

BIDDING DOCUMENTS FOR
RENOVATION AND REHABILITATION
OF
UNDP SUB OFFICE BUILDINGS
ADEN-YEMEN
Bill OF QUANTITIES

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■ **GENERAL NOTES, INSTRUCTIONS, AND REQUIREMENTS.**

- Tenderers are advised to visit the site and acquaint themselves with the surroundings and take any measurements deemed necessary as no claims will be accepted due to lack of knowledge of the site.
- All works according to particular specifications, technical rules, drawings, and supervisor engineer instructions.
- All used materials have to be of high quality and subject to the Employer/Engineer approval, and shall be the best available common practice in engineering codes at the time of execution.
- The unit rate of all items given hereunder in the Bill of Quantities includes supply all materials, transportation, supervision, labor, equipment, scaffolds, and etc. It shall also include overheads, risks, profit, and etc. and all other financial matters to have all these works completed. And all requirements necessary to have the work maintained until its final handing over. As well it includes Removal and disposal of demolished material, waste materials, debris, and etc. and should be dumped in an approved dumping site.
- The contractor should include in his unit rate the costs of sampling and testing as required according to work requirements, technical rules, specifications, and the engineer's directions.
- The Engineer term mentioned frequently in the BOQ means the employer or the consultant recruited by the employer.
- The contractor shall submit a list of his technical team and names the project manager, Civil engineer or Architect, with experience not less than 10 years in the same field, for approval before commencing any activities. And the workmen recruited must be highly experienced and skilled.
- The contractor has to submit detailed shop drawings to be approved by the engineer before commencing any work.
- For all activities mentioned in items shall be measured by accurate field measurement with net volume or area without any exceptions.
- All quantities given hereunder in the BOQ shall be deemed to be estimated quantities and the actual quantities increase or decrease, and any claim whatsoever submitted for cost or extra expenses incurred from such increase or decrease will not be accepted by Employer/Engineer.

- **ABBREVIATIONS.**

The following abbreviations are used throughout the Bills of Quantities:

BOQ Bills of quantities.

MM Millimetre.

CM Centimetre.

L.M. Linear meter.

M² Square meter.

M³ Cubic meter.

L.S Lump sum.

NO. Number.

Kg Kilogram.

REF. Reference.



CIVIL WORKS

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

1-	BILL OF QUANTITES OF REHABILITATION WORKS	SUB-BILL NO.1			
	CIVIL WORKS.	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
1.1	DISMANTLEMEN, DEMOLITION, AND REMOVAL WORKS.				
1.1.1	<u>Dismantlement and removal of existing doors.</u> In Number/door: Dismantlement and removal of installed door with steel Security Shutters if any. the work includes removal and disposal of waste materials to the specified and approved dumpsite, and doing all it takes and needs to finish the item according to the engineer's instructions and satisfaction.	NO	25		
1.1.2	<u>Dismantlement and removal of existing windows.</u> In Number/Window: Dismantlement and removal of installed window with steel Security Shutters if any. The work includes removing and disposing waste materials to the specified and approved location (Bir Al Na'am 30km north-west Aden), and doing all it takes and needs to finish the item according to the instructions and satisfaction of the engineer.	NO	25		
1.1.3	<u>Demolition and removal of existing Masonry walls.</u> In square meter: Demolition and removal of existing masonry walls whatever it is (stone, block, filigree, and etc). demolition process has to be in a technical way to avoid causing any damage to the structural frame of the building (columns, bearing walls, slabs, and etc). The work includes removing and disposal of debris and waste material to the specified and approved location (dumpsite), and doing all it takes and needs to finish the work according to the engineer's instructions and satisfaction.	M ²	250		
1.1.4	<u>Demolition and removal of existing flooring tiles and skirting.</u> In square meter: Demolition and removal of existing old flooring tiles, mortar and sand bed of rooms, corridors, baths, and etc.) demolition process has to be in a technical way to avoid causing any damage to the structural frame of the building (columns, bearing walls, slabs, and etc) . Also, The work includes removing and disposing debris and waste materials to the specified and approved location (dumpsite), and doing all it takes and needs to finish the item according to the engineer's instructions and satisfaction.	M ²	950		
1.1.5	<u>Demolition and removal of existing wall tiles:</u> In square meter: Demolition and removal of existing wall tiles and mortar of baths, kitchens, and wherever). demolition process has to be in a technical way to avoid causing any damage to the structural frame of the building . Also, the work includes removing and disposing debris and waste materials to the specified and approved location (dumpsite), and doing all it takes and needs to finish the item according to the engineer's instructions and satisfaction.	M ²	300		
	SUB-TOTAL-SHEET1				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

1-	BILL OF QUANTITES OF REHABILITATION WORKS	SUB-BILL NO.1			
	CIVIL WORKS.	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
1.2	PLASTERING AND PAINTING WORKS.				
1.2.1	<u>Supply and Laying Internal cement plaster:</u> In square meter: Supply, laying, and finishing internal plastering for the new walls and ceilings, and repairing the existing damaged plaster of walls and ceilings. The work and price include removing and peeling the damaged and feeble parts of the harmed areas properly with wire brush and electrical grinder, laying plastering composed of 2 coats, a rough bond coat consists of (1cement:1coarse sand) and a finishing coat using cement mortar consists of (1cement : 3sand), curing with water three times a day for seven days. Also, the price includes scaffolding, labor, and doing all it takes and needs to finish the work according to the technical rules and instructions of the engineer.	M ²	600		
1.2.2	<u>Supply and Laying External cement plaster:</u> In square meter: Supply, laying and finishing external plastering for the new walls and repairing the existing damaged plaster of walls, Facades, parapets, and etc . the work and price include peeling and removing the feeble and defective parts properly with wire brush and electrical grinder, laying plastering composed of 2 coats, a rough bond coat (1cement:1coarse sand) and a finishing coat using cement mortar consist of (1cement : 3sand), curing with water three time a day for seven days. Also, the price includes scaffolds, labor, and doing all it takes and needs to finish the work according to the technical rules and instructions of the engineer.	M ²	300		
1.2.3	<u>Supply and apply internal oil paint for walls:</u> In square meter: Supply and apply oil paint for the internal walls, two coats with the required color. The work and price include cleaning surfaces of dust, dirt, stuck, and etc. Peeling and striping the existing defective painting and puttying properly. filling any holes with cement mortar, sanding, priming, puttying 2 faces and polishing, filling the cracks with special paste and epoxy (adibond) after expanding, adding special paste mesh on cracks, and doing all it takes and needs to finish the work properly, according to the technical rules and the engineer's instructions.	M ²	2,900		
1.2.4	<u>Supply and apply water Paint for ceilings:</u> In square meter: Supply and apply water Paint for ceiling, two coats white color. The work and price include cleaning the surfaces properly of dust, dirt, stuck, and etc. Peeling and striping all damaged painting and puttying properly, filling any holes with cement mortar, sanding, priming, puttying and polishing, filling the cracks with special paste and epoxy (adibond) after expanding, and doing all it takes and needs to finish the work properly, according to the technical rules and the engineer's instructions.	M ²	1,400		
1.2.5	<u>Supply and apply external Painting:</u> In square meter: Supply and apply external weather resistant Paint(high quality). The work includes peeling and striping the old existing paints properly, cleaning the surfaces of dust, dirt, stuck, and etc. sanding, priming, applying 2 finishing coats, and doing all it needs to finish the work properly, according to the technical rules and the engineer's instructions.	M ²	850		
	SUB-TOTAL-SHEET2				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

1-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.1			
	CIVIL WORKS.	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
1.3	TILE AND FALSE CEILING WORKS.				
1.3.1	Supply and laying Porcelain Floor tiles: In square meter: Providing, laying, and finishing porcelain flooring tiles (60x60x0.8) of high quality, approved by the engineer for rooms, offices, and corridors. The work and price include supplying and preparing sand bed ,installing tiles accurately on a leveled layer of cement mortar (1cement: 3sand) not less than 3 cm thick., grouting and finishing properly, curing with water properly for not less than seven days, and doing all it needs to finish the work according to the technical rules and the engineer's instructions.	M ²	850		
1.3.2	Supply and installing Porcelain wall tiles: In square meter: Providing, installing, and finishing porcelain wall tiles (60x60) of high quality, approved by the engineer for the walls of the ground floor of B2. The work and price include removing the damaged plaster, preparing the surface properly, installing tiles accurately on a layer of cement mortar (1cement: 3sand), grouting and finishing properly, curing with water properly for not less than seven days, and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions.	M ²	210		
1.3.3	Supply and Laying Ceramic Flooring tiles: In square meter: Supply, laying, and finishing anti-slip ceramic flooring tiles of high quality, approved by the engineer, for bathrooms and kitchens. The work and price include supplying and preparing sand bed ,installing tiles accurately on a layer of cement mortar (1cement: 3sand) not less than 3 cm thick.,curing with water properly for not less than seven days, and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions.	M ²	220		
1.3.4	Supply and install of Ceramic wall tiles : In square meter: Supply and installation of Ceramic wall tiles for bathrooms and kitchens, (high quality, approved by the engineer). The work and price include, installing tiles accurately on a layer of cement mortar (1cement: 3sand), and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions.	M ²	900		
1.3.5	Supply and Install of Porcelain Skirting: In Linear meter: Supply and installation of porcelain skirting for walls , 10 cm height (high quality, approved by the engineer). The work and price include, preparing the surface properly, installing tiles accurately on a layer of cement mortar (1cement: 3sand), grouting and finishing properly, curing, and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions.	L.M	700		
1.3.6	Maintenance and clean of mosaic floor tiles: In square meter: Maintenance and cleaning floor mosaic tiles of the stairs and balconies of B2. The work includes cleaning and grouting the joints of the tiles with white cement, polishing the tiles with special substance and machine, and doing all it needs and takes to finish the work according to the technical rules and the engineer's instructions and satisfaction.	M ²	150		
1.3.7	Supply and Installation of fiber false ceilings: In square meter: Supply and installation of fiber false ceiling, tiles size (60x60) of high quality approved by the engineer, suspended and installed properly by grid of suspension system. the price includes all it takes and needs to finish the item as shown in the drawings and instructed by the engineer.	M ²	550		
	SUB-TOTAL-SHEET3				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

1-	BILL OF QUANTITES OF REHABILITATION WORKS	SUB-BILL NO.1			
	CIVIL WORKS.	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
1.4	ALUMINUM, CARPENTRY, AND METAL WORKS.				
1.4.1	<u>Maintenance and repair of Aluminum Windows:</u> In Number/ window: Maintenance and repair of aluminum windows. The work and price include replacing any missing or damaged Parts, hardware, or accessories (glass 6mm, hinges, locks, handles, rubber, fly screen with frames(internal and external frames), and etc), fixing and sealing with silicone properly, cleaning and polishing, and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions and satisfaction.	NO	35		
1.4.2	<u>Supply and install aluminum windows:</u> In square meter: Supply and install of aluminum windows (high quality, approved by the engineer) match the same specification of the installed ones .The work and price include removing the previous ones, providing and installing all required parts and accessories (frames, glass 6mm, hinges, locks, handles, rubber, fly screen with frames, and etc.), fixing with anti-rust screws, sealing with silicone properly, and doing all it needs and takes to finish the work according to the technical rules and the engineer's instructions and satisfaction.	M ²	85		
1.4.3	<u>Supply and install aluminum doors with(door closer):</u> In square meter: Supply and installation of aluminum doors for baths and kitchens (high quality, approved by the engineer) tubes 1.8 mm with the same specification of the installed ones in B1 , work and price include removing the damaged previous doors if any, providing and installing all required hardware, parts, and accessories (frames, 3hinges/door, locks, handles, rubber, door closers, and etc), fixing with anti-rust screws, sealing with silicone properly, and doing all it takes and needs to complete the work according to the technical rules and the engineer's instructions and satisfaction.	M ²	55		
1.4.4	<u>Supply and install wooden doors:</u> In square meter: Supply and installation of wooden doors with frames (Swedish wood high quality, approved by the engineer), the work and price include removing the previous damaged doors, providing and installing all required hardware, parts, and accessories (frames, 3 hinges/door, locks, handles, and etc) of high quality, fixing frame with anti-rust anchors, sanding, puttying and polishing, painting(priming, and 2 coats of wooden paint applied with special machine , and doing all it takes and needs to complete the work according to the technical rules and the engineer's instructions and satisfaction.	M ²	100		
1.4.5	<u>Supply and install wooden Door closers:</u> In Number: Supply and installation of automatic wooden door closer with 60 KG for the doors specified by the engineer. The work and price include, providing and installing all required parts and accessories, and doing all it takes and needs to finish and operate the item according to the manufacturer recommendations and engineer's instructions and satisfaction.	NO	30		
	SUB-TOTAL-SHEET4				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

1-	BILL OF QUANTITIES OF REHABILITATION WORKS		SUB-BILL NO.1			
	CIVIL WORKS.		UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION					
1.4.6	<u>Supply and Installation of steel doors:</u> In square meter: Supply and installation of steel doors with frames (high quality, approved by the engineer), the doors made of steel tubes 60x30x2mm attached and welding vertically in proper way and the tubes of frames (80mmx 40mmx2mm). The work and price include removing the old doors if any , providing and installing all required hardware, parts, and accessories (3hinges/door, locks, handles, and etc.), sanding, painting (anti-rust paint and 3 coats of Metallic paint), and doing all it takes and needs to complete the work according to the technical rules and the engineer's instructions and satisfaction.		M ²	40		
1.4.7	<u>Supply and install steel door closers:</u> In Number: Supply and installation of automatic steel door closer with 80 KG. the work and price include, providing and installing all required parts and accessories, and doing all it takes and needs to finish and operate the item according to the manufacturer recommendations and engineer's instructions and satisfaction.		NO	10		
1.4.8	<u>Supply and install Security Shutters for Windows and balconies.</u> In square meter: supply and installation of Galvanized Steel Grill 16 mm for windows of the GF-B2 and balconies, in the same shape and specification of the installed ones, Steel bars spacing shall be not more than 8cm. the work and price include, providing all required parts and accessories, fixing with anti-rust stakes, sanding, painting with rust resistant paint, priming and 3 coats of Metallic paint with the required color, and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions and satisfaction.		M ²	150		
1.4.9	<u>Maintenance of steel windows :</u> In Number/window : Maintenance and repair of steel windows. The work and price include replacing any damaged or missing parts and accessories (glass, frames, hinges, locks, handles, fly screen, and etc.), peeling and burnishing properly, applying anti-rust paint and Metallic paint, re-fixing with anti-rust stakes, and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions and satisfaction.		NO	8		
1.4.10	<u>Maintenance and repair of steel Security Shutters of Windows:</u> In Number/ window: Maintain and repair Security Shutters of Windows. The work includes replacing the damaged parts, peeling and burnishing properly, applying anti-rust paint and Metallic paint, re-fixing with anti-rust stakes, and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions and satisfaction.		NO	12		
1.4.11	<u>Supply and installation of steel emergency spiral stair:</u> In Lump sum: Supply and installation of Emergency exit stair for the 1st and 2nd floors of the building2, (1.6m dia.) stair width is 70 cm, welded tightly to a Galvanized Iron pipe of 8inch x 7mm thick. standing in the middle of the stair and installed in a reinforced concrete base (1.5 x 1.5 x .5)m, minimum compression strength of 25MPa at 28 days), reinforced with no less than (8Ø16mm) bars for the both directions. The stair steps made of grained steel plates 1.5mm thick. supported with iron angles 5cm x5cm x 5mm. The work includes handrails. The stair to be fixed in the back side of the B2 . The work and price include providing and fixing all steel parts to connect the stair to the tow floors, sanding, painting (anti-rust paint and 3 coats of Metallic paint), as well, excavation works, and doing all it takes and needs to complete the work according to the technical rules, drawings and the engineer's instructions and satisfaction.		L.S	1		
	SUB-TOTAL-SHEET5					

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

1-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.1			
	CIVIL WORKS.	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
1.5	EARTH, MASONRY, CONCRETE, AND INSULATION WORKS.				
1.5.1	<u>Excavation works.</u> In cubic meter: Excavation in all types of soil (common or rock) , the work and price include disposing the surplus and unsuitable material to the approved dumpsite, and doing all it takes and needs to finish the work according to the drawings and instructions of the engineer.	M ³	40		
1.5.2	<u>Backfilling works.</u> In cubic meter: Supply and fill of suitable material from the excavation or selected borrow material, to be constructed in compacted layers not more than 20cm thick. The work includes all it takes to complete the item according to the technical rules, drawings and instructions of the engineer.	M ³	30		
1.5.3	<u>Supply and construction of basalt Stone masonry for base walls:</u> In cubic meter: Supply and construction of hard basalt stone masonry for external walls, using cement mortar (1 cement :3 sand) to be grouted with plain concrete. the work and price include doing all it takes and needs to finish the work according to the technical rules, drawings and the engineer's instructions.	M ³	25		
1.5.4	<u>Supply and build solid concrete block walls:</u> In square meter: Supply and build solid Automatic cement blocks (40x20x20) cm for external walls of the building 2 , Drivers room , and where it needs, with cement mortar (1:3). The work and price include scaffolds, workmanship, making connection holes with the existing walls, curing, providing and installing reinforced concrete sills above doors and windows, and doing all it needs and takes to finish the work properly according to the technical rules, drawings, and the Engineer's instructions.	M ²	150		
1.5.5	<u>Supply and build Hollow concrete block walls:</u> In square meter: Supply and build hollow Automatic Cement blocks (40x20x20) cm for internal walls of the building 2, and where it needs, with cement mortar (1:3). The work and price include, scaffolds, workmanship, making connection holes with the existing walls, curing, providing and installing reinforced concrete sills above doors and windows, and doing all it needs and takes to finish the work properly according to the technical rules, drawings, and the Engineer's instructions.	M ²	150		
1.5.6	<u>Supply and build light brick block walls:</u> In square meter: Supply and build brick walls (40x20x20) cm for internal walls of the building 2, and where it needs, with cement mortar (1:3). The work and price include, scaffolds, workmanship, making connection holes with the existing walls, curing, providing and installing reinforced concrete sills above doors and windows, and doing all it needs and takes to finish the work properly according to the technical rules, drawings, and the Engineer's instructions .	M ²	50		
1.5.7	<u>Supply and build soundproof walls for the generator room:</u> In square meter: Supply and build soundproof walls for the generator room composed of double hollow Automatic cement blocks (40x20x20) built with cement mortar (1:3) and grouted with 10 cm of polystyrene boards. The work and price include providing and installing all required materials, and doing all it takes to complete the item according to the drawings and instructions of the engineer.	M ²	70		
	SUB-TOTAL-SHEET6				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

1-	BILL OF QUANTITES OF REHABILITATION WORKS	SUB-BILL NO.1			
	CIVIL WORKS.	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
1.5.8	<u>Maintenance and repair of External Stone Masonry facades:</u> In square meter: Maintenance and repair of the external stone masonry facades of the G.F of the building2 . the work and price include, peeling and removing all damaged and feeble parts of the plaster, stones, and the old cement mortar of the stones joints properly , burnishing with wire brush and grinder, to ensure removing all feeble parts, laying plastering for the lower part of the damaged stones of the facades, composed of 2 coats. a rough bond coat consist of (1cement:1coarse sand) and a finishing coat using cement mortar consist of (1cement : 3sand), reshaping and lining the plaster with the same shape of the existing stone masonry. as well cleaning and polishing the upper parts of the stone masonry facades with wire brush and electrical grinder , grouting and finishing the joints and breaks with cement mortar(1:3), painting the joints and breaks with external weather paint of high quality. Also, the price includes scaffolding, labor, and doing all it needs and takes to complete the work according to the engineer's instructions and satisfaction. The price include disposing and hauling the debris to the dumpsite.	M ²	300		
1.5.9	<u>Maintenance and cleaning of Marble facades :</u> In square meter: Maintenance, cleaning, and polishing the marble facades of the building 2. the work and price include cleaning the surfaces of dust, dirt, stuck, etc., grouting any holes with cement mortar, polishing marble with special substance and machine. Also, the price includes scaffolding, labor, and doing all it needs and takes to complete the work according to the technical rules and the engineer's instructions and satisfaction .	M ²	580		
1.5.10	<u>Maintenance and repair of concrete stripe (belt) around building2:</u> In Linear meter: Maintaining and repairing the damaged concrete stripe around the building 2. the work and price include peeling and removing all damaged and feeble parts of concrete and paints, burnishing with wire brush and grinder, replacing the rusted rebar if it needs, Reforming and reshaping the stripe with the same specification that it was, with as it needs of concrete or cement mortar composed of 2 coats, a rough bond coat (1cement:1coarse sand) and a finishing coat using cement mortar consist of (1cement : 3sand), sanding, priming, applying 2 finishing coats of external weather paint. Also, the price includes scaffolding, labor, and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions. The work and price include disposing and hauling the debris to the approved dumpsite.	L.M	300		
1.5.11	<u>Maintenance and repair of concrete frame around windows:</u> In Linear meter: Maintaining and repairing the damaged concrete frame around windows of the building 2 . the work and price include, peeling and removing all damaged and feeble parts of concrete and paints, burnishing with wire brush, replacing the rusted rebar if it needs, Reforming and reshaping the frames with the same specification that it was, sanding, priming, applying 2 finishing coats of external weather paint, and doing all it takes and needs to finish the work according to the technical rules and the engineer's instructions and satisfaction. Also, The work and price include disposing and hauling the debris to the approved dumpsite.	L.M	230		
	SUB-TOTAL-SHEET7				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

1-	BILL OF QUANTITES OF REHABILITATION WORKS	SUB-BILL NO.1			
	CIVIL WORKS.	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
1.5.12	<u>Supply and casting cyclopean concrete:</u> In cubic meter: Supply and casting cyclopean concrete consists of (30% sound rubbles - 70% concrete, minimum compression strength of 25MPA at 28 days) for foundations. the work and price include providing all required materials of high quality (cement, sand, aggregate, and whatever), frameworks, workmanship, curing, and doing all it needs and takes to finish the work according to the technical rules, drawings, and the engineer's instructions.	M³	20		
1.5.13	<u>Supply and casting Plain cement concrete:</u> In cubic meter: Supply and costing Plain cement concrete minimum compression strength of 20MPA at 28 days). the work and price include providing all required materials (cement, sand, aggregate, and whatever), framework, workmanship, curing, and doing all it needs and takes to finish the work according to the technical rules, drawings, and the engineer's instructions.	M³	20		
1.5.14	<u>Supply and casting reinforced cement concrete:</u> In cubic meter: Supply and costing reinforced cement concrete for (footings, ground beams, columns, beams, slab, and etc), minimum compression strength of 25MPA at 28 days. the work and price include providing all required materials of high quality and clean(cement, sand, aggregate, reinforcement rebar, and whatever), framework, curing, and doing all it needs and takes to finish the work according to the technical rules, drawings and details, and the engineer's instructions.	M³	50		
1.5.15	<u>Supply and installation of pre cast concrete kerb stones 35cm:</u> In Linear meter: Providing and install pre cast concrete kerb stones class A (C25/28) 35cm height. The work and price include, excavation, plain concrete and doing all it takes to finish the work according to the technical rules, and the engineer's instructions.	L.M	20		
1.5.16	<u>Supply and installation of interlock cement tiles:</u> In square meter: Providing and install interlock 6cm thick. approved by the engineer. The work and price include, the sand fills, back filling, grouted fine sand , compaction and doing all it needs and takes to finish the work according to the technical rules and the engineer's instructions.	M²	25		
1.5.17	<u>Supply and grouting the beams holes with cement concrete:</u> In lump sum: Supply, grouting, and injecting the holes made in the ground floor beams of the buildind2 with cement concrete, minimum compression strength of 25MPA at 28 days. the work and price include providing all required materials of high quality and clean(cement, sand, aggregate, and whatever), providing injection machine, framework, workmanship, curing, and doing all it needs and takes to finish the work according to the technical rules and the engineer's instructions.	L.S	1		
	SUB-TOTAL-SHEET8				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

1-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.1			
	CIVIL WORKS.	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
1.5.18	Supply and laying Insulation layers for baths : In square meter: Supply and laying insulation layer of 4mm thick torch bond bitumen membrane water proof with 10 cm overlap (high quality, approved by the engineer), laid on a layer of hot bitumen, the work and price includes providing and laying not less than 5 cm plain concrete, and doing all it takes and needs to finish the work according to the technical rules and the instructions of the engineer.	M ²	100		
1.6	OTHER WORKS				
1.6.1	Supply and Treatment of termite: In Lump sum : Supply and treatment of termite for the wooden ceiling and walls of the G.F of B2. the work and price include providing the required substances (anti-termite), cleaning wooden surfaces of dust, dirt, stuck, etc), spraying and injecting all wooden surfaces properly with the required substances, and doing all it needs and takes to finish the item according to the technical rules and the engineer's instructions and satisfaction .	L.S	1		
1.6.2	Supply and installation of supporting steel frames. In Linear meter: Supply and installation of steel frames to support the deflected slabs of the ground floor of the building2. steel frames composed of beams of H-beam 16 cm height). beams shall be fixed tightly on the concrete beams of the slabs with concrete anchors 24mm fixed with epoxy . The price includes doing all it takes to finish the work according to the drawings and the engineer's instructions.	L.M	100		
1.6.3	Supply and installation of a shade (5x3.5)m for the main ground water tanks. In Lump sum: Supply and installation of 2 plain concrete bases and a shade for the main water tanks of the compound . the work includes the following: 1- Two bases of solid blocks (20x20x40)and cement concrete for the two water tanks. 2- Four steel columns of H beams (14X7)cm, each column fixed on a footing (0.8x0.8x0.6) of reinforced concrete, including excavation and backfilling. 3- Shade (roof) of steel purlins 10 cm supported with main beams of 14cm H-beam, insulation layer 5 cm and roof sheet panels 0.5 mm as shown in the drawings. 4- Fence of blocks 1m height, includes plastering, and painting. and doing all it takes and needs to finish the work completely according to the technical rules, drawings, and the engineer's instructions.	L.S	1		
1.6.4	Supply and installation of roof for the generator room In Square meter: Supply and installation of metallic roof for the generator room, composed of steel purlins 8 cm, sheet panels 0.5 mm. The work and price include doing all it takes to finish the work according to the drawings and the engineer's instructions.	M ²	25		
1.6.5	Departments and rooms names sign boards: In Number: Supply and fixing departments and rooms names signs boards Size 20*35 of plastic plate. The work and price include doing all it takes to finish the item according to the engineer's instructions.	NO	40		
	SUB-TOTAL-SHEET9				
	TOTAL AMOUNT OF CIVIL WORKS, CARRIED TO THE SUMMARY				



WASH WORKS

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

2-	BILL OF QUANTITES OF REHABILITATION WORKS	SUB-BILL NO.2			
	WASH WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
	GENERAL NOTES: COST OF SUPPLYING AND INSTALLING INTERNAL WATER SUPPLY NETWORKS AND INTERNAL SANITATION NETWORKS of ALL BATHROOMS AND KITCHEN ARE INCLUDED IN PRICES OF SANITARY WARE AND FIXTURES OF BATHS AND KITCHENS. WORK INCLUDES REPLACING THE OLD NETWORKS OR INSTALLING NEW NETWORKS, DEMOLITION WORKS AND REPARING ANY DAMAGE CAUSED				
2.1	<u>Supply and installation of external Sanitation networks for (bathrooms and kitchens):</u> In Lump sum: Supply, installation, testing and commission of external Sanitation networks for all bathrooms & kitchens in the building2 and drivers room. The work and price include demolition and removal works, Providing and installing all required parts, fittings, and accessories (Pipes of the required size(6inch, 4inch, and etc), elbows, connections, and etc.) heavy duty and High quality approved by the engineer) to connect all sanitary wares of baths and kitchens (toilets, bathtubs, showers, floor drains, washbasins (internal & external), sinks, and etc.) to the main sewer network. as well work and price include, excavation, backfilling, supplying and constructing manholes with heavy duty iron covers where it needs, fixing pipes properly on walls with clips, repairing any damage caused during installation process, and doing all it needs and takes to complete and operate the networks properly according to the technical rules, drawings and the instructions of the engineer. The price includes examination after completion.	L.S	1		
2.2	<u>Supply and Installation of external water supply networks:</u> In Lump sum: Supply, installation, testing and commission of external water supply networks for all bathrooms and kitchens in B2 and drivers room. work and price include Demolition and removal works . Providing and installing all required parts, fittings, and accessories (Pipes of the required size (1.5 inch,1 inch, & etc), connections, elbows, valves, stopcocks, and whatever it needs (heavy duty of High quality, approved by the engineer) to connect the internal water supply networks of all bathrooms and kitchens to the main source of water (Pumps of the ground water tanks behind the building1), also to connect the internal water supply networks of bathrooms and kitchens to the roof water tanks. as well, the price and work include excavation and backfilling works, fixing pipes on walls properly with clips, repairing any damage caused during installation process, and doing all it needs and takes to complete and operate the networks properly, according to the technical rules, drawings and the instructions of the engineer. The price includes examination after completion.	L.S	1		
2.3	<u>Supply and installation of Toilet (European type):</u> In Number: Supply, installation, testing and commission of European toilet of high quality approved by the engineer, in the required color with all supplies (siphon, elongated bowl, seat with open front, and etc). the work and price include removing the damaged toilet if any, supplying and fixing all required parts, fittings, and accessories of high quality (pipes of all required sizes, elbows, P traps, hose, valves, stopcocks, covers, and etc., to connect the toilet and its supplies to the external water supply network and the external sanitation drainage, and doing all it takes and needs to finish and operate the item according to the technical rules and the instructions of the engineer. The price includes examination after completion	NO	20		
	SUB-TOTAL-SHEET 1				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

2-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.2			
	WASH WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
2.4	<p><u>Supply & installation of Washbasin (European type) :</u> In Number: Supply, installation, testing and commission of washbasins (high quality approved by the engineer) with S and P trap outlet. work and price include supplying and installing all required supplies, fittings, accessories, and sanitary fixtures such as (Pipes , hose, elbows valves, stopcocks, connectors, valves, stopcocks, water mixers(cold and hot), rubbers, and etc.) to connect the washbasin and its supplies to the external water supply network, water heaters and the sanitation networks, and doing all it takes and needs to finish and operate the item according to the technical rules and the instructions of the engineer. The price includes examination after completion.</p>	NO	26		
2.5	<p><u>Supply & installion of Bathtub:</u> In Number: Supply, installation, testing and commission of bathtub (high quality approved by the engineer). The work and price include, supplying and installing all required parts, fittings, accessories, and sanitary fixtures of high quality (pipes, hoses, connectors, elbows, valves, stopcocks, rubbers, water mixers combined with shower (cold + hot), and etc.) to connect the bathtub and its supplies to the external water supply network, water heaters, and the external sanitation networks, and doing all it takes and needs to finish and operate the item properly, according to the technical rules and the instructions of the engineer. The price includes examination after completion</p>	NO	2		
2.6	<p><u>Supply and installation of Shower Sink:</u> In Number: Supply, installation, testing and commission of Slimline Shower sink with all supplies (high quality approved by the engineer).The work and price include, providing and installing all required parts, fittings, accessories, and sanitary fixtures (Pipes, couplings, hoses, connectors, elbows, valves, stopcocks, rubbers, water mixers combined with shower (cold + hot), and etc.) to connect the shower Sink and its supplies to the external water supply network, water heaters, and the external sanitation network, and doing all it takes and needs to finish and operate the item according to the technical rules and the instructions of the engineer. The price includes examination after completion</p>	NO	17		
2.7	<p><u>Supply and installation of kitchen sinks:</u> In Number: Supply, install, testing, and commission of kitchen sink with all supplies (high quality approved by the engineer). the work and price include, providing and installing all required parts, fittings, and accessories (pipes, couplings, hoses, connectors, valves, stopcocks, water mixers(cold + hot), rubbers, and etc. to connect the sink and it supplies to the external water supply network and external drainage, and doing all it takes and needs to finish and operate the item according to the technical rules and the instructions of the engineer. The price includes examination after completion.</p>	NO	7		
SUB-TOTAL-SHEET 2					

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

2-	BILL OF QUANTITES OF REHABILITATION WORKS	SUB-BILL NO.2			
	WASH WORKS				
S.No	WORK ITEM DESCRIPTION	UNIT	QTY	UNIT RATE \$	AMOUNT \$
2.8	<u>Supply and installation of stainless steel trap floor drain .</u> In Number: Supply, installation, testing and commission of stainless trap floor drain (15x15)cm with all supplies. The work and price include, providing and installing all required fitting, and accessories(pipes, couplings, covers, plates, p traps, and etc) to connect floor drain to the external sanitation networks, and doing all it needs and takes to finish and operate the item according to the technical rules and engineer's instructions	NO	25		
2.9	<u>Supply and install water tap 1/2":</u> In Number: Supply, installation, testing and commission of chrome taps 1/2 inch combined with flusher of high quality. The work and price include supplying and installing all required fittings and accessories, to connect taps to the water networks, and doing all it takes and needs to complete and operate the item according to the technical rules and instructions of the engineer. The price includes examination after completion.	NO	20		
2.10	<u>Supply and install electrical water heater :</u> In Number: Supply, installation, testing and commission of electrical water heater for baths of high quality 50 liter. The work and price include supplying and installing all required parts and fittings (Pipes, elbows, couplings, valves, cable, and etc.) of high quality to connect water heater to external water supply network and sanitary fixtures(showers, mixers, taps, and etc), also, to electrical source, and doing all it takes and needs to complete and operate the item properly according to the technical rules and the instructions of the engineer.	NO	15		
2.11	<u>Supply and install Mirrors.</u> In Number: Supply and installation of mirrors of high quality for washbasins. the work and price include providing and fixing all it needs to finish the item according to the instructions of the engineer.	NO	26		
2.12	<u>Supply and installation of Conditioners water drainage networks:</u> In Lump sum: Supply and installation of air Conditioners water drainage networks for building1 and building2. The work and price include providing and installing all parts, fittings, and accessories (pipes of the required sizes, couplings, elbows, clips, and etc. to collect and drain the outlet water of the conditioners to the specified places, fixing pipes on walls and ground properly with clips . and doing all it takes to finish the item properly according to the instructions of the engineer.	L.S	1		
2.13	<u>Supply and installation of roof water drainage pipes 4 inch (UPVC):</u> In Linear meter: Supply and installation of roof water drainage pipes of 4inch (UPVC). the work and price include providing and installing all required parts and fittings. (Pipes, elbows, connections, clips, and etc), demolition works, fixing pipes on walls properly with clips, repairing any damage caused. and doing all it takes to complete the item as instructed by the engineer.	L.M	100		
2.14	<u>Supply and installation of roof water tanks. capacity 2000 liter:</u> In Number: Supply and installation of plastic water tanks three layers capacity 2000 liter, (high quality, approved by the Engineer). The work and price include providing and installing footings of solid blocks for tanks, supplying and fixing all required parts and fittings (pipes 1 inch, connections, elbows, stopcocks, valves, clips, and etc) to connect the roof tanks to the pumps of the main ground water tanks, excavation and bachfilling, and doing all it takes to complete the work according to the technical rules and instructions of the engineer.	NO	3		
	SUB-TOTAL-SHEET 3				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

2-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.2			
	WASH WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
2.15	<u>Supply and installation of automatic water pumps.</u> In Number: Supply, installation, testing, commission of automatic water pumps for supplying water to the baths and kitchens of the building2, and roof water tanks. The work and price include providing and installing all required parts and fittings (Pipes, connections, elbows, stopcocks, valves, sockets, cables, clips, and etc) to connect the water pumps to the main water tanks, as well to connect the pumps to the electricity source, and doing all it takes and need to complete and operate the pumps properly according to the technical rules and instructions of the engineer.	NO	2		
2.16	<u>Supply and replacing heavy duty iron covers for manholes:</u> In Number: Supply and installation of heavy duty iron covers for manholes (80x80) cm. The work and price include removing the existing concrete ones, and doing all it needs and takes to finish the work properly according to the technical rules and the instructions of the engineer.	NO	5		
SUB-TOTAL-SHEET4					
TOTAL AMOUNT OF WASH WORKS, CARRIED TO THE SUMMARY					



ELECTRICAL AND MECHANICAL WORKS

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

3-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.3			
	ELECTRICAL AND MECHANICAL WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
3.1	LIGHTING SYSTEM:				
3.1.1	<u>Supply and installation of Tube led lighting T 8 (1* 18 watt):</u> In Number: Supply, install, connect, test and commission of lighting fixtures tube led lighting 1*18 watt length 1200 mm , not less than 1800 lm ,life time not less than 30000 hour surface mounted (Philips or equivalent). the work and price include providing and installing all supplies and accessories (switches(Legrand or equivalent) ,wiring (2*2.5+1*1.5) mm2(Saudi cables) installed in trunks (25x25) mm2 fixed with screws, and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	74		
3.1.2	<u>Supply and installation of square or Circular led lighting (1* 20 watt):</u> In Number: Supply, Install, Connect, Test and Commission of Lighting Fixtures Square or Circular led lighting 1*20 watt , not less than 1800 lm ,life time 30000 hour decor mounted (Philips or equivalent). the work and price include providing and installing all supplies and accessories (switches (Legrand or equivalent) ,wiring (2*2.5+1*1.5) mm2 (Saudi cables) installed in trunks (25x25) mm2 fixed with screws, and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	81		
3.1.3	<u>Supply and installation of circular led lighting(1* 9 WATT) For Bath Room:</u> In Number: Supply, Install, Connect, Test and Commission of Lighting Fixtures Circular led lighting 1* 9 watt (weather proof IP 54) Bath Room , not less than 1100 lm ,life time not less than 30000 hour decor mounted (Philips or equivalent). the work and price include providing and installing all supplies and accessories (switches (Legrand or equivalent) ,wiring (2*2.5+1*1.5) mm2 (Saudi cables) installed in trunks (25x25) mm2 fixed with screws, and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	25		
3.1.4	<u>Supply and installation of Emergency led lighting(1*10 WATT):</u> In Number: Supply, Install, Connect, Test and Commission of Lighting Fixtures Emergency led lighting 1* 10 watt , not less than 1100 lm , life time not less than 30000 hour wall mounted (Philips or equivalent). the work and price include providing and installing all supplies and accessories (switches (Legrand or equivalent) ,wiring (2*2.5+1*1.5) mm2 (Saudi cables) installed in trunks (25x25) mm2 fixed with screws, and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	34		
3.1.5	<u>Supply and installation of Circular led lighting(1* 9 WATT) For Stairs:</u> In Number: Supply, Install, Connect, Test and Commission of Lighting Fixtures Circular led lighting 1* 9 watt For Stairs , not less than 1000 lm , life time not less than 30000 hour decor mounted (Philips or equivalent). the work and price include providing and installing all supplies and accessories (switches (Legrand or equivalent) ,wiring (2*2.5+1*1.5) mm2 (Saudi cables) installed in trunks (25x25) mm2 fixed with screws, and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	13		
3.1.6	<u>Supply and installation of led lighting (1*12 WATT) Connected to UPS :</u> In Number: Supply, Install, Connect, Test and Commission of Lighting Fixtures led lighting 1* 12 watt with holder connected to ups DBs , not less than 1000 lm , life time not less than 30000 hour decor mounted (Philips or equivalent). the work and price include providing and installing all supplies and accessories (switches (Legrand or equivalent) ,wiring (2*2.5+1*1.5) mm2 (Saudi cables) installed in trunks (25x25) mm2 fixed with screws, and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	42		
SUB-TOTAL-SHEET1					

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

3-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.3			
	ELECTRICAL AND MECHANICAL WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
3.2	POWER SYSTEM				
3.2.1	<u>Supply and installation of socket power (15 A) (BS) :</u> In Number: Supply, Install, Connect, Test and Commission of power socket of 15 A 240V/50HZ+E (Legrand or equivalent). the work and price include providing and installing all required supplies and accessories (wiring (2*4+1*2.5) mm2 (Saudi cables) installed in trunks (40x40) mm2 fixed with screws, conduits, conduit fittings and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	12		
3.2.2	<u>Supply and installation of socket power (13 A) (BS) :</u> In Number: Supply, install, connect, testing and commission of power socket of 13 A 240V/50HZ+E (Legrand or equivalent). the work and price include providing and installing all required supplies and accessories (wiring (2x4+1x2.5) mm2 (Saudi cables) installed in trunks (40x40) mm2 fixed with screws, conduits, conduit fittings and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	183		
3.2.3	<u>Supply and installation of (UPS) socket power (13A) with lamp indicator (BS) .</u> In Number: Supply, Install, Connect, Test and Commission of (UPS) power socket of (13) A 240V/50HZ+E ,with lamp indicator (Legrand or equivalent). the work and price include providing and installing all required supplies and accessories (wiring (2x4+1x2.5) mm2 (Saudi cables) installed in trunks (40x40) mm2 fixed with screws, conduits, conduit fittings and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	116		
3.2.4	<u>Supply and installation of Double socket power (2x13 A) (BS).</u> In Number: Supply, Install, Connect, Test and Commission of Double power socket of (2x13) A 240V/50HZ+E (Legrand or equivalent). the work and price include providing and installing all required supplies and accessories (wiring (2x4+1x2.5) mm2 (Saudi cables) installed in trunks (40x40) mm2 fixed with screws, conduits, conduit fittings and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	13		
3.2.5	<u>Supply and installation of outlet switch of (20A) with lamp indicator for water heater (BS) :</u> In Number: Supply, Install, Connect, Test and Commission of outlet switch of (20A) , 240V/50HZ+E, with lamp indicator for water heater (BS) , (Legrand or equivalent). the work and price include providing and installing all required supplies and accessories (wiring (2x4+1x2.5) mm2 (Saudi cables) each switch has separated wire installed in trunks (40x40) mm2 fixed with screws, conduits, conduit fittings , separated circuit breaker in DBs and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	14		
3.2.6	<u>Supply and installation of outlet switch of (45A) with lamp indicator for air conditioner (BS) :</u> In Number: Supply, Install, Connect, Test and Commission of outlet switch of (45A) , 240V/50HZ+E, with lamp indicator for air conditioner (BS) , (Legrand or equivalent). the work and price include providing and installing all required supplies and accessories (wiring (2x6+1x4) mm2 (Saudi cables) each switch has separated wire installed in trunks (25x25) fixed with screws, conduits, conduit fittings , separated circuit breaker in DBs and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer."	NO	47		
SUB-TOTAL-SHEET2					

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

3-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.3			
	ELECTRICAL AND MECHANICAL WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
3.3	TELEPHONE SYSTEM				
	Supply and installation of telephone socket: In Number: Supply, Install, Connect, Test and Commission of telephone socket (Legrand or equivalent). the work and price include providing and installing all required supplies and accessories (wiring (2x0.6)mm2 high quality installed in trunks fixed with screws, and etc.), and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.3.1	Single telephone sockets.	NO	42		
3.3.2	Ditto but double	NO	4		
3.3.3	TELEPHONE CONNECTION BOX :				
	Supply and installation of telephone connection box: In Number: Supply, Install, Connect, Test and Commission of telephone connection box 1p(54). the work and price include providing and installing all required supplies and accessories (high quality wall mounted fixed with screws, and etc.), and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.3.3.1	(100 pair capacity) Main distribution frame (MDF) .	NO	1		
3.3.3.2	(10 pair capacity) Telephone connection box (TCB1).	NO	1		
3.3.3.3	(10 pair capacity) Telephone connection box (TCB2).	NO	1		
3.3.3.4	(10 pair capacity) Telephone connection box (TCB3).	NO	1		
3.3.3.5	(40 pair capacity) Telephone connection box (TCB4).	NO	1		
3.3.3.6	(40 pair capacity) Telephone connection box (TCB5).	NO	1		
3.3.4	LOW VOLTAGE CABLE FOR TELEPHONE SYSTEM (0.6) MM2				
	Supply and installation of low voltage telephone cable (0.6)mm2 : In linear Meter: Supply, Install, Connect, Test and Commission of low voltage telephone cable (0.6)mm . the work and price include providing and installing all required supplies and accessories (wiring shielded cable (0.6) mm2 high quality (england or equivalent) installed in pvc pipe under ground with warning tape for main telephone cable from main (MDF) for ministry of telecommunication to (MDF) for building (B2) , from (MDF) TO (PBX) , from main distribution frame to sub telephone connection box or installed in trunks fixed with screws, cable tray, and etc.) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.3.4.1	20 pair of (0.6) mm2	L.M	100		
3.3.4.2	10 pair of (0.6) mm2	L.M	80		
	Private Brand Exchange:				
3.3.5	Supply and Installation of Private Branch Exchange Telephone (PBX): In Number: Supply, Install, Connect, Test and Commission of the telephone system including private automatic branch exchange (PABX) (Panasonic or equivalent) , The work and price include providing and installing all required supplies and accessories (20 in /100 out) pairs , batteries , charger. should be IP connected and etc). and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	1		
3.4	DATA SYSTEM				
	Supply and installation of Switches (CISCO) : In Number: Supply, Install, Connect, Test and Commission of CISCO switches 10/100+2 port 10/100/1000 P.o.E . The work and price include providing and installing all required supplies and accessories of high quality (patch panels(24or48) , management cables, cabinets, screws , cooling fan, and etc), wiring cables CAT (6) to connect the sub-switches to the main switch, and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.4.1.1	Switches of 48 ports, 10/100+2 port 10/100/1000 P.O.E Main Switch for (B2)	NO	1		
3.4.1.2	Switches of 24 ports , 10/100+2 port 10/100/1000 P.O.E	NO	4		
	SUB-TOTAL-SHEET3				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

3-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.3			
	ELECTRICAL AND MECHANICAL WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
3.4.2	Supply and installation of data socket outlet: In Number: Supply, Install, Connect, Test and Commission of data sockets outlet RJ45 (Legrand or equivalent) . the work and price include providing and installing all required supplies and accessories (RJ45, wiring data cables CAT.6 (Molex or R&M cable, or equivalent) installed in trunks fixed with screws, and etc.) to connect the sockets to the patch panels, and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	95		
3.5	TV SYSTEM:				
3.5.1	Supply and installation of TV socket outlet: In Number: Supply, Install, Connect, Test and Commission of tv Socket outlets(Legrand or equivalent) , the work and price include providing and installing all required supplies and accessories (RJ11,75ohm coaxial cable installed in trunks fixed with screws, from each tv socket in the room in ground floor to roof to splitter then to sa and etc.) to connect the sockets from each point to the main TV box in roof which connect to satalite dish , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	14		
3.6	CCTV SYSTEM:				
3.6.1	Supply and Installation of CCTV point with Cat (6) cable: In Number: Supply, Install, Connect, Test and Commission of CCTV point , the work and price include providing and installing all required supplies and accessories (RJ45,wiring Cable (4) pair of Cat (6) (Molex or R&M cable, or equivalent) installed in trunks fixed with screws, and etc.) , to connect each camera to the patch panels and switch , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	14		
3.6.2	CAMERAS (POE & 12V DC) (5MPXL)				
3.6.2.1	Supply and Installation of out door cameras(IP 67): In Number: Supply, Install, Connect, Test and Commission of fixed outdoor camera with following specification (HIK Vision or equivalent) : -IP (67) . -5 MPXL with surevision. -low-light 120 dp ,WDR,BLC /3D DNR /ROI / HLC , day-night . - network camera with mega pixel lens , Varifocol f1 /2.9" progrossive scan CMOS. - resolution :(2944X1656). -focal length2.8 to 12 mm . - behavior analysse and face detection :(H265-H.265+,H.264+,H.264). the work and price include providing and installing all required supplies and accessories ,and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	6		
3.6.2.2	Supply and Installation of indoor cameras: In Number: Supply, Install, Connect, Test and Commission of fixed indoor camera with following specification (HIK Vision or equivalent): - IP (67) . -5 MPXL with surevision. -low-light 120 dp ,WDR,BLC /3D DNR /ROI / HLC , day-night . -network camera with mega pixel lens , Varifocol , f1 /2.9" progrossive scan CMOS. -resolution 2560X1920@ 30 fps. -2.8 to 12 mm fixed lens , optional focal length -behavior analysse and face detection(H265-H.265+,H.264+,H.264), -3D digital Noise Reduction , -IR range up to 30 m, support on -board storage . -up to 128 GB . the work and price include providing and installing all required supplies and accessories ,and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer. ..	NO	8		
SUB-TOTAL-SHEET4					

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

3-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.3			
	ELECTRICAL AND MECHANICAL WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
3.6.2.3	Supply and Installation of (Network Video Recorder) 32 4K Channel: In Number: Supply, Install, Connect, Test and Commission of (Network Video Recorder) for recording from cameras to Hard Disk , the work and price include providing and installing all required supplies and accessories with following specification (HIK Vision or equivalent): -32 4k channel ,P.o.E.. -Supports up to 24TB HDD . -265 Mbps bit rate input max up to 32 -ch) IP video . - 4 SATA Interfaces, 16/4 -1.5 U case .and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	1		
3.6.3	SWITCHES For CAMERAS				
	Supply and installation of Switches : In Number: Supply, Install, Connect, Test and Commission of switches 10/100+2 port 10/100/1000 P.o.E . The work and price include providing and installing all required supplies and accessories of high quality (patch panels, management cables, cabinets, screws , cooling fan, and etc), wiring cables CAT (6) (MOLEX , R &M or equivalent cables) to connect the sub-switches to the main switch, and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.6.3.1	Switches of (D-LINK) 8 ports, 10/100+2 port 10/100/1000 P.O.E ,8 port patch panel	NO	2		
3.6.3.2	Switches of (D-LINK) 16 ports, 10/100+2 port 10/100/1000 P.O.E, 16 port patch panel	NO	1		
3.6.4	LED HD Monitor 32 "				
	supply and installation of Led HD Monitor 32 ": In Number: Supply, Install, Connect, Test and Commission of led HD Monitor 32 " , the work and price include providing and installing all required supplies and accessories (The back base for fixing , cabling by cat 6 wire which connecting between the main switch or rack to (LCD) monitor installed by trunk or pvc pipe which fixed by screws , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	2		
3.7	VENTILLATION FAN (30*30):				
	supply and installation of ventilation fan : In Number: Supply, Install, Connect, Test and Commission of ventilation fan size (30x30) cm not less than 100 watt , gelvanized metal type anti rust , the work and price include providing and installing all required supplies and accessories (wiring by (2*2.5+1*1.5) , one switch for each one . and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	23		
3.8	DISURIBUTION BOARD				
3.8.1	supply and installation of main distribution boards (3ph): In Number: Supply, Install, Connect, Test and Commission of low voltage main distribution boards (3 PH) (Legrand or equivalent) for all loads in the building , the work and price include providing and installing all required supplies and accessories (Enclosure material should be galvanized steel sheets , Ingress protection must be at least IP41, installed over Concreted base with trench , , circuit breakers (MCCB,RCCB,RCB) , Internal connection should be through bus bar covered with colored label red , yellow and blue witch connect between main circuit breaker and sub main circuit breaker , measuring instruments , indicating lamps , phase failure, etc), and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	1		
	A-incoming (630) MCCB A . NO(1)				
	B-out coming (160)A MCCB . NO(3)				
	C-out coming (125)A MCCB . NO(5)				
	D-out coming (63)A MCCB. NO(2)				
	SUB-TOTAL-SHEET5				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

3-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.3			
	ELECTRICAL AND MECHANICAL WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
3.8.2	<u>supply and installation of main distribution boards (3ph) for UPS.</u> In Number: Supply, Install, Connect, Test and Commission of low voltage main distribution boards (3 PH) (Legrand or equivalent) , the work and price include providing and installing all required supplies and accessories (Enclosure material should be galvanized steel sheets , Ingress protection must be at least IP41, Internal connection should be through bus covered with colored label red , yellow and blue , circuit breakers (MCCB,RCCB,RCB) , measuring instruments , indicating lamps , phase phase failure, etc) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	1		
	A-incoming (100) MCCB A mccb. NO(1)				
	B-out coming (80)A MCCB. NO(3)				
	C-out coming (63)A MCCB. NO(1)				
3.8.3	<u>Supply and installation of sub distribution boards (3ph) for air conditioning</u> In Number: Supply, Install, Connect, Test and Commission of low voltage sub distribution boards (3 PH) (Legrand or equivalent) for air conditioning: , the work and price include providing and installing all required supplies and accessories (Enclosure material should be galvanized steel sheets , Ingress protection must be at least IP41, Internal connection should be through bus covered with colored label red , yellow and blue , circuit breakers (MCCB,RCCB,RCB, MCB) , etc) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	3		
	A-incoming (125)A mcb. NO(1)				
	B-out coming (32)A mcb . NO(18)				
3.8.4	<u>Supply and installation of sub distribution boards (3ph) for (UPS) :</u> In Number: Supply, Install, Connect, Test and Commission of low voltage sub distribution boards (3 PH) (Legrand or equivalent) for (UPS) , the work and price include providing and installing all required supplies and accessories (Enclosure material should be galvanized steel sheets , Ingress protection must be at least IP41, Internal connection should be through bus covered with colored label red , yellow and blue , circuit breakers (MCCB,RCCB,RCB, MCB) , etc) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	3		
	A-incoming (63)A mcb. NO(1)				
	B-out coming (10)A mcb . NO(9)				
	C-out coming (16)A mcb . NO(9)				
3.8.5	<u>Supply and installation of sub distribution boards (3ph) for lighting , sockets and miscellenous load .</u> In Number: Supply, Install, Connect, Test and Commission of low voltage sub distribution boards (3 PH) (Legrand or equivalent) for lighting , sockets and miscellenous load , the work and price include providing and installing all required supplies and accessories (Enclosure material should be galvanized steel sheets , Ingress protection must be at least IP41, Internal connection should be through bus covered with colored label red , yellow and blue , circuit breakers (MCCB,RCCB,RCB, MCB) , etc) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	4		
	A-incoming (100)A mcb. NO(1)				
	B-out coming (32)A mcb . NO(6)				
	C-out coming (10)A mcb . NO(10)				
3.8.6	<u>Supply and installation of sub distribution boards (1ph) for lighting , sockets and miscellenous load for drivers room :</u> In Number: Supply, Install, Connect, Test and Commission of low voltage sub distribution boards (1 PH) (Legrand or equivalent) for lighting , sockets and miscellenous load , the work and price include providing and installing all required supplies and accessories (Enclosure material should be galvanized steel sheets , Ingress protection must be at least IP41, Internal connection should be through bus covered with colored label red , yellow and blue , circuit breakers (MCCB,RCCB,RCB, MCB) , etc) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	1		
	A-incoming (63)A mcb. NO(1) , B-out coming (32)A mcb . NO(2)				
	C-out coming (10)A mcb . NO(3) , D-out coming (3)A mcb . NO(3)				
SUB-TOTAL-SHEET6					

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

3-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.3			
	ELECTRICAL AND MECHANICAL WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
3.9	ON LINE CENTRAL UPS OF (30KVA) : Supply and installation of on line central ups (30KVA) : In Number: Supply, Install, Connect, Test and Commission of on line central ups (30KVA) (3 PH) (tripp lite smart or equivalent) for lighting , sockets and miscellaneous load , the work and price include providing and installing all required supplies and accessories as following specification : -highly efficient 94% on line ups with compact design protects mission - critical equipment against down time due to disturbances. - best -in- class footprint and power density minimize space requirement for up 30 kva. - intuitive LCD interface offers key performance , configuration and diagnostics info. -high efficiency (94% on line , 98% ECO mode. -optional WEBCARDLX network management card allows cost- effective remote management . -parallel capability provides increased capacity. -full load runtime (min)5.5 min (27kw). -half load runtime (min) 17 min (13.5 kw). -2 years warranty . , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	1		
3.10	Earthing System: supply and installation of earthing system : In Number: Supply, Install, Connect, Test and Commission of copper earthing system , the work and price include providing and installing all required supplies and accessories (All metal casing/shielding of the system and its components should be thoroughly grounded, Earthing pit Dimension (3x3) meter , ,tap-clamps(Y/G earthing cable), In Number (3*2meter) copper busbar Dimension (50x5) mm2. In Number (4) Earthing Copper rod of 35 sq. mm. 1*95 mm2 conductors , manholes , (2 Inch) pvc pipe for irrigation The earth resistance should not be more than 3 Ohm,) Earthing installation in accordance with the IEE Wiring regulations, BS 7671, All conductive materials shall be pure copper ,The size of conductor shall be according of IEE – BS 7671 – IEC 60365-5-54) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	1		
3.11	LOW VOLTAGE CABLES 0.6/(1.2)KV: supply and installation of Low Voltage Cables 0.6/(1.2)KV : In linear Meter: Supply, Install, Connect, Test and Commission of Low Voltage Cables 0.6/(1.2)KV , the work and price include providing and installing all required supplies and accessories ((installation , fixing by cable tray , conduits, (PVC) pipe, trenches ,excavation , backfilling ,manholes , warning tape and etc..) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.11.1	Multi core SWA/XLPE/PVC/PVC Insulated copper cables:-				
3.11.1.1	4x150+ E=1*120 sqmm from ATS TO MDB for Building (B)	L.M	30		
3.11.2	Multi core XLPE /PVC/PVC Insulated copper cables:-				
3.11.2.1	4x35+ E=1*25 sqmm from MDB-AC In Building (B2)	L.M	30		
3.11.2.2	4x35+ E=1*25 sqmm from MDB-AC1 In Building (B2)	L.M	37		
3.11.2.3	4x35+ E=1*25 sqmm from MDB-AC2 In Building (B2)	L.M	42		
3.11.2.4	4x35+ E=1*25 sqmm from (MDB) TO (UPS) TO (MDB-UPS) In Building (B2)	L.M	15		
3.11.2.5	4x16+ E=1*10 sqmm from MDB TO LP4 In Building (B2)	L.M	44		
3.11.2.6	4x16+ E=1*10 sqmm from MDB TO LP3 In Building (B2)	L.M	40		
3.11.2.7	4x25+ E=1*16 sqmm from MDB TO LP2 In Building (B2)	L.M	15		
3.11.2.8	4x16+ E=1*10 sqmm from MDB TO LP1 In Building (B2)	L.M	35		
3.11.2.9	4x16+ E=1*10 sqmm (MDB- UPS) TO UPS2 In Building (B2)	L.M	44		
3.11.2.10	4x16+ E=1*10 sqmm (MDB- UPS) TO UPS1 In Building (B2)	L.M	37		
3.11.2.11	4x10+ E=1* 6 sqmm (MDB- UPS) TO UPS In Building (B2)	L.M	10		
3.11.2.12	4x10+ E=1* 6 sqmm (MDB) TO DDB In Drivers Room	L.M	50		
SUB-TOTAL-SHEET7					

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

3-	BILL OF QUANTITIES OF REHABILITATION WORKS	SUB-BILL NO.3			
	ELECTRICAL AND MECHANICAL WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
3.12	CABLE TRAY <u>supply and installation of cable tray:</u> In Number: Supply, Install, Connect, Test and Commission of galvanized cable tray thickness of 1.5 mm , the work and price include providing and installing all required supplies and accessories (installation , fixing by screws and rods , covering by cable tray sheet ,earthing wire for first and second floor in corridor for power , data and telephone , ladder for cables which carrying cables from cable tray to MDBs and etc..) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.12.1	100X200 mm	L.M	112		
3.12.2	100X100 mm or 100 x150 mm	L.M	50		
3.13	AIR CONDITIONING <u>supply and installation of split unit air conditioner :</u> In Number: Supply, Install, Connect, Test and Commission of split unit air conditioner indoor and out door unit , the work and price include providing and installing all required supplies and accessories (copper pipe between the two units, Outdoor unit shall be housed inside metal gage made of galvanized mild steel fixed with screws ,remote control) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.13.1	1 ton (12000 BTU)	NO	1		
3.13.2	1.5 ton (18000 BTU) Building (B2) and Drivers Room	NO	41		
3.13.3	2 ton (24000 BTU)	NO	5		
3.14	FIRE EXTINGUISHER <u>supply and installation of fire extinguisher:</u> In Number: Supply, Install, Connect, Test and Commission of fire extinguisher , the work and price include providing and installing all required supplies and accessories (wooden cabinet , new date of manufacturing not less than (2) months,) , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.14.1	CO2 fire extinguisher (5 kg)	NO	11		
3.14.2	Chemical Powder fire extinguisher (6 kg)	NO	11		
3.15	FIRE ALARM SYSTEM <u>supply and installation of fire alarm system:</u> In Number: Supply, Install, Connect, Test and Commission of fire alarm system (kidde or equivalent) , the work and price include providing and installing all required supplies and accessories (thermal wire (2*1.5) mm2 for fire alarm system , and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.				
3.15.1	fire alarm control panel (FACP) (KIDDE),4 loops intelligent addressable system, the work and price include providing and installing all required supplies and accessories (batteries, charger, printer and etc..),and doing all it needs and takes to finish and operate the item properly according to the specifications, technical rules, drawings, and as directed by the engineer.	NO	1		
3.15.2	Smoke detector fixed type.	NO	61		
3.15.3	Heat detector fixed type.	NO	6		
3.15.4	Manual pull station (Break glass).	NO	9		
3.15.5	Fire alarm bell with Lamp Indicator.	NO	8		
	SUB-TOTAL-SHEET8				
	TOTAL AMOUNT OF ELEC. WORKS, CARRIED TO THE SUMMARY				



SECURITY WORKS

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

4-	BILL OF QUANTITIES OF REHABILITATION WORKS		SUB-BILL NO.4			
	SECURITY WORKS		UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION					
	General Notes: Tenderers are advised to visit the site and acquaint themselves with the surroundings and take any measurements deemed necessary as no claims will be accepted due to lack of knowledge of the site. Tenderers are to ensure that during the course of works the inconvenience to third parties should be very minimal and special care should be taken to existing surroundings. Any disposal of demolished / unwanted material should be dumped in an approved dumping site and any related fees to be borne by the tenderer.					
4.1	Glazing Catch Systems					
4.1.1	Supply and install Cable Catchment System Type A. In Number/ window (1.2X1.2)m: Provide a window cable catchment system for a standard window 1200mmx1200mm including installation of an 8mil anti-shatter security film, 3mm polycarbonate sheet anchored to the wall with masonry anchors, cable catchment system with no less than 2 1/4-in Aircraft Wire Rope cables per glass pane (4x3.50m total estimated for this window type) including no less than 3 clamps and thimble per cable edge installed as per manufacturer recommendations, and 4 steel anchor plate with 12 Hilti concrete anchors as specified in the drawings detail A.05/1. Based cost should include all material and labor and must follow the installation notes included in the drawings.		No.	30		
4.1.2	Supply and install Cable Catchment System Type B. In number/ window (1.8X1.2)m: Provide a window cable catchment system for a standard window 1800mmx1200mm including installation of an 8mil anti-shatter security film, 3mm polycarbonate sheet anchored to the wall with masonry anchors, cable catchment system with no less than 2 1/4-in Aircraft Wire Rope cables per glass pane (6x3.50m total estimated for this window type) including no less than 3 clamps and thimble per cable edge installed as per manufacturer recommendations, and 6 steel anchor plate with 18 Hilti concrete anchors as specified in the drawings detail A.05/2. Based cost should include all material and labor and must follow the installation notes included in the drawings.		No.	8		
4.1.3	Supply and install Cable Catchment System Type C. In Number/ window : Provide a window cable catchment system for a standard window 830mmx840mm including installation of an 8mil anti-shatter security film, 3mm polycarbonate sheet anchored to the wall with masonry anchors, cable catchment system with no less than 2 1/4-in Aircraft Wire Rope cables per glass pane (2x3.50m total estimated for this window type) including no less than 3 clamps and thimble per cable edge installed as per manufacturer recommendations, and 2 steel anchor plate with 6 Hilti concrete anchors as specified in the drawings detail A.06/2. Based cost should include all material and labor and must follow the installation notes included in the drawings.		No.	20		
4.1.4	Supply and install Cable Catchment System Type D. In Number/ window : Provide a window cable catchment system for a standard window 600mmx1200mm including installation of an 8mil anti-shatter security film, 3mm polycarbonate sheet anchored to the wall with masonry anchors, cable catchment system with no less than 2 1/4-in Aircraft Wire Rope cables per glass pane (2x3.50m total estimated for this window type) including no less than 3 clamps and thimble per cable edge installed as per manufacturer recommendations, and 2 steel anchor plate with 6 Hilti concrete anchors as specified in the drawings detail A.06/3. Based cost should include all material and labor and must follow the installation notes included in the drawings.		No.	14		
	SUB-TOTAL-SHEET1					

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

4-	BILL OF QUANTITES OF REHABILITATION WORKS	SUB-BILL NO.4			
	SECURITY WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
4.1.5	<u>Supply and install Cable Catchment System Type E.</u> In Number/ window : Provide a window cable catchment system for a standard window 1930mmx830mm including installation of an 8mil anti-shatter security film, 3mm polycarbonate sheet anchored to the wall with masonry anchors, cable catchment system with no less than 2 1/4-in Aircraft Wire Rope cables per glass pane (4x3.50m total estimated for this window type) including no less than 3 clamps and thimble per cable edge installed as per manufacturer recommendations, and 4 steel anchor plate with 12 Hilti concrete anchors as specified in the drawings detail A.06/4. Based cost should include all material and labor and must follow the installation notes included in the drawings.	No.	12		
4.1.6	<u>Supply and installation of Ground Floor Foundation.</u> In linear meter: Provide and casting 30cm x 25cm ground floor beam as specified in the drawing reinforced with no less than 4 diameter 14mm longitudinal bars and diameter 12mm stirrups spaced no more than 15cm on center, including demolitions of ground floor finishing, excavations and repair of finished floor. Structural dowels into existing perimeter wall must be provided as identified in the drawings. These foundations must extend 15cm from the locations of the concrete anchors and must be constructed no less then 20 days prior the installation of the cable catchment system. Base cost should include all material and labor and must follow the installations notes included in the drawings.	L.M	22		
4.2	Window/Door Infill				
4.2.1	<u>Supply and installation of reinforced masonry walls for doors infill.</u> In Number/ Door Infill : Provide 200cm reinforced masonry wall infill for a typical door (90cm x 200cm). Reinforcement to be provided using no less than a diameter 14 reinforcement bar doweled as specified in the drawings. Base cost should include all material and labor and must follow the installations notes included in the drawings.	No.	15		
4.2.2	<u>Supply and installation of reinforced masonry walls for windows infill.</u> In Number/Window Infill : Provide 200cm reinforced masonry wall infill for a typical window (1200mm x 1200mm). A new window is to be installed on the top to allow for a 390mm clear glass which must be laminated or protected with no less then 8mil anti-shatter security film. Reinforcement to be provided using no less than a diameter 14 reinforcement bar doweled as specified in the drawings. Base cost should include all material and labor, including demolition of existing window and must follow the installations notes included in the drawings.	No.	25		
4.3	Protective Reinforced Masonry Wall				
4.3.1	<u>Supply and install Protective Reinforced Masonry Walls for Stairwell.</u> In linear meter : Provide and install Stairwell Reinforced Masonry Wall, 200cm 6 meters tall fully grouted reinforced masonry wall being existing filigree stairwell enclosure reinforced with no less than one diameter 14 per cell unit and fully grouted. The wall must be supported on the ceiling by a 100x100x10mm angle anchored to the ceiling structural slab as specified in the drawings.	L.M	9		
4.3.2	<u>Supply and install Protective Reinforced Masonry Wall for Safe room.</u> In linear meter : Provide and install Reinforced Masonry Wall, 200cm 3meters tall fully grouted reinforced masonry wall being existing exterior enclosure wall for the safe room, reinforced with no less than one diameter 14 per cell unit and fully grouted. The wall must be supported on the ceiling by a 100x100x10mm angle anchored to the ceiling structural slab as specified in the drawings.	L.M	30		
	SUB-TOTAL-SHEET2				

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

4-	BILL OF QUANTITES OF REHABILITATION WORKS	SUB-BILL NO.4			
	SECURITY WORKS	UNIT	QTY	UNIT RATE \$	AMOUNT \$
S.No	WORK ITEM DESCRIPTION				
4.3.3	<u>Supply and installation of Ground Floor Foundation.</u> In linear meter: Provide and casting 50cm x 20cm ground floor Foundation for the protective wall of the safe room as specified in the drawing, reinforced with no less than 4 diameter 14mm longitudinal bars and diameter 12mm stirrups spaced no more than 15cm on center, including demolitions of ground floor finishing, excavations and repair of finished floor. Structural dowels into existing perimeter wall must be provided as identified in the drawings. These foundations must be constructed no less then 20 days prior the installation of the protective wall. Base cost should include all material and labor and must follow the installations notes included in the drawings.	L.M	30		
4.4	<u>Exterior Security Blast Gates</u>				
4.4.1	<u>Supply and installation of Exterior Security Blast Gates.</u> In Number : Supply and installation of Exterior Security Gates, constructed with heavy steel tubes and I beams, vertical post and exterior steel plates as specified in the drawings, including rolled up mechanisms to properly manually operations of the door (open/close) including reinforced concrete foundations as identified in the drawings. Confirm the gate dimensions (minimum gate heights) with the operations to confirm access of emergency vehicles.	No.	2		
4.5	<u>Additional Security Improvements</u>				
4.5.1	<u>Provide and install additional T-wall around the compound.</u> In linear meter : Provide and install additional T-wall around the compound to complete the security perimeter with same type of construction as the existing T-wall and properly anchored in between new and existing T-wall modules as specified by the manufacturer.instructions. The price include preparation the surface, removing (curbs, tiles...etc.) if any.	L.M	20		
SUB-TOTAL-SHEET3					
TOTAL AMOUNT OF SECURITY WORKS, CARRIED TO THE SUMMARY					



SUMMARY

RENOVATION AND REHABILITATION OF UNDP SUB OFFICE BUILDINGS - ADEN, YEMEN

SUMMARY OF THE BILL OF QUANTITIES			AMOUNT (\$)		Remarks
Sub-Bill NO.	NO. OF SHEETS	WORK DESCRIPTION	Figure	Word	
1	9	CIVIL WORKS.			
2	4	WASH WORKS.			
3	8	ELECTRICAL AND MECHANICAL WORKS.			
4	3	SECURITY WORKS			
TOTAL					
DISCOUNT AMOUNT (%)					
GRAND TOTAL TO CONTRACTOR'S BID					

Contractor:

Name:

Signature:

Stamp: