



BIRLA INDUSTRIAL & TECHNOLOGICAL MUSEUM
(National Council of Science Museums)
19A, Gurusaday Road, Kolkata – 700019.

Bill of Quantity

Renovation of Gent's toilet, exterior repairing & painting of NTC building of BITM, Kolkata.

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
1.0	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).	300	Mtr.	13.92	4,176.00
2.0	Repairing of cracks in Dome & adjoining annular surface with Acrylic co-polymer based Crack fillers of approved quality and brand (ICI Dulux Aquatech Crack fillers or equivalent) including cutting grooves (10mm x 10mm), cleaning and finishing off the same to match with adjacent surface. The rate is inclusive of necessary staging & scaffolding if required. As per manufacturer's specification & direction of Engineer-in-charge. This item is to be carried out on specific instruction of Engineer-in-charge.	100	Mtr.	32.00	3,200.00
3.0	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.	1	Cum	447.00	447.00
4.0	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
5.0	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.	300	Sqm.	19.00	5,700.00
6.0	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.				
6.1	Providing & applying rust removing compound (Sika Rustoff 100 or equivalent).	4	Kg	345.00	1,380.00
6.2	Providing & applying polymer modified anti corrosive protective coating (Sika Rustop or equivalent).	9	Kg	271.00	2,439.00
7.0	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.	10	Lit.	360.00	3,600.00
8.0	Brick work with 1st class bricks (Class designation 75) in cement mortar (1:6). In superstructure at any floor.	1	Cum	5,636.00	5,636.00

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
9.0	125mm thick brick work with 1st class bricks in cement mortar (1:4) at any floor.	2	Sqm.	736.00	1,472.00
10.0	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. With 1:6 cement mortar, 20mm thick plaster.	500	Sqm.	175.00	87,500.00
11.0	Neat cement punning about 1.5mm thick in wall, dado, window, sill, floor etc.NOTE: Cement 0.152 cu.m per100 sq.m.	50	Sqm.	34.00	1,700.00
12.0	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 20 mm nominal size).	2	Cum	6,757.22	13,514.44
13.0	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.At any floor & height.	2	Sqm.	335.00	670.00
14.0	Cement concrete (1:1½:3) with graded stone chips 5.6 mm size with hexagonal/ square mesh wire netting, I.R.C. fabric mesh or X.P.M. fitted and fixed after tying the existing reinforcement on concrete without distributing the same and with proper scarping and cleaning the reinforcement and disturbed concrete with wire brush etc. after applying a coat of cement including the cost of wire netting I.R.C or X. P. M. & cost of all handling and scaffolding complete as per direction of Engineer-in -charge. 25mm thick. <i>(This item will be done only after specific instruction of EIC.)</i>	50	Sqm.	522.00	26,100.00
15.0	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.	50	Sqm	12.00	600.00
16.0	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.	10	Each	110.00	1,100.00

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
17.0	<p>Supplying & laying 3mm thick pre-fabricated plastomeric water proofing membrane conforming to EN 12311-1 & ASTM D 5147, manufactured with atactic poly propylene (APP) modified premium grade asphalt, specially reinforced with non-woven polyester core with polyester reinforcement @160 gms per sqm & both faces covered with thermo-fusible polyethylene film /Mineral on top face over a coat of primer @ 0.40 lit/sqm 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.</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).</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>	50	Sq.m	407.00	20,350.00
18.0	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.	50	Sqm	57.00	2,850.00
19.0	Sealing new/ old expansion joint with Elastomeric Polysulphide Sealant of gap size 50mm X 25mm Including cleaning of the expansion joint thoroughly, mending of edges & surface, placing 50mm dia Backer rod as back up material with the cost of materials, labours & all other incidental charges as per manufacturer's specification & direction of Engineer-in-charge.	3	Mtr.	792.00	2,376.00
20.0	Dismantling of concealed G.I pipe line, P.V.C pipe, bib cock, pillar cock, stop cock, wash basin, P.V.C cistern, EWC, OPWC etc & staking all the dismantled materials within the campus of BITM.	1	L.S	3,000.00	3,000.00
21.0	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.	28	Mtr.	292.00	8,176.00
22.0	UPVC Fittings				

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
22.1	Plain Tee: 110 mm dia.	1	Each	172.00	172.00
22.2	Plain Y: 110 mm dia.	1	Each	223.00	223.00
22.3	Bend 87.5 degree: 110 mm dia.	2	Each	140.00	280.00
22.4	Shoe: 110 mm dia.	1	Each	111.00	111.00
22.5	Door Tee: 110 mm dia.	5	Each	195.00	975.00
22.6	Door Bend 87.5 degree: 110 mm dia.	10	Each	120.00	1,200.00
22.7	Half Bend 45 degree: 110 mm dia.	1	Each	89.00	89.00
22.8	Vent Cowl: 110 mm dia.	1	Each	33.00	33.00
22.9	Pipe Clip: 110 mm dia.	5	Each	21.00	105.00
23.0	Supplying, fitting and fixing PVC pipes of approved make of Schedule 80 (medium duty) conforming to ASTM D - 1785 and threaded to match with GI Pipes as per IS : 1239 (Part - I). with all necessary accessories, specials viz. socket, bend, tee, union, cross, elbo, nipple, longscrew, reducing socket, reducing tee, short piece etc. fitted with holder bats clamps, including cutting pipes, making threads, fitting, fixing etc. complete in all respect including cost of all necessary fittings as required, jointing materials and two coats of painting with approved paint in any position above ground. (Payment will be made on the centre line measurements of total pipe line including all specials. No separate payment will be made for accessories, specials. Payment for painting will be made separately) For Concealed work.				
23.1	20 mm dia	55	Metre	158.00	8,690.00
23.2	40mm dia medium quality.	5	Mtr.	207.00	1,035.00
24.0	Supply, fitting and fixing C.I. round grating.(150mm dia)	10	Each	85.00	850.00
25.0	Supply and fixing of PVC elbow(100mm dia)	10	Each	479.00	4,790.00
26.0	Supplying, fitting and fixing Orissa pattern water closet in white glazed vitreous chinaware of approved make in position complete excluding 'P' or 'S' trap (excluding cost of concrete for fixing). Size: 580 mm X 440 mm.	4	Each	1,613.00	6,452.00
27.0	Supplying, fitting and fixing E.W.C. in white glazed vitreous chinaware of approved make complete in position with necessary bolts, nuts etc. With 'S' trap (Make: Parryware / Hindware).	2	Each	1,512.00	3,024.00
28.0	Supplying, fitting and fixing 10 litre P.V.C. low-down cistern conforming to I.S. specification with P.V.C. fittings complete, C.I. brackets including two coats of painting to bracket etc. (Make: Parryware / Hindware)	6	Each	1,015.00	6,090.00
29.0	Supplying, fitting and fixing Closet seat of approved make with lid and C.P. hinges, rubber buffer and brass screws complete. (a) E.W.C. Bestolite (solid type) white.	2	Each	715.00	1,430.00
30.0	Supplying, fitting and fixing 32 mm dia. PVC Flush Pipe of approved make with necessary fixing materials and clamps complete.	6	Each	155.00	930.00
31.0	Supplying, fitting and fixing Half stall urinal in white vitreous chinaware of approved make in position with brass screws on 75 mm X 75 mm X 75 mm wooden blocks complete. Size: 470 mm X 280 mm X 340 mm	8	Each	945.00	7,560.00

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
32.0	Supplying, fitting and fixing white vitreous china best quality approved make wash basin with C.I. brackets on 75 mm X 75 mm wooden blocks, C.P. waste fittings of 32 mm dia., one approved quality brass C.P. pillar cock of 15 mm dia., C.P. chain with rubber plug of 30 mm dia., approved quality P.V.C. waste pipe with C.P. nut 32 mm dia., 900 mm long approved quality P.V.C. connection pipe with heavy brass C.P. nut including mending good all damages and painting the brackets with two coats of approved paint. (ii) 550 mm X 400 mm size (Make: Hindware/Parryware)	4	Each	2,208.00	8,832.00
33.0	Supplying, fitting and fixing pedestal of approved make for wash basin (white) (Make: Hindware/Parryware).	4	Each	1,497.00	5,988.00
34.0	Chromium plated Bib Cock with wall flange (Equivalent to Code No. 5047 & Model - Florentine of Jaquar or similar brand).	10	Each	861.00	8,610.00
35.0	Chromium plated angular Stop Cock with wall flange (Equivalent to Code No. 5053 & Model - Florentine of Jaquar or similar brand).	10	Each	815.00	8,150.00
36.0	Supplying, fitting and fixing pillar cock of approved make CP Pillar Cock - 15 mm. (Code No. 5011 & Model - FLORENTINE of JAQUAR or equivalent).	10	Each	857.00	8,570.00
37.0	Supplying, fitting and fixing approved brand P.V.C. CONNECTOR white flexible, with both ends coupling with heavy brass C.P. nut, 15 mm dia.				
37.1	450mm long	5	Each	82.00	410.00
37.2	600mm long	12	Each	107.00	1,284.00
37.3	750mm long	5	Each	117.00	585.00
38.0	Supplying, fitting and fixing bevelled edged mirror 5.5 mm thick silver red as per I.S. 3438 / 1965 together with brass C.P. hinges of size 600 mm X 450 mm	4	Each	484.00	1,936.00
39.0	Supplying, fitting and fixing towel rail with two brackets- C.P. over brass. Size: 25 mm dia. and 600 mm long	4	Each	430.00	1,720.00
40.0	Supplying, fitting and fixing Chromium plated liquid soap container.	4	Each	393.00	1,572.00
41.0	Supplying, fitting and fixing gunmetal wheel valve of approved brand and make tested to 21 kg per sq. cm. (for water lines only). 25 mm dia	2	Each	1,250.00	2,500.00
42.0	Supplying, fitting and fixing pillar cock of approved make. CP 2-way bib Cock - 15 mm, supplied, fitted and fixed. (Code No.5041 & Model - FLORENTINE of JAQUAR or approved brand).	5	Each	1,269.00	6,345.00
43.0	Supplying, fitting and fixing shower of approved brand and make. Hand Shower(Health Faucet) with 1mtr Flexible Tube with Wall Hook(Equivalent to Code No.573 & Model -ALLIED of Jaquar or approved).	5	Each	1,251.00	6,255.00
44.0	Supplying & fixing 4mm thick bubble free float glass (coloured / tinted / smoke) of approved make and brand conforming to IS: 2835-1987.	3	Sqm	468.00	1,404.00
45.0	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	Sqm.	122.00	6,100.00

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
46.0	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.	200	Sqm.	30.80	6,160.00
47.0	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.	200	Sqm.	70.00	14,000.00
48.0	Applying pre treatment coat of approved quality and brand (ICI Aquatech Exterior Pre Treatment Coat or equivalent) over the exterior surface of slope roof, parapet walls etc. after thorough cleaning & scraping of moss, blisters etc. by means of scraper, wire brush & water jet all complete as per manufacturer's specification and direction of the EIC. (Payment against this item will be made only when this has been done on the specific direction of the Engineer-in-charge)	3200	Sqm.	11.00	35,200.00
49.0	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 sqm. (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.	3200	Sqm.	31.40	1,00,480.00

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
50.0	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 sqm 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.	3200	Sqm.	97.00	3,10,400.00
51.0	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)	10	Sqm.	38.00	380.00
52.0	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)	100	Sqm.	29.00	2,900.00
53.0	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				
53.1	Two coats (with any shade except white) with super gloss (hi-gloss) of approved quality on timber or plastered surface.	10	Sqm.	81.00	810.00
53.2	Two coats (with any shade except white) with super gloss (hi-gloss) of approved quality on steel or other metal surface.	100	Sqm.	79.00	7,900.00
54.0	Supplying bubble free float glass of approved make and brand conforming to IS : 2835-1987 and fixed with nails, putty etc all complete. 5 mm thick coloured / tinted / smoke glass.	10	Sqm.	585.00	5,850.00
55.0	Taking out Mirzapur or glazed porcelain tiles carefully by chiselling from walls or floor including stacking serviceable material as directed.	210	Sqm.	106.00	22,260.00
56.0	Supplying, fitting & fixing 1st quality Ceramic tiles in walls & floors to match with the existing work & 4 nos. of key stones (10mm) fixed with araldite at the back of each tile & finishing the joints with white cement mixed with colouring oxide if required to match the colour of tiles including roughening of concrete surface, if necessary or by synthetic adhesive & grout materials etc. In walls with Sand Cement Mortar (1:3) 15 mm thick & 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg/Sq.m & joint filling using white cement slurry @ 0.20kg/Sq.m. Area of each Coloured decorative premium quality tile is upto 0.09 Sq.m. (Make: Kajaria / NITCO / Orient Bell)	150	Sqm.	757.00	1,13,550.00
57.0	Supplying and laying true to line and level Anti Skid, Full Body, Homogeneous & Granular finish Vitrified Tiles conforming to IS:15622-	60	Sqm.	930.00	55,800.00

Sl. No.	Description of item	Qty.	Unit	Rate	Amount
58.0	Providing and fixing of false ceiling with powder coated exposed G.I. grid suspension system (<i>Armstrong make</i>) 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. (<i>Approved make & brand : Armstrong, Model: Minatuff RH99/ DUNE RH-99, Micro look.</i>)	45	Sqm.	1,357.00	61,065.00
59.0	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.	4	Trip	2,500.00	10,000.00

Cost of Civil works ::: 10,57,980.44

GST, as applicable over cost of Civil work @ 18% ::: 1,90,436.48

Cost of Civil works excluding labour welfare cess ::: 12,48,416.92

Labour welfare cess @ 1% ::: 12,484.17

Total amount of Civil Work ::: 12,60,901.09

Say Rs. 12,60,901.00