

Al Rastan Hospital

Technical Specifications

Summary

❖	General specifications	5
➤	Bill of quantities nomenclature	5
➤	Alternative Works Prices	5
➤	Composite Unit Rate Breakdown (Split Pricing)	5
1.	Preparation of the site and Contractor Mobilization	7
1.1.1.	Site Mobilization, Office and Warehouses	7
1.1.2.	Staff Sanitary Facilities	8
1.1.3.	Security Measures	9
1.1.4.	Temporary Fencing & Sign Board	11
1.1.5.	Generator for Building-site	11
1.1.6.	Water Tank for Building-site	12
1.1.7.	Temporary Lighting System	12
1.1.8.	Temporary Power Distribution System	12
1.1.9.	Site safety	13
2.	Demolition Works	14
2.1.	Demolition works	14
2.1.1.	Demolition of Brick Walls	14
2.1.2.	Demolition of Existing Screeds	14
2.1.3.	Demolition of Damaged Stone Facade Tiles	15
2.1.4.	Removal of existing metal doors	16
2.1.5.	Removal of Window Metal Grilles	17
2.1.6.	Removal of existing EI material	18
2.1.7.	Removal of existing Air Duct	18
2.1.8.	Removal of existing AHU System	18
2.1.9.	Removal of Existing Boilers and Plumbing System	18
3.	Horizontal Concrete Works	20
3.1.1.	HI-BOND Slab	20
4.	Waterproof Roof Layer, Gutter, Downspout	21
4.1.1.	Walkable Roof Insulation & Waterproofing System	21
4.1.2.	External Rainwater Downspouts	22
5.	Block works and Partition Wall	23
5.1.1.	120mm Standard Drywall Partition	23
5.1.2.	120mm Fire-rated Drywall Partition - REI 60	23
5.1.3.	30mm Fire-Resistant Plasterboard Cladding - EI 60	24

5.1.4.	120mm Lead-Lined Drywall Partition For Radiology Rooms (Xray/CT scan)	24
5.1.5.	150mm Hollow Concrete Blocks (HCB) Wall	24
6.	Doors and Windows	25
6.1.	Internal doors	25
6.2.	OTs Double-Leaf Lead-Lined Manual Doors	26
6.3.	Certified Metal Fire Doors (REI 60 / EI 60)	26
6.4.	Aluminium Doors and Windows	26
7.	Plastering and Pointing	27
7.1.1.	Plaster. Base and fine Coat Plastering for new bricks Walls	27
8.	Floor and Wall Finishing	27
8.1.	Cement Screed	27
8.1.1.	Installation of new Cement Screed	27
8.2.	Tiles and other Finishing	27
8.2.1.	Special Technical Stoneware Flooring (OTs)	27
8.2.2.	Special Technical Stoneware Flooring (OTs)	27
8.2.3.	Full-Height Technical Stoneware Wall Tiles (OTs)	27
8.2.4.	Ceramic Floor Tiles	27
8.2.5.	Ceramic Wall Tiles	28
8.2.6.	Linoleum Floor (only in physiotherapy)	28
8.3.	External Walls	28
8.3.1.	Precast Concrete Coping for Masonry Wall	28
9.	Painting Works	29
9.1.1.	Standard Washable Acrylic Paint for General Areas	29
9.1.2.	Special Antibacterial Coating (Ots)	29
9.1.3.	External Waterproof Paint (Quartz or Siloxane)	29
10.	Ceiling	30
10.1.1.	Suspended Lay-in Mineral Fiber Ceiling (60x60)	30
10.1.2.	Monolithic Suspended Gypsum Board ceiling	30
11.	Green and External Areas Works	31
11.1.1.	Restoration, clearing and weeding of Existing Garden Areas	31
11.1.2.	Renovation of existing external paving	31
11.1.3.	Asphalt Roads Repairing	31
12.	Metal Works	32
12.1.1.	Metal Ramp	32
13.	Horizontal and Vertical Joints	32

13.1.1.	Internal Floor Structural Movement Joint	32
13.1.2.	External Floor Structural Movement Joint.....	33
13.1.3.	Internal Wall and Ceiling Structural Movement Joint.....	33
13.1.4.	External Facade Structural Movement Joint.....	33
13.1.5.	Watertight Structural Movement Joint for Terraces	33
Alternative Prices		33
2.	Demolition Works.....	34
2.1.10.	Demolition and removal of Existing Finishing Floor Surface (Porcelane/Granite Tiles or Marble Tiles) 34	
2.1.11.	Demolition and removal of Existing Finishing Floor Surface (Linoleum)	34
5.	Block works and Partition Wall.....	34
5.1.6.	Extra Over: Moisture-Resistant Upgrades.....	34
5.1.7.	50mm Rock Wool Acoustic Insulation	34
7.	Plastering and Pointing	34
7.1.3.	Repair and Skimmed of Existing Damaged.....	34
8.	Floor and Wall Finishing.....	35
8.1.	Cement Screed	35
8.1.2.	Renovation (Patching) of new Cement Screed	35
8.2.	Tiles and other Finishing	35
8.2.7.	Conductive/Anti-static Self-Leveling Epoxy Flooring (Operating Theatres)	35
8.2.8.	Seamless Epoxy Hygienic Coved Skirting	35
8.2.9.	PVC Wall Cladding	35
8.2.10.	Cement Screed non Slippery (External Walkways)	35
8.2.11.	Renovation of the marble tiles	35
12.	Metal Works.....	36
12.1.2.	Metal Grills Renovation	36

❖ General specifications

This volume contains descriptions of each individual item in the "Bill of Quantities" document.

The chapter codes in this document correspond to the items in the Bill of Quantities.

The contractor is required to examine each individual description in detail in order to follow the instructions provided and perform the necessary price analyses.

➤ Bill of quantities nomenclature

2	Demolition Works
2.1	Demolition works
2.1.1	Demolition of Brick Walls
2.1.2	Demolition of Existing Screeds

This Table is just a part of the BoQ as example.

The Main Title "2" defines the macro-item of the processes and the subsequent level "2.1" is a collection of general instructions that are to be considered for all subsequent processes. The instructions contained in this line are to be considered valid for all subsequent processes of the macro-item "2". The second level code "2.1" does not require a quotation as it is exclusively general instructions and does not refer to a specific process.

➤ Alternative Works Prices

The "Alternative Works Prices" section lists the work processes that will be evaluated by the Emergency NGO Engineer. Where possible, the reference work process has been indicated to take into account the quantities. The unit price must be defined and calibrated by the Contractor based on the reference dimensions, and Emergency NGO will have the right to modify any work process with the "Alternative Works Prices."

➤ Composite Unit Rate Breakdown (Split Pricing)

Considering the significant price fluctuations that may affect certain materials, bidders may specify separately the price of the principal materials. This will allow any duly documented price variations to be managed more effectively in accordance with the mechanism described in the attached draft contract.

The total price for each relevant item may therefore be divided into the following two components:

Price A: the cost of the principal material only. For example, for flooring items, Price A may include only the cost of the tiles.

Price B: all remaining cost components, including ancillary materials. For example, for flooring items, these may include adhesives and grouts, as well as labour, the contractor's overheads and profit, and any other related costs.

Where the bidder considers such a breakdown unnecessary or inappropriate, the bidder may choose not to divide the cost between Price A and Price B and may instead provide only the total price for the relevant item.

The bidder shall provide the brand, model and technical specifications of each proposed principal material.

As a general rule, where a material is not fully or specifically defined in the technical specifications, the bidder shall propose a suitable material of its choice and provide full details of the proposed brand, model and technical specifications.

Following sample review, the EMERGENCY NGO Engineer reserves the right to change the primary material; in such cases, Unit Price (A) will be adjusted based on the new net material cost, while Unit Price (B) shall remain strictly fixed, modifying the final total rate accordingly.

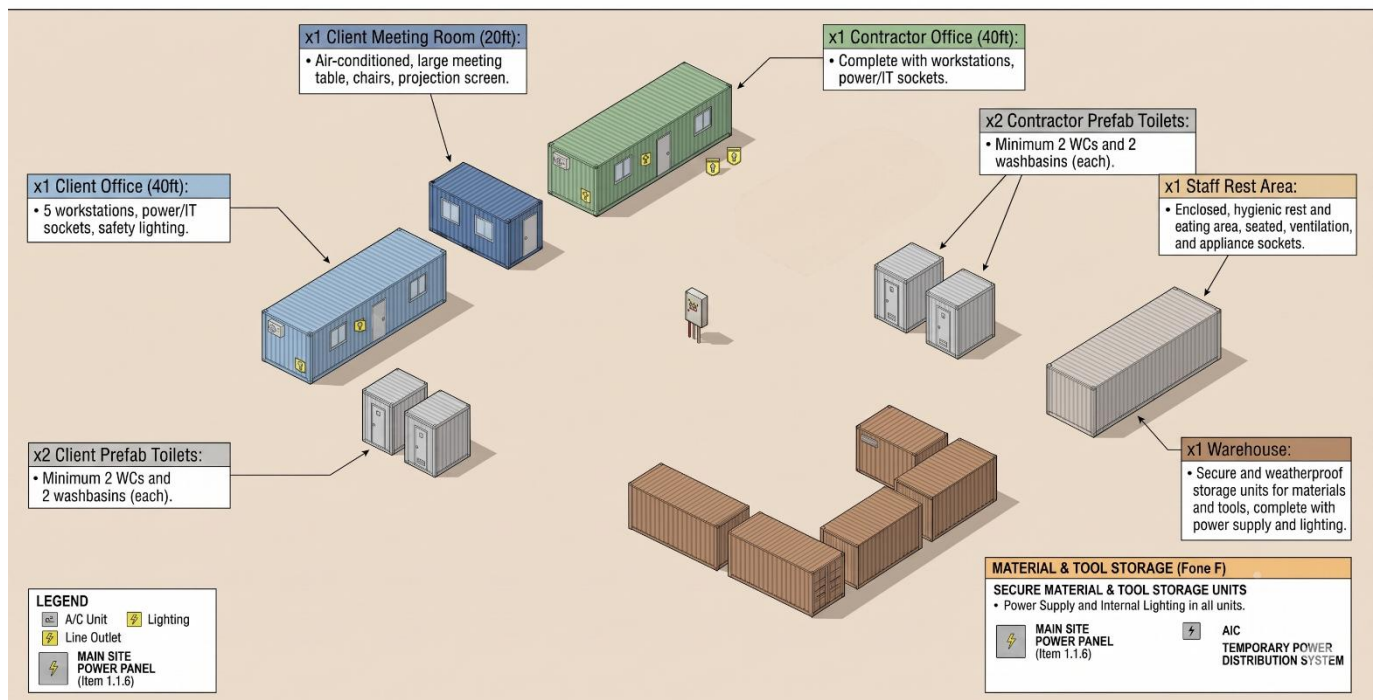
The total composite unit rate for the execution of the item shall be the sum of Price (A) and Price (B).

1. Preparation of the site and Contractor Mobilization

1.1.1. Site Mobilization, Office and Warehouses

- 1 no. 40ft air-conditioned office container for the Client, complete with 5 workstations, power/IT sockets, and safety lighting.
- 1 no. 20ft air-conditioned meeting room container.
- 1 no. prefab toilet cabin for Client (minimum 2 WCs and 2 washbasins) fully connected to utilities.
- 1 no. prefab toilet cabin for Contractors.
- 1 no. 40ft (or 2 no. 20ft) air-conditioned container for the Main and MEP Contractors,
- 1 no. 20ft air-conditioned rest and eating area equipped with seating, ventilation, and appliance sockets.
- Secure and weatherproof storage units for materials and tools must be provided, complete with power supply and lighting.

SIMPLIFIED SITE MOBILIZATION PLAN - CONTAINER LAYOUT DIAGRAM



This is just a drawing to help in understanding. For detail refer to the description.

1.1.2. Staff Sanitary Facilities

Supply, installation, connection, management, routine and extraordinary cleaning, and final removal of construction site restrooms for approximately 100 workers, including:

- Minimum of **10 toilets** with sinks, located in prefabricated cabins or modular units suitable for construction site use, with adequate gender segregation where necessary;
- **All necessary connections** for water supply and wastewater disposal, including pipes, fittings, sumps, inspection chambers, and any collection tanks or wastewater lifting/pumping systems;
- All necessary **electrical connections** for interior lighting, ventilation, any heating/cooling systems, and auxiliary devices, including the supply and connection of local distribution panels with protection against direct and indirect contact and grounding;

Ordinary and extraordinary management and maintenance for the entire duration of the works, including cleaning, disinfection and periodic replenishment of consumables (toilet paper, soap, electric hand dryers and similar).

1.1.3. Security Measures

Designated Areas

The plan divides the space to the south of the main hospital building into two adjacent but distinct sectors:

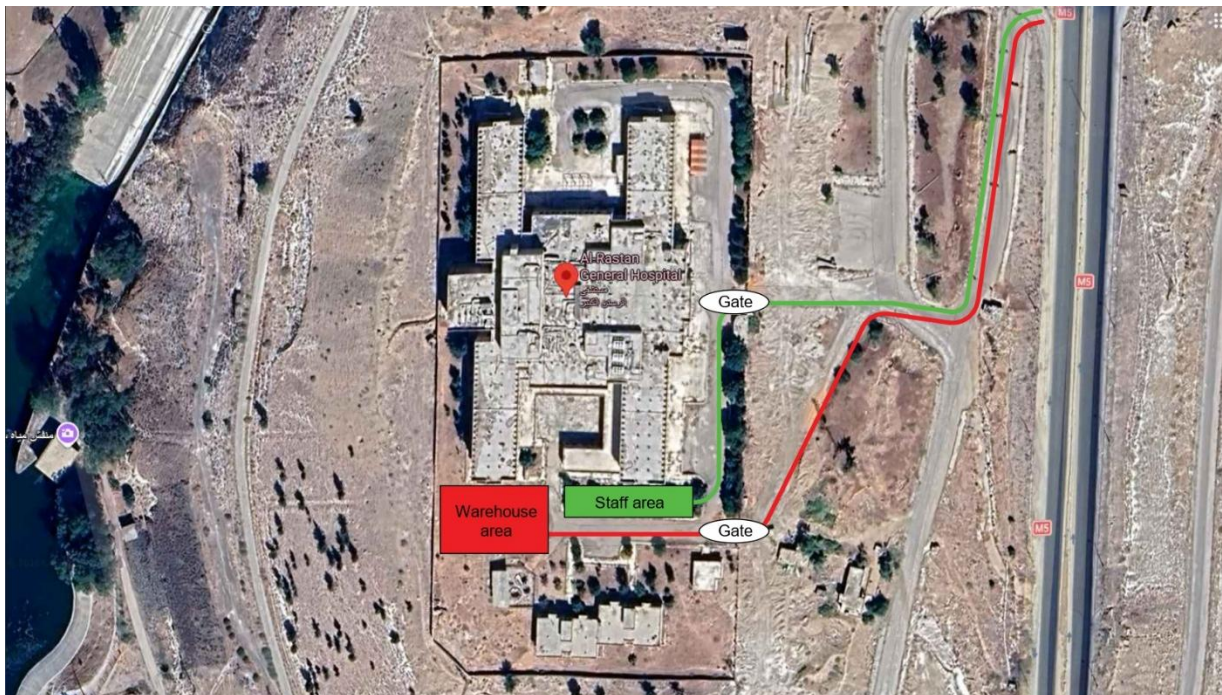
- Staff Area (Green Rectangle): This zone is reserved for personnel and includes all prefabricated structures used for offices, coordination, or employee accommodation.
- Warehouse / Material Area (Red Rectangle): A dedicated sector exclusively for the storage, reception, and management of warehouse materials.

Flow Management and Entrances

To optimize traffic and safety, access from the main road (the M5 highway) has been split into two separate paths with distinct entrances:

- Staff Flow (Green Line): This path is intended for employees. It branches off the main road, passes through a controlled access point labeled "Gate," and leads directly into the green Staff Area.
- Material Flow (Red Line): This path is dedicated to cargo and logistical vehicles. It follows a parallel but independent route from the staff path, by passing the main Gate to terminate directly inside the red Warehouse Area.

This compartmentalization of entrances and routes ensures that heavy vehicles dedicated to loading and unloading do not interfere with the daily activities and safety of the staff present in the prefabricated area.



Management, operation and maintenance of site security measures for the entire duration of the Works, including:

- Access gates.
- Permanent 24/7 security guards.

- Manned entry control points for personnel checking,
- Access control and material tracking.

1.1.4. Temporary Fencing & Sign Board

1.1.1.1. **General Notes:** These Particular Specifications are guidelines for the Contractor intended to cover major part of information with respect to the materials, finish, workmanship and quality. All materials shall be subject to the approval of Employer / Emergency NGO Engineer.

1.1.1.2. **Scope of Works:** Scope of works under this section includes the preparation of shop drawings, supply, install, maintain & Handing over for the Temporary Fencing and Sign Boards, to the full satisfaction of Client / Emergency NGO Engineer. Contractor shall understand that the contract is a Lump Sum and all works shall be carried out for the site allocated for the project, for which the designs are under progress.

1.1.1.3. Contractor shall design, supply, install, maintain and removal of installations for the temporary fencing and signboards till handing over of site to the client or up to the instruction of Engineer.

1. Temporary fencing shall be erected for the full length as shown in the layout.
2. All installations shall be maintained through out the contract period. Any damages shall be reported to the Engineer / Client.
3. The design calculations & shop drawings shall be submitted to Engineer's approval.
4. Fencing & signboard N.O.C drawings shall be submitted to DoH by the Emergency NGO Engineer. Contractor shall collect the approved drawings and permission to carry out the works with payment of necessary fee. Also, contractor shall co-ordinate with relevant authorities for relocation of any existing services or facilities through the site, with payment of necessary fee.
5. Any obstruction to access the site shall be informed to the Emergency NGO Engineer in writing. Contractor may visit the site prior to submission of tender. Location map of the plot is enclosed.
6. Any existing obstructions shall be removed and cleared off the site by the contractor.
7. Contractor shall comply with all contractual obligations, including third party insurances, workmen compensation etc.

1.1.5. Generator for Building-site

Supply, hire or procurement, installation, testing, commissioning, operation and maintenance of a **diesel generator** set for a period of 15 months, rated **100 kVA**, to provide a fully off-grid temporary power supply for the construction site, including:

- **Generator control panel** and local connection facilities suitable for connection to the temporary power distribution system described under item 1.1.6.
- **Routine servicing and preventive maintenance** in full accordance with the manufacturer's operation and maintenance manual (including all scheduled inspections, filter changes, oil changes and adjustments), as well as oil top-up as required.
- 1 no. **external bunded diesel storage** tank with a net capacity of not less than 2,000 liters, complete with all necessary pipework, connections, fill point, venting arrangements, level indication and safety devices, suitable for continuous site operation.

EMERGENCY reserves the right to approve the generator proposed by the Contractor based on the actual site requirements, or to specify the minimum loads that the generator shall be capable of supporting.

The cost of diesel fuel is excluded and shall be measured and paid separately based on actual consumption report against hours of operations and fuel consumed per month.

1.1.6. Water Tank for Building-site

Provision of a temporary water tank and associated water distribution system for the construction site, including:

- Provision of a temporary water tank of **20,000** liters
- Installation of a temporary booster pump set with associated distribution pipework to supply water to construction activities and staff facilities;
- Installation of an internal site water distribution network suitable to satisfy all water supply requirements of the site;
- Provision of a minimum of 4 water points distributed within the site area, to be located in agreement with the Engineer/Employer's Representative, for use both in construction activities and by the workforce for drinking water supply.

All costs for water supply (e.g., from water bowzers), including transportation and filling, shall be borne by the Contractor for the entire duration of the Works.

1.1.7. Temporary Lighting System

Design, supply, installation, testing, commissioning, operation and maintenance of a complete temporary lighting system for the whole construction site for the entire duration of the Works, including:

- **Lighting** to work areas, offices, services and storage areas, loading and unloading areas and principal circulation routes, providing an average illuminance of not less than 50 lux in general construction areas and 100 lux at principal work faces, measured at floor level;
- Continuous lighting to **pedestrian walkways**, ramps, stairways and escape routes, with illuminance levels not lower than 40 to 50 lux, sufficient to ensure safe movement in low-visibility conditions and during night-time operations;
- **Perimeter lighting** to the temporary external site areas, with illuminance levels adequate for site security and, luminaires, supports, accessories and cabling suitable for outdoor use and resistant to weather, impact and site conditions, installed at such heights and positions as to avoid glare, excessive shadowing and mechanical damage;

Periodic inspection, cleaning, lamp replacement and adjustment of luminaires as necessary to maintain the specified lighting levels throughout the construction period.

The temporary lighting system shall be supplied from and coordinated with the temporary power distribution system described under item 1.1.6.

1.1.8. Temporary Power Distribution System

The scope covers the complete lifecycle provision, including design, supply, installation, testing, commissioning, operation, and maintenance of a temporary LV network from generators to all site loads.

A main distribution board must be located adjacent to the generators and fully equipped with adequately sized MCBs, RCCBs, metering, and protective devices.

Secondary boards supplying all site facilities, lighting, and equipment shall be installed on every wing and floor at a maximum distance of 20 meters from work areas, providing clearly labeled circuits, spare capacity, and single or three-phase sockets.

Multicore feeders and sub-mains must be safely routed overhead or underground, protected against damage and weather, and sized to limit voltage drop.

Connection points and socket outlets must be sufficiently rated and distributed to power all workstations, facilities, and tools across the site.

A complete and compliant earthing and bonding system is required for all equipment and metal structures, complete with periodic earth resistance testing.

Up-to-date electrical documentation, such as single-line diagrams, schedules, and settings, must be maintained alongside daily operation by competent and qualified electricians.

1.1.9. Site safety

For the full duration of the Works, the Main Contractor shall provide all measures necessary to maintain orderly, clean and safe site conditions, including:

- **Regular cleaning** and housekeeping of all internal and external work areas, corridors, staircases and circulation routes, with periodic collection of construction debris and waste generated by the site activities, transport to collection points and disposal at authorized facilities in accordance with waste regulations.
- Supply, installation, maintenance and adjustment of **temporary fencing**, barriers, guardrails, warning tapes and covers to openings for the segregation of work areas, in accordance with the Project Health and Safety Plan and the instructions of the Engineer/Employer's Representative.
- Supply, installation and maintenance of safety, warning, mandatory and **information signage**, including indication of protected routes and restricted areas.
- Supply, installation and maintenance in working order of the minimum required **portable fire-fighting equipment** for the site, in particular in the generator area, main switchboard rooms, site electrical boards and other technical areas designated by the Engineer/Employer's Representative.

All labour, materials, equipment, inspections, maintenance and coordination costs are deemed to be included in this lump sum item for the entire duration of the site.

2. Demolition Works

2.1. Demolition works

General Information:

Mechanical or manual loading onto trucks of all waste materials and debris resulting from the demolitions and removals described above, accumulated in temporary on-site stockpiles.

- Including road transport to an authorized landfill or recycling center, hauling fees, weighing, and unloading, excluding only landfill tipping fees.
- Including horizontal and vertical handling, manual or mechanical loading onto trucks.
- including tipping fees and final clean-up of the work area

2.1.1. Demolition of Brick Walls

Complete demolition of non-load-bearing internal brick partition walls of any thickness and height. Including tiling, stripping of plaster, removal of door/window frames, and any remaining EL and Plumbing system, lowering materials to ground level, water spraying for dust suppression, sorting, and temporary on-site stockpiling.

2.1.2. Demolition of Existing Screeds

Demolition, cutting, and chasing of existing concrete/cement floor screeds comprehensive of existing tiles and any other finishing material, to accommodate new building systems (electrical routing, water supply, medical gases, drainage, and vertical penetrations). Including any remaining EL and Plumbing system, clean cutting using a circular diamond saw to prevent damage to sound structural elements, debris removal, and industrial vacuum cleaning.

2.1.3. Demolition of Damaged Stone Facade Tiles

Careful demolition and selective removal of damaged stone facade tiles, including the chipping away and complete clearing of all residual mortar beds, adhesives, pointing, and mechanical fixings to expose a clean, sound substrate. The Demolition will be done just on the stairs and all the stone has to be removed carefully in order to use the stone for other purpose.



2.1.4. Removal of existing metal doors

Complete dismantling and removal of existing metal doors, including door leaves, frames, sub-frames, architraves, and all associated ironmongery and operating hardware. The rate includes careful extraction to minimize damage to the surrounding structural openings.



2.1.5. Removal of Window Metal Grilles

Complete dismantling and removal of existing heavy-duty metal security grilles (iron bars) fitted to window and door openings. The rate includes careful cutting, grinding, or extraction of all embedded wall anchors, brackets, and mechanical fixings to leave the structural reveals entirely clear.



2.1.6. Removal of existing EI material

Safe removal and disposal of all existing and residual electrical equipment and cables located in the Main Switchboard Room, Transformer Room and other affected electrical technical rooms, including, by way of example: MV/LV switchboards, distribution boards, busbars, busbar trunking, cable trays and ladders, power and control cables, auxiliary panels, ancillary equipment and related supports, as shown on the drawings and in accordance with the instructions of the Engineer/Employer's Representative.

The works include all operations for isolation and de-energisation, identification, disconnection, cutting where required, removal from the building, temporary storage of reusable materials identified by the Employer, and disposal of waste materials in compliance with applicable environmental regulations, leaving the rooms clean and in a safe condition.

The Contractor shall prepare a brief survey report with photographic documentation and a list of the main components removed, to be submitted to the Engineer/Employer's Representative; this item is measured on a lump sum basis.

2.1.7. Removal of existing Air Duct

Removal of existing Air Duct distribution from each floor (do not remove any duct from the shafts). Safe removal and disposal of all existing and residual electrical equipment and cables located in the Main Switchboard Room, the Transformer Room and any other affected electrical technical rooms, including, by way of example, MV/LV switchboards, distribution boards, busbars and busbar trunking, cable trays and ladders, power and control cables, auxiliary panels, ancillary equipment and all related supports, as shown on the drawings and in accordance with the instructions of the Engineer/Employer's Representative. The scope of work includes all operations required for safe isolation and de-energisation, identification and labelling of circuits, disconnection, cutting into sections where necessary, removal from the building, temporary storage of reusable materials identified by the Employer, and final disposal of all waste materials in compliance with applicable environmental regulations, leaving all rooms clean, free from debris and in a safe condition for subsequent works. The Contractor shall prepare a brief survey report with photographic documentation and a list of the main components removed, to be submitted to the Engineer/Employer's Representative as support documentation for this lump sum item.

2.1.8. Removal of existing AHU System

Safe removal and disposal of all existing horizontal air distribution ducts serving each floor of the building, including branches, dampers, diffusers, grilles, hangers and supports, as shown on the drawings and in accordance with the instructions of the Engineer/Employer's Representative, expressly excluding all vertical ducts located within shafts/service risers, which shall remain in place pending further checks and instructions. The works include disconnection from the existing AHUs/fans, dismantling of ductwork, cutting into manageable sections where required, removal from the building, temporary safe closure of any openings left in walls, slabs or ceilings, and disposal of all resulting materials in compliance with applicable environmental regulations. The Contractor shall document the activities by means of a concise report with photographic records for each floor, before and after removal; this item shall be deemed to be measured and paid as a lump sum.

2.1.9. Removal of Existing Boilers and Plumbing System

Safe removal and disposal of all existing Air Handling Units (AHUs) and associated equipment installed on the roof, in the basement and in any other internal technical rooms of the hospital, as shown on the drawings and in accordance with the instructions of the Engineer/Employer's Representative. This item includes AHU casings complete with fans, coils, filters, condensate drain trays and drain piping, base frames, anti-vibration mounts, local control panels, flexible connections, together with the ductwork and pipework sections immediately upstream and downstream of each AHU up to the points indicated for subsequent reconnection or blanking,

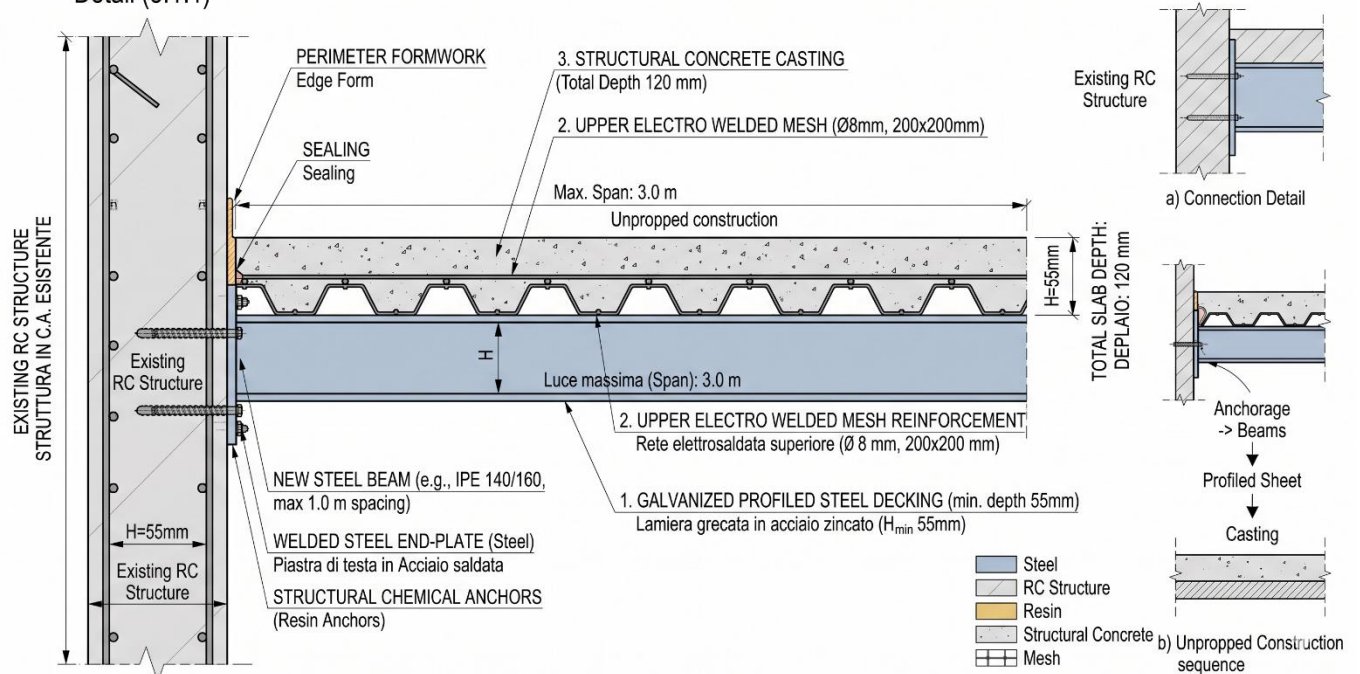
including all related supports and fixings. The scope of work covers all operations for safe de-energisation and isolation, disconnection, dismantling, lifting or lowering, handling and removal from site, as well as final disposal of all waste materials in compliance with the applicable environmental and health and safety regulations. The Contractor shall carry out a complete photographic survey of all affected areas before and after dismantling and attach it to a brief removal report to be submitted to the Engineer/Employer's Representative; this item shall be measured and paid on a lump sum basis

3. Horizontal Concrete Works

3.1.1. HI-BOND Slab

Supply and installation of a composite steel-concrete deck slab (HI-BOND) for a max 4.0m span, supported by new steel joists anchored to the existing RC structure. The rate includes supply and installation of structural steel beams (e.g., IPE 140/160) spaced at max 1.0m centers, connected to the existing concrete walls/beams via welded steel end-plates and structural chemical anchors; laying of galvanized profiled steel decking (min. depth 55mm); upper electro welded mesh reinforcement ($\varnothing 8\text{mm}$, 200x200mm); and casting of structural concrete for a total thickness of 120mm. The system is designed as unpropped construction, inclusive of perimeter formwork, sealing, and full structural integration.

3.1.1 Main HI-BOND Slab Detail DETAILED GRAPHIC CONSTRUCTION SCHEMA: HI-BOND SLAB (3.1.1)



4.1.2. External Rainwater Downspouts

Supply and installation of roof sheet metal drainage components for rainwater routing from the flat roof. All works shall be carried out in accordance with approved shop drawings, local building codes, and manufacturer's guidelines, including scaffolding, hoisting, and final cleaning.

The system includes:

- **External Downspouts:** Manufactured from pre-painted galvanized steel (minimum thickness 0.6 mm) or powder-coated aluminum (minimum thickness 1.0 mm). Profile to be circular with a 150 mm (DN 150) diameter. Finish and RAL color to be selected by the Architect.
- **Anchoring System:** Heavy-duty wall anchoring brackets made of galvanized or stainless steel, spaced at a maximum of 1.5 m to 2.0 m on center. Securely fixed using mechanical or chemical masonry plugs appropriate for the wall substrate.
- **Jointing & Sealants:** All sheet metal joints to be overlapped by a minimum of 50 mm to 100 mm, mechanically fastened with color-matched stainless steel blind rivets, and fully sealed with premium exterior-grade, UV-resistant polyurethane or silicone sealants.

5. Block works and Partition Wall

5.1.1. 120mm Standard Drywall Partition

Supply and installation of non-load-bearing interior plasterboard partition wall, total thickness 120 mm, with internal rock wool insulation, comprising:

- **Framework:** Galvanized steel metal framing structure, consisting of 70 mm perimeter U-tracks mechanically fixed to the floor and ceiling, provided with acoustic isolation tape (resilient pad) underneath. Vertical C-studs (70 mm) installed at maximum 600 mm centers (or 400 mm as required by structural/height limits).
- **Insulation:** No insulation for Acoustic. This price is in the "Alternative Price and is excluded from this item. Emergency NGO Engineering will evaluate during construction site.
- **Cladding (Boarding):** Double layer of standard gypsum plasterboard (Type A) on both sides of the framework. Each board being 12.5 mm thick (total cladding thickness 25 mm per side). The boards are to be installed with staggered joints and secured using appropriate phosphate self-tapping drywall screws of adequate length for the first and second layers.
- **Finishing:** Application of reinforcing joint tape and approved jointing compound to all board seams, internal/external corners, and screw heads. Surfaces must be properly filled, sanded, and smoothed to achieve a continuous, flush finish (Level 4 standard). The final partition surface is to be left clean, dust-free, and fully ready to receive the final primer and paint applications.

The price includes all necessary tracking, cutting, waste, scaffolding (up to a standard ceiling height of 3.0 m), hardware, and ancillary materials required to complete the work in strict accordance with the manufacturer's technical specifications and current building regulations.

5.1.2. 120mm Fire-rated Drywall Partition - REI 60

Supply and installation of a complete, non-loadbearing fire-resistant plasterboard partition wall, 120 mm total thickness, to achieve a certified fire compartmentalization rating of **REI 60 / EI 60**.

The rate shall include, but is not limited to, the following:

- **Framework:** Supply and installation of a galvanized steel structural framework comprising 70 mm floor and ceiling tracks, and 70 mm vertical studs spaced at maximum 600 mm centers (or as per manufacturer's fire certification requirements). Including all necessary fixings, acoustic isolation tape beneath tracks, and cross-bracing where required.
- **Insulation (Core):** No insulation for Acoustic. This price is in the "Alternative Price and is excluded from this item. Emergency NGO Engineering will evaluate during construction site.
- **Boarding:** Supply and application of a **double layer of 12.5 mm Type F** (fire-resistant, pink core) gypsum plasterboard to **both sides** of the metal framework. Boards are to be installed with staggered joints (both between layers and on opposing sides of the wall) and fixed using approved corrosion-resistant drywall screws.
- **Finishing:** Jointing, taping, and filling of all board joints, internal/external angles, and screw heads using certified fire-rated jointing compound to achieve a seamless finish, ready for final decoration (Quality Level Q2/Q3).
- **Fire Stopping:** Application of intumescent acoustic/fire sealants at all perimeter junctions (floor, ceiling, and structural walls) to ensure complete smoke and fire sealing.
- **Openings & Penetrations:** Forming of openings for doors, windows, and MEP (Mechanical, Electrical, and Plumbing) service penetrations, including reinforcing the steel framework around openings and making good with approved fire-stopping materials.

5.1.3. 30mm Fire-Resistant Plasterboard Cladding - EI 60

Supply and installation of a space-saving fire-resistant plasterboard cladding system to existing 200 mm thick masonry walls (comprising 150 mm Hollow Concrete Blocks plus existing finishes) to achieve the required fire compartmentalization rating of **EI 60**, while minimizing wall thickness build-up.

The rate shall include, but is not limited to, the following:

- **Framework:** Supply and installation of 15mm shallow galvanized steel **furring channels (Omega profiles)**, mechanically fixed directly to the existing masonry substrate using approved fire-rated masonry anchors in accordance with the manufacturer's certified spacing.
- **Boarding:** Supply and application of a double layer of 12.5 mm Type F (fire-resistant, pink core) gypsum plasterboard. Boards to be fixed to the metal furring channels using approved corrosion-resistant drywall screws.
- **Finishing:** Jointing, taping, and filling of all board joints, angles, and screw heads using certified fire-rated jointing compound to achieve a seamless finish, ready for final decoration (Quality Level Q2/Q3).
- **Fire Stopping:** Application of intumescent acoustic/fire sealants at all perimeter junctions (floor, ceiling, and intersecting walls) to maintain continuous compartmentalization.
- **Openings & Penetrations:** Forming of openings for doors, windows, and MEP (Mechanical, Electrical, and Plumbing) service penetrations, including additional making good with approved fire-stopping materials.

Exclusions: Final painting and decorative finishes are measured elsewhere.

5.1.4. 120mm Lead-Lined Drywall Partition For Radiology Rooms (Xray/CT scan)

Supply and installation of shielded drywall partitions for X-ray rooms and diagnostic imaging suites. Built with heavy metal framing and lined externally with gypsum boards factory-bonded to a lead sheet of calibrated thickness (e.g., 2mm). Including continuous shielding overlaps on all joints and electrical boxes using lead tape to ensure radiation protection continuity. Include all finishing works to be ready for decoration.

5.1.5. 150mm Hollow Concrete Blocks (HCB) Wall

Construct class 'B' 150mm thick Hollow Concrete Blocks wall. Laid with cement-lime mortar, including waste, internal scaffolding, anchoring to existing RC structural frames (beams/columns) via rebar dowels or wire mesh, and top stiffening details.

6. Doors and Windows

6.1. Internal doors

Supply and installation of an interior door with an aluminum frame and plastic laminate finish. The door includes: a silver aluminum **frame and wall trim** (preferably 1.5 mm thick and 90x80 mm size for the frame, and preferably 1.5 mm thick and 65x65 mm size for the trim), fixed to the wooden wall frame with steel screws and sealed with foam; 3 adjustable aluminum hinges with steel pins (preferably Ø 16x90 mm); a **hollow door panel** (preferably 40 mm thick, with an option for 50 mm) made of a wooden frame (preferably 50x30 mm), a honeycomb core, MDF boards (preferably 4 mm thick), and a plastic laminate cover (preferably 1.0 mm thick, Abet type or similar). It is finished with rounded aluminum edges and a built-in lock that sits flat against the edge. The price includes all hardware, accessories, and labor for a complete and professional installation.



6.2. OTs Double-Leaf Lead-Lined Manual Doors

Supply and installation of specialized doors for the Operating Theatre (OT) suite, double-leaf swing doors, manually or power-assisted operated, with integrated radiation shielding consisting of a calibrated lead sheet (e.g., 2 mm) embedded inside the leaf and frame. External cladding in flush HPL, hermetic/tight-fitting seals, clinical elbow handles or push-pad bars, and flush-mounted vision panels with lead glass.

6.3. Certified Metal Fire Doors (REI 60 / EI 60)

Supply and installation of certified metal fire doors, single or double leaf, rated REI 60, for fire compartmentation across clinical zones and corridors. Complete with corner steel frames, thermal-insulated leaf core, intumescent seals, self-closing spring hinges, horizontal panic bars along escape routes, and electromagnetic hold-open door releases connected to the central fire alarm system.

6.4. Aluminium Doors and Windows

Supply and installation of aluminum doors and windows equipped with insulated double glazing, with documented thermal performance:

- Thermal Transmittance: U-value $\leq 1,8 \text{ W/m}^2\text{K}$
- Solar Factor: Solar Heat Gain Coefficient (SHGC) ≤ 0.65

The rate includes: extruded aluminum alloy profiles complying with EN 12020 and EN 755 (or equivalent),; supply and installation of insulated glass units including spacers. The unit rate is fully inclusive of all system-compatible and certified hardware (corner cleats, hinges, handles, multi-point locks, and gaskets) properly engineered to support the respective sash weights and wind loads. The complete assembly must meet the project's minimum requirements for air permeability, watertightness, and resistance to wind load in accordance with EN 14351-1, with performance values explicitly declared by the supplier during the bidding phase.

7. Plastering and Pointing

7.1.1. Plaster. Base and fine Coat Plastering for new bricks Walls

Supply and application (manual or machine) of internal plaster on new brick walls, consisting of a first base coat (scratch coat) based on cement/lime and a second finish coat (fine civil plaster) worked with a fine trowel to make the surface perfectly flat, plumb, and ready for skimming/painting.

8. Floor and Wall Finishing

8.1. Cement Screed

8.1.1. Installation of new Cement Screed

Supply and installation of a new sand and cement floor screed, 50mm nominal thickness, to serve as a perfectly level substrate for floor tiling. The rate includes cleaning and preparation of the underlying concrete slab; application of a bonding primer or slurry coat if required; mixing, pouring, and leveling the cementitious screed; and troweling/floating to a true, flat, and even finish. The unit rate is fully inclusive of leaving the surface fully prepared, dry, and ready to receive ceramic or porcelain tiles using thin-set tile adhesive.

8.2. Tiles and other Finishing

8.2.1. Special Technical Stoneware Flooring (OTs)

Supply and installation of high-density, 300x300/300x600/600x600 mm chemically resistant technical "Full body" porcelain (Porcelain Mutajanis بورسلان متجانس) tiles for Operating Rooms (OT), using special glue for tiles, with airtight joint sealing using anti-acid, antibacterial, and waterproof epoxy grout, highly resistant to frequent washing and deep disinfection, including curved perimeter cove fittings.

8.2.2. Special Technical Stoneware Flooring (OTs)

Supply and installation of high-density, chemically resistant technical "Full body" porcelain (Porcelain Mutajanis بورسلان متجانس) curved hygienic cove base (skirting) to form a seamless concave transition between flooring and wall tiles without right angles in Operating Rooms (OT), using special glue for tiles, with airtight joint sealing using anti-acid, antibacterial, and waterproof epoxy grout, highly resistant to frequent washing and deep disinfection. The skirting elements must exactly match the physical, chemical, and aesthetic properties of the adjacent floor and wall tiles.

8.2.3. Full-Height Technical Stoneware Wall Tiles (OTs)

Supply and installation of high-density, 300x300/300x600/600x600 mm chemically resistant technical "Full body" porcelain (Porcelain Mutajanis بورسلان متجانس) tiles for Operating Rooms (OT), using special glue for tiles, with airtight joint sealing using anti-acid, antibacterial, and waterproof epoxy grout, highly resistant to frequent washing and deep disinfection, including curved perimeter cove fittings.

8.2.4. Ceramic Floor Tiles

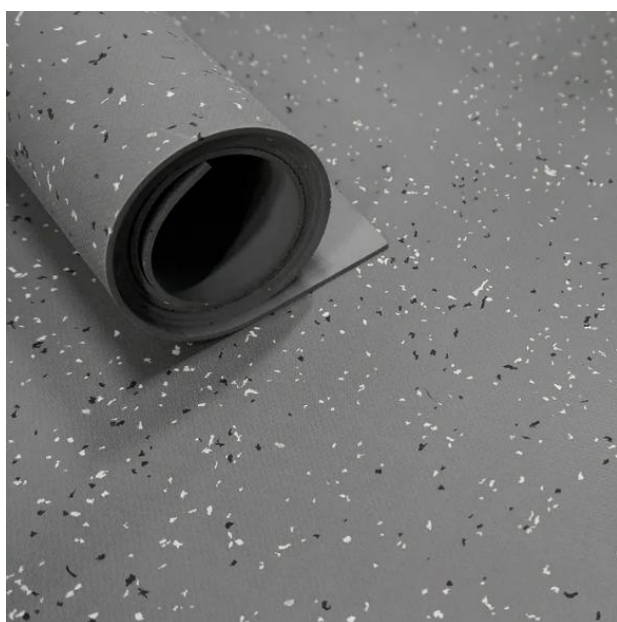
Supply and installation of high-density, 300x300/300x600/600x600 mm chemically resistant technical "Full body" porcelain (Porcelain Mutajanis بورسلان متجانس) tiles flooring bedded with glue with 2mm joints filled with tile grout. Price should include 10 cm skirting. Color and pattern of tile shall be approved by the engineer.

8.2.5. Ceramic Wall Tiles

Supply and installation of high-density, 300x300/300x600/600x600 mm chemically resistant technical "Full body" porcelain (Porcelain Mutajanis بورسلان متجانس) tiles on wall bedded with glue with 2mm joints filled with tile grout. Price should include 10 cm skirting. Color and pattern of tile shall be approved by the engineer.

8.2.6. Linoleum Floor (only in physiotherapy)

Supply & fix resilient safety flooring in linoleum or rubber/vinyl for physiotherapy areas, with shock-absorbing and anti-slip properties, minimum thickness 3.2 mm, certified for healthcare use and suitable for rehabilitation centers.



8.3. External Walls

8.3.1. Precast Concrete Coping for Masonry Wall

Supply and installation of precast concrete coping elements for the top of external masonry walls. The coping shall be manufactured with high-quality concrete, weather-resistant and durable, with a smooth or slightly textured finish as specified. Units shall be provided with a sloped surface and drip groove to allow water runoff and prevent staining or water infiltration into the wall structure. The coping shall be securely fixed using appropriate mortar or mechanical fixings as required. Joint sealing shall be done with suitable flexible sealant to ensure water tightness.

Unit rate to include all labor, materials, equipment, edge finishing, transportation, cutting (if necessary), and any other incidental works for a complete installation.

9. Painting Works

9.1.1. Standard Washable Acrylic Paint for General Areas

Painting of internal walls in patient rooms, clinics, and common healthcare spaces by applying water-based wall enamel, matte or satin finish, highly washable and resistant to hospital-grade disinfectants and detergents. Low-VOC certified.

9.1.2. Special Antibacterial Coating (Ots)

Application of a special protective coating using a water-borne two-component epoxy or polyurethane resin paint, additivated with permanent antibacterial/sanitizing agents (silver ion technology), specifically for ceilings and walls of the Operating Theatre (OT) and sterile rooms. Highly resistant to industrial chemical washing, solvent-free, providing a perfectly smooth satin/gloss finish, according to ISO EN 22196.

9.1.3. External Waterproof Paint (Quartz or Siloxane)

Protective external painting of plastered facade surfaces, executed after cleaning and applying a primer coat, by laying two coats of quartz-based or siloxane paint with high weather and UV resistance, water-repellent and anti-mold properties.

10. Ceiling

10.1.1. Suspended Lay-in Mineral Fiber Ceiling (60x60)

Supply and installation of a modular, acoustic suspended ceiling with 60x60 cm tiles made of mineral fiber or washable antibacterial material for corridors and offices. Suspended via an exposed white pre-painted T-bar grid system hung from the upper slab, designed to conceal ventilation ducts and MEP networks, including perimeter L-angle trims.

10.1.2. Monolithic Suspended Gypsum Board ceiling

Supply and installation of a continuous, non-accessible suspended ceiling using gypsum boards (standard, moisture-resistant, or fire-rated depending on room type) fixed to a single or double metal framing suspended from the slab. Including joint taping, skim coating ready for paint, and integrated access hatches where required for valves or mechanical systems. Used in wards and specialized clinical areas.

11. Green and External Areas Works

11.1.1. Restoration, clearing and weeding of Existing Garden Areas

General clearing, brush cutting, and removal of wild weeds, briars, and overgrown vegetation accumulated in the garden areas adjacent to the building. Including new local grass planting, superficial ground leveling, collection, loading, and transport of organic waste to disposal points, excluding mature tree pruning.

11.1.2. Renovation of existing external paving

Complete cleaning and clearance of existing external paved areas. The rate includes the manual or mechanical eradication and removal of all weeds, moss, and spontaneous vegetation from surface joints and edges; thorough sweeping, collection, and removal of accumulated dirt, soil, rubbish, and loose debris; and the loading, transportation, and legal off-site disposal of all resulting green waste and sweepings at an authorized facility, leaving the pavements completely clean and clear.

11.1.3. Asphalt Roads Repairing

Repair and extraordinary localized maintenance of the internal asphalted roadway network on the three sides of the building currently in fair condition. Including mechanical milling of cracked/damaged zones, bottom cleaning, tack coat spraying with bituminous emulsion, supply and laying of hot-mix asphalt concrete (wearing course) compacted thickness 3-4 cm, and final mechanical roller compaction.

12. Metal Works

12.1.1. Metal Ramp

1. General Description Supply and installation, on a lump-sum basis, of an external heavy steel ramp designed for patient evacuation. The structure has a total linear length of approximately 90 meters, accommodating a total height difference of about 8 meters. The layout includes all sloped sections, slope changes, and intermediate/terminal resting landings.

2. Technical Specifications and Materials This item covers the manufacturing and installation of all structural and architectural elements, specifically:

- **Structural Framework:** Main and secondary structures made of hot-rolled steel profiles (e.g., columns, supporting beams, wind bracings, and stringers) properly sized according to the required structural calculations.
- **Flooring:** Ramp and landing walking surfaces made of anti-slip steel checker plate or heel-proof grating. The surface must be completely flush and smooth to ensure the safe and vibration-free transit of stretchers, hospital beds, and wheelchairs.
- **Guardrails:** Safety guardrails featuring continuous double handrails (at standard and reduced heights for accessibility) and intermediate rails or balusters to prevent falls.

3. Surface Treatment

- All steel components (framework, flooring, guardrails) must be fully protected against corrosion through **hot-dip galvanizing**, with a zinc thickness suitable for permanent outdoor exposure.

4. Included Costs The lump-sum price guarantees a complete "turnkey" installation, including but not limited to:

- Preliminary on-site dimensional and topographic surveys.
- Executive design, fabrication shop drawings, and a structural calculation report prepared and signed by a licensed engineer.
- Supply of all necessary hardware (high-strength galvanized bolts) and anchoring systems (plates, chemical/mechanical anchors) to fasten the structure to the concrete foundations and the existing building.
- Transportation to the site, hoisting with cranes or suitable lifting equipment, and complete assembly by specialized personnel.
- Provision of material mill certificates and final As-Built drawings.

13. Horizontal and Vertical Joints

All structural movement joint systems shall be proprietary, complete and suitable for the joint width, expected movement, adjacent finishes and service conditions. Rates shall include profiles, seals, anchors, fixings, corners, transitions, accessories, shop drawings and complete installation.

The Contractor shall verify the actual joint dimensions before ordering and submit the proposed manufacturer, model and technical specifications for EMERGENCY's approval.

13.1.1. Internal Floor Structural Movement Joint

Supply and installation of flush structural movement joint system for internal hospital floors, suitable for pedestrian traffic, wheelchairs, hospital beds, medical trolleys and cleaning equipment. System complete with

corrosion-resistant profiles, replaceable elastomeric insert, anchors, fixings and all accessories. Exposed surfaces shall be smooth, hygienic, easy to clean and compatible with the adjacent floor finish.

13.1.2. External Floor Structural Movement Joint

Supply and installation of heavy-duty structural movement joint system for external floors, suitable for the specified pedestrian or vehicular traffic. System complete with corrosion-resistant profiles, UV- and weather-resistant seal, anchors, fixings and accessories. The completed joint shall be flush, slip-resistant, weather-resistant and free from trip hazards.

13.1.3. Internal Wall and Ceiling Structural Movement Joint

Supply and installation of heavy-duty structural movement joint system for external floors, suitable for the specified pedestrian or vehicular traffic. System complete with corrosion-resistant profiles, UV- and weather-resistant seal, anchors, fixings and accessories. The completed joint shall be flush, slip-resistant, weather-resistant and free from trip hazards.

13.1.4. External Facade Structural Movement Joint

Supply and installation of weather-resistant and watertight structural movement joint system for external façades, complete with corrosion-resistant profiles, continuous UV-resistant flexible seal, anchors, flashings, end closures and transitions. The system shall maintain continuity of the façade weatherproofing system throughout the specified movement range.

13.1.5. Watertight Structural Movement Joint for Terraces

Supply and installation of fully watertight structural movement joint system for waterproofed external terraces, complete with corrosion-resistant profiles, flexible waterproof element, mechanical terminations, anchors, seals and all accessories. The system shall be fully compatible and continuously connected with the terrace waterproofing membrane and shall remain watertight throughout the specified movement range.

Alternative Prices

2. Demolition Works

2.1.10. Demolition and removal of Existing Finishing Floor Surface (Porcelane/Granite Tiles or Marble Tiles)

Complete demolition and careful removal of existing porcelain, granite, or marble floor tiles, do not including the chipping away of mortar beds and adhesives and do not expose the clean structural substrate, loading, horizontal/vertical handling. Include transport of all debris to an authorized disposal facility.

2.1.11. Demolition and removal of Existing Finishing Floor Surface (Linoleum)

Complete removal and disposal of existing linoleum flooring, do not including the mechanical scraping and removal of residual glues or adhesives and do not expose a clean screed, loading, handling, and transport of waste materials to an authorized landfill.

5. Block works and Partition Wall

5.1.6. Extra Over: Moisture-Resistant Upgrades

Additional rate (Extra Over) applied exclusively for upgrading standard drywall partition cladding to moisture-resistant boards in wet areas, encompassing the difference in material cost and any specific moisture-resistant jointing compounds required.

5.1.7. 50mm Rock Wool Acoustic Insulation

Supply and installation of 50mm thick rock wool acoustic insulation panels within the cavity of drywall partition frameworks, including proper cutting, fitting, and securing to ensure continuous sound dampening and thermal insulation properties without gaps.

7. Plastering and Pointing

7.1.3. Repair and Skimmed of Existing Damaged

Targeted restoration of existing wall plaster, strictly limited to localized areas presenting loose, crumbling, or unstable material. The operation includes the careful removal of all detached and compromised plaster down to the sound structural substrate, followed by thorough surface cleaning and preparation. The work requires the precise patching and skim coating of these specific sections to seamlessly blend with the surrounding intact surfaces, achieving a perfectly flat, plumb, and smooth continuous finish that is completely ready to receive the final painting or decorative coating.

8. Floor and Wall Finishing

8.1. Cement Screed

8.1.2. Renovation (Patching) of new Cement Screed

Localized repair and patching of newly installed cement screeds to correct imperfections, level discrepancies, or accommodate variations, ensuring a perfectly flat, solid, and continuous substrate ready to receive final floor finishes.

8.2. Tiles and other Finishing

8.2.7. Conductive/Anti-static Self-Leveling Epoxy Flooring (Operating Theatres)

Supply and application of a conductive, anti-static, self-leveling epoxy flooring system specific for operating theatres and sterile environments. The work includes mechanical surface preparation, application of a conductive epoxy primer, installation of a copper earthing tape network connected to the electrical grounding system, and casting of the final seamless, antibacterial epoxy topcoat. The finished surface must safely dissipate electrostatic charges, ensure absolute hygiene without joints, and provide high resistance to hospital-grade chemical disinfectants and frequent intensive cleaning.

8.2.8. Seamless Epoxy Hygienic Coved Skirting

Supply and installation of seamless epoxy hygienic coved skirting to form a concave, easy-to-clean transition between the floor and wall, specifically designed to eliminate right angles where dirt can accumulate, ensuring compliance with strict healthcare hygiene standards.

8.2.9. PVC Wall Cladding

Supply and installation of UPVC protective wall cladding panels, mechanically fixed or fully bonded to the wall substrate, including all necessary matching trims, corner profiles, and welded or sealed joints to provide a durable, impact-resistant, and hygienic washable surface.

8.2.10. Cement Screed non Slippery (External Walkways)

Supply and installation of a non-slip exterior cement screed for walkways, including substrate preparation, pouring, leveling, and creating a textured or broom finish to guarantee safe pedestrian transit in outdoor, weather-exposed conditions.

8.2.11. Renovation of the marble tiles

Restoration and renovation of existing marble tile flooring, including localized repairs, deep cleaning, regrouting of joints, mechanical polishing, and surface sealing to restore the original aesthetic and structural properties of the stone.

12. Metal Works

12.1.2. Metal Grills Renovation

Renovation of existing metal security window grilles, including the complete removal of old paint and rust via sanding or grinding, structural repairs to damaged bars or fixings, application of anti-corrosion primer, and finishing with durable exterior-grade enamel paint.