

## Scope of Work

### Invitation to Bid – Interior Renovation Works for the United Nations University, Macau (Phase 1) (UNUCS-ITB/001/2015)

#### 1. Technical Specifications

- 1.1 The United Nations University – Computing & Society (UNU-CS) in Macau had in 2013-2014 undergone an organizational restructuring exercise and is looking for a qualified construction firm to carry out interior renovation works for its office space located at Casa Silva Mendes, Est. do Engenheiro Trigo No. 4, Macau based on the **BILL OF QUANTITIES** and the **ENGINEERING DRAWINGS** set out below.

#### 2. Time Schedule

- 2.1 The interior renovation works must be completed not later than 6 weeks from the date of issuance of contract.

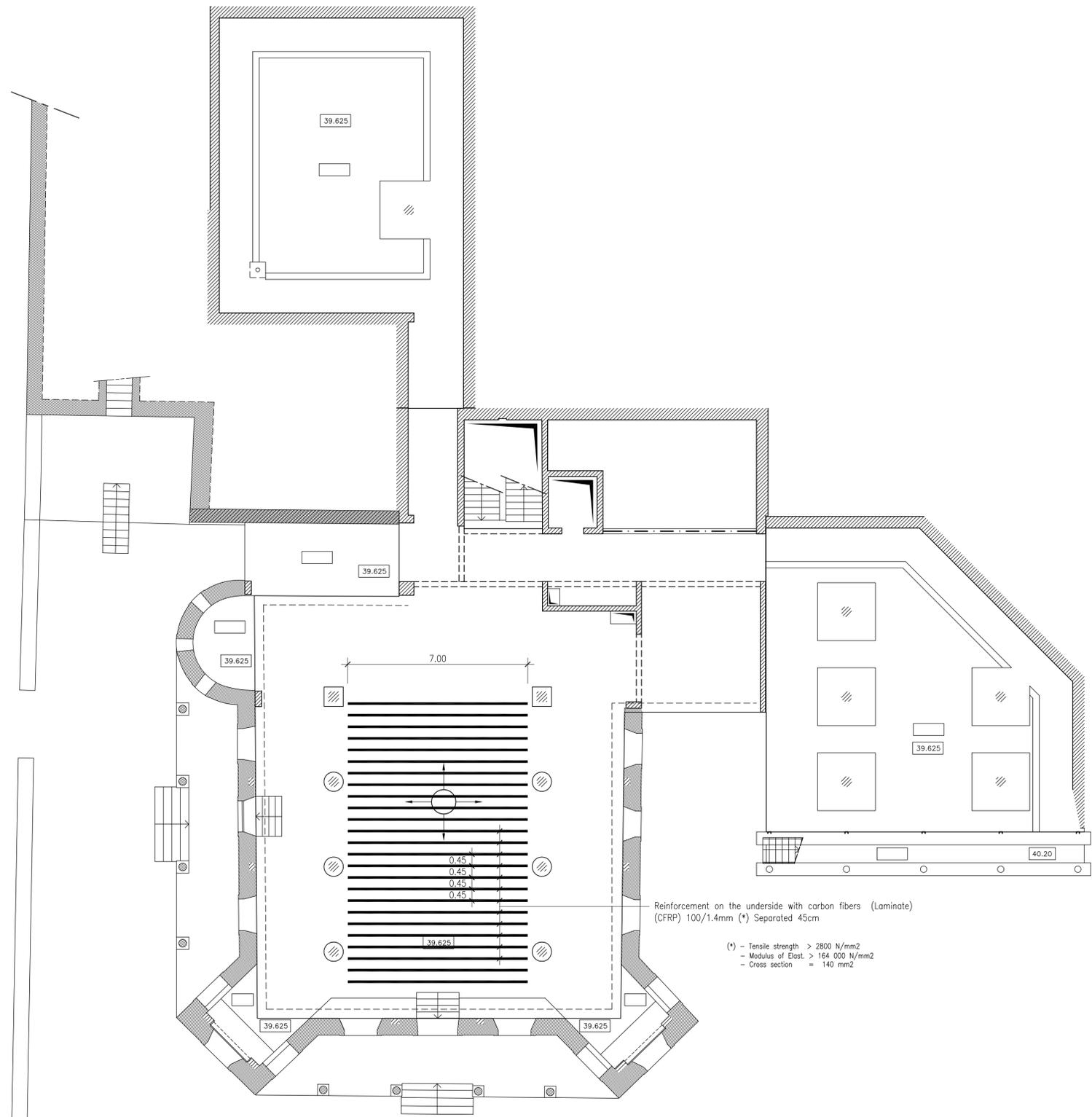
#### 3. Site Inspection

- 3.1 Bidders are compulsorily required to attend a site inspection at the Building Premises on 27 October, 2015 at 11:-00 hours (Macau Time) for a briefing by the UNU on the requirements.

## BILL OF QUANTITIES (BQ)

BQ Reference	Description	No.	Unit
	<b>PHASE 1 WORKS</b> Working Areas: East Wing (G/F) Central Wing BASEMENT ~ ROOF North Wing GF ~ 1/F		
<b>1.</b>	<b>EAST WING, G/F</b>		
1.1	Check and repair the water leakage on the corner wall below window sill in the office room with door to the patio, including works of waterproofing, repair of damage plaster and paint surface, temporary removal of the metal cladding on the sill (if necessary) and reinstallation the same afterward. Note: price quoted should be based on the assumption that the water leaks into room through the underside of window frame at above-ground level. If it is found otherwise and underground waterproofing works would be necessary, additional quotation for underground works will be quoted and chargeable to the client.	1	lot
1.2	Demolition and removal of the wood partition walls on G/F East Wing. (NOT including making good works to adjacent floor, wall and ceiling.)	1	lot
<b>2.</b>	<b>CENTRAL WING, BASEMENT~ROOF</b>		
	<b>BASEMENT</b>		
2.1	Remove the light fittings, fan-coil units and acoustic plaster of basement ceiling to prepare for the carbon reinforcement, including reinstall all light fitting afterward.	1	Lot
2.2	Supply and apply with appropriate epoxidic adhesive, strips of carbon fibers laminate of 100mm (wide) x1.4mm (thick) at 450mm centers to the underside of the ceiling slab of basement, including primer, adhesive and all surface repair and preparation works, all according to the design and instructions shown on the engineer drawing.	196	M
2.3	Temporary works and measures necessary to protect the carpet floor and office facilities in the main room while carrying out the above works.	1	Lot
2.4	<b>G/F</b>		
	Open the double wall at G/F between reception and main room to make a permanent doorway with size: 2.15m (W) x 2.4m (H), including construction of brick walls at both sides to close the open gap between two walls, reinforced concrete lintel beam/slab to close the top, making good the damaged, plastering, painting, 65x6mm thick #304 stainless steel wall skirting, cement sand floor leveling screeding, including repair and making good works to the adjacent walls surface damaged due to water leakage, and all necessary works and material to accomplish the doorway.	1	Lot
2.5	Check to find out the cause of the water leakage inside the pipe duct, prepare and submit a check report of the find-out and to suggest professional repair proposal accordingly. Note: Water leakage repair works not included in this item	1	Lot
2.6	Check and make good the insulation coat of the A/C chilled pipe mounted on the east wall of the big office hall to stop water leakage from condensation.	1	Lot
2.7	Seal the gap between the bended window frame and the sill below with proper sealing material, including all necessary making-good works.	1	Lot
	<b>1/FLOOR</b>		
2.8	Supply and install tempered-hollow-glass panel to replace the broken piece in the seminar room.	1	Lot
2.9	Repair and making good surface of the corner leakage area on wall in the seminar room.	1	Lot
2.10	Repair and making good the crack and damaged plaster on west wall of the seminar room.	1	Lot
2.11	Repair and making good structural crack between walls at corner of the COPIAS room.	1	Lot
	<b>2/FLOOR</b>		
2.12	Repair and making good two leakage areas on walls in the office hall.	2	Lots
2.13	Repair and making good leakage area on wall of the separate office.	1	lot

2.14	Repair and making good cracks on the west wall of the office hall.	1	Lot
2.15	Repair and making good cracks on the south wall above window.	1	Lot
	<b>GF~2/FLOOR</b>		
2.16	Refit doors of the wood cabinets in all PANTRIES	1	lot
2.17	Supply and apply ICI emulsion paint to walls inside the main room and the two corner room, full height from G/F level to the ceiling of 2/F, including removal of loose or damaged existing paint coat, re-plastering where necessary, making good and apply 1 primer coat + 2 finish coats, including necessary working platform and scaffolding	750	m <sup>2</sup>
2.18	Supply and apply ICI emulsion paint to the curve wall of the reception room, full height from G/F level to bottom of roof skylight, including removal of loose or damage existing paint coat, making good crack and damage, re-plastering where necessary, apply 1 primer coat + 2 finish coats, including necessary working platform and scaffolding.	70	m <sup>2</sup>
2.19	Supply and apply ICI emulsion paint to walls of the main entrance corridor, full height from G/F to bottom of skylight on 2nd floor level, including removal of loose or damage existing paint coat, making good crack and damage, re-plastering where necessary, apply 1 primer coat + 2 finish coats, including necessary working platform and scaffolding. (G/F~Skylight)	43	m <sup>2</sup>
	<b>ROOF</b>		
2.20	Waterproofing work to the floor drain outlet or leakage spot beside the skylight on roof.	3	spots
2.21	Waterproofing works to the upper roof of the staircase leading to the roof.	1	lot
2.22	Supply and install clear-wired-glass panels to replace the broken pieces on the skylight on roof.	7	Units
2.23	Repair and rustproof paint the HVAC metal frame on the roof.	1	lot
	<b>BASEMENT~ROOF</b>		
2.24	Demolition and removal of the HVAC, AHU and PAU unit on the roof and inside the HVAC rooms on each floor, including temporary seal and waterproof the openings left, including temporary protection to building facilities along the passageways for removing demolished debris off site. (The vent fans and the AC distribution ducts spreading out of the HVAC room to the other areas of the building will remain in place and to be removed on the 2nd phase). <b>Removed Items:</b> - Chiller Unit CH-1 & CH-2 - Chilled Water Pump: CH.W.P-01~04 - Expansion Water Tank - Control Panel - Chilled Water Pipe Supply & Return (Roof only) - Air Handling Unit: AHU-C-01、AHU-C-02 AHU-00-01、AHU-00-02、AHU-00-03 AHU-01-01、AHU-01-02 AHU-02-01、AHU-02-02 - Primary Air Handling Unit : - All ducts, pipes, wall acoustic blankets inside room	1	lot
<b>3.</b>	<b>NORTH WING, G/F ~1/FLOOR</b>		
	<b>G/F</b>		
3.1	Remove and reinstall all loose wood-grain-vinyl-laminate on walls and cabinet in the canteen area.	1	Lot
	<b>1/FLOOR</b>		
3.2	Remove and reinstall all loose wood-grain-vinyl-laminate on walls in the reading room.	1	Lot



Reinforcement on the underside with carbon fibers (Laminate) (CFRP) 100/1.4mm (\*) Separated 45cm

- (\*) - Tensile strength > 2800 N/mm<sup>2</sup>
- Modulus of Elast. > 164 000 N/mm<sup>2</sup>
- Cross section = 140 mm<sup>2</sup>

### 1) Preparation of the receiving surface

**1.1) Grinding the surface (laitance removal)**  
Removal of the cement grout (d) the surface, through polishing the surface with machine.

**1.2) Cleaning the surface with air or water jets**  
Cleaning applied with air or water jets with controlled pressure.

**1.3) Repair of imperfections**  
Regularization of geometrical defects with modified cement mortar and smoothed with a spatula.

**1.4) Adjustment of surface-control**  
control surface of regularity, through a ruler with 2m in length. In each measurement gaps below 3mm.

**2) Laminate Application**

**2.1) Humidity Measurement**  
Surface Humidity should be less than 4%.

**2.2) Temperature Measurement**  
Temperature the surface should be more than 5° C at the time of application the temperature should be 3° C above the dew point.

**2.3) Primary Application on the surface**  
Applied in a hand uniformly over the entire surface, with roller.

**2.4) Cutting the laminated**  
The laminate cutting has to be done with the dimensions defined in the project by cutting machine, with 1 incision from the middle to the edges.

**2.5) Cleaning the Laminate**  
cleaning with clean cloth impregnated with suitable solvent.

**2.6) Adhesive Preparation**  
Mixing the two components in predefined proportions.

**2.7) Laminate Adhesive application**  
Spreading the adhesive along the laminate, controlling the maximum layer thickness of 2mm, with ruler.

**2.8) Application of the laminate in surface**  
Laminate applied manually by pressing against the surface with a semi-rigid roll, to expel any excess adhesive.



CLIENT  
UNU - CS

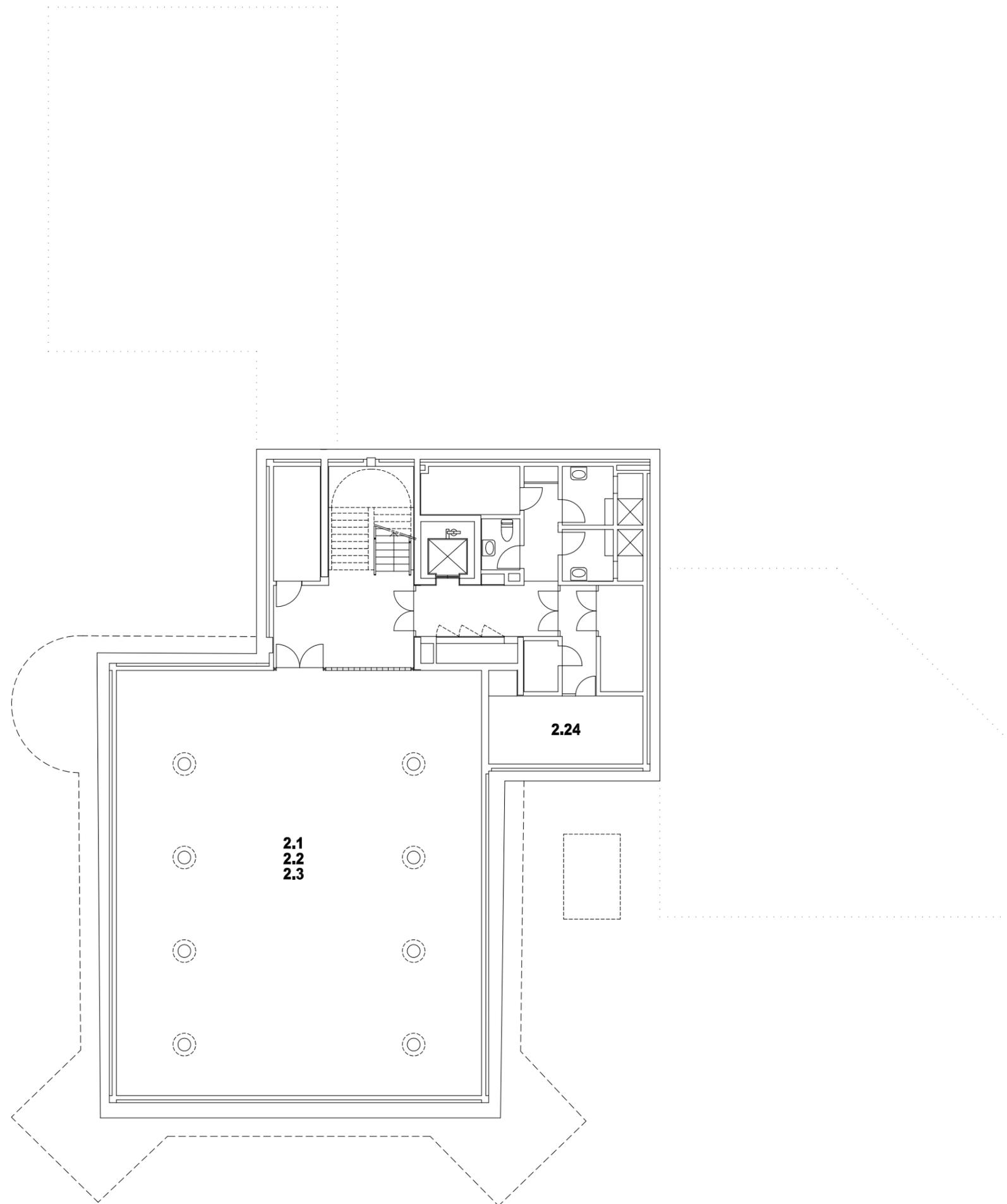
PROJECT  
INTERIOR RENOVATION WORKS

PHASE  
PHASE 1 - CONSTRUCTION

TITLE  
BASEMENT CEILING SLAB  
ENGINEERING REINFORCEMENT

DATE  
OCT/2015

SCALE  
1:100



LEGEND:  
**2.24 - REFERENCE TO BQ**



UNU - CS

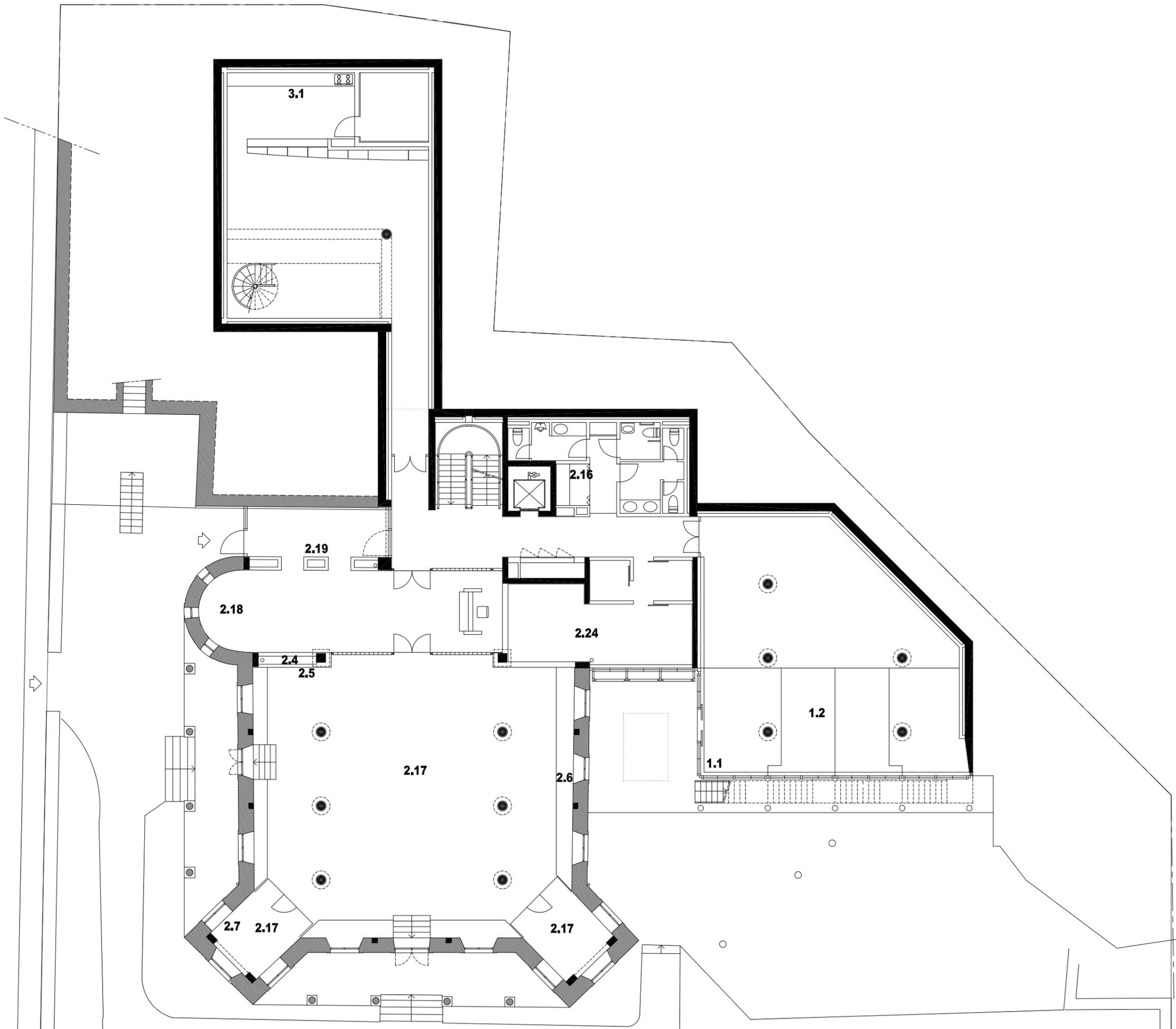
PROJECT - PROJECT  
 INTERIOR RENOVATION WORKS

PAGE - PAGE  
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TITLE - TITLE  
 BASEMENT PLAN  
 F -1

DATE - DATE  
 OCT/2015

ESCALA - SCALE



LEGEND:  
**2.24 - REFERENCE TO BQ**



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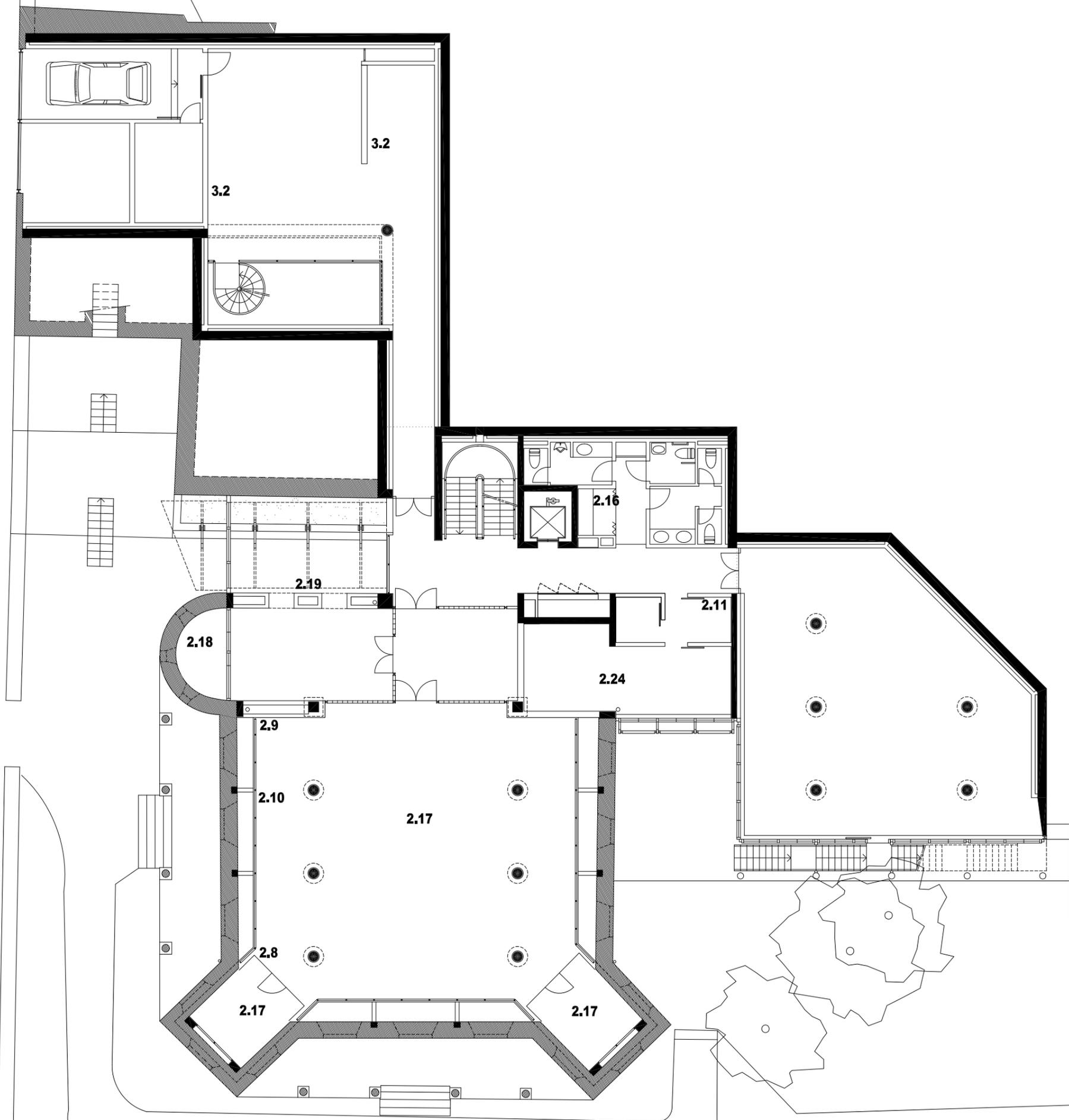
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 INTERIOR RENOVATION WORKS

PAGE - PAGE  
 PHASE 1 - BQ REFERENCE

TITLE - TITLE  
 BASEMENT/FLOOR PLAN  
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DATE - DATE  
 OCT/2015

ESCALA - SCALE



LEGEND:  
**2.24 - REFERENCE TO BQ**



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CLIENTE - CLIENT

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INTERIOR RENOVATION WORKS

PAGE - PAGE

PHASE 1 - BQ REFERENCE

TÍTULO - TITLE

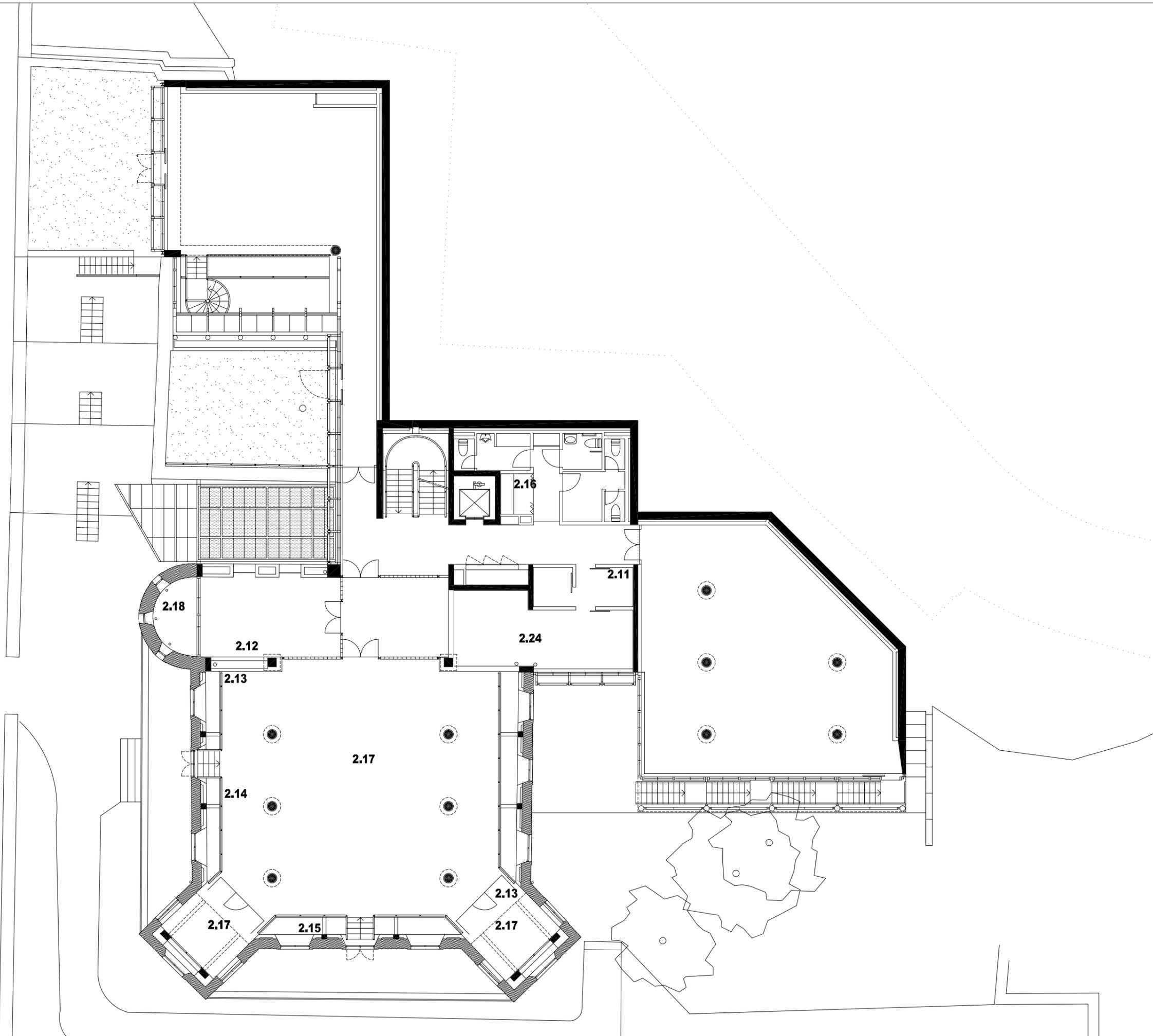
FIRST FLOOR PLAN

F1

DATA - DATE

OCT/2015

ESCALA - SCALE



LEGEND:  
**2.24 - REFERENCE TO BQ**



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UNU - CS

PROYECTO - PROJECT

INTERIOR RENOVATION WORKS

PAGE - PHASE

PHASE 1 - BQ REFERENCE

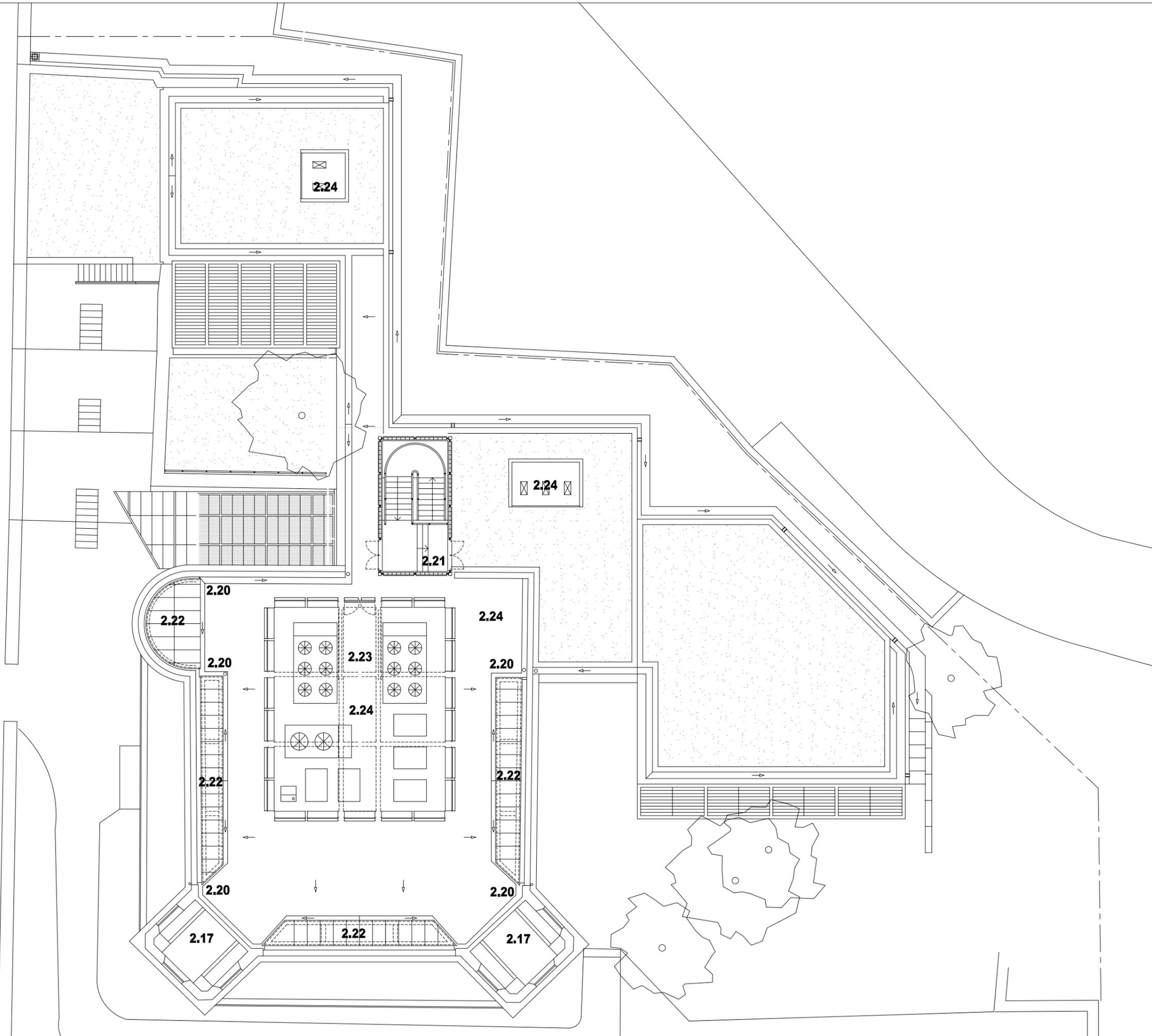
TITULO - TITLE

SECOND FLOOR PLAN  
 F2

DATA - DATE

OCT/2015

ESCALA - SCALE



LEGEND:  
**2.24 - REFERENCE TO BQ**



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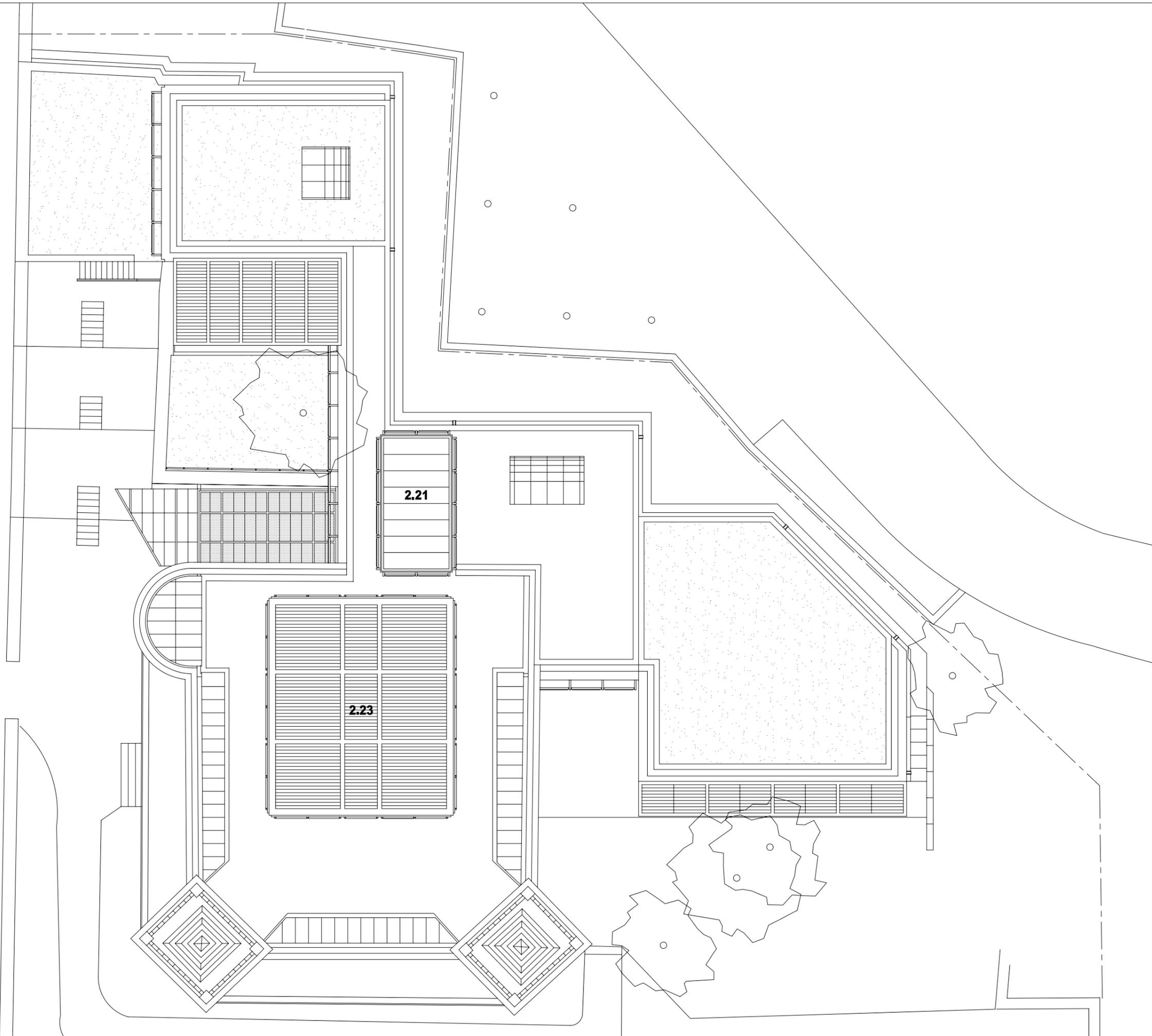
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 INTERIOR RENOVATION WORKS

PAGE - PAGE  
 PHASE 1 - BQ REFERENCE

TITLE - TITLE  
 ROOF AC PLAN  
 RF-AC

DATE - DATE  
 OCT/2015

ESCALA - SCALE



LEGEND:  
**2.24 - REFERENCE TO BQ**



PROYECTO \_ PROJECT  
 INTERIOR RENOVATION WORKS

PAGE \_ PÁGUA  
 PHASE 1 - BQ REFERENCE

TÍTULO \_ TITLE  
 ROOF PLAN  
 RF

FECHA \_ DATE  
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ESCALA \_ SCALE