



BIRLA INDUSTRIAL & TECHNOLOGICAL MUSEUM

(National Council of Science Museum)

19A, Gurusaday Road, Kolkata – 700019.

Bill Of Quantity

Name of work: Renovation of boundary wall, waterproofing treatment over the roof and miscellaneous work at Bardhaman Science Centre, Bardhaman .

Item no.	Description of item	Quantity	Unit	Rate (Rs)	Amount (Rs)
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 75 m. as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete.				
1.1	Depth of excavation not exceeding 1,500 mm.	10	Cum.	119.27	1,192.70
1.2	Depth of excavation for additional depth beyond 1,500 mm. and upto 3,000 mm. but not requiring shoring.	20	Cum.	192.38	3,847.60
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.	10	Cum.	77.54	775.40
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.	30	Cum	447.00	13,410.00
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.	3	Cum	1,417.00	4,251.00
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.	200	Sqm.	19.00	3,800.00
6.0	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.	200	Sqm.	90.00	18,000.00
7.0	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).	150	Mtr.	13.11	1,966.50
8.0	Brick work with 1st class bricks (Class designation 75) in cement mortar (1:6) In superstructure, upto 2nd floor.	90	Cum	5,035.00	4,53,150.00

9.0	125mm thick brick work with 1st class bricks in cement mortar (1:4) at any floor.	10	Sqm.	664.00	6,640.00
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, 15mm thick plaster.	20	Sqm.	136.00	2,720.00
11.0	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 1:4 cement mortar, 20mm thick plaster.	200	Sqm.	174.00	34,800.00
12.0	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
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.	80	Sqm.	328.00	26,240.00
14.0	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. (JSW/JSPL/SHYAM/SRMB/BMASL/ELECROSTEEL/SSL)	2	MT	68,053.00	1,36,106.00
15.0	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).	10	Cum	6,374.25	63,742.50
16.0	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor five level, excluding the cost of centering, shuttering and finishing: 1:2:4 (1 Cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	30	Cum	8,287.84	2,48,635.20

17.0	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				
17.1	Providing & applying rust removing compound (Sika Rustoff 100 or equivalent).	5	Kg	312.00	1,560.00
17.2	Providing & applying polymer modified anti corrosive protective coating (Sika Rustop or equivalent).	5	Kg	245.00	1,225.00
18.0	Applying 2 coats of bonding agent with synthetic multi functional rubber emulsion having adhesive and water proofing properties by mixing with water in proportion (1 bonding agent : 4 water : 6 cement) as per Manufacturer's specification and direction of EIC.	50	Sqm.	88.00	4,400.00
19.0	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 manufacture's specification and direction of EIC.	5	Lit.	360.00	1,800.00
20.0	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.	500	Sqm	12.00	6,000.00
21.0	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.	30	Each	113.00	3,390.00

22.0	<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. 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>	500	Sq.m	407.00	2,03,500.00
23.0	<p>Painting with superior quality aluminium paint of approved make and brand over the top surface of APP membrane. Two or more coats . The rate is inclusive of all materials, labour, taxes, scaffolding, staging, safety measures, insurance coverage for workmen and other incidental charges complete. Manufacturer: ICI, Asian paints, Berger, Nerolac or equivalent.</p>	500	Sq.m	57.00	28,500.00
24.0	<p>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.</p>	20	Mtr.	792.00	15,840.00
25.0	<p>Labour for dismantling G.I. pipe with fittings. Dia:50mm</p>	40	Mtr.	8.00	320.00

26.0	Supplying, fitting and fixing PVC pipes for underground work 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, long screw, reducing socket, reducing tee, short piece etc. fitted including cost of all materials, jointing materials, cutting pipes, making threads, cutting trenches upto 1.5 metre below surface in all sorts of soil and refilling the same as directed complete in all respect. (Payment will be made on the centre line measurement of the total pipe line including all specials No separate payment will be made for accessories, specials.)				
26.1	PVC Pipe: 50mm dia.	40	Mtr	403.00	16,120.00
26.2	PVC Pipe: 100mm dia.	5	Mtr	1,162.00	5,810.00
27.0	Supplying, fitting & fixing UPVC pipes B- 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 etc if necessary and mending good damages including joining with jointing materials (Spun Yarn, Valamoid/Bitumen/M-Seal etc) complete. (Make: Supreme, Oriplast or equivalent)				
27.1	UPVC Pipe: 75mm dia.	10	Metre	196.00	1,960.00
27.2	UPVC Pipe: 110mm dia.	5	Metre	292.00	1,460.00
28.0	UPVC Fittings				
28.1	Plain Tee: 75 mm dia.	2	Each	46.00	92.00
28.2	Plain Tee: 110 mm dia.	2	Each	85.00	170.00
28.3	Door Tee: 75 mm dia.	1	Each	101.00	101.00
28.4	Door Tee: 110 mm dia.	1	Each	195.00	195.00
28.5	Bend 87.5 degree: 75 mm dia.	1	Each	61.00	61.00
28.6	Bend 87.5 degree: 110 mm dia.	1	Each	120.00	120.00
28.7	Door Bend 87.5 degree: 75 mm dia.	1	Each	83.00	83.00
28.8	Door Bend 87.5 degree: 110 mm dia.	1	Each	147.00	147.00
28.9	Plain Floor Trap with Top tile & Strainer 75 mm	1	Each	144.00	144.00
29.0	Supplying, fitting and fixing Peet's valve fullway gunmetal standard pattern best quality of approved brand bearing I.S.I. marking with fittings (tested to 21 kg per sq. cm.). Dia-50mm	1	Each	2,362.00	2,362.00
30.0	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) <i>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.</i>	200	Sqm.	31.40	6,280.00

31.0	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.	200	Sqm.	97.00	19,400.00
32.0	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 CuSO ₄ (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.	10	Each	50.00	500.00
33.0	Removal of rubbish, earth, scrap material, old APP membrane etc. from the working site and dispose off the same beyond the compound in truck loads in conformity with Municipal/Corporation rules and as per instruction of Engineer - in - Charge.	1	L.S.	5,000.00	5,000.00

Cost of Civil work ::: 13,47,516.90
 GST, as applicable over cost of Civil work @ 18% ::: 2,42,553.04
 Cost of Civil works excluding labour welfare cess ::: 15,90,069.94
 Labour welfare cess @ 1% ::: 15,900.70
Total amount of Civil Work ::: 16,05,970.64
Say Rs. 16,05,971.00