

Item	Description	Unit	Qty
1. Ninth Floor			
1.1	<p>Dual split DX-Air conditioning unit :</p> <p>a) Outdoor Unit</p> <p>Supply, fix, test and commission DX -Condensing Outdoor Unit of the auto reset type suitable for altitude of 2400m from sea level, including control systems, insulated copper pipe work, accessories, connecting pieces to Indoor Units according to where shown on the drawing. The cabinet shall be made of prepainted sheet metal, specially suitable for use outdoors. Motors shall have internal thermal protection, refrigerant-to-air heat exchangers shall be manufactured from high quality copper tubing, mechanically expanded into pretreated aluminium fins and offer high corrosion resistance, Hermetic reciprocating compressors shall be mounted on shock absorbers for vibration-free operation, and include internal mufflers and thermal protection.</p> <p>i) For meeting room on ninth floor/OU-01/ - Cooling capacity = 13 Kw</p> <p>b) Matching Indoor Unit</p> <p>Supply, fix, test and commission ductable Indoor units (auto reset type) complete with insulated plenum, flexible connection to plenum, support with vibration isolator and all required works. The unit shall be complete with insulated and painted drain pan and a factory fitted frame, with filter media, installed with direct driven forward curved centrifugal fans and 3 speed motor ensures quiet operation, flare fittings - easy & quick installation, standard copper tube aluminium fins (Cu/Al) evaporator coil for maximum heat transfer, carrier lanced sine wave fin pattern to high EER performance, factory supplied expansion devices, accumulator and units shall be manufactured as left-hand side (in the direction of air flow) piping connection as standard.</p> <p>i) For meeting room on ninth floor, - Cooling capacity = 6.4Kw (2 pieces to 1 outdoor unit)</p>	set	2
1.2	<p>Condensate Pipes</p> <p>Supply and install UPVC PN-4 condensate drain pipe as shown on the drawing, complete with all necessary fittings, supports and accessories.</p> <p>Dia. 20mm</p>	ml	17

Item	Description	Unit	Qty
1.3	Duct work & Accessories Supply,install,test and commission galvanized steel duct work all as shown on the drawing. Galvanized steel thickness shall be used in accordance with SMACNA standards and/or EBCS-11 & technical specification. Price shall also include vanes, fixing and clamping accessories necessary for proper functioning of air distribution system. a) Internal & external supply & return duct work b) dia.300mm flexible duct	Kg ml	283 32
1.4	Volume Damper Supply, fix, test and commission volume dampers of Frame: 1.2mm thick galvanized steel sheet, Frame size: 125mm depth and standard flange height of 25mm, Blade: double skinned high quality extruded aluminium aerofoil profiles, Bearing pins: electro plated square steel rod of size 12.7mm X 12.7mm, Bushings: self oiling nylon bushings of internal square size, Bearing pin connecting quadrant: electro plated square steel rod of size 12.7 X 12.7 mm, Blade linkage: steel / aluminium linkage, Blade stopper: 20 mm X20 mm aluminium angle as where shown on the drawings. Price shall include all the necessary accessories and connecting pieces. /On supply & exhaust air branch duct./ size: 200x150mm	No	8
1.5	Fire Damper Supply, fix, test and commission Fire damper of approved quality as where shown on the drawings. Price shall include all the necessary accessories and connecting pieces. Dampers shall meet the requirements of NFPA 90A and SMACNA rated dampers for use as Fire barriers for 1-1/2 hr. / 3 hrs fire rating. size: 300x250mm	No	1
1.6	Supply & Return Air Linear Diffuser Made of high quality extruded aluminum profiled construction complete with insulated plenum and all required accessories. Flow rate= 165lps size : W=15cm , L=100cm Flow rate=165lps size : W=15cm , L=100cm	No No	8 8

Item	Description	Unit	Qty
1.7	<p>Heat Recovery Unit Supply, fix, test and commission heat recovery unit of approved quality as where shown on the drawings. Price shall include all the necessary accessories and connecting pieces.</p> <p>The supply and extract ventilation unit shall be positioned as indicated on the drawings and shall be in accordance with the particular fan schedule. The combined supply and extract with heat recovery unit, shall supply filtered fresh air the room and vitiated air shall be extracted from the same room. The supply air shall be pre-cooled by the cold extract air via the integrated counter-flow heat exchanger element.</p> <p>A summer bypass shall be included (excludes 90S) that shall allow fresh air to bypass the heat exchanger, when the incoming air temperature is at or above the designated “set point”.</p> <p>- Flow rate = 340 lps - Static Pressure = 200Pa.</p>	No	1
2. Eighth Floor			
2.1	<p>Dual split DX-Air conditioning unit :</p> <p>a) Outdoor Unit Supply, fix, test and commission DX -Condensing Outdoor Unit of the auto reset type suitable for altitude of 2400m from sea level, including control systems, insulated copper pipe work, accessories, connecting pieces to Indoor Units according to where shown on the drawing. The cabinet shall be made of prepainted sheet metal, specially suitable for use outdoors. Motors shall have internal thermal protection, refrigerant-to-air heat exchangers shall be manufactured from high quality copper tubing, mechanically expanded into pretreated aluminium fins and offer high corrosion resistance, Hermetic reciprocating compressors shall be mounted on shock absorbers for vibration-free operation, and include internal mufflers and thermal protection.</p> <p>i) For Director room on eighth floor /OU-02/ - Cooling capacity = 10.74 Kw</p>	set	1

Item	Description	Unit	Qty
	b) Matching Indoor Unit Supply, fix, test and commission cassette type Indoor units (auto reset type) and complete with all required works. High performance washable filters, high performance condensate drain pump, The unit shall offer four-way air diffusion, be elegant air inlet grille aesthetically with any room decor. i) For Director room on eighth floor/IU-02/, - Cooling capacity = 5.59Kw (2 pieces to 1 outdoor unit)		
2.2	Condensate Pipes Supply and install UPVC PN-4 condensate drain pipe as shown on the drawing, complete with all necessary fittings, supports and accessories. Dia. 20mm	ml	45
3. Seventh Floor			
3.1	Single split DX-Air conditioning unit : a) Out Door Unit Supply, fix, test and commission DX -Condensing Outdoor Unit of the auto reset type suitable for altitude of 2400m from sea level, including control systems, insulated copper pipe work, accessories, connecting pieces to Indoor Units according to where shown on the drawing. The cabinet shall be made of prepainted sheet metal, specially suitable for use outdoors. Motors shall have internal thermal protection, refrigerant-to-air heat exchangers shall be manufactured from high quality copper tubing, mechanically expanded into pretreated aluminium fins and offer high corrosion resistance, Hermetic reciprocating compressors shall be mounted on shock absorbers for vibration-free operation, and include internal mufflers and thermal protection. i) For Deputy Director room on seventh floor/OU-03/ - Cooling capacity =7.035Kw b) Matching Indoor Unit	set	1

Item	Description	Unit	Qty
	<p>Supply, fix, test and commission cassette type Indoor units (auto reset type) and complete with all required works. High performance washable filites, high performance condensate drain pump, The unit shall offer four-way air diffusion, be elegant air inlet grille aesthetically with any room decor.</p> <p>i) For Deputy Director room on seventh floor/IU-03/, - Cooling capacity = 7.035Kw (1 piece to 1 outdoor unit)</p>		

Item	Description	Unit	Qty
3.2	<p>Condensate Pipes</p> <p>Supply and install UPVC PN-4 condensate drain pipe as shown on the drawing, complete with all necessary fittings,supports and accessories.</p> <p style="text-align: center;">Dia. 20mm</p>	ml	40
3.3	<p>Dual split DX-Air conditioning unit :</p> <p>a) Out Door Unit</p> <p>Supply, fix, test and commision DX -Condensing Outdoor Unit of the auto reset type suitable for altitude of 2400m from sea level, including control systems, insulated copper pipe work, accessories, connecting pieces to Indoor Units according to where shown on the drawing. The cabinet shall be made of prepainted sheet metal, specially suitable for use outdoors. Motors shall have internal thermal protection, refrigerant-to-air heat exchangers shall be manufactured from high quality copper tubing, mechanically expanded into pretreated aluminium fins and offer high corrosion resistance, Hermetic reciprocating compressors shall be mounted on shock absorbers for vibration-free operation, and include internal mufflers and thermal protection..</p> <p>i) For Meeting room on seventh floor/OU-04/ - Cooling capacity =10.74Kw</p> <p>b) Matching Indoor Unit</p> <p>Supply, fix, test and commision casset type Indoor units (auto reset type) and complete with all required works. High performance washable filites, high performance condensate drain pump, The unit shal offer four-way air diffusion, be elegant air inlet grille aesthetically with any room decor.</p> <p>i) For Meeting room on seventh floor /IU-04/- Cooling capacity = 5.59Kw (2 pieces to 1 outdoor unit)</p>	set	1

Item	Description	Unit	Qty
4. AIR CONDITIONING SYSTEM (Sixth Floor)			
4.1	Multi split DX-Air conditioning unit : a) Outdoor Unit Supply, fix, test and commission DX -Condensing Outdoor Unit of the auto reset type suitable for altitude of 2400m from sea level, including control systems, insulated copper pipe work, accessories, connecting pieces to Indoor Units according to where shown on the drawing. The cabinet shall be made of prepainted sheet metal, specially suitable for use outdoors. Motors shall have internal thermal protection, refrigerant-to-air heat exchangers shall be manufactured from high quality copper tubing, mechanically expanded into pretreated aluminium fins and offer high corrosion resistance, Hermetic reciprocating compressors shall be mounted on shock absorbers for vibration-free operation, and include internal mufflers and thermal protection. i) For IT & Server room on sixth floor/OU-05/ - Cooling capacity =13.20Kw	set	1
	b) Matching Indoor Unit Supply, fix, test and commission cassette type Indoor units (auto reset type) and complete with all required works. High performance washable filters, high performance condensate drain pump, The unit shall offer four-way air diffusion, be elegant air inlet grille aesthetically with any room decor. i) For IT & Server room on sixth floor/IU-05/, - Cooling capacity = 5.56Kw (2 pieces to 1 outdoor unit)		
4.2	Condensate Pipes Supply and install UPVC PN-4 condensate drain pipe as shown on the drawing, complete with all necessary fittings, supports and accessories. Dia. 20mm	ml	25
5. Fifth Floor			
	Dual split DX-Air conditioning unit : a) Outdoor Unit		

Item	Description	Unit	Qty
5.1	<p>Supply, fix, test and commission DX -Condensing Outdoor Unit of the auto reset type suitable for altitude of 2400m from sea level, including control systems, insulated copper pipe work, accessories, connecting pieces to Indoor Units according to where shown on the drawing. The cabinet shall be made of prepainted sheet metal, specially suitable for use outdoors. Motors shall have internal thermal protection, refrigerant-to-air heat exchangers shall be manufactured from high quality copper tubing, mechanically expanded into pretreated aluminium fins and offer high corrosion resistance, Hermetic reciprocating compressors shall be mounted on shock absorbers for vibration-free operation, and include internal mufflers and thermal protection.</p> <p>i) For Meeting room on fifth floor/OU-06/ - Cooling capacity =10.74Kw</p> <p>b) Matching Indoor Unit Supply, fix, test and commission cassette type Indoor units (auto reset type) and complete with all required works. High performance washable filters, high performance condensate drain pump, The unit shall offer four-way air diffusion, be elegant air inlet grille aesthetically with any room decor.</p> <p>i) For meeting room on fifth floor/IU-06/, - Cooling capacity = 5.59Kw (2 pieces to 1 outdoor unit)</p> <p>a) Outdoor Unit</p>	set	1

Item	Description	Unit	Qty
	<p>Supply, fix, test and commission DX -Condensing Outdoor Unit of the auto reset type suitable for altitude of 2400m from sea level, including control systems, insulated copper pipe work, accessories, connecting pieces to Indoor Units according to where shown on the drawing.</p> <p>The cabinet shall be made of prepainted sheet metal, specially suitable for use outdoors. Motors shall have internal thermal protection, refrigerant-to-air heat exchangers shall be manufactured from high quality copper tubing, mechanically expanded into pretreated aluminium fins and offer high corrosion resistance, Hermetic reciprocating compressors shall be mounted on shock absorbers for vibration-free operation, and include internal mufflers and thermal protection.</p> <p>i) For IT & Server room on fifth floor /OU-07/ - Cooling capacity =13.20Kw</p>		

Item	Description	Unit	Qty
	b) Matching Indoor Unit Supply, fix, test and commission cassette type Indoor units (auto reset type) and complete with all required works. High performance washable filters, high performance condensate drain pump, The unit shall offer four-way air diffusion, be elegant air inlet grille aesthetically with any room decor. i) For IT & Server room on fifth floor /IU-07/, - Cooling capacity = 5.56Kw (2 pieces to 1 outdoor unit)	set	1
5.2	Condensate Pipes Supply and install UPVC PN-4 condensate drain pipe as shown on the drawing, complete with all necessary fittings, supports and accessories. Dia. 20mm	ml	25
6. Fourth Floor			
6.1	Single split DX-Air conditioning unit : a) Outdoor Unit Supply, fix, test and commission DX -Condensing Outdoor Unit of the auto reset type suitable for altitude of 2400m from sea level, including control systems, insulated copper pipe work, accessories, connecting pieces to Indoor Units according to where shown on the drawing. The cabinet shall be made of prepainted sheet metal, specially suitable for use outdoors. Motors shall have internal thermal protection, refrigerant-to-air heat exchangers shall be manufactured from high quality copper tubing, mechanically expanded into pretreated aluminium fins and offer high corrosion resistance, Hermetic reciprocating compressors shall be mounted on shock absorbers for vibration-free operation, and include internal mufflers and thermal protection. i) For UNCDF room on fourth floor/OU-08/ - Cooling capacity =7.035Kw b) Matching Indoor Unit Supply, fix, test and commission cassette type Indoor units (auto reset type) and complete with all required works. High performance washable filters, high performance condensate drain pump, The unit shall offer four-way air diffusion, be elegant air inlet grille aesthetically with any room decor.	set	1

Item	Description	Unit	Qty
	i) For UNCDF room on fourth floor/IU-08/ - Cooling capacity = 7.035Kw(1 piece to 1 outdoor unit)		

Item	Description	Unit	Qty
6.2	Condensate Pipes Supply and install UPVC PN-4 condensate drain pipe as shown on the drawing, complete with all necessary fittings,supports and accessories. Dia. 20mm	ml	42
7. Ground Floor			
7.1	Single split DX-Air conditioning unit : a) Out Door Unit Supply, fix, test and commision DX -Condensing Outdoor Unit of the auto reset type suitable for altitude of 2400m from sea level, including control systems, insulated copper pipe work, accessories, connecting pieces to Indoor Units according to where shown on the drawing. The cabinet shall be made of prepainted sheet metal, specially suitable for use outdoors. Motors shall have internal thermal protection, refrigerant-to-air heat exchangers shall be manufactured from high quality copper tubing, mechanically expanded into pretreated aluminium fins and offer high corrosion resistance, Hermetic reciprocating compressors shall be mounted on shock absorbers for vibration-free operation, and include internal mufflers and thermal protection. i) For CCTV room on ground floor/OU-09/ - Cooling capacity =6.4Kw b) Matching Indoor Unit Supply, fix, test and commision casset type Indoor units (auto reset type) and complete with all required works. High performance washable filites, high performance condensate drain pump, The unit shal offer four-way air diffusion, be elegant air inlet grille aesthetically with any room decor. i) For CCTV room on ground floor/IU-09/, - Cooling capacity = 6.4Kw(1 piece to 1 outdoor unit)	No	1
7.2	Condensate Pipes Supply and install UPVC PN-4 condensate drain pipe as shown on the drawing, complete with all necessary fittings,supports and accessories. Dia. 20mm	ml	7

Item	Description	Unit	Qty
8. Toilet Ventilation System (Ground to Ninth floors)			
8.1	Exhaust Air Fan /Twin-Fan/ Supply, fix, test and commission toilets exhaust twin fans of approved quality, complete with all connecting pieces, controls and all accessories. The unit shall be designed to guarantee uninterrupted air exhaust this achieved by means of a fan in duty and another one stand-by waiting to start automatically in case of break down of the first fan. Duty and stand-by fans shall be manually or automatically exchanged.		
	a) i) Twin Fan Q=525lps H=250Pa.	Set	1
8.2	Duct work & Accessories Supply,install,test and commission galvanized steel sheet thickness shall be 0.6mm and comply with provisions of SMACNA standard and EBCS-11. Price shall also include fixing and clamping accessories. a) Exhaust duct work	Kg	440
8.3	Volume Damper Supply, fix, test and commission volume dampers of approved quality as where shown on the drawings. Price shall include all the necessary accessories and connecting pieces. /On supply & exhaust air branch duct./ size: 100x100mm	No	21
8.4	Exhaust Air Grill Made of high quality extruded aluminum profiled construction with the advantage of corrosion resistance and rigidity.	No	21
	i.) size: 150x150mm		