

Name of the Work: Construction of Mechanical lab and its Site Development Works at Jigme Namgyel Engineering College
Sub Head: Civil (BoQ)

Sl. No.	Description	Qty.	Unit	Rate (Nu.)	Amount (Nu.)
1					
1.01	Clearing jungle including uprooting of vegetation & trees of girth < 300mm & disposal within 50m of the site	1,173.70	Sq.m		
	Subtotal for Clearing and Grubbing				-
2					
2.01	Excavation in foundation trenches or drains, width <1.5m, area <10Sq.M. in plan, depth >300mm including dewatering dressing and ramming, disposal of surplus soil within 50m lead & 1.5m lift.				
	Ordinary Soil	1,048.10	Cu.m		
2.02	Filling of trenches, sides of foundations etc. in layers <200mm using selected excavated earth, ramming etc. within lead 50 m & lift 1.5m	661.35	Cu.m		
2.03	Earth work in excavation over areas, depth >300mm, width >1.5m, area >10 Sq.m on plan, including disposal of excavated earth within 50m lead and 1.5m lift & disposed soil to be neatly dressed - Ordinary Soil	3612.11	Cu.m		
2.04	Transport of loose soil materials in designated locations including loading/unloading, dressing of dump sites and plantation of vegetation after completion of dumping				
	Up to 2000 m	281.74	Cu.m		
2.05	Providing & laying sand bedding, including watering, ramming, dressing	151.03	Cu.m		
	Subtotal for EarthWork				
3					
3.01	Providing and laying Hand packed stone filling or soling with stones	98.59	Cu.m		
3.02	Providing and laying Hand packed stone filling or soling with stones.-for Ground Floor	207.80	Cu.m		
3.03	Providing & laying Random Rubble Masonry with hard stone in foundation & plinth. In cement mortar 1:4	227.17	Cu.m		
	Subtotal for Stone Work				
4					
4.01	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level 1:4:8 (1 cement : 4 sand : 8 graded crushed stone 40 mm nominal size)	49.30	Cu.m		
4.02	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level 1:3:6(1 cement :3 sand : 6 graded crushed rock 20 mm nominal size)	85.02	Cu.m		
4.03	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:2:4 (1 cement : 2 sand : 4 graded crushed rock 20 mm nominal size)	22.36	Cu.m		
	Subtotal for Concrete Work				
5					
5.01	Providing & laying in position reinforced cement concrete excluding the cost of centering, shuttering and reinforcement - all work upto plinth level 1:1.5:3 (1 cement : 1:5 sand : 3 graded crushed rock 20 mm nominal size)	376.50	Cu.m		

5.02	Providing and laying RCC 1:1.5:3, 20mm aggregate excluding form work and reinforcement in columns, Pillars, posts above plinth up to roof	180.55	Cu.m		
5.03	Providing & laying in position reinforced cement concrete work 1:1.5:3(1 cement : 1.5 sand : 3 graded crushed rock 20mm nominal size) in beams, lintels, bands, plain window sills, staircases, spiral staircases upto floor five level excluding the cost of centering, shuttering and reinforcement	697.36	Cu.m		
	Subtotal for RCC Work				

6					
6.01	Providing & fixing Thermo-Mechanically Treated reinforcement bar (Yield Strength 500 MPa) for R.C.C work including cutting, bending, binding and placing in position complete	194,205.55	kg		
Subtotal for Steel Reinforcement					
7					
7.01	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork-Foundation and plinth etc.	766.77	Sq.m		
7.02	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork-Lintels, beams, girders, bresummers, Slabs etc.	4,942.39	Sq.m		
7.03	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork-Columns, pillars, post, struts etc-plinth to Roof level	1484.96	Sq.m		
7.04	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork. -Staircase (except spiral staircase) excluding landing	201.53	Sq.m		
Subtotal for Form Work					
8					
8.01	Providing & laying Second-Class Brick work at all level. In cement mortar 1:4	409.25	Cu.m		
8.02	Providing & laying Second-Class Half-brick Masonry (125 mm) in superstructure below floor 2 level. In cement mortar 1:4	1941.65	sq.m		
Subtotal for Brick Work					
9					
9.01	Providing & fixing Eaves board (225x25mm) with moulding fitted and fixed with necessary screws. -Mixed Conifer	155.25	m		
9.03	Providing & fixing in position dressed wood work in frames of doors, windows, clerestory windows and other frames, wrought and framed.(dingri) -Blue pine	16.39	Cu.m		
9.04	Providing & fixing white suspended Acoustical ceiling gid kit type false ceiling including frames and all as per the manufacturer specifications-complete	259.10	Sq.m		
9.05	Providing & fixing bison panel (pre-laminated both sides for wall/ceiling) lining with necessary nails/screws etc. complete, excluding the cost of frame-8mm for eve ceiling	452.40	Sq.m		
9.06	Providing & fixing Mixed Conifer (undressed) in wall frames etc for Eve Ceiling	3.77	Cu.m		
Subtotal for Wood Work					
10					
10.01	Providing & fixing in position Wooden doors including, hardwood frames, Shutter, approved brand wood polish finishes, fittings & fixtures of approved brand & hold fasts etc., as per drawing and specifications complete.				
	MD	1.00	Each		
	D	10	Each		
	D1	8	Each		
	D2	6	Each		

	D3	2.00	Each		
	TD	12	Each		
	TD1	6	Each		
	SD	1	Each		
	LD	8	Each		
	BD	6	Each		
10.02	Providing & fixing in position Wooden windows in local hard wood including Shutter, Pelmet & curtain rod, fittings & fixtures & hold fasts as per drawing complete, including providing, making and fixing MS grills, straps, flats etc. as per drawing including one coat of red lead primer and two coat of Aluminium/Synthetic paint, complete (The paint specified is only for the grill).				
	B	2	Each		
	BW	15	Each		
	BW1	1	Each		
	BW2	2	Each		
	W	22	Each		
	JW	6	Each		
	W1	11	Each		
	W2	5	Each		
	W3	5	Each		
	W4	3	Each		
	W5	7	Each		
	CW	8	Each		
	P1	1	Each		
	P2	2	Each		
	P3	2	Each		
10.03	Providing & fixing in position Wooden Rabsey windows in local hard wood including Frame, applying approved brand wood polish/paint finishes, Shutter, Pelmet & curtain rod, fittings & fixtures & hold fasts, MS grills, straps, flats, one coat of red lead primer and two coat of Aluminium/Synthetic paint, complete as per drawing. (The paint specified is only for the grill)				
	Rabsey-1	3.00	Each		
	Rabsey-2	2.00	Each		
10.04	Providing and fixing plain glass panes on aluminium section complete (including the cost of aluminium frame & accessories) - 5.5mm thick, plain glass in aluminium frame as per the drawing - complete in GD.	1.00	Each		
	Subtotal for Doors and Windows				
11					
11.01	Steel work welded, in built up sections, trusses, frame-works including cutting, hoisting, fixing and appl. priming coat of red In Tubular sections				
	For Rafter, Bottom chord, 60.3 medium duty	6,149.03	kg		

	For vertical,diagonal, 48.3 medium duty	3,164.52	kg		
	For purlin, 60.3 medium duty	5,617.78	kg		
	For Rafter, Bottom chord, 21.3 medium duty	347.41	kg		
	For vertical,diagonal, 21.3 light duty	43.88	kg		
	For purlin, 21.3 light duty	313.02	kg		
11.02	Providing & fixing M.S. round hold-down bolts with nuts and washer	383.94	kg		
11..03	Providing & fixing bolts of various sizes including nuts & washers	146.11	kg		
11.04	Providing, making and fixing M.S. straps, flats, sole plates etc.	4,021.60	kg		
11.05	Providing & fixing M.S. fan clamps of 16 mm dia. in R.C. slabs, including painting with red lead paint	80.00	Each		
11.06	Steel work in single section including cutting, hoisting, fixing and applying priming coat of red lead paint. In Tees, angles and channels	1,073.28	kg		
11.07	Stainless Steel (Grade 304) Railing. 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 fittings the same with necessary stainless steel nuts and bolts complete, i/e fixing railing with necessary accessories and 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 engineers in charge.	683.13	kg		
11.08	Providing and fixing sheet-covering over expansion joints with iron screws as per design to match the colour shade of the distemper or wall treatment. -Aluminium fluted strip 3.15x150mm	308.00	m		
	Subtotal for Steel Works				

12					
12.01	Providing & fixing Pre Painted Steel Corrugated Roofing sheets, including bolts, hooks and nuts 8mm dia. with bitumen and G.I limpet washers filled with white lead for connection, excluding the cost of purlins, rafter and trusses. -25g (0.50mm)	1337.95	Sq.m		
12.02	Providing & fixing 600mm ridges or hips in Pre Painted Steel sheets, including bolts, hooks and nuts 8mm dia G.I limpet and bitumen washers for connection. -25g. (0.50mm)	66.88	m		
12.03	Providing & fixing 450mm over all semi-circular plain G.I gutter, 24g sheet including brackets, bolts, nuts, washers & rain water pipes connections, excluding the cost of pipes	140	m		
12.04	Providing and fixing on wall face single socketed rigid PVC (Working Pressure 4kgf per sq.cm) rain water pipes including jointing with seal ring leaving 10 mm gap for thermal expansion-complete. -110mmdia	154.25	m		
Subtotal for Roofing					
13					
13.01	Bhutan type Traditional Cornices in R.C.C 1:1.5:3, 20 mm aggregate including cost of formwork including finishing with 6mm thick plaster on the exposed surface with cement mortar 1:3, excluding reinforcement & decorative painting cost as per standard design (Measurement to be taken along the cornice and wall junction). -Multi-Storied building..at floor 2 level including the cost of lhanglag and at other floors where Lhanglag is provided	9.9	m		
13.02	Bhutan type Traditional Cornices in R.C.C 1:1.5:3, 20 mm aggregate including cost of formwork including finishing with 6mm thick plaster on the exposed surface with cement mortar 1:3, excluding reinforcement & decorative painting cost as per standard design (Measurement to be taken along the cornice and wall junction). -Multi-Storied building. . at all middle floor levels (excluding the cost of phana)	24.3	m		
13.03	Bhutan type Traditional Cornices in R.C.C 1:1.5:3, 20 mm aggregate including cost of formwork including finishing with 6mm thick plaster on the exposed surface with cement mortar 1:3, excluding reinforcement & decorative painting cost as per standard design (Measurement to be taken along the cornice and wall junction). -Phana	50.22	m		
13.04	Bhutan type Traditional Cornices in R.C.C 1:1.5:3, 20 mm aggregate including cost of formwork including finishing with 6mm thick plaster on the exposed surface with cement mortar 1:3, excluding reinforcement & decorative painting cost as per standard design (Measurement to be taken along the cornice and wall junction) - Lintel Cornice (only cornice portion at external face)	135.98	m		
Subtotal for Traditional Cornices					
14					
14.01	Providing & laying 40mm thick marble chips flooring top layer 6mm thick with white, black or black and white marble chips of nominal size 1.5-3mm in proportion 1:2 (cement: chips), on 34mm thick concrete base in cement concrete 1:2:4, 12.5mm aggregate (cement and marble powder mix shall be of the ratio 3 part of cement to 1 part of marble powder)	2837.73	Sq.m		
14.02	Providing & fixing Terrazzo or Marble chips skirting < 300mm height top layer 6mm thick with white or black, black and white marble chips size 4mm in proportion 1:2, laid on 12.5mm thick cement plaster 1:3 base	351.73	Sq.m		
14.03	Providing & fixing white/ coloured glazed tiles in flooring, treads of steps and landings laid on bed of 12mm thick cement mortar 1:3 finished with flush pointing in white cement: 300X300 mm ANTISKID	55.26	Sq.m		

14.04	Providing & fixing white/ coloured glazed tiles in flooring, treads of steps and landings laid on bed of 12mm thick cement mortar 1:3 finished with flush pointing in white cement: 300X300 mm-IN WALLS	157.95	Sq.m		
14.05	Providing & laying Kota stone flooring over 20mm thick base of cement mortar 1:4, jointed with grey cement slurry mixed with pigment where necessary, rubbing & polishing complete	177.84	Sq.m		
14.06	Providing & laying 40mm thick marble chips flooring top layer 6mm thick with white, black or black and white marble chips of nominal size 1.5-3mm in proportion 1:2 (cement: chips), on 34mm thick concrete base in cement concrete 1:2:4, 12.5mm aggregate (cement and marble powder mix shall be of the ratio 3 part of cement to 1 part of marble powder)-timber type	79.19	Sq.m		
14.07	Providing and laying moisture barrier using plastic sheeting underlay. -200 micro-metre	3,020.60	Sq.m		
	Subtotal for Flooring and Tiling Works				
15					
15.01	Providing & laying cement plaster, finished with floating coat of neat cement-12mm Plaster in CM 1:4	5481.25	Sq.m		
15.02	Providing & laying cement plaster, finished with floating coat of neat cement-20mm Plaster in CM 1:4	755.15	Sq.m		
15.03	Providing & laying 6mm cement plaster (in ceilings). -C.M 1:4	3020.6	Sq.m		
15.06	Providing and applying finishing coats. -Vinyl plastic emulsion paint, for cement, masonry, plaster, two coats on new work	6236.4	Sq.m		
15.07	Providing, preparing and applying Sumdang washable painting. -thamar	126.6	Sq.m		
	Subtotal for Finishing				

16					
16.01	Providing & fixing G.I. pipes including G.I. fittings & clamps & repair	100.00	m		
16.02	Providing & fixing G.I. pipes including G.I. fittings & clamps & repair	74.30	m		
16.03	Providing & fixing European-type vitreous china w.c pedestal including seat and lid with c.p brass hinges, 15 lit white vitreous china low level cistern, fittings, brackets, repair walls. -coloured, with plastic seat & lid	19.00	Each		
16.04	Providing & fixing white vitreous china wash basin, including C.I brackets, 15mm C.P. brass pillar taps, c.p. chain & rubber plug, 32mm pvc waste, 32mm dia. trap & union, repair walls Flat back wash basin 630x450mm with a pair of 15mm c.p. brass pillar taps	26.00	Each		
16.05	Providing & fixing SENSOR BASED URINAL POT (AUTOMATIC URINAL FLUSHER WITH INFRARED SENSOR TECHNOLOGY) INCLUDING PLUMBING AND FITTING WORKS COMPLETE AS PER DIRECTIONS FROM SITE INCHARGE AND AS PER ORIENTATION REQUIRED (SAMPLE SHOULD BE APPROVED BEFORE INSTALLATION)	15.00	Each		
16.06	Providing & fixing 450x120mm glass shelf, including c.p brass brackets fixed to wooden cleats	26.00	Each		
19.07	Providing & fixing bevelled edge mirror (superior glass) incl.4mm A.C sheet base fixed to wooden cleats and fixed to the wall complete as per drawing and manufacturers' specification	26.00	Each		
16.08	Providing & fixing c.p. brass bibcock. -15mm, standard vertical, c.p k	16.00	Each		
16.09	Providing & fixing plastic tank including all accessories complete. - 2000 litre capacity	3.00	Each		
16.1	Providing & fixing Liquid soap container, c.p, including c.p brass lid & brackets, wooden cleats, c.p brass screws	26.00	Each		
16.11	Providing & Fixing brass stop cock-25mm	55.00	Each		
16.12	Providing & fixing Kitchen Sinks including all connections and fittings	1.00	Each		
16.13	Providing & fixing brass full way valve with wheel. -32mm	6.00	Each		
16.14	Providing & fixing CPVC pipes incl. PVC fittings & clamps & repair walls - 15mm (Internal piping)	121.50	m		
Subtotal for Plumbing Works					
17					
17.01	Providing & fixing P.V.C soil waste and vent pipes, single or double socketed, including pipe clip complete (excluding the cost of PVC fittings). -75mm dia	133.50	m		
17.02	Providing & fixing P.V.C soil waste and vent pipes, single or double socketed, including pipe clip complete (excluding the cost of PVC fittings)110mm dia	183.50	m		
17.03	Providing & fixing P.V.C Nahani Trap. 110mm inlet & 75mm outlet	69.00	Each		
17.04	Providing & fixing P.V.C plain bend. -110mm dia	69.00	Each		
17.05	Providing & fixing P.V.C Single Tee with door. -110mm dia	10.00	Each		
17.06	Providing & fixing P.V.C Terminal guard. -110mm dia	5.00	Each		
17.07	Providing & laying H.D.P.E Pipes, 4 PN, including H.D.P.E fittings (excluding trenching, refilling & thrust block). -160mm	100.00	m		
17.08	Providing & fixing P.V.C plain bend-75mm	15.00	Each		

17.09	Providing & fixing P.V.C door bend-75mm	8.00	Each		
17.1	Providing & fixing P.V.C Single Tee with door	25.00	Each		
17.11	P/F hand jet or health feucet with neccessary fittings-complete	19.00	Each		
17.12	Hand excavation and refilling in layers < 200mm, of trenches for pipes & sockets, cables, including dressing of sides/ ramming of bottom, depth upto 1.5m, disposal of surplus material within lead of 50m: All kinds of soil	53.00	m		
Subtotal for Sanitation Works					
18					
18.01	Constructing Brick masonry manhole in cement mortar 1:5, R.C.C top slab with 1:2:4 20mm aggregates, foundation concrete 1:4:8 40mm aggregates, 12mm plaster in CM 1:3 finished with floating coat of neat cement and making channels in cement concrete 1:2:4 20mm aggregates, neatly finished complete-Inside dimension 900 x 800mm & 450mm deep including C.I. cover & frame (weight >38 kg)	1.00	Each		
18.02	Constructing Brick INSPECTION CHAMBER in cement mortar 1:5, R.C.C top slab with 1:2:4 20mm aggregates, foundation concrete 1:4:8 40mm aggregates, 12mm plaster in CM 1:3 finished with floating coat of neat cement and making channels in cement concrete 1:2:4 20mm aggregates, neatly finished complete-Inside dimension 900 x 800mm & 600mm deep including C.I. cover & frame (weight >38 kg)	6.00	Each		
18.03	Constructing Septic Tanks, in reinforced concrete 1:2:4 (20mm aggregates) including fittings, C.I cover with frame, 40mm thick concrete flooring (40mm aggregates) cement plaster concrete base in C.C 1:4:8 etc. complete as per standard design-50 USERS	1.00	Each		
18.04	Constructing Soak Pit-Size 1200x1200x1200mm, filled with brick bats including 100mm SW drain pipe X 1200mm long	1.00	Each		
Subtotal for External Works					

19					
19.01	Supply and Installation of 12 mm thick clear toughened glass frame less partition as per architects using Aluminium channels for fixed portion and dorma XLC hardware and fittings for Circular Glazing	43.07	Sq.m		
19.02	Supply and Installation of 12 mm thick clear toughened glass frame less partition as per architects using Aluminium channels for fixed portion and dorma XLC hardware and fittings for Glazing G	9.00	Sq.m		
19.03	Supply and Installation of 12 mm thick clear toughened glass frame less partition as per architects using Aluminium channels for fixed portion and dorma XLC hardware and fittings for Glazing G	9.90	Sq.m		
19.04	Providing and Fixing of Exposed Grid False Ceiling at all height with 6mm thick Everest Designer Board with Everest 1510/1520 ceiling Grid system in place including Ceiling Grid system consisting of Main Runner 3.6m long,Cross Tee 1.2/0.6m long and Wall Angel 3.0m long. Grid 1510/1520 of module size 600mmx600mm shall be supported by 4mm dia. G.I. wire,Single layer of 6mm thick Everest Designer Boards of 595mmx595mm size to be placed suspended Grid system, Cost of Water base cement primer and Accessories complete as per design drawing and manufacturers'. Samples and shop drawing to be provided for approval of client/consultant.	3,020.60	Sq.m		
Subtotal for Associated Special Items not covered under other Items					
CIVIL TOTAL					