

**SCHEDULE- B**

**NAME OF WORK: CONSTRUCTION OF CENTER OF EXCELLENCE (COE) FOR GREEN HYDROGEN AT GANDHIDHAM**

Sr. no.	Item Description	Total Qty.	Rate		Unit		Amount
			In Fig.	In Words	In Fig.	In Words	
	<b>PART-B : UTILITY BUILDINGS</b>						
1	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m in All kinds of soil, as directed by Engineer-in-Charge.						
(A)	All kinds of soil	800.000			SQM	One Square Meter	
2	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-Charge.						
(A)	All kinds of soil	1,281.000			CUM	One Cubic Meter	
3	Diluting and injecting chemical emulsion for POST CONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :						
(A)	Along the external wall below concrete or masonry apron using chemical emulsion @ 2.25 litres per linear metre including drilling and plugging holes With Chlorpyrifos/ Lindane E.C. 20% with 1% concentration	117.000			RMT	One Running Meter	
4	Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor:						
(A)	With Chlorpyrifos/Lindane E.C. 20% with 1% concentration	161.000			SQM	One Square Meter	
5	Treatment of existing masonry using chemical emulsion @ one litre per hole at 300 mm interval including drilling holes at 45 degree and plugging them with cement mortar 1:2 (1 cement : 2 coarse sand) to the full depth of the hole :						
(A)	With Chlorpyrifos/Lindane E.C. 20% with 1%	45.000			RMT	One Running Meter	
6	Treatment at points of contact of wood work by chemical emulsion Chlorpyrifos/ Lindane (in oil or kerosene based solution) @ 0.5 litres per hole by drilling 6 mm dia holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same.	9.000			RMT	One Running Meter	
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :						
(A)	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size).	54.000			CUM	One Cubic Meter	
8	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	1,005.000			CUM	One Cubic Meter	
9	<b>Disposal of moorum/building rubbish/ malba/ similar unserviceable</b> , dismantled or waste material by mechanical transport including loading, transporting, unloading to approved municipal dumping ground for lead upto 10 km for all lifts, complete as per directions of Engineer-in-charge.	1,468.000			CUM	One Cubic Meter	
10	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering,shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge.Extra for providing richer mixes at all floor levels						
(A)	Providing M-30 grade concrete instead of M-25	386.000			CUM	One Cubic Meter	
11	Centering and shuttering including strutting, propping etc. and removal of form work for :						
(A)	Foundations, footings, bases for columns	74.000			SQM	One Square Meter	
12	Centering and shuttering including strutting, propping etc. and removal of form work for :						

(A)	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	503.430			SQM	One Square Meter	
13	Centering and shuttering including strutting, propping etc. and removal of form work for :						
(A)	Lintels, beams, plinth beams, girders, bressumers and cantilevers	372.000			SQM	One Square Meter	
14	Centering and shuttering including strutting, propping etc. and removal of form work for : Columns						
(A)	Columns, Pillars, Piers, Abutments, Posts and Struts	254.000			SQM	One Square Meter	
15	Centering and shuttering including strutting, propping etc. and removal of form work for :						
(A)	Suspended floors, roofs, landings, balconies and access platform with water proof ply 12 mm thick	91.000			SQM	One Square Meter	
16	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position						
(A)	Thermo-Mechanically Treated bars of grade Fe-500D or more.	41,800.000			KG	One Kilogram	
17	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with :						
(A)	Cement mortar 1:6 (1 cement : 6 coarse sand)	42.000			CUM	One Cubic Meter	
18	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for separately).	64.000			CUM	One Cubic Meter	
19	12 mm cement plaster of mix :						
(A)	1:4 (1 cement: 4 coarse sand)	548.000			SQM	One Square Meter	
20	6 mm cement plaster of mix :						
(A)	1:3 (1 cement : 3 fine sand)	321.000			SQM	One Square Meter	
21	15 mm cement plaster on the rough side of single or half brick wall of mix :						
(A)	1:4 (1 cement: 4 fine sand)	612.000			SQM	One Square Meter	
22	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length ( hold fast lugs or dash fastener shall be paid for separately).						
(A)	Second class teak wood	0.204			CUM	One Cubic Meter	
23	Providing and fixing ISI marked flush door shutters conforming to IS :2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.						
(A)	30 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	5.250			SQM	One Square Meter	
24	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :						
(A)	300x16 mm	10.000			NO	One Number	
25	Providing and fixing bright finished brass tower bolts (barrel type) with necessary screws etc. complete :						
(A)	200x10 mm	4.000			NO	One Number	
26	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc.						
(A)	125mm	10.000			NO	One Number	

27	Providing and fixing factory made uPVC white colour sliding glazed window upto 1.50 m in height dimension comprising of uPVC multi-chambered frame with in-built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), appropriate dimension of uPVC extruded glazing beads and uPVC extruded interlocks, EPDM gasket, wool pile, zinc alloy (white powder coated) touch locks with hook, zinc alloy body with single nylon rollers (weight bearing capacity to be 40 kg), G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid						
(A)	Fixed window / ventilator made of (small series) frame 47 x 50 mm & mullion 47 x 68 mm both having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area upto 0.75 sqm.)	0.360			SQM	One Square Meter	
28	Providing and fixing factory made uPVC white colour casement/casement cum fixed glazed windows comprising of uPVC multi-chambered frame, sash and mullion (where ever required) extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM gasket, stainless steel (SS 304 grade) friction hinges, zinc alloy (white powder coated) casement handles, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid						
(A)	Casement window double panels with S.S. friction hinges (300 x 19 x 1.9 mm) made of (small series) frame 47 x 50 mm, sash 47 x 68 mm & mullion 47 x 68 mm all having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area of window above 0.75 sqm upto 1.50 sqm).	3.600			SQM	One Square Meter	
29	Providing & fixing glass panes with putty and glazing clips in steel doors, windows, clerestory windows, all complete with :						
(A)	5.5 mm thick glass panes	28.720			SQM	One Square Meter	
30	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :						
(A)	Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @ 0.75 ltr/10 sqm of approved brand and manufacture	0.078			SQM	One Square Meter	
31	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick :						
(A)	Float glass panes 4mm thick glass pane	0.360			SQM	One Square Meter	
32	Finishing walls with Acrylic Smooth exterior paint of required shade :						
(A)	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	715.065			SQM	One Square Meter	

33	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:						
(A)	One or more coats on old work	505.000			SQM	One Square Meter	
34	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	699.000			SQM	One Square Meter	
35	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete						
(A)	Size of Tile 600x600 mm	137.000			SQM	One Square Meter	
36	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in colours White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.	13.000			SQM	One Square Meter	
37	Providing and fixing 1st quality ceramic glazed floor tiles conforming to IS : 15622 (thickness to be specified by the manufacturer ) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	14.000			SQM	One Square Meter	
38	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand), laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.						
(A)	Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	7.260			SQM	One Square Meter	
39	Providing and laying in situ seven course water proofing treatment with APP (Atactic poly-propylene) modified Polymeric memberane over roof consisting of first coat of bitumen primer @ 0.40 Kg per sqm, 2nd, 4th & 6th courses of bonding material @ 1.20 Kg/sqm, which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, 3rd and 5th layers of roofing membrane APP modified Polymeric membrane 1.5 mm thick of 2.25 Kg/sqm weight consisting of five layers prefabricated with centre core as 20 micron HMHDPE film sandwiched on both sides with polymeric mix and the polymeric mix is protected on both side with 20 micron HMHDPE film. 7th, the top most layer shall be finished with brick tiles of class designation 10 grouted with cement mortar 1:3 (1cement : 3 fine sand) mixed with 2% integral water proofing compound by weight of cement over a 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat (item of laying brick tiles shall be paid for separately).	271.035			SQM	One Square Meter	

40	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 20 mm) with SRI (solar refractive index) > 78, solar reflection > 0.70 and initial emittance > 0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1:4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement & marble powder in ratio of 1:1, including rubbing and polishing of the surface upto 3 cuts complete including providing skirting upto 150 mm height along the parapet walls in the same manner.	271.035			SQM	One Square Meter	
41	Horizontal application - the membrane must be applied to smooth, prepared substrate, concrete binding is preferred. substrate shall be free from loose aggregate or other sharp protrusions. Standing water must be removed to prevent contamination of overlaps and subsequent compromise of waterproof properties. Supply and laying of 1.2 to 1.5 mm Thick (Based on manufacturer specifications) HDPE 80 membrane (below Raft) which is pressure sensitive, Fully bonded and foot trafficable, weather resistant, which bonds with poured concrete so that prevents water ingress or migration. The membrane will have following properties (i) puncture resistance of > 900 N per ASTM E154, (ii) tensile strength >= 21MPa as per ASTM D412, and (iii)Hydrostatic head resistance >70m as per ASTM D 5385 and resist lateral migration of water (iv) Peel Strength to Poured-in-Place Concrete after 7 days of water immersion should be >880N/m as per ASTM D 903. (v) Lap peel adhesion of >400 N/m at 22°C as per ASTM D1876. (vi) Elongation of at least 500 % as per ASTM D412. All systems to be installed as per manufacturer's specification and executed by manufacturer's certified applicators. Rates includes all lead and lift, for all materials, labours as directed by Engineer-in-Charge. The membrane shall be capable of UV exposure without additional protection for a maximum of 45 days prior to concrete pouring. Also Providing Joint treatment to earthing rods complete as per approved Specification and drawings Complete including cost of all labour, material, T & P, lead, lift,taxes etc as per instruction & satisfaction of EIC.	343.331			SQM	One Square Meter	
42	12 mm cement plaster of mix : (A) 1:6 (1 cement: 6 fine sand)	90.000			SQM	One Square Meter	
43	Providing and fixing factory made uPVC white colour sliding glazed window upto 1.50 m in height dimension comprising of uPVC multi-chambered frame with in-built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile),appropriate dimension of uPVC extruded glazing beads and uPVC extruded interlocks, EPDM gasket, wool pile, zinc alloy (white powder coated) touch locks with hook, zinc alloy body with single nylon rollers (weight bearing capacity to be 40 kg),G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, including drilling of holes for fixing hardware's and drainage of water etc.After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes, wire mesh and silicon sealant shall be paid separately).	1.800			SQM	One Square Meter	
(A)	Casement window double panels with top fixed with S.S. friction hinges (350 x 19 x 1.9 mm) made of (small series) frame 47 x 50 mm, sash 47 x 68 mm & mullion 47 x 68 mm all having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension.(Area of window upto 2.50 sqm).						

44	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab,including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :						
(A)	25 mm thick	50.905			SQM	One Square Meter	
45	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	3.480			SQM	One Square Meter	
46	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.	3.630			SQM	One Square Meter	
47	Providing and fixing stainless steel ( Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)	45.000			KG	One Kilogram	
48	Providing and fixing angle iron frames for doors, windows and ventilators of mild steel Angle sections of size 35x35x5 mm, joints mitred and welded by angle iron 35x35x5 mm or 35x 5 mm flat pieces to the existing T-iron frame or to the wall with dash fastener,including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer, all complete as per the direction of Engineer-In-charge.	47.890			KG	One Kilogram	
49	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :						
(A)	1:1½:3 (1 Cement: 1½ coarse sand (zone-III) derived from natural sources : 3 graded stone	6.000			CUM	One Cubic Meter	
50	Centering and shuttering including strutting, propping etc. and removal of form for all heights :						
(A)	Suspended floors, roofs, landings, balconies and access platform	42.000			SQM	One Sqaure Meter	
51	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters.						
(A)	80x1.25 mm M.S. laths with 1.25 mm thick top cover	21.600			SQM	One Sqaure Meter	
52	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :						
(A)	New work (two or more coats) including a coat of approved steel primer but excluding a coat of mordant solution	12.000			SQM	One Sqaure Meter	
53	Casement cum fixed panel window having both end single casement panel, middle fixed panels and at top completely fixed ventilator with S.S friction hinges (350 x 19 x 1.9) made of (big series) frame 67 x 60 mm,sash 67 x 80 mm , & mullion 67 x 80 mm all having wall thickness of 2.3 ± 0.2 mm and single glazing bead/double glazing bead of appropriate dimension . (Area of window above 3.00 sqm upto 5.00 sqm).	23.320			SQM	One Sqaure Meter	

