist for consolidating
-Cleaning the brick surface.



Courtyard Wall (South East Façade)

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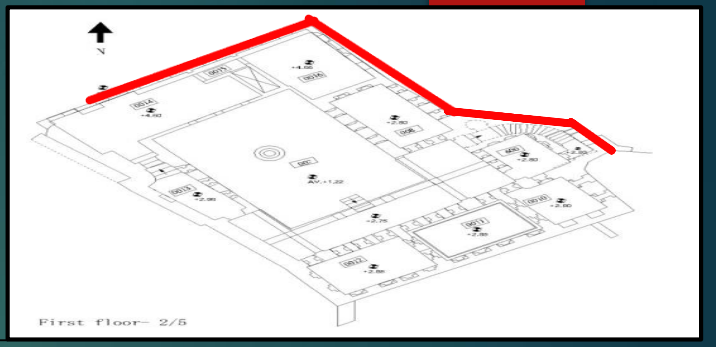
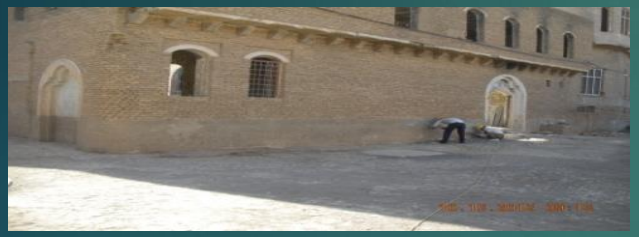
Repairing Brick Wall

-Removing cement plaster from the lower part of the façade wall
-Repairing the brick wall by replacing the deteriorated brick with new bricks using the lime mortar:
(1 lime:1 sand: 0.75 stone dust)
-Cleaning the brick surface.



Front & Side Façade(North West & North East Façade)



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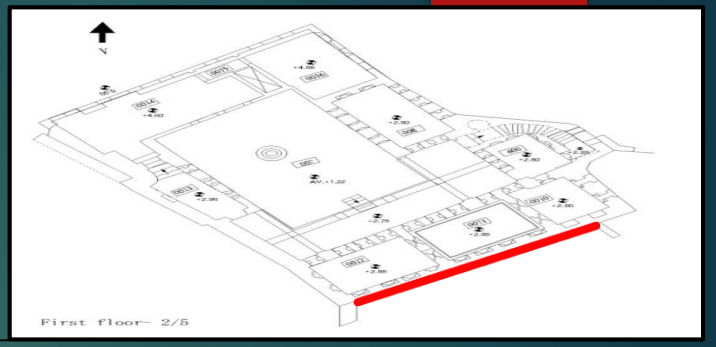
Repairing Brick Wall

-Removing cement plaster.
-Preparation and shoring
-Repairing the brick wall by replacing the detreated brick with new bricks using the lime mortar:
(1 lime:1 sand: 0.75 stone dust)
-Cleaning the brick surface.



Back Façade (South East Façade)

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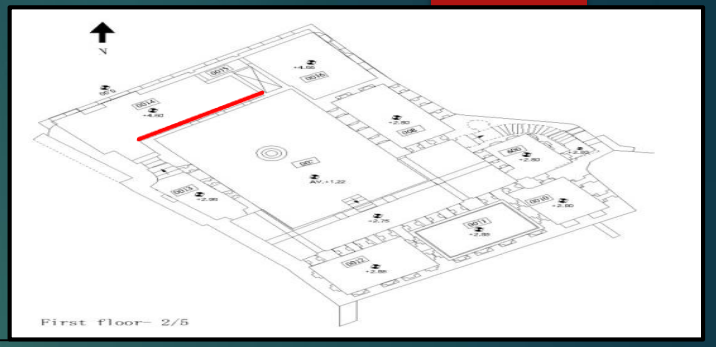
Retaining Wall

-Building a retaining wall along the wall for consolidating the structure with bricks and lime mortar (1 lime:1 sand: 0.75 stone dust)
-Connecting the two walls by using treated wooden joists.



Inner Retaining Wall

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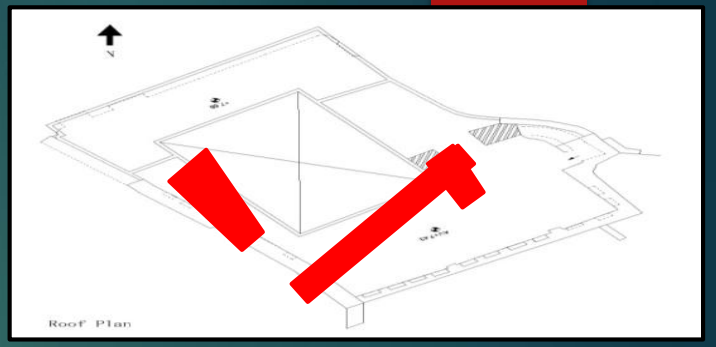
Repairing Damaged Ceiling

1-Dissmatiling the damaged part of the roof .
2-Placing 5 inch **I** section beam at every 70 cm.
3-Building the jack arches with brick and gypsum.



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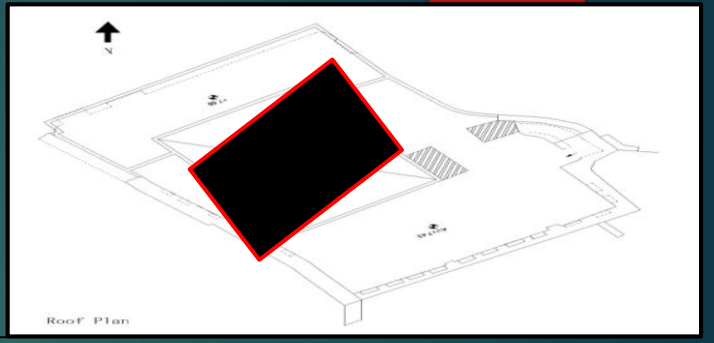
Courtyard Iron Roof

-Dismantling the deteoraited Iron roof and placing a new steel structure roof, consisted of Iron girders, aluminum sections, laminate thickness 10mm.



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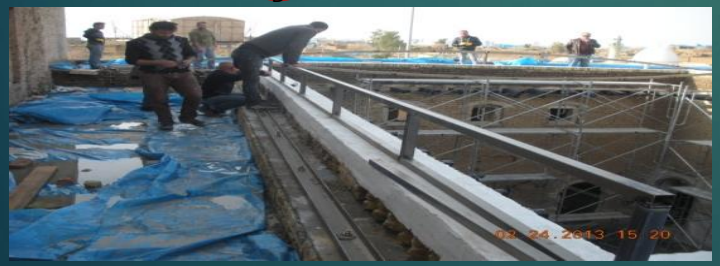

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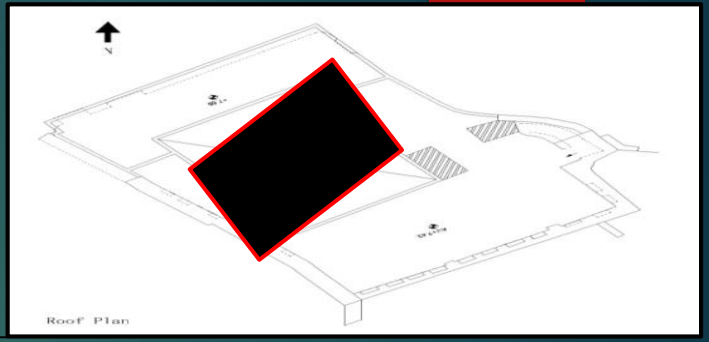
Courtyard Iron Roof

-Dismantling the deteriorated Iron Roof and placing a new steel structure roof, Consisted of Iron Girders, Aluminum sections, poly carbonate plastic sheets .



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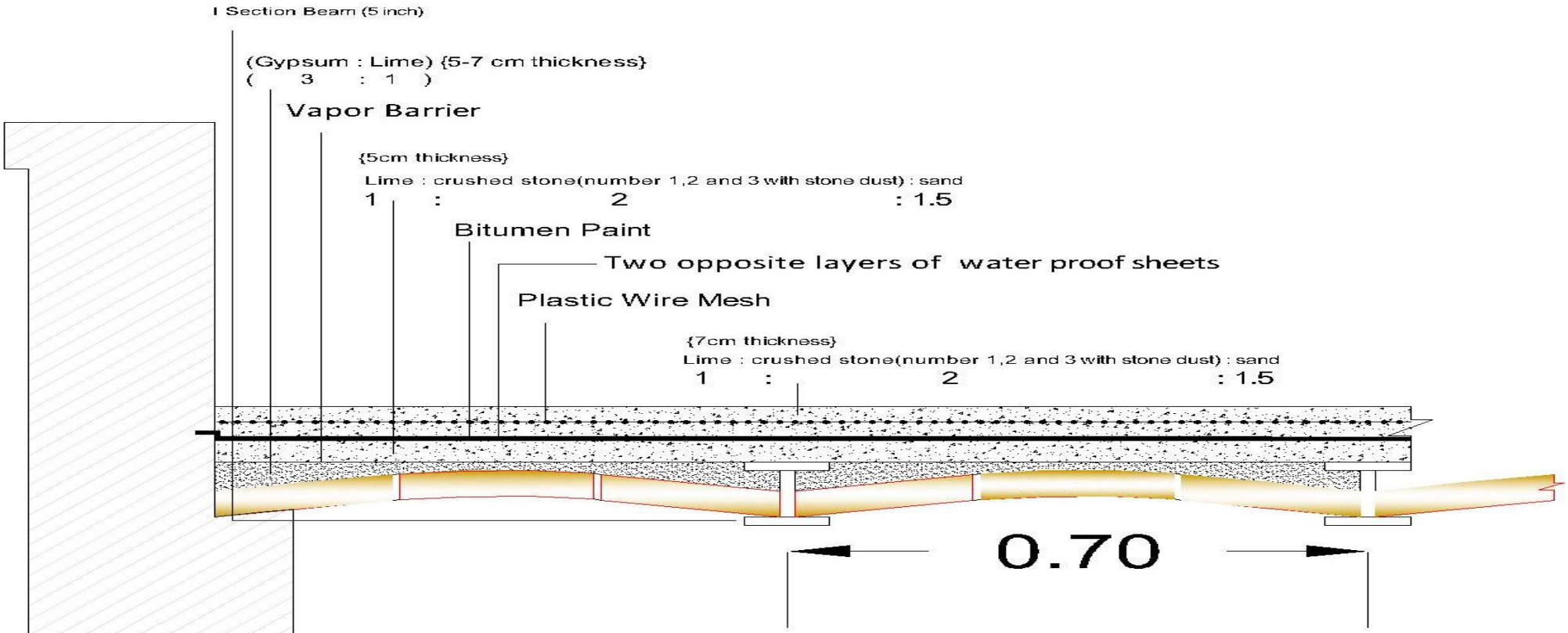
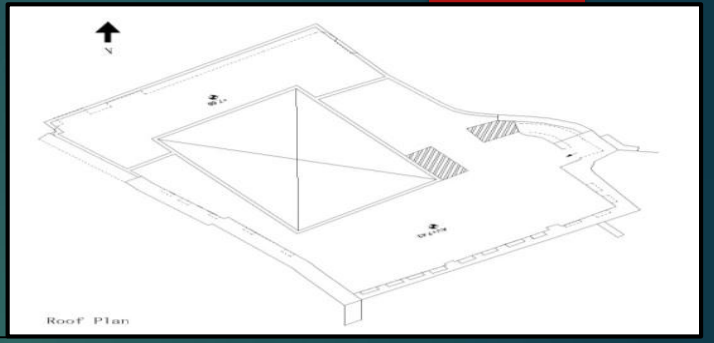
Roofing Layers Section



Roofing Layers

1-Casting with gypsum and lime (3 : 1) ,(8mm thickness)
2-Placing flint coat layer.
3-Plasing 2 two opposite layers of Isogamies .
4-Casting the final layer of lime mixture (1 lime:2 crushed stone: 1.5 sand) including plastic wire mesh for consolidate.
See section 1-1

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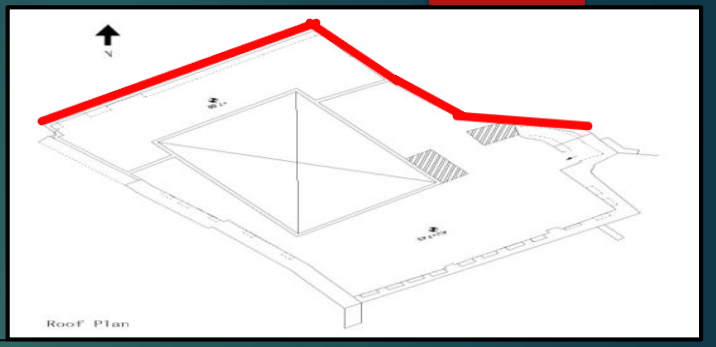
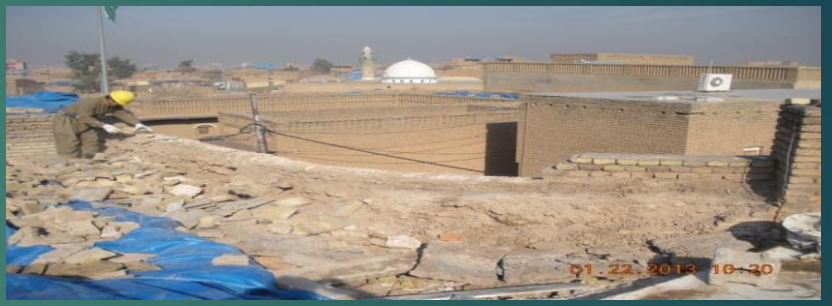
Parapet Wall

-Building parapet wall with bricks and lime mortar (1 lime:1 sand: 0.75 stone dust)



Front & Side Façade(North West & North East Façade)

A



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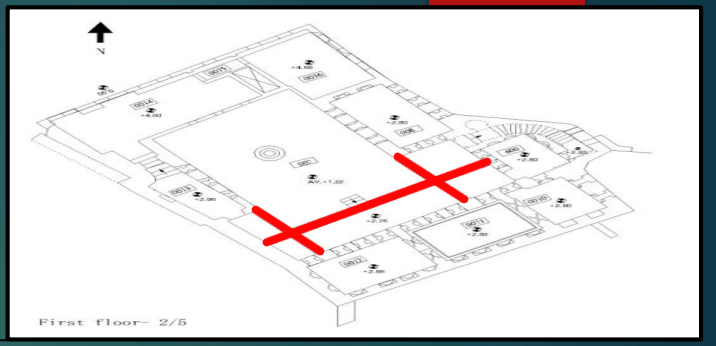
Repairing Alabaster

1-Cleaning the damaged sarfaces and removing the detioriated layers and parts .
2-Completing the original shapes by adding new compatible Alabaster peices whenever neceessary.
3-Smoothening the surfaces.



Alabaster Arches

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Repairing Alabaster

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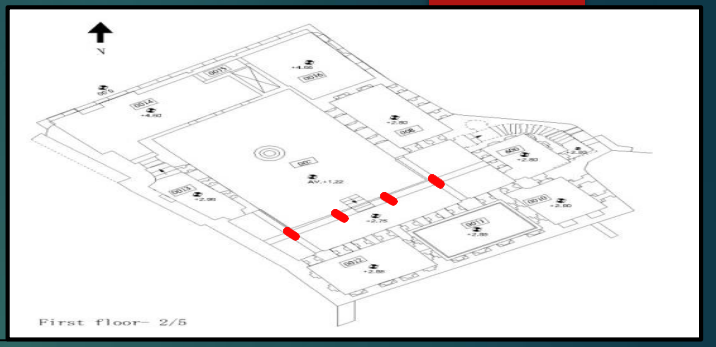

Alabaster Columns

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Repairing Alabaster

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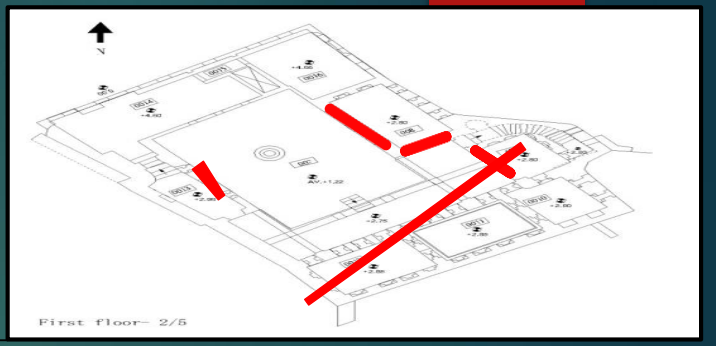
3-Smoothening the surfaces.



Alabaster Window Frames

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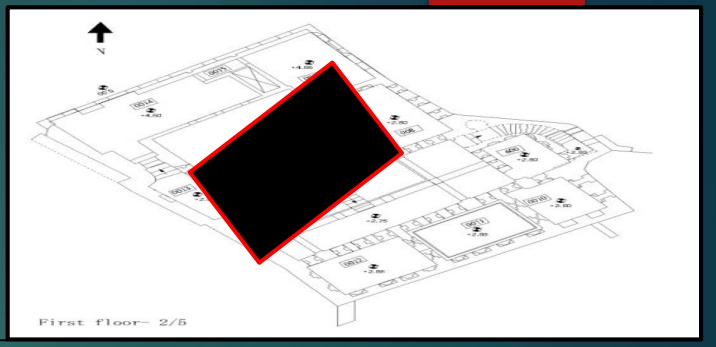
Flooring

1-Removing the old concrete layer.
2-Lowering and levelling the courtyard to its' original level.
3-Applying a layer of cement and sand mixture for flattening (thicness ≈ 8cm)
4-Laying of brich tiles pavement with morter mix (cement ,sand).
5-Pointing the joints.



Courtyard Floor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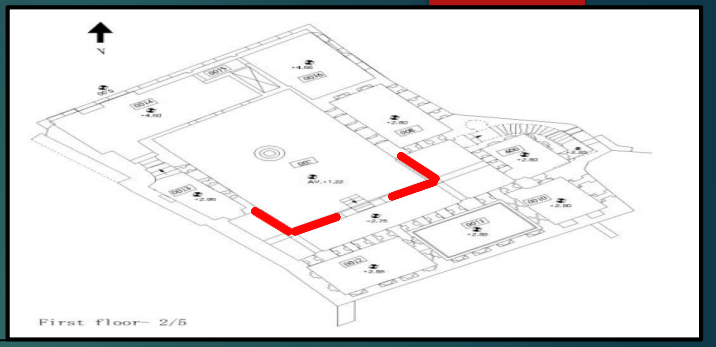
Iron Grils

1-Repairing the iron grills of the tarma.
2-Applying anti-rast paint and coloured paint.
3-Installing the iron grills at their places.



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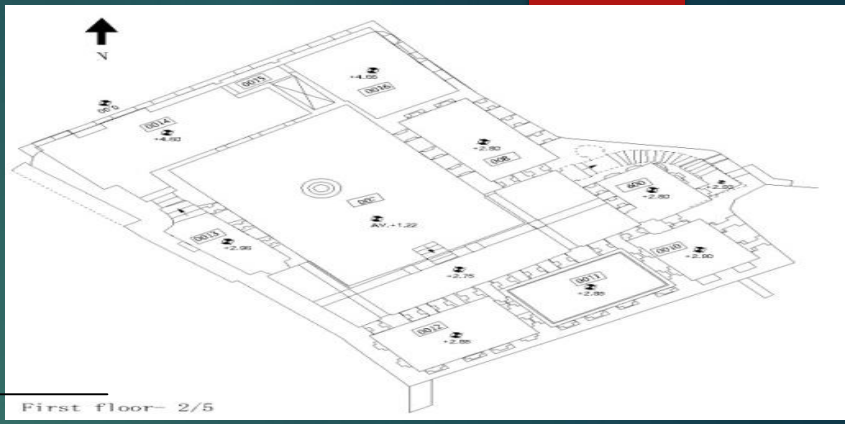
Electrucal Work

-Installing electrucal cables.



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