



Bill of Quantity

Name of work: Construction of cafeteria and waterproofing treatment over the roof of entrance lobby and balcony near reception at BITM, Kolkata.

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
1.0	Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone) including removing, spreading or stacking the spoils within a lead of 150 m. as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete. Depth of excavation not exceeding 1,500 mm.	10	Cum.	119.27	1192.70
2.0	Earth work in filling in foundation trenches or plinth with good earth, in layers not exceeding 150 mm. including watering and ramming etc. layer by layer complete. (Payment to be made on the basis of measurement of finished quantity of work) With earth obtained from excavation of foundation.	2	Cum.	77.54	155.08
3.0	Labour for laying Single brick flat soling (thickness 75 mm) with departmental bricks including carriage of departmental bricks within a lead of 150 meters preparation of bed as necessary with brick joints properly filled in and packed with local sand or powdered earth and including necessary cushion of similar materials below the soling (and in between layers when more than one layer is used) (The item included the cost of obtaining local sand or powdered earth)	1	Sqm.	35.84	35.84
4.0	Brick soling with picked Jhama bricks including preparation of bed as necessary with brick joints properly filled in and packed with powdered earth and including necessary cushion of similar material below the soling (and in between layers when more than one layer is used) completes as per direction. Single brick flat soling (thickness 75 mm.)	25	Sqm.	266.00	6650.00
5.0	Dismantling all types of masonry excepting cement concrete plain or reinforced, stacking serviceable materials at site and removing rubbish as directed within a lead of 150m. At any floor including roof.	8	Cum	447.00	3,576.00
6.0	Dismantling all types of plain cement concrete works, stacking serviceable materials at site and removing rubbish as directed with a lead of 150m at any level. Upto 150 mm. thick.	1	Cum	939.00	939.00
7.0	Dismantling the whole Cafeteria structure including roof ,foundation etc complete. Disposing off the debris from BITM campus and stacking the serviceable material at the specified location within the campus as directed by the Engineer-In-Charge.	1	L.S.	10000.00	10,000.0
8.0	Stripping off worn out plaster and raking out joints of walls, ceilings etc upto any height and in any floor including removing rubbish within a lead of 150m as directed.	10	Sq.m.	19.00	190.00
9.0	Repairing of crack in wall, roof etc. by cement grouting (1:2) including widening the crack on the surface (into V-section), cleaning and packing the same with cement mortar (1:2) and finishing off to match with adjacent surface. (Cement-69 Kg/100 m).	70	Meter	13.92	974.40
10.0	Providing & mixing polymer based water resistant, bonding agent like Dr. Fixit 101 LW+/- Sika Latex power or equivalent in cement plaster, concrete etc. as per manufacturer's specification and direction of EIC.	5	Lit.	360.00	1,800.00
11.0	Cleaning the exposed reinforcement preferably upto full diameter by wire brush, applying two coats of polymer based rust removing compound left for 24 hours, removing the coating and then applying two (2) coats of polymer modified anti corrosive protective coating formulated to inhibit the corrosion of reinforcement as per manufacturer's specification.				
11.1.	Providing & applying rust removing compound (Sika Rustoff 100 or equivalent).	1	Kg	345.00	345.00
11.2.	Providing & applying polymer modified anti corrosive protective coating (Sika Rustop or equivalent).	2	Kg	271.00	542.00
12.	Brick work with 1st class bricks (Class designation 75) in cement mortar (1:6). In superstructure at any floor.	5.2	Cum	5,636.00	29,307.20
13.	125mm thick brick work with 1st class bricks in cement mortar (1:4) at any floor.	35	Sq.m.	736.00	25,760.00
14.	Plaster (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary at any height.				
14.1	With 1:6 cement mortar, 15 mm thick plaster.	40	Sq.m.	151.00	6,040.00
14.2	With 1:6 cement mortar, 20mm thick plaster.	80	Sq.m.	175.00	14,000.00

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15.	Neat cement punning about 1.5mm thick in wall, dado, window, sill, floor etc.NOTE: Cement 0.152 cu.m per100 sq.m.	10	Sq.m.	34.00	340.00
16.	Hire and labour charges for shuttering with centering and necessary staging upto 4 m using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams, columns, lintels, curved or straight including fitting, fixing and striking out after completion of works. 25mm to 30mm thick wooden shuttering as per decision & direction of Engineer-In-Charge.	60	Sq.m.	335.00	20,100.00
17.	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering at any floor/ level as per relevant IS code. 1:1½:3 (1 Cement: 1½ coarse sand (zone-III) : 3 graded stone aggregate nominal size as approved).	6.5	Cum	6,757.22	43,921.93
18.	Reinforcement for reinforced concrete work in all sorts of structures including distribution bars, stirrups, binders etc. including supply of rods, initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction. For works in foundation and upto roof of ground floor/ upto 4 m using Tor/HYSD steel. (Make: TATA/SAIL)	0.12	MT	60,580.00	7,269.60
19.	Rendering the surface of walls and ceiling with Ready mixed Acrylic wall putty of approved make and brand (1.5mm thick) and prepare the surface even and smooth all complete.	50	Sq.m.	122.00	6,100.00
20.	Applying Interior grade Acrylic Primer of approved quality and brand on plastered or concrete surface in old or new work to receive Distemper/ Acrylic emulsion paint including scraping and preparing the surface thoroughly, complete as per manufacturer's specification and as per direction of the EIC at any floor. Water based interior grade Acrylic Primer One coat. Physical consumption of primer will be verified with the actual area of painted surface and penalty @Rs.130/lit will be imposed if any deviation is found with respect to the consumption of primer according to the manufacturer's specifications.	50	Sq.m.	30.80	1,540.00
21.	Applying Acrylic Emulsion Paint of approved make and brand (Asian Paints Apcolite/ ICI Dulux Super Clean / Berger Easy clean) on walls and ceiling including sand papering in intermediate coats including putty (to be done under specific instruction of Superintending Engineer) : Two or more coats with Luxury Quality Acrylic Emulsion Paint. (Rate is inclusive of applying additional coats wherever required to achieve even shade and colour.) Physical consumption of paint will be verified with the actual area of painted surface and penalty @Rs.440/lit will be imposed if any deviation is found with respect to the consumption of paint according to the manufacturer's specifications.	50	Sq.m.	70.00	3,500.00
22.	Applying Exterior grade Acrylic primer of approved quality and brand (ICI Dulux Weathershield Alkalibloc or equivalent) on plastered or concrete surface old or new surface to receive decorative textured (matt finish) or smooth finish acrylic exterior emulsion paint including scraping and preparing the surface thoroughly, complete as per manufacturer's specification and as per direction of the EIC at any floor. One Coat applied @ 0.9 ltr/ 10 Sq.m. (Make: ICI/ Asian Paints/ Berger/ Nerolac) Physical consumption of primer will be verified with the actual area of painted surface and penalty @Rs.220/lit will be imposed if any deviation is found with respect to the consumption of primer according to the manufacturer's specifications.	60	Sq.m.	31.40	1,884.00
23.	Protective and Decorative Acrylic exterior emulsion paint of approved quality and brand (ICI Dulux Weathershield Max, Apex ultima of Asian paint, Barger Weather coat long life or equivalent), as per manufacturer's specification and as per direction of Engineer-In-Charge to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer. Two or more coats applied @ 1.67 ltr/ 10 Sq.m with Super protective 100% Acrylic Emulsion paint. Rate is inclusive of applying additional coats wherever required to achieve even shade and colour. Physical consumption of paint will be verified with the actual area of painted surface and penalty @Rs.550/lit will be imposed if any deviation is found with respect to the consumption of paint according to the manufacturer's specifications.	60	Sq.m.	97.00	5,820.00
24.	Priming one coat on timber or plastered surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc. (This item is applicable to new work or old work when the original surface has been exposed by removal of old paint)	15	Sq.m.	38.00	570.00
25.	Priming one coat on steel or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc. (This item is applicable to new work or old work when the original surface has been exposed by removal of old paint)	25	Sq.m.	29.00	725.00

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
26.	Painting with best quality synthetic enamel paint of approved make and brand (ICI Dulux 5 in 1 or Equivalent) including smoothening surface by sand papering etc. including using of approved putty etc. on the surface, if necessary				
26.1.	Two coats (with any shade except white) with super gloss (hi-gloss) of approved quality on timber or plastered surface.	15	Sq.m.	81.00	1,215.00
26.2.	Two coats (with any shade except white) with super gloss (hi-gloss) of approved quality on steel or other metal surface.	25	Sq.m.	79.00	1,975.00
27.	Providing and fixing of false ceiling with powder coated exposed G.I. grid suspension system (Armstrong make) E-Grid U-1520 or equivalent load carrying capacity with mid span deflection not exceeding 1/360 span with hanger spacing of 1200mm c/c) consisting of Main Runner 3600 mm long, Cross Tee 1200 mm / 600 mm long and Wall Angle. The Wall Angle shall be fixed on PVC Dash Fasteners on the perimeter of the wall by steel screws with distance 300mm c/c. The Main Runners to be placed @ 1200 mm. The Cross Tee 1200mm will be inserted in the pre-cut slots of Main Runner at a regular interval of 600 mm to form a modular grid of 1200mm X 600mm. Additional Cross Tees of 600 mm shall be placed perpendicular to the Cross Tee 1200 mm long to finally form a grid of 600 mm X 600 mm. Grid of module size 600 mm X 600 mm shall be supported by 6 mm dia G.I. wire from purlins / soffit. 16mm thick Mineral Fiber Acoustic Ceiling Tiles of size 600mm X 600mm with NRC value > 0.65 should be placed in the Grid module to form a False Ceiling. All complete as per the drawing & directions of Engineer-in-charge. (Approved make & brand : Armstrong, Model: Minatuff RH99/ DUNE RH-99, Micro look.)	12	Sq.m.	1,357.00	16,284.00
28.	Supplying,fitting & fixing granite slab 15mm to 18mm thick in floor, lobby, stair, landing and treads etc. over 20mm (avg) thick base of cement mortar (1:2) laid with white cement slurry @ 4.40Kg per Square meter before placing of granite and jointed with white cement slurry @ 2.0 Kg per square meter with necessary pigments and complete as per direction of Engineer-in-charge including cost of all materials, labours, curing and roughening of concrete surface complete. In ground floor. Aea of each Granite slab above 1.00 Square meter.	4	Sq.M.	3,021.00	12,084.00
29.	Providing edge moulding to granite slabs in counters, vanities, window sill etc. including machine polishing to edge to give high gloss finish all complete as per design approved by Engineer - in - Charge.	20	R.M	125.00	2,500.00
30.	M.S. structural works with hollow sections (square or rectangular shape) conforming to IS: 806-1968 & IS:1161-1998) connected to one another with bracket, gusset, cleat as per design, drawing & direction of Engineer-in-Charge complete including cutting to requisite shape & size, fabrication including metal arc welding conforming to IS: 816-1969 & IS: 9595 using electrodes of approved make and brand conforming to IS:814- 2004, haulage, hoisting and erection all complete. The rate includes the cost of all M.S. Hollow section, all consumables such as electrodes, gas and hire charges of all tools and plants and labour required for execution and all incidental chages (such as electricity, labour insurance) etc. complete.For roof truss works Payment to be made on the basis of calculated weight of structural memebtrs of MS Holow Section as specified in relevent IS code in finished work. Payment for gusset, bracket, cleat may be made by adding the actual weight of such items with weight of finished structural members. For roof truss works,Span up to 12 Meter . Make Tata/ SAIL	0.35	MT.	58832.00	20,591.2
31.	Supplying, fitting & fixing Zn-Al alloy (55% Al & 45% Zn) coating of 150 grams per sq. metre (followed by colour coated on both side) steel sheet work having minimum yield strength of 550 Mpa of trapzoidal profile of approved make as per IS: 15965: 2012 and IS: 14246: 2013 (excluding the supporting frame work) fitted and fixed with 55 mm & 25 mm self tapping screw, EPDM Washer 16 mm dia & 3 mm th. washer etc.complete with 150 mm end lap and one corrugation minimum side lap.In Roof:-With 0.5 mm thick sheet(Payment to be made on area of finished work). Make:Tata-Bluescope/JSW.	20	Sq.M	896.00	17,920.0

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
32.	Supplying, fitting and fixing steel rolling shutter profile type with 18 B.G . of approved type steel lathe section 75mm wide, fitted with coil wire spring to necessiate the fitting of required Nos. of C.I. Pulleys on heavy type solid drawn seamless steel tube complete with locking arrangements both inside and outside specially builtup side guide channels including providing a hood for the steel rolling shutter in the room, painting two coats of approved aluminium paint over a coat of red lead primer complete. Make:As approve by the Engineer-in-Charge.	8	Sq.M	2,170.00	17,360.0
33.	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/clerestory windows & desertory other Frames/Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/ cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm2, modulus of elasticity 900 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length, Including all fitting and fixing of accessories complete as per direction of Engineer-In- Charge. Frame size 45 x 85 mm. (Make:Century / as approve by the Engineer-in-Charge.)	5	meter	723.00	3,615.0
34.	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm2, modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, including fitting and fixing of locking arrangement with SS Has bolt ,SS door handles (Both side), SS tower bolt all complete as per direction of Engineer-In-Charge. 30 mm thick.	2	Sq.m	3,433.00	6,866.0
35.	Supplying and laying true to line and level Anti Skid, Full Body, Homogeneous & Granular finish Vitrified Tiles conforming to IS:15622-2006 & IS 4457-2007 and testing shall be made in accordance with IS:13630 [Non- modular sizes for tiles with Skid resistance > 0.5, Mohr's hardness > 5.0, Staining resistance:Class-1, Water Absorption: E < 0.5%], MOR > 35 N/sq.mm in Internal area of building e.g. Toilet Block, Passage, Corridor, Accessible Open Terrace etc. set in 20 mm sand cement mortar (1:4) and 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg./Sq.m or using Polymerised Adhesive (6 mm thick layer applied directly over finished artificial stone floor/ Mosaic etc without any backing course) laid after application slurry using 1.75 Kg of cement per Sq.m below mortar only, joints grouted with admixture of white cement and colouring pigment to match with colour of tiles/ epoxy grout materials of approved make as directed and removal of wax coating of top surface of tiles with warm water and polishing the tiles using soft and dry cloth upto mirror finish complete including the cost of materials, labour and all other incidental charges complete true to the manufacturer's specification and direction of Engineer-in-Charge. (White cement, synthetic adhesive and grout material to be supplied by the contractor). a) In Ground Floor: Sizes-300 mm x300mm x10 mm with breaking strength > 1200 N	16	Sq.m.	906.00	14,496.00
36.	Taking out old damaged tarfelt/ APP membrane from the roof, parapet etc. preparing the roof surfaces by removing all spoils, blisters, moss etc. from the working site and disposal of the same beyond the compound and cleaning the site in all respect as per direction of Engineer-in-Charge.	135	Sq.m	12.00	1,620.00
37.	Cleaning the concrete surface by removing dirt and debris, marking defective locations and removing loose concrete by careful stripping untill hard surface is exposed, cutting the concrete to regular shape, wire brushing the exposed surface and removing debris from site complete as per direction of the Engineer - in - Charge.	135	Sq.m.	90.00	12,150.00
38.	Preparation of drainage spout on roof for bituminous waterproofing treatment after required grading and shaping of the under bed with Cement Concrete (1:2:4) or Cement Mortar (1:4) as directed, Chamfering and moulding the parapet wall to form a bell mouth entry, if required and providing full course treatment with bituminous felt to facilitate quick and smooth drainage of water into the down pipes complete including cost of all materials and labour according to satisfaction of the Engineer - in - Charge.	4	Each	110.00	440.00

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39.	<p>Supplying & laying 3mm thick pre-fabricated plastomeric water proofing membrane conforming to EN 12311-1 & ASTM 5147, manufactured with atactic poly propylene (APP) modified premium grade asphalt , specially reinforced with non-woven polyester core with polyester reinforcement @160 gms per Sq.m & both faces covered with thermo-fusible polyethylene film /Mineral on top face over a coat of primer @ 0.40 lit/Sq.m of manufacturer's specification on smooth, clean dry surface prepared wherever required including repairing the old surface with cement mortar (1:2) admixing Sika Latex etc. Lap joint shall be provided of 75 mm in longitudinal & 100 mm in transverse direction and fused using LPG/ Propane torch employing extra care ensuring full bondage, complete removal of entrapped air and sealing edges into grooves in appropriate manner as per direction of Engineer -in-charge all complete including materials, labour and applicable taxes. Membrane Property: Softening Point > 150 deg C, Cold Flexibility < -6 deg C, Tensile Strength, N/cm : 600 (longitudinal), 450 (transverse), Tearing Strength, N: 300 (longitudinal), 200 (transverse).</p> <p>The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane following manufacturer's specification. Necessary groove to be made on vertical wall and inserted the APP membrane into the groove, including mending the damages, complete. (Payment shall be made on the basis of finished surface area, no extra payment for lapping/ wastage / grooving & mending etc.) Make : Sika India Pvt Ltd or equivalent approved make.</p> <p>Membrane Property: Softening Point > 150 deg C, Cold Flexibility < -6 deg C, Tensile Strength, N/cm : 600 (longitudinal), 450 (transverse), Tearing Strength, N: 300 (longitudinal), 200 (transverse).The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane following manufacturer's specification. Necessary groove to be made on vertical wall and inserted the APP membrane into the groove, including mending the damages, complete. (Payment shall be made on the basis of finished surface area, no extra payment for lapping/ wastage / grooving & mending etc.) Make : Sika India Pvt Ltd or equivalent approved make.</p>	150	Sq.m	407.00	61,050.00
40.	Painting with superior quality aluminium paint of approved make and brand over the top surface of APP membrane. Two or more coats . Make: ICI, Asian paints, Berger, Nerolac or approved.	150	Sq.m	57.00	8,550.00
41.	Supplying, fitting & fixing UPVC pipes A- Type and fittings conforming to IS:13592-1992 with all necessary clamps nails, including making holes in walls, floor etc. cutting trenches in any soil through masonry concrete structures , chase cutting on wall for concealed pipe line etc if necessary and mending good damages including joining with jointing materials (Spun Yarn, Valamoid/Bitumen/M-Seal etc) complete. (Make: Supreme, Oriplast, Ashirvad or equivalent) UPVC Pipe: 110mm dia.	3	Meter	292.00	876.00
42.	UPVC Fittings				
42.1	Plain Tee: 110 mm dia.	1	Each	172.00	172.00
42.2	Plain Y: 110 mm dia.	1	Each	223.00	223.00
42.3	Bend 87.5 degree: 110 mm dia.	1	Each	140.00	140.00
42.4	Shoe: 110 mm dia.	1	Each	111.00	111.00
42.5	Door Tee: 110 mm dia.	1	Each	195.00	195.00
42.6	Door Bend 87.5 degree: 110 mm dia.	1	Each	120.00	120.00
42.7	Half Bend 45 degree: 110 mm dia.	1	Each	89.00	89.00
42.8	Vent Cowl: 110 mm dia.	1	Each	33.00	33.00
42.9	Pipe Clip: 110 mm dia.	1	Each	21.00	21.00

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43.	Uprooting and removing plants from the surface of walls parapet etc and making good damages. (Repairing of damages to be paid separately). Small plant of girth of exposed stem upto 75 mm. The work includes any height of the exterior wall, roof etc and treatment to be done with CuSO4 (Copper sulphate solution) and mending damages good with C.C. (1:1.5:3) including sika latex. The cost of concrete shall be paid separately.	5	Each	50.00	250.00
44.	Removal of rubbish, earth, scrap material etc. from the working site and dispose of the same beyond the compound in conformity with Municipal/Corporation rules for such disposal, loading into truck and cleaning the site in all respect as per direction of Engineer in charge.	1	L.S.	2,500.00	2,500.00

Cost of Civil works ::: 3,96,723.95
 GST, as applicable over cost of Civil work @ 18% ::: 71,410.31
 Cost of Civil works excluding labour welfare cess ::: 4,68,134.26
 Labour welfare cess @ 1% ::: 4,681.34
Total amount of Civil Work ::: 4,72,815.60
Say Rs. 4,72,816.00