

<u>PROPOSED NEW CLASS ROOM BLOCK FOR MSE AT KOTTURPURAM</u>		10.05.2025
<u>BILL OF QUANTITIES - PHE SERVICES</u>		
<u>SUMMARY</u>		
Sl. No.	Description	Amount (Rs.)
A	SANITARYWARE AND CP FITTINGS	-
B	INTERNAL DRAINAGE	-
C	INTERNAL, VERTICAL & TERRACE WATER SUPPLY	-
D	EXTERNAL DRAINAGE	-
E	EXTERNAL WATER SUPPLY	-
F	EXISTING RE-ROUTING DRAINAGE WORKS	-
	TOTAL - A	-
	GST-18% - C	-
	Grand Total - (A+B)+C	-
Note:		
1).	Mirrors for wash basins are not included in this BOQ. It should be added in Civil BOQ	

2).	Cost of Demolition of the Existing Manhole chambers, Gully Chambers and pipes are not included.		
3).	Cost of WTP is not included in this BOQ		
4).	Cost of R.O Plant is not included in this BOQ		
5).	Cost of Civil Structure OHT is not included		
6).	Water proofing not considered in this BOQ.		
7).	Cost of following pumps are not included.		
	a). Borewell pump		
	b). Booster pump		

PROPOSED NEW CLASS ROOM BLOCK FOR MSE AT KOTTURPURAM					
BILL OF QUANTITIES - PHE SERVICES					
Sl. No.	Description	Unit	Quantity	Rate	Amount
A	SANITARYWARE AND CP FITTINGS				
1	Supplying,installing,testing and commissioning of approved make Floor mounted white colour European Water closet with PVC cistern with 'S' trap, pan connector, screws, 15mm SS braided hose, 32mm flush pipe & 15mm cp angular stop cock etc.complete. Cost including conveyance of all materials to the site, all labour charges etc., complete. Complete in all floors including cutting and making rough finishing the walls and floors wherever required,checked and directed by the site engineer.				
1.1	Hindware -Slick EWC Set -20011 (S-Trap), Size: (575 x 360 x 390mm)				
1.2	Hindware-Standard Seat Cover				
1.3	Parryware-Slimline Economy Single Flush Cistern-E8090				
1.4	32mm dia flush pipe				
1.5	Braided connection tube-Parryware-T754199 SS Braided Hose Pipe 2.0 ft				
1.6	Schell make-TRIOS regulating angle valve; Surface: chrome, Packaging unit: 1, G 1/2 x G 1/2-Model No: 05 451 06 64				
1.7	Pan connector	Set	15		-

Sl. No.	Description	Unit	Quantity	Rate	Amount
2	Supplying, installing, testing and commissioning of approved make White colour Indian Water closet with PVC cistern with 'S' trap, pan connector, 15mm cp angular stop cock, 15mm SS braided hose etc.complete. Cost including conveyance of all materials to the site, all labour charges, etc complete. complete in all floors including cutting and making rough finishing the walls and floors wherever required,checked and directed by the site engineer. Cost including necessary civil works, filling and cement works etc complete.				
2.1	Parryware - Utsav pan - C0126CS, Size: (580 x 420 x 260mm)				
2.2	Parryware-Slimline Economy Single Flush Cistern-E8090				
2.3	32mm dia flush pipe and PVC "P" Trap				
2.4	Braided connection tube-Parryware-T754199 SS Braided Hose Pipe 2.0 ft				
2.5	Schell make-TRIOS regulating angle valve; Surface: chrome, Packaging unit: 1, G 1/2 x G 1/2-Model No: 05 451 06 64				
2.6	Pan connector	Set	QRO		
3	Supplying,installing, testing and commissioning of white color Urinal with brackets, Auto closing Concealed Urinal Flush Valve with concealed pipes, waste coupling, bottle trap, cp/ss spreader with connection pipe etc., complete. Cost including conveyance of all materials to the site, all labour charges etc., complete.Works including necessary cutting and making good to its original condition ,finishing the wall and floors wherever required etc., complete.				
3.1	Urinal-Hindware -Flat back large -60002 (375 x 390 x 590mm)				
3.2	Waste coupling- Jaquar - ALD-705				
3.3	Bottle trap - Jaquar - ALD-769L300x190				

Sl. No.	Description	Unit	Quantity	Rate	Amount
3.4	10mm M.S Rack bolt set/Fisher Bolt/Wall brackets with screws or bolts				
3.5	Auto closing Concealed Urinal Flush Valve With Wall Flange -Jaquar- PRS-073	Set	12		-
4	Supplying and fixing of curved shaped urinal partition with frosted glass 8mm thick -chrome finish (shape as per architectural drg) works including cutting the grooves in the wall by cutting machine,the partition fixed by ss clamp to the wall by ss screws etc complete. Jaquar, model: JSE-CHR-810UC450X	Each	12		-
5	Supplying, installing, testing and commissioning of Rectangular Wash basin with 15mm Pressmatic tap,32mm dia waste coupling, 32mm dia bottle trap with extension pipe,15mm cp angular stop cock with wall flange, with connection tube including necessary supporting brackets, with screws or bolts etc complete. Cost including conveyance of all materials to the site, all labour charges etc., complete. Works including necessary cutting and making finishing the wall and floors wherever required etc. complete.				
5.1	Rectangular Wash basin -Hindware-Fabio-10129,Size: (500 x 400 mm)				
5.2	Waste coupling- Jaquar - ALD-705				
5.3	Bottle trap - Jaquar - ALD-769L300x190				
5.4	Pressmatic taps - Jaquar -PRS- 031-G				
5.5	Schell make-TRIOS regulating angle valve; Surface: chrome, Packaging unit: 1, G 1/2 x G 1/2-Model No: 05 451 06 64				
5.6	10mm M.S Rack bolt set/Fisher Bolt/Wall basin brackets with screws or bolts				

Sl. No.	Description	Unit	Quantity	Rate	Amount
5.7	450mm long braided hose with M10X1 nipple, 15mm nut, O-ring & rubber washer - Jaquar - ALD-805B	Set	12		-
6	Supplying and fixing of approved make Health Faucet has 1.25m SS hose with wall hook with 2 way bib cock and flexible tube with wall hook, screws etc; complete.				
6.1	Health faucet - Hindware-Accessories-model no:F160110				
6.2	2 way bib cock for HF - Hindware-Aspiro series-model no: F570005	Set	15		-
7	Supplying and fixing of 40mm dia waste coupling for Civil Rcc wash trough / S.S wash trough - drinking water purpose, complete.				
7.1	40mm dia SS/Cp full thread waste coupling - Essco (Jaquar Group)-model no: ALE-CHR-543FT	Each	QRO		
8	Supply, fixing and testing of CP Pressmatic Bib Cock Auto Closing System with Built-in Control Cock With Wall Flange for drinking water purpose (wall mounted type) located above Civil RCC wash trough / S.S wash trough etc complete.				
8.1	Pressmatic Bib cock -Jaquar - PRS-043-Bib Cock Auto Closing System	Each	QRO		
9	Supply, fixing and testing of Toilet Paper holder necessary accessories as per tender drawing and specification				
9.1	Jaquar-ACN-1153S	Each	QRO		
10	Supplying and fixing cp Robe hook fixing with necessary screws etc., complete				

Sl. No.	Description	Unit	Quantity	Rate	Amount
10.1	Jaquar-model no: ACN-1161N	Each	15		-
11	Supplying and fixing of Manual Soap Dispenser - fixing with necessary screws, etc., complete				
11.1	Askon-model no: ASD-138W	Each	6		-
12	Supplying, fixing of approved make cp Towel rod - fixing with necessary screws,located in shower area etc., complete				-
12.1	Jaquar-Continental-model no:ACN-1111 SM - 600mm long	Each	QRO		
13	Supplying, installing, testing and commissioning of approved make cp short body bib tap for Indian Water Closet area at Boys Toilet and Girls Toilet etc., complete.				
13.1	JAQUAR - CON-047KN Bib Cock with Wall Flange	Each	QRO		
14	Supplying and fixing of 15mm CP Long body bib tap with flange for drinking water purpose at all floor etc complete.				
14.1	JAQUAR - CON 107KN	Each	QRO		
15	Supplying and fixing of Hand drier Fully Automatic Twin blower fixed for Gents & Ladies toilet etc., complete				
	Location : Each group toilet :1 No				
15.1	Askon - AS-25-IR (SB)-(S.Steel 304 with brush finish)	Each	QRO		

Sl. No.	Description	Unit	Quantity	Rate	Amount
16	Supplying, installing, testing and commissioning of floor mounted drinking water dispenser / water cooler with following specifications and located at all typical floor corridor area near toilets etc complete.				
	> To deliver ambient temperature drinking water > No. of faucets - 3 -(Normal, Hot & Cold water) > Purification Method: Ultraviolet + Ozone +R.O 25 LPH unit > Outer body - Stainless steel 304 - 0.8mm sheet > Heater power in watts: 1000W > Filtration -spun candle and carbon block				
	Conway-Model No: D 75 NHC , Stainless Steel, Size: L 365 x W 355 x H 1370 mm with flow rate: 75 LPH with R.O 25 LPH unit included.				
	Schell-Schell make-TRIOS regulating angle valve; Surface: chrome, Packaging unit: 1, G 1/2 x G 1/2-Model No: 05 451 06 64	Set	3		-
	Total - Part-A				-
B	INTERNAL DRAINAGE				
1	Supply, fixing, testing and commissioning of approved make pipes and fittings for soil & waste as per the following specification.				
	Pipe : uPVC 10 Kg/cm² conforming to IS 4985-2000				
	Fittings: uPVC IS 7834 with latest amendment				
	Jointing method: With Pipe cleaner & Solvent cement				
	Application: draingae inside toilets - sunken/suspended				
	Marking, chasing, laying testing, concealing & commissioning the pipes				
	Test: Gravity leak test				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Pipes which are exposed to be provided with identification lables, flow direction, etc.				
	Installation: As per the consultant approved drawing.				
1.1	40mm dia	RM	20		-
1.2	50mm dia	RM	20		-
2	Supply, fixing, testing and commissioning of approved make pipes and fittings for soil & waste as per the following specification.				
	Pipe: SWR uPVC - B- Class conforming to IS -13592-1992				
	Fittings: uPVC IS - 14735 with latest amendment				
	Jointing method : With Pipe cleaner & push fit type				
	Application: Draingae (soil & waste) - inside toilets, sunken under ground up to the sewage manholes & gully chambers.				
	Supports to be provided as per details given separately below				
	Marking, chasing, laying testing, concealing & commissioning the pipe				
	Test: Gravity leak test & Water flow test wherever required.				
	Pipes which are exposed to be provided with identification lables, flow direction, etc.				
	Installation: As per the consultant approved drawing.				
2.1	75mm dia	RM	60		-
2.2	110mm dia	RM	65		-
3	Drainage pipe encasement				
	Application: Internal concealed drainage pipes				
	Types of Encasement : PCC				
	Ratio of Encasement : 1:4:8				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Thickness of the encasement: 100mm around the pipe				
	Installation: As per the specification.				
3.1	75mm to 110mm dia	M3	6		-
4	Vertical Pipes - Waste & Soil				
	Supply, fixing, testing and commissioning of approved make pipes and fittings for soil & waste as per the following specification.				
	Pipe: SWR uPVC- B-Class conforming to IS -13592-1992 for smaller dia.				
	Fittings: uPVC IS - 14735 with latest amendment				
	Jointing method: With Pipe cleaner & push fit type				
	Application: Draingae (Soil & waste) - Vertically stacked with proper support.				
	Supports to be provided as per details given separately below				
	Marking, chasing, laying testing, concealing & commissioning the pipe				
	Test: Gravity leak test & Water flow test wherever required.				
	Pipes which are exposed to be provided with identification lables, flow direction, etc.				
	Installation: As per the consultant approved drawing.				
4.1	75mm dia	RM	15		-
4.2	110mm dia	RM	15		-
5	Rainwater Pipes - Vertical				
	Supply, fixing, testing and commissioning of approved make pipes and fittings for soil & waste as per the following specification.				
	Pipe: SWR uPVC- B-Class conforming to IS -13592-1992 for smaller dia.				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Fittings: uPVC IS - 14735 with latest amendment				
	Jointing method: With Pipe cleaner & push fit type				
	Application: Draingae (Soil & waste) - Vertically stacked with proper support.				
	Supports to be provided as per details given separately below				
	Marking, chasing, laying testing, concealing & commissioning the pipe				
	Test: Gravity leak test & Water flow test wherever required.				
	Pipes which are exposed to be provided with identification lables, flow direction, etc.				
	Installation: As per the consultant approved drawing.				
5.1	75mm dia	RM	10		-
5.2	110mm dia	RM	80		-
5.3	160mm dia	RM	QRO		
5.4	200mm dia-6kg upvc pipe	RM	QRO		
6	Supplying, fixing, testing and commisioning of approved C.I grating to fix in the parapet wall of terrace areas etc complete.				
6.1	150x150 mm	Each	5		-
6.2	200x200 mm	Each	QRO		
7	Supplying, and fixing of 4mm thickness Moulded Multi uPVC Floor traps , made out of 110mm dia uPVC Pipe with single or multiple inlets of size 40mm to 75mm dia.(boss tee/riser piece), as per the following specification with min.2" water seal, fixing in position, using cement concrete 100 mm alround to full depth of trap, including providing FRP matting at bottom, inlet and outlet etc, complete				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Material: uPVC Floor trap				
	Thickness of FT : 4mm				
	Application: Drainage (Sunken & Suspended)				
	Water seal :50mm min				
	Type :Single/Multiple				
	Marking, chasing, laying testing, concealing & comissioning the floor traps				
7.1	Installation: As per the consultant approved drawing.	Each	27		-
8	Supplying and fixing of Heavy duty PVC grating of approved make, fixed over the floor trap as per the specification.				
	Material: PVC - Heavy duty				
	Size: 150 X 150 mm Square floor plate with inlet removable grate.				
	Duty: Heavy duty cover suitable for uPVC Floor trap				
	Marking,fixing, testing, comissioning and filling the caps around the grating				
8.1	Installation: As per the consultant approved drawing.	Each	QRO		
9	Supplying and fixing of Heavy duty SS anti cockroach grating of approved make, fixed over the floor trap as per the specification.				
	Material: SS 304 - Heavy duty				
	Size: 156 X 156 mm Square floor plate with inlet removable grate.				
	Duty: Heavy duty cover suitable for uPVC Floor trap				
	Chilly-Vintage-Square Classic-Model No: CCT-SC-156, Size: Over all 156X156mm and drain pipe size: 100mm				
	Marking,fixing, testing, comissioning and filling the caps around the grating-				
9.1	Installation: As per the consultant approved drawing.	Each	27		-

Sl. No.	Description	Unit	Quantity	Rate	Amount
10	Fabricating brackets using 6mm thickness 50mm width Mild Steel flats or angles , cutting, welding, forming shapes, providing hot dip galvanizing with 85 microns thickness coating for brackets, cutting pockets in masonry / concrete surfaces, grouting brackets in concrete of 1:2:4 mix, restoring the damaged portion to their original condition required materials etc. complete. M.S. Angle for supports.(vertical drainage, Rain water vertical & vertical water supply and terrace water supply)	Kg	600		-
11	Supplying,fixing and testing of SS Floor Clean Out which are provided in floors slab as per the following specification.				
	Material: Stainless Steel 304				
	Size: 153 X 153 mm Square floor plate with push fit (sealed with rubber washer and 3 nos of SS Screws) for 110mm soil pipe				
	Size: 102 X 102 mm Square floor plate with push fit (sealed with rubber washer and 3 nos of SS Screws) for 75mm waste pipe				
	Duty: Heavy duty clean out plate with screws.				
	Marking,fixing, testing, comissioning and filling the caps around the cover.				
	Installation: As per the consultant approved drawing.				
11.1	Chilly-Vintage-Cleanout Square-Model No: CO-S-102 with Gloss finish for 75 mm dia waste pipe	Each	3		-
11.2	Chilly-Vintage-Cleanout Square-Model No: CO-S-153 with Gloss finish for 110 mm dia soil pipe	Each	3		-

Sl. No.	Description	Unit	Quantity	Rate	Amount
12	Supplying,fixing and testing of Sealed uPVC 'P' Trap with SS clean out which are provided in floors slab urinal areas as per the following specification.				
	Material: uPVC 'P' Trap & Stainless steel clean out				
	Size: 153 X 153 mm Square floor plate with push fit (sealed with rubber				
	Duty: Heavy duty clean out plate with screws.				
	Marking,fixing, testing, comissioning and filling the caps around the cover.				
	Installation: As per the consultant approved drawing.				
	Chilly-Vintage-Cleanout Square-Model No: CO-S-153 with Gloss finish for 110 mm dia soil pipe & uPVC Trap for 110 mm dia	Each	6		-
13	Drilling with core cutting in RCC beams, slabs, floors etc.,for laying pipes and rendering the same in RCC 1:2:4, finishing the same to the satisfaction of the Owner or his authorized representative etc.,including nominal reinforcement where ever required, complete. The quoted rate shall also include for providing EPOXY based water proofing compound for sealing the joints around the pipes. Core cut shall be done using rebar detector after getting the approval from the structural consultant.				
	RCC slabs				
	25mm dia upto 50 mm	Each	QRO		
	50mm dia upto 110 mm	Each	5		-
	110mm dia. upto 160 mm	Each	5		-
	160mm upto 250mm	Each	QRO		
	RCC Beams				
	25mm dia upto 50 mm	Each	QRO		
	50mm dia upto 110 mm	Each	QRO		
	110mm dia. upto 160 mm	Each	QRO		

Sl. No.	Description	Unit	Quantity	Rate	Amount
	160mm upto 250mm	Each	QRO		
14	Supplying fixing of approved Make Split type supporting clamps used in the bottom of ceiling level as per the drawings with necessary anchor fastner,"U" clamp bolt and washer nuts etc...complete The clamps shall be fixed on ceiling.				
	50mm Clamp	Each	QRO		
	75mm Clamp	Each	QRO		
	110mm Clamp	Each	QRO		
	160mm Clamp	Each	QRO		
15	Supplying,fixing of 110mm dia Pvc coupler with upvc plate of size 200mm x 200mm on the bottom of slabs, fixing with screws and filled with cement mortar with water proofing materials upto the top of slab.	Each	QRO		
	Total - Part-B				-
C	INTERNAL, VERTICAL & TERRACE WATER SUPPLY				
1	Internal Water supply: Domestic, Flushing at inside of Toilets and Drinking (R.O water) for drinking purpose				
	Supply, fixing, testing and commissioning of approved make pipes and fittings as per the following specification.				
	Pipe : CPVC - SDR 11 conforming to IS.15778.2007				
	Fittings: CPVC - SDR 11 conforming to IS.15778.2007				
	Jointing method : With pipe cleaner & CPVC Solvent cement				
	Application: Pipes embedded on the walls concealed / suspended / riser				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Marking, chasing, laying with proper support, testing, commissioning and concealing the pipe				
	Support: G.I Anchor fastner, G.I threaded rod, rubber lined split clamps as suitable pipe size and G.I 'U' bolts with nut and washer. Anchor fastener shall be selected for a cracked conditions. Split clamps shall be used in the horizontal running pipe and rigid support shall be provided with G.I channel at every 4.0ft intervals and every change of directions.Doing disinfection for all the main pipes and providing ID lables for all the plumbing services.				
	Test: Hydraulic pressre test (test pressure shall be 1.5 times of working pressure)				
	Doing disinfection for all the main pipes				
	Pipes which are exposed to be provided with identification lables, flow direction, etc.				
	Installation: As per the consultant approved drawing.				
1.1	3/4"dia (NB)/20mm	RM	70		-
1.2	1"dia (NB)/25mm	RM	35		-
1.3	1 1/4"dia (NB)/32mm-SDR-11	RM	30		-
1.4	1 1/2"dia (NB)/40mm-SDR-11	RM	20		-
1.5	2"dia (NB)/50mm-SDR-11	RM	QRO		
2	Vertical Water Supply				
	Domestic water and Drinking water from proposed OHT/R.O plant to proposed toilets				
	Supply, fixing, testing and commissioning of approved make pipes and fittings as per the following specification.				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Pipe : CPVC - SDR 11 conforming to IS.15778.2007 for pipes dia 20mm to 50mm				
	Pipe : CPVC - SCH 40 Conforming to ASTM F 441 for pipes dia 65mm and above				
	Fittings: CPVC - SDR 11 conforming to IS.15778.2007 / CPVC SCH-40 Fittings conforming to ASTM F 438				
	Jointing method : With pipe cleaner & CPVC Solvent cement				
	Application: Pipes running on vertical stack / riser				
	Marking, chasing, laying with proper support, testing and commissioning the pipe				
	Support: G.I Anchor fastner, G.I threaded rod, rubber lined split clamps as suitable pipe size and G.I 'U' bolts with nut and washer. Anchor fastener shall be selected for a cracked conditions. Split clamps shall be used in the horizontal running pipe and rigid support shall be provided with G.I channel at every 4.0ft intervals and every change of directions.Doing disinfection for all the main pipes and providing ID lables for all the plumbing services.				
	Doing disinfection for all the main pipes				
	Pipes which are exposed to be provided with identification lables, flow direction, etc.				
	Test: Hydraulic pressre test (test pressure shall be 1.5 times of working pressure)				
	Installation: As per the consultant approved drawing.				
2.1	1"dia (NB)/25mm	RM	QRO		
2.2	1 1/4"dia (NB)/32mm-SDR-11	RM	5		-
2.3	1 1/2"dia (NB)/40mm-SDR-11	RM	5		-
2.4	2"dia (NB)/50mm-SDR-11	RM	10		-

Sl. No.	Description	Unit	Quantity	Rate	Amount
2.5	2 1/2"dia (ID)/65mm-SCH-40 - Pumping main from vertical line to OHT included	RM	30		-
2.6	3"dia (ID)/80mm-SCH-40	RM	QRO		
3	Terrace Water Supply				
	Domestic water and Drinking water from proposed OHT/R.O Plant to proposed toilets duct				
	Supply, fixing, testing and commissioning of approved make pipes and fittings as per the following specification.				
	Pipe : CPVC - SDR 11 conforming to IS.15778.2007 for pipes dia 20mm to 50mm				
	Pipe : CPVC - SCH 40 Conforming to ASTM F 441 for pipes dia 65mm and above				
	Fittings: CPVC - SDR 11 conforming to IS.15778.2007 / CPVC SCH-40 Fittings conforming to ASTM F 438				
	Jointing method : With pipe cleaner & CPVC Solvent cement				
	Application: Pipes running on terrace floor parapet wall				
	Marking, chasing, laying with proper support, testing and commissioning the pipe				
	Support: G.I Anchor fastner, G.I threaded rod, rubber lined split clamps as suitable pipe size and G.I 'U' bolts with nut and washer. Anchor fastener shall be selected for a cracked conditions. Split clamps shall be used in the horizontal running pipe and rigid support shall be provided with G.I channel at every 4.0ft intervals and every change of directions.Doing disinfection for all the main pipes and providing ID lables for all the plumbing services.				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Doing disinfection for all the main pipes				
	Pipes which are exposed to be provided with identification lables, flow direction, etc.				
	Test: Hydraulic pressre test (test pressure shall be 1.5 times of working pressure)				
	Installation: As per the consultant approved drawing.				
3.1	1 1/2"dia (NB)/40mm-SDR-11	RM	QRO		
3.2	2"dia (NB)/50mm-SDR-11	RM	10		-
3.3	2 1/2"dia (ID)/65mm-SCH-40	RM	10		-
3.4	3"dia (ID)/80mm-SCH-40	RM	QRO		
4	Supplying,fixing and testing of approved make ball valve as per the following specification.				
	Body: Full port, Forged and sand plastered Brass				
	Ball: Forged brass hard chrome plated with mirror smooth finish				
	Seat: PTFC (Polytetrafluoroethylene)				
	Stem seals: EPDM with WRAS approved 'O' ring				
	Pressure rating: PN16				
	Ends: BSP Threaded female				
	Standard: EN-ISO 9001				
	Valve tags to be provided				
4.1	25mm dia	Each	3		-
4.2	40mm dia	Each	4		-
5	Supplying, fixing and testing of approved make C.I Y-strainer PN-16, with flanged end, SS-304 screen suitable for mounting in horizontal & vertical pipe.				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Valve tags to be provided				
5.1	65mm dia	Each	1		-
6	Providing and fixing butterfly valve ; body: cast iron, shaft: AISI 410, disc: SG Iron, seat: EPDM with ISI marked of approved make with flange, washer, nuts & bolts and PN-16 pressure rating including rubber gasket & painting complete.				
	Fixing to the pipe work with flanges, bolts, nuts, and gaskets, testing & commissioning for the same.				
	Application: domestic inlet to OHT				
	Valve tags to be provided				
6.1	65mm dia	Each	3		-
7	Supply, installation, testing & commissioning of vertical cylindrical 3-layered, Multi-Ribbed Design, 100% UV Stabilized, Virgin Polymer Granules, Food Grade Polymer with FDA Approval, White/Green Colour SINTEX pure Antimicrobial tank suitable for domestic water storage and to be installed on the above of student toilet roof with necessary inlet, outlet, overflow and drain connections as per standards etc complete.				
7.1	Tank capacity 5000 litres for DWS water storage at terrace floor above 2.0 m height bed	Each	1		-
8	Supplying, fixing, testing & commissioning of approved make water hammer arrestor 3/4" as indicated on the drawings.				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	WHA consists of a Lead Free copper body, EPDM seals and O-rings, polypropylene piston , and NPT hex brass adapter end connections for easy installation. It must be factory air charged and and permanently sealed. The sealed chamber prevents the loss of air to the water and ensures long and trouble-free life. It can be installed in new or existing plumbing systems in concealed locations with a standard pipe tee in any angle.				
	Operating Pressure: Designed to operate on all domestic and commercial lines @ 150psi (10.6 bar) working pressure.				
8.1	Temperature Range: 33°F to 180°F (0.5°C to 82°C)	Each	6		-
9	Supplying, fixing, testing & commissioning of approved make Air release valve 1/2" as indicated on the drawings with the following specifications.				
	Air release valve consists of a brass body construction with male NPT connection, brass cover, air vent with silicone rubber seal, polyethylene float with valve plug, and automatic vent. Maximum Pressure: 150psi (10 bar) Temperature Range: 33°F – 240°F (5°C – 116°C)				
	Valve tags to be provided				
9.1	1/2" dia	Each	1		-
	Total - Part-C				-
D	<u>EXTERNAL DRAINAGE</u>				
1	Supply, fixing, testing and commissioning of approved make pipes and fittings as per the following specification.				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Pipe: Foamcore uPVC pipes - SN8 Class conforming to IS 16098:2013				
	Fittings: As per the manufacturer recommendations				
	Jointing method: With Pipe cleaner & solvent cement.				
	Application: Soil & waste water buried in below ground				
	Marking, excavation, testing, commissioning and refilling				
	Price is included for earth work excavation & backfilling.				
	Test: Gravity leak test				
	Installation: As per the consultant approved drawing.				
1.1	110mm dia - 450 to 1000 depth	RM	10		-
1.2	160mm dia - 500 to 1000 depth	RM	30		-
1.3	160mm dia - 1000 to 1500 depth	RM	QRO		
2	Drainage pipe encasement				
	Application: Drainage pipes				
	Types of Encasement : PCC				
	Ratio of Encasement : 1:4:8				
	Thickness of the Encasement : 100mm around the pipe				
	Installation: As per the specification.				
2.1	110 to 160mm dia	M3	3		-
3	Construction of inspection chamber as per the following specification.				
	Contractor shall submit the details and drawings for the approval of Project Manager prior to execution.				
	Masonry: First class Brick work 1:5				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Wall thickness : 230mm upto 1.5m depth & 345mm more than 1.5m depth				
	Bed concrete: PCC 1:4:8 & 200mm thick upto 1 to 2m depth and 300mm thick for more than 2m depth				
	Plastering : 20mm thick,1:3 inner & outer side of the chamber wall				
	Benching : Provide benching with PCC 1:3:6				
	Steps : Insulated Cast iron steps with the interval of 300mm if the depth is equal or more than 0.8m				
	Water proofing : If the water table is high, two layer of water proofing need to do in inner & outer side of the chambers				
	Construction : Providing opening for manhole cover frames with required size (600X600mm) and providing RCC cover slab with the suitable thickness from the structural engineer, covered on rest of the area.				
3.1	600x600 depth upto 1000 mm	Nos	2		-
3.2	900x600 depth from 1000 to 1500 mm	Nos	QRO		
4	Construction of gully chamber as per the following specification.				
	Contractor shall submit the details and drawings for the approval of Project				
	Gulley: PVC Gulley with CI Grating set				
	Masonry: First class Brick work 1:4				
	Wall thickness : 115mm brick wall				
	Bed concrete: PCC 1:4:8 & 75mm thick				
	Plastering : 12mm thick, CM1:6 inner & outer side of the chamber wall				
	Benching : Provide benching with PCC 1:3:6				
	Construction : Providing opening for 300X300 SFRC cover frames, and fixing				
	Excavation : Cost and works including the necessary excavation & backfilling				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Supply and fixing 300x300 SFRC cover slab and frame				
4.1	300x300	Nos	3		-
5	Supplying and fixing of approved FRP / GRP make Medium duty to withstand 12.5 ton capacity of bearing load, manhole Frame with cover , fixing to a perfect level in concrete slab				
5.1	600X600 mm	Each	2		-
5.2	900X600 mm	Each	QRO		
	Existing Library Building drainage Rerouting cost				
6	Supply, fixing, testing and commissioning of approved make pipes and fittings for soil & waste as per the following specification.				
	Pipe: SWR uPVC - B- Class conforming to IS -13592-1992				
	Fittings: uPVC IS - 14735 with latest amendment				
	Jointing method : With Pipe cleaner & pvc solvent cement joint				
	Application: Re Routing Drainage (soil & waste) - inside toilets for the Existing Library building, sunken under ground up to the proposed new sewage manholes & gully chambers.				
	Supports to be provided as per details given separately below				
	Marking, chasing, laying testing, concealing & commissioning the pipe				
	Test: Gravity leak test & Water flow test wherever required.				
	Pipes which are exposed to be provided with identification labels, flow direction, etc.				
	Installation: As per the consultant approved drawing.				
6.1	40mm dia - 10kg uPVC pipe	RM	5		-
6.2	50mm dia - 10kg uPVC pipe	RM	5		-

Sl. No.	Description	Unit	Quantity	Rate	Amount
6.3	75mm dia	RM	20		-
6.4	110mm dia	RM	15		-
6.5	Multi PVC Floor trap with PVC grating	Each	5		-
7	Making connection to the Existing External main sewer chamber , works including necessary pipes, fittings, and cutting the main road/landscaped area, chamber wall and making good the road after connection.	Each	1		-
	Total - Part-D				-
E	<u>EXTERNAL WATER SUPPLY</u>				
1	External Water Supply				
	Domestic water - from Existing DWS UG sump, Open well submersible pumping line to New class room block OHT.				
	Supply, fixing, testing and commissioning of approved make pipes and fittings as per the following specification.				
	Pipe : CPVC - SDR 11 conforming to IS.15778.2007 for pipes dia 20mm to 50mm				
	Pipe : CPVC - SCH 40 Conforming to ASTM F 441 for pipes dia 65mm and above				
	Fittings: CPVC - SDR 11 conforming to IS.15778.2007 / CPVC SCH-40 Fittings conforming to ASTM F 438				
	Jointing method : With pipe cleaner & CPVC Solvent cement				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Application-1: a) Pipes shall be laid in under ground within trench with MS supports b) buried with thrust blocks at change of direction and at branches c) above ground within pipe racks with MS supports d) on pedestral with rigid supports e) vertically stacked in shaft f) Note: rigid MS pipe supports shall be measured and priced separately				
	a) marking, excavation, levelling, laying with proper supports b) sand bed and sand filling after the erection of pipes and excavated backfilling				
	Doing disinfection for all the main pipes. Cost included for Split clamps, M.S supports and if excavation necessary it has also included.				
	Test: Hydraulic pressre test (test pressure shall be 1.5 times of working pressure)				
	Cost and works included for identification labels and arrow mark for flow direction on the suspended level pipes, vertical pipes and terrace running pipes as per NBC standard code and colour as well as manufacturer's recommendations with the following specification: 120 microns eco solvent vinyl sticker with matt lamination.				
	Installation: As per the consultant approved drawing.				
1.1	50mm dia - SDR 11	RM	QRO		
1.2	65mm dia - CPVC-SCH-40 pipe for UG Sump to OHT buried line only.	RM	110		-
2	Supplying,fixing and testing of approved make ball valve as per the following specification.				
	Body: Full port, Forged and sand plastered Brass				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Ball: Forged brass hard chrome plated with mirror smooth finish				
	Seat: PTFE (Polytetrafluoroethylene)				
	Stem seals: EPDM with WRAS approved 'O' ring				
	Pressure rating: PN16				
	Ends: BSP Threaded female				
	Standard: EN-ISO 9001				
	Valve tags to be provided				
2.1	50mm dia	Each	QRO		
3	Providing and fixing butterfly valve ; body: cast iron, shaft: AISI 410, disc: SG Iron, seat: EPDM with ISI marked of approved make with flange, washer, nuts & bolts and PN-16 pressure rating including rubber gasket & painting complete.				
	Fixing to the pipe work with flanges, bolts, nuts, and gaskets, testing & commissioning for the same.				
	Application: domestic water pipes				
	Valve tags to be provided				
3.1	65mm dia	Each	1		-
3.2	80mm dia	Each	QRO		
4	SITC of bronze body Pressure reducing valves with SS trim as in indicated on the drawings with the following specifications.				
	Body: Lead Free* cast copper silicon alloy / Brass				
	Seat: Thermoplastic cartridge				
	Integral Strainer: Stainless steel				
	Diaphragm: Reinforced EPDM				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Valve Disc: EPDM				
	Temperature Range: 33°F – 180°F (0.5°C – 82°C)				
	Maximum Working Pressure: 25 bar				
	Adjustable Reduced Pressure Range: 1.38 Bar– 5.52 Bar				
	Threaded end - NPT				
	Valve tags to be provided				
4.1	50mm dia	Each	QRO		
4.2	65mm dia	Each	QRO		
5	Supplying, fixing and testing of approved make dual plate check valve CI body with SS-304 disc - PN-16 with flanged end, seat-nitrile/EPDM suitable for mounting in horizontal & vertical pipe.				
	Valve tags to be provided				
5.1	50mm dia	Each	QRO		
5.2	65mm dia	Each	1		-
6	Supplying, Transporting to Site , Unloading , Safe storage,fixing, testing and commissioning of Open Well Submersible Pump comprise the following specification for domestic water supply from UG sump to OHT with required flow rates and Head along with Control panel and all the accessories including connection with water supply network as indicated on the drawing.				
	MOC = Cast Iron/SS304				
	Pump Housing: Cast iron				
	Motor: IP 68				
	Type of Motor: 3 Phase				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Supply Voltage: 440V AC				
	Cycles/Sec.: 50 Hz				
	Impeller- Stainless Steel				
	Control panel need to be supplied as specified below: CP 3x16A DOL 3x415 DPC PLUS IP41,50 cycles A.C. IP-55 enclosure and MP-204 controller unit for overload, under load, missing phase, phase sequence, over voltage, under voltage, current unbalance, power factor, high temperature protection and 4-digit display for indicate all the electrical parameter for motor protection. Suitable incoming and outgoing switches, earthing arrangement. Control panel to have provision for sequence operation and to operate both the pumps together in the high level condition.				
	Auto/Manual Control Panel with Folat-3 Nos. to provide for dry and low level, overflow protection				
6.1	2.5 LPS @ 35M Head (1W + 1S) - Domestic water from the existing UG sump to OHT	Set	1		-
7	Construction of valve chamber as per consultant drawing & river sand etc. complete. Cost included for civil materials and other plumbing materials, sand, stone and cement.				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Chambers shall be in brick work as per the following specification. Earth work excavation in all type of soil except hard rock with initial lead and lift, river sand filling, P.C.C.1:4:8 for foundation using 40 mm metal jelly, R.C.C.1:1.5:3 using 20 mm metal jelly for foundation bed concrete thickness as per the drawing, Brick work in CM 1:4 mix for walls thickness as per the drawing given, work including scaffolding, shuttering charges for all R.C.C. works, wall plastering with CM 1:3, mix 15 mm thick for inside and outside wall. bed benching with P.C.C.1:2:4 mix using 20 mm metal jelly, thickness as per the drawing given. over the bed benching water proof compound mix plastering in CM 1:3, 15 mm thickness. Cost included of 600X600mm FRP cover Medium duty capacity with frame (12.5T) etc complete.				
7.1	600x600x1000mm deep with 600X600mm FRP Medium Duty cover (12.5Ton)	Each	1		-
1	Supply, installation, testing & commissioning of approved make automatic tank filling level control system with following items: > On-Off Type 65mm dia Electrical Actuator Single Phase 220V AC Operated Wafer Type Butterfly Valve with CI Body & SS Disc > 65mm Y-Strainer > Water level Controller includes Master controller for water pump and kit includes level sensor, dry run sensor, wire clamps and warranty card. > MY4n 220V relay tapper 1 no				
	Sensor cable From OHT to solenoid valve Controller in the terrace with 50 mtr length				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	power cable 2 core From solenoid valve controller to master controller with 100 mtr length				
	Installations and commissioning Including plumbing materials				
	Approved Make -Saveon / Lehry / Aloft				
1.1	Automatic level controller with 65mm electrically actuated valve, level sensor - For DWS OHT tank filling	Set	1		-
	Total - Part-E				-
F	<u>EXISTING RE-ROUTING DRAINAGE WORKS</u>				
1	Supplying, fixing and testing of approved make foamcore uPVC pipe for Rain water pipe works as per the following specification				
	Pipe: Foamcore uPVC pipes - SN8 Class conforming to IS 16098:2013				
	Fittings: As per the manufacturer recommendations				
	Jointing method : With Pipe cleaner & solvent cement.				
	Application: Soil & waste water buried in below ground				
	Marking, chasing, laying testing, consealing & comissioning the pipe.				
	Price is included for earth work excavation.				
	Test: Gravity leak test				
	Installation: As per the consultant approved drawing.				
1.1	110mm dia depth upto 1000mm	RM	QRO		
1.2	160mm dia depth from 450 to 1000mm	RM	50		-
1.3	160mm dia depth from 1000 to 1500mm	RM	30		-
2	Drainage pipe encasement				
	Application: Drainage pipes				

Sl. No.	Description	Unit	Quantity	Rate	Amount
	Types of Encasement : PCC				
	Ratio of Encasement : 1:4:8				
	Thickness of the Encasement : 100mm around the pipe				
	Installation: As per the specification.				
2.1	110 to160mm dia	M3	6		-
3	Construction of inspection chamber as per the following specification.				
	Contractor shall submit the details and drawings for the approval of Project Manager prior to execution.				
	Masonry: First class Brick work 1:5				
	Wall thickness : 230mm upto 1.5m depth & 345mm more than 1.5m depth				
	Bed concrete: PCC 1:4:8 & 200mm thick upto 1 to 2m depth and 300mm thick for more than 2m depth				
	Plastering : 20mm thick,1:3 inner & outer side of the chamber wall				
	Benching : Provide benching with PCC 1:3:6				
	Steps : Insulated Cast iron steps with the interval of 300mm if the depth is equal or more than 0.8m				
	Water proofing : If the water table is high, two layer of water proofing need to do in inner & outer side of the chambers				
	Construction : Providing opening for manhole cover frames with required size (600X600mm/900X600mm) and providing RCC cover slab with the suitable thickness from the structural engineer, covered on rest of the area.				
3.1	600x600 depth upto 1000 mm	Nos	3		-
3.2	900x600 depth from 1000 to 1500 mm	Nos	QRO		

Sl. No.	Description	Unit	Quantity	Rate	Amount
4	Supplying and fixing of approved FRP / GRP make Medium duty to withstand 12.5 ton capacity of bearing load, manhole Frame with cover , fixing to a perfect level in concrete slab				
4.1	600X600 mm	Each	2		-
4.2	900X600 mm	Each	QRO		
5	Extension of existing chamber depth from 550mm to 610mm depth with necessary civil works like pcc pedestal, plastering, chamber wall and chamfering etc.				
5.1	600X600 mm (As per drawing IC-4)	Each	1		-
6	Supply, fixing, testing and commissioning of approved make pipes and fittings for soil & waste as per the following specification.				
	Pipe: SWR uPVC - B- Class conforming to IS -13592-1992				
	Fittings: uPVC IS - 14735 with latest amendment				
	Jointing method : With Pipe cleaner & push fit type				
	Application: Re Routing Draingae (soil & waste) - inside toilets for the Existing Library building, sunken under ground up to the proposed new sewage manholes & gully chambers.				
	Supports to be provided as per details given separately below				
	Marking, chasing, laying testing, concealing & commissioning the pipe				
	Test: Gravity leak test & Water flow test wherever required.				
	Pipes which are exposed to be provided with identification lables, flow direction, etc.				
	Installation: As per the consultant approved drawing.				

Sl. No.	Description	Unit	Quantity	Rate	Amount
6.1	75mm dia	RM	10		-
6.2	110mm dia	RM	10		-
	Total - Part-F				-

LIST OF APPROVED MAKES / BRANDS		
SL NO	DESCRIPTION	MAKES / BRANDS
1	SANITARYWARE	HINDWARE / PARRYWARE / CERA / JAQUAR
2	CP FITTINGS AND ACCESSORIES	JAQUAR / HINDWARE / SCHELL / PARRYWARE / CERA /ASTRAL
3	SOAP DISPENSER	PARRYWARE/ASKON/JAQUAR/EURONICS
4	MULTI PVC FLOOR TRAP	ASHIRVAD / ASTRAL / FINOLEX / SUPREME
5	SS ANTI COCKROACH GRATING	CHILLY / SGE / NEER
6	cPVC PIPE	ASHIRVAD / ASTRAL / FINOLEX / PRINCE
7	uPVC PIPE, FOAM CORE PIPE	ASHIRVAD / ASTRAL / FINOLEX / TRU FLO
8	BALL VALVES	SANT / LEHRY / KARTAR / NDR / VARIE
9	BUTTER FLY VALVE, NRV	SANT / LEHRY / KARTAR / NDR / VARIE
10	'Y' STRAINERS	SANT / LEHRY / KARTAR / NDR / VARIE
11	PRESSURE REDUCING VALVE	SANT / LEHRY / KARTAR / NDR / VARIE
12	AIR RELEASE VALVES	SANT / LEHRY / KARTAR / NDR / VARIE
13	G.I RUBBER LINED SPLIT CLAMPS/'U' BOLTS	HILTI / CHILLI / EUROCLAMP / MUPRO
14	FASTNERS	HILTI / FISHER / SPIT (FRANCE) / MUPRO
15	FRP COVER	THERMO DRAIN / (HP) STRONG DRAIN / AAGAM
16	WATER DISPENSER / WATER COOLER	CONWAY / BLUE STAR / VOLTAS
17	CI / DI COVER	NECO / DURAA / KARTAR
18	OPEN WELL SUBMERSIBLE TRANSFER PUMPS	TEXMO / KIRLOSKAR / KSB/ SAMUDRA /GRUNDFOS