

الجمهورية اللبنانية

وزارة الثقافة

المُلحق رقم (1)
BOQ LBP
جدول الكميات والأسعار

***مقدمة:**

- يجري التلزم على أساس تقديم أدنى الأسعار
- ١- يجب على المتعاقد أن يأخذ بعين الاعتبار كافة الأشغال والمواد اللازمة لإنجاز الاعمال المطلوبة، وأن يجمع جميع المعلومات الضرورية والمتعلقة بالمخاطر والطوارئ وأي ظروف أخرى يُمكن أن تؤثر في عرضه.
- ٢- يُعتبر المتعاقد راضياً عن عرضه قبل تقديمه وذلك في ما يتعلق بدقة وصحة وشمولية عرض أسعاره المحدد في جدول الكميات أو جدول الأسعار على أن تغطي كافة التزاماته وفق هذا العقد.



UNESCO PALACE - HVAC SYSTEM
Schedule of Rates

Grand Summary

Division	Amount (LBP)
Division 1: General Requirements Division 7: Thermal & Moisture Protection Division 23: Mechanical Works Division 26: Electrical Works	
	Sub-Total (LBP)
	11% VAT (LBP)
	Grand Total (LBP)
	اسم العارض:
	توقيع وختم العارض:
	التاريخ:

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Division 0: Preambles

Item	Description
	<p>The Bill of Quantity is in conformance with the method of measurements included in the preambles. The Contractor is responsible for the interpretation of this document and is deemed to have understood all its aspects and accepts its explanations. The bill of quantity is to be fully reviewed and priced with the knowledge that no claims on account of deviation in method of measurement will be entertained.</p>
	<p>All quantities shall be re-measured at completion and submitted to the Engineer for approval. This excludes works where the unit of measurement is "item" which are paid as a lump sum and are not subject to re-measurement at completion.</p>
	<p>Preambles to Division 2: Rates for demolition shall include: a) Clearing and uncovering the elements to be demolished. b) Demolition, manual or mechanical (as the case may require) regardless of materials met. c) Protection of adjacent areas from falling debris, vibration. d) Special measures for delicate items or areas. e) Cleaning and cart-away of debris at the end of demolition works. f) Repairs and patching-up as necessary, re-instatement of finishes, and any special measures for concrete works. g) Working outside working hours to avoid disrupting activities in the rest of the building. h) Ensuring safe disconnection of all existing equipment as specified. i) Draining of all fluids and gases from existing systems as specified.</p>
	<p>Preambles to Division 7: Rates for roofing and waterproofing: a) Shop drawings for all details. b) Transport and delivery to site. c) Cleaning and preparation of surfaces. d) Overlaps and waste. e) Flood-testing as specified including provision for supply and storage of water. f) Temporary protection. g) Flashing and pointing as shown on drawings. h) Removal of existing membrane where/if required for a finished product under Contractor's standard guarantee. Waterproofing works are measured in surface area net of any openings or cut-outs exceeding 1 sq. m.</p>
	<p>Preambles to Division 23: Rates for plumbing works shall include: a) All labour, tools, plant, machinery, equipment, and transport. b) All materials. c) Painting of all exposed elements of the system wherever required by the Engineer. d) Cleaning, final testing, and handing-over. e) Guarantees, etc. f) Shop drawings and as-built drawings. g) Operations and maintenance manuals. h) Labeling and identification plates for appliances and pipelines. i) Assembling and jointing with approved methods. j) Fixations, anchors, etc. k) Cutting, pinning. l) Forming chases in concrete elements to the Engineer's approval. m) Closing all openings between fire zones with approved materials. n) Protection of pipes in areas where they are exposed to vehicular traffic with approved painted steel arrangement, and adhesive indicator strips. o) Manual and automatic air vents at high points and drain valves at low points of piping systems. p) Expansion joints. q) Builder's work. r) Bends, elbows, tees, junctions, cleanouts, etc. s) Certificates, samples, tests, other information that may be requested by the Engineer. t) Pipe hangers and supports.</p>



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Division 0: Preambles

Item	Description
	The rates for equipment shall include: a) Certificates, samples, tests, other information that may be requested by the Engineer b) Shop drawings, as-built drawings c) Cleaning, final testing, and handing-over d) Guarantees, etc e) Flexible connections, valves, thermometers, gauges, etc. f) Sound attenuation as required g) Electrical connection to the nearest disconnect switch shown on the electrical drawings, including cables, clamps, fixing accessories, etc. h) Spare parts as specified i) One year maintenance on the system
	The rates for insulation shall include: a) Insulation of hot and cold equipment b) Insulation of ducts and duct accessories
	The rates for HVAC works shall include: a) All labour, tools, plant, equipment, machinery, and transport b) Protection of all HVAC work c) Protection of pipes in areas where they are exposed to vehicular traffic with approved painted steel arrangement, and adhesive indicator strips d) Painting of all exposed elements of the system wherever required by the Engineer e) Cleaning, final testing, and handing-over f) Guarantees, etc g) Shop drawings and as-built drawings h) Operations and maintenance manuals i) Labeling and identification plates for appliances and pipelines j) Assembling and jointing with approved methods k) Fixations, anchors, etc l) Cutting, pinning m) Forming chases in concrete elements to the Engineer's approval n) Closing all openings between fire zones with approved materials o) 1/2" aluminum wire mesh p) Expansion joints q) Builder's work r) Certificates, samples, tests, other information that may be requested by the Engineer s) Pipe and duct hangers and supports t) One year warranty and maintenance including all parts and expenses.
	The rates for duct works shall include: a) The weight of the duct as measured geometrically without considerations for overlaps, bends, elbows, fittings, or waste b) Wooden frames for all grilles, transfer grilles, etc c) Access doors d) Flexible connections



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Division 0: Preambles

Item	Description
	<u>Preambles to Division 26:</u>
	The rates for electrical works in general shall include:
	a) Supply, transport, installation, testing, handing-over, of all parts of the electrical scope
	b) Maintenance and operation manuals, as-built record sets
	c) Shop drawings
	d) Priming or painting off-site applied as part of the manufacturing process
	e) Corrosion protective treatment where required.
	f) Fire sealants in openings between fire zones
	g) Brackets and supports.
	h) Temporary works and temporary protection, and their removal when no longer needed
	i) Spare parts as specified
	j) One year maintenance on all parts of the system
	The rates for main distribution boards shall include:
	a) Termination of outgoing cables to equipment including cable glands, termination and accessories
	b) Fixing and support structures and materials required for installation of wall or floor mounted equipment as indicated
	c) AC or DC power supply for switchgear control and operation
	The rates for feeders shall include:
	a) Net lengths
	b) Conduits, fittings, draw wires, etc
	c) Cable connectors and cable joints including joint boxes, sealing boxes, shrouds, and the like
	d) Allowance for cable length for entering control gear or equipment in its planned or other reasonably possible locations
	The rates for cable trays and cable ladders shall include:
	a) Mounting fittings, including cutting and jointing
	b) Joining between two sections, bends, tees, etc.
	c) Earthing continuity
	d) Adapters and connections between trunking and items of equipment or control gear requiring the use of flanges and/or the forming of apertures
	e) Pin racks for supporting cable
	f) Supports including fixing
	The rates for wiring devices and miscellaneous equipment shall include:
	a) Outlets
	b) Wires, including protective earthing conductors, conduits, trunking, and other raceways and fittings from outlet back to upstream outlet or to final branch circuit panel board
	c) Floor-mounted boxes are deemed to include trunking wiring and devices that are to be included under each

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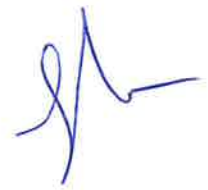
Division 1: General Requirements

Item	Description	Unit	Qty	Unit Price (LBP)	Price (LBP)
SECTION 013000					
ADMINISTRATIVE REQUIREMENTS					
1	Insurance Policy: Provide a Workmen's Compensation and a Contractor's All Risk insurance policy and maintain throughout the duration of the Works. The coverage should be provided by a reputable insurance company acceptable to the client and shall be in accordance with the Specifications.	item	1		
2	Photographs: provide photographic survey before starting the works, provide updated progress photographs upon presentation of every interim invoice.	item	1		
3	Resident Personnel: nominate for the Engineer's approval a resident Project Manager and a resident Site Supervisor in charge of representing the Contractor in all project related activities in accordance with the Specifications.	item	1		
4	Shop Drawings: The contractor shall elaborate new drawings based on the design drawing showing all details, effective sizes of selected equipment and fixtures, exact connection location and elevations. Shop drawings must be approved prior to execution. This includes electrical, mechanical, and civil trades.	item	1		
SECTION 013553					
SECURITY PROCEDURES					
5	Coordinate with Client's security personnel as specified.	item	1		
SECTION 015000					
TEMPORARY FACILITIES AND CONTROLS					
6	Provide temporary power, water, and lighting using own means.	Item	1		
7	Remove all temporary provisions and site utilities upon completion of the Works.	item	1		
SECTION 015600					
SAFETY AND ENVIRONMENTAL REQUIREMENTS					
8	Comply with the specified requirements to maintain a safe and environmentally-compliant work site including all measures necessary, tools, protection, personal safety devices, first aid facilities, etc.	item	1		
SECTION 017000					
EXECUTION AND CLOSEOUT REQUIREMENTS					
9	Provide all necessary cleaning and adjusting at the end of the Works.	item	1		
10	As Built Drawings: Before the final reception, the Contractor shall submit the final "As Built Drawings" with the exact routing of the pipes, and the exact location of the equipments. This document shall be backed by digital photos for the embedded pipes. This includes electrical, mechanical, and civil trades.	item	1		
11	Testing & Commissioning: The rate of testing and commissioning shall include: Labor, tools, works, materials to achieve the testing and the good running of the systems, including the submittals of testing sheets required by the consultant	item	1		
To Grand Summary (LBP)					

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Division 7: Thermal & Moisture Protection

Item	Description	Unit	Qty	Unit Price (LBP)	Price (LBP)
SECTION 075200					
MODIFIED BITUMINOUS MEMBRANE ROOFING					
Waterproofing membrane consisting of two layers of reinforced SBS membrane including primer, reinforcement at corners, overlaps, flashing and pointing, fasteners, cant strips, all in accordance with the Specifications.					
1	Waterproofing membrane to machine bases, cable tray supports, and all roof concrete elements where required.	item	1		
SECTION 078400					
FIRESTOPPING					
2	Provide firestopping at all pipe, cable, duct, and cable tray penetrations as specified.	item	1		
					To Grand Summary (LBP)



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Division 23: Mechanical Works

Item	Description	Unit	Qty	Unit Price (LBP)	Price (LBP)
SECTION 230500					
BASIC MECHANICAL MATERIALS AND METHODS					
The Contractor shall include in all the necessary items, tools, engineering.					
1	Labeling tagging of equipment with their related control panel and components	item	1		
2	Painting and identification of pipes	item	1		
3	Builders works with all necessary civil work related to Mechanical systems. This shall include new concrete bases where required, adaptation of existing concrete bases, and all necessary penetration, coring, and related works.	item	1		
SECTION 230700					
DUCT INSULATION					
Supply and install Chemically cross-linked closed-cell polyolefin foam as specified					
4	Duct insulation	m ²	700		
RESIN JACKETING					
Supply and install a Multi-layered laminate or liquid-applied polymer resin reinforced with glass fiber mesh as specified					
5	Aluminum Duct jacketing	m ²	600		
SECTION 230923					
BUILDING MANAGEMENT SYSTEM					
Supply, install BMS system, including conduits, field devices, DDC controllers, panels, junction and pull boxes with all the mechanical and electrical points, along with all the necessary accessories, controls, field devices, ... for the perfect operation of the system, as specified and/or shown on the drawings and to the satisfaction of the Engineer complete with interfaces and communication port connections.					
The system architecture shall support future expansion capacity of all types of BMS panels, associated DDCs, and all points types included in the initial installation.					
The BMS supplier has to prepare a detailed shop drawings prior to system execution.					
Note: the BMS item is priced as a lump sum against a system that fulfills the functional requirements described in the Specifications and Schedule of Points. No re-measurement of the total number of points is allowed except in cases where the Engineer adds or omits functional requirements from the original Schedule of Points.					
6	BMS	item	1		
SECTION 233113					
SECTION 233300					
GALVANIZED RECTANGULAR DUCT					
Supply and installation of duct for the air distribution systems made of galvanized steel sheets conforming to the ASHRAE norms, and SMACNA regulation, including air plenums, splitter or volume dampers where shown on the drawings, duct liner, including connections to AC units, hangers, canvas, seams, Sound attenuators where indicated on drawings. Duct shall be manufactured and installed according to the specifications and detailed drawings. Price shall include cleaning of the existing duct.					
7	Galvanized rectangular duct	Kg	7,000		
8	Duct Cleaning	item	1		
Provide cleaning by mechanical means to new and existing ducts for all machines in the Scope of Work as specified in paragraph 3.05 of Section 233113. This shall include labor, equipment, tools, survey report, and all necessary items.					

Division 23: Mechanical Works

Item	Description	Unit	Qty	Unit Price (LBP)	Price (LBP)
SECTION 237413					
ROOF TYPE PACKAGED AIR CONDITIONER					
Supplying and installation a roof type packaged air conditioning unit, heat pump 380V/3ph/50hz power supply as specified. Price shall cover drain connections, as well as a guarantee and free maintenance for one year.					
9	RT-01	each	4		
Note: supply and installation of the two package units serving rooms GF02 and GF is not in this scope of work and will be carried out separately by the Employer later. All related works remain within the scope.					
SECTION 238126					
CENTRAL SPLIT TYPE AIR CONDITIONER					
Supplying and installation a central system heat pump as specified. The unit shall be complete with a full function controller. Price shall cover copper tubing from the IU to the OU with insulation, drainage pipe, filter-dryer, pressure test, vacuum and freon charge if necessary, duct connection from the IU to existing duct with internal duct lining and insulation, disconnect switch, as well as a guarantee and free maintenance for one year. The Contractor shall submit for the static pressure of the fan- to insure the proper air quantity to the conditioned area through the duct.					
10	AC-01	each	2		
11	AC-02	each	2		
12	AC-03, including power cables from the nearest panelboard in the basement and circuit breaker.	each	1		
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Division 26: Electrical Works

Item	Description	Unit	Qty	Unit Price (LBP)	Price (LBP)
BASIC ELECTRICAL REQUIREMENTS					
The Contractor shall include in all the necessary items, tools, engineering.					
1	Labeling tagging of panel boards and components	item	1		
2	Identification of cables, wires, CBs, Disconnectors...	item	1		
3	Intumescent seals for all incoming trays, cables from vertical shafts to each floor	item	1		
4	Builders works with all necessary civil work related to Electrical systems including coring, penetrations, cable tray bases, sealing of openings, chases, steel sheds at panel boards, and all necessary items for a turnkey job.	item	1		
WIRES AND CABLES					
Supply, installation, testing and connection of Cu/PVC/PVC & fire resistant cables or Cu/PVC fire resistant wiring insulated conductors, including junction boxes, cable ladders, cable cleats, cable glands, sealing compound, cable sleeves and all necessary accessories including conduits and liquid-tight flexible conduits (for outdoor and wet areas) where necessary, as specified and shown on drawings and to the satisfaction of the Engineer.					
The electrical cables have to be fixed to cable trays, metallic supports and upon entry to MDB's & SMDB's by metallic clamps.					
The single core cables have to be installed in trefoil arrangement.					
All cables/insulated conductors to be labeled/ identified as per the adopted specification requirements.					
All cables shall be tested for insulation and continuity using megger machine					
Approved manufacturers Liban cable or equivalent.					
Cables Cu/PVC/PVC 600/1000 V, to IEC 502.					
5	Cable, 4x50 mm ²	m	193		
6	Cable, 4x16 mm ²	m	128		
7	Provisional Item: Laying of Existing Cables	m	0		
Installation, testing and connection of cables existing on site and deemed suitable by the Engineer for use in the Permanent Works.					
This item includes labor, glands, cleats, sleeves, consumables, transport, and any accessories required to utilize the existing cables.					
Earth Cables					
Supply, installation, connection and testing of Cu/PVC 450V, earth cables (to IEC 227) including accessories as specified and to the satisfaction of the Engineer.					
8	Earth cable, PVC insulated, 1x25 mm ²	m	193		
9	Earth cable, PVC insulated, 1x16 mm ²	m	128		



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Division 26: Electrical Works

Item	Description	Unit	Qty	Unit Price (LBP)	Price (LBP)
SECTION 260536					
CABLE TRAYS AND LADDER SYSTEMS					
Supply and installation of hot dip galvanized cable trays with returned flange and covers (where required on drawings/specifications)					
The cable trays have to be rigidly fixed to the structure.					
Electrical cable, have to fixed with metallic clamps when fixed on cable trays for cable sized above 25mm ² .					
Maximum spacing between metallic clamps, is to be less than 20 times cable diameter.					
The electrical cables on cable trays and ladders, have to be spaced by at least one diameter (of the Biggest size). A minimum of 30% space shall be kept on cable trays for future uses.					
Low current cables have to fixed with rigid clamps when fixed on cable trays.					
Maximum spacing between clamps is to be less than 1 meter.					
Low current cables on horizontal cable tray runs shall be grouped into logical bundles by function & area. CAT6A UTP cables shall not be bundled.					
The system has to be installed on concrete blocks (When needed) for a perfect operation and to the satisfaction of the engineer.					
All needed external cable trays with covers shall be included.					
Hot dip galvanized (after perforation/fabrication) perforated cable tray with return flange, 5cm or 10cm deep and non-perforated cover for external runs:					
10	Cable trays, 50x200mm (With Cover)	m	35		
11	Cable trays, 50x300mm (With Cover)	m	40		
12	Cable trays, 50x400mm (With Cover)	m	90		

Division 26: Electrical Works

Item	Description	Unit	Qty	Unit Price (LBP)	Price (LBP)
SECTION 262416					
SECONDARY DISTRIBUTION BOARDS					
	Supply, installation, connection, testing and commissioning of a modular type panelboard, Type Pragma or Type Prisma (where bigger space is needed), (with 24 modules/row) with full rating copper bus-bars, glass door, complete with thermomagnetic circuit breakers (1P+N), residual current circuit breakers and devices (RCCB, RCBO, RCD or ELCB), busbars, connectors, switch-disconnectors, distribution blocks, neutral and earth termination blocks, earth leakage protection devices, insulation monitoring devices, spares and spaces, cable terminations, structural support, protected Busbars, neutral and earth terminals for each subpanel, including all trunking and wires, ground conductors and accessories.				
	Surge protection devices shall be cartridges of the plug in type (MOV type), with corresponding fuses. (Dehn or Phoenix) The panel shall house all the control circuits, relays, contactors, impulse relays, measuring equipment, pilot lights (R-Y-B & Gen & EDL) with corresponding fuses and fuses holders, timers, digital multi-meter with corresponding fuses and fuses holders, current transformers installed on the din rail of the panel, and all needed components that are used for control, shall all be part of the panelboard - all items shall be of the same manufacturer.				
	The panel shall house on each rail the related subpanel (Lighting, Power & Mechanical), as specified and detailed on the drawings . All the panelboards' components shall be labeled and identified with a durable fixed identification with label support sheet mounted in a type written circuit directory. Panel boards have to be provided with engraved metal nameplates mounted with resistant corrosion screws.				
	The outgoing branches feeders are connected to circuit breakers by insulated flexible wires in PVC trunks (with 50% space) and suitable insulated connectors, mounted at the panel bottom. All panels shall have at least 30% space and 30% spare from the total numbers of panel size/module and circuit breaker numbers. Shop drawing of the panel board layout shall be submitted to the Engineer for approval. The panel board shall be installed, connected, terminated and assembled by a professional certified panel builder. IP42, design verified to IEC EN 61439-1&2. Cables entry into all panel boards shall be from the bottom.				
	Approved manufacturer Schneider Electric or equivalent.				
13	DB-RF-M-01	each	1		
14	DB-RF-M-02	each	1		
15	DB-RF-M-03	each	1		
To Grand Summary (LBP)					