

### Details of interior modification of Library Reading hall

Work of interior modification of library reading hall is planned as detailed in the following table (Table-1)

Table -1 – Details of interior modification of library hall

Sl.No	Work Planned	Work Involved	Remarks
1	Civil Works	Dismantling masonry, windows, Flooring, Painting, Toughened glazed walls etc.	Specifications are detailed in <b>Annexure – I</b>
2	Interior and Furnishing Work	Modular furniture for internet browsing, Sofa sets and table for convenient seating for reading / browsing  Carpentry and allied works for Library front desk, Security Desk, Storage cabinet, Pigeon hole bag storage.  False ceiling: Calcium Silicate plain false ceiling, providing acoustics board panelling etc  Miscellaneous items - Roller blinds and decorative photo frames, natural plants with planter, letters of building name etc	Specifications are detailed in <b>Annexure - II</b>
3	Electrical and Lighting Works	Internal electrification works with decorative light fittings, modular power boards with wiring, supply and installation of distribution board with cables and earthing including under floor trunking, CMS etc.	Specifications are detailed in <b>Annexure – III</b>
4	E LV works	Supply and Installation of ELV systems - Telephone System, Data Networking system etc	Specifications are detailed in <b>Annexure – IV</b>
5	Fire Alarm System	Supply and Installation of addressable fire alarm system	Specifications are detailed in <b>Annexure – V</b>

#### Note:

For the referred tables, figures, drawings, approved makes, etc., please refer to the document "**Request for Proposal: Facelift of Library Reading Hall at VSSC**" (ISRO-VSSC-MR-0296-0-24, Dt. 18<sup>th</sup> June 2024).

## Civil Work

Civil work is bifurcated into

- Civil Work- Part I - Flooring and painting works
- Civil Work- Part II - Dismantling Existing windows/walls and providing glazed walls

Table 2 - Civil Works Part I - Flooring and Painting works

ITEM NO	ITEM DESCRIPTION	UNIT	APPROX QTY	PRICE
<b>Civil Works - Part I</b>				
<b>1</b>	<b>REMOVAL OF EXISTING TILE FLOORING</b>			
	Removing existing tile flooring/skirting/dado without damaging the base concrete including mechanical gridding, roughening, hacking the existing terrazo/mosaic flooring/dado and making min. 5mm depth cross grooves in staggered manner to receive new tile flooring, stacking servicable materials and disposal of unserveicable materials as directed with all leads, lifts etc.	Sqm	316.00	
<b>2</b>	<b>VITRIFIED TILE FLOORING (600x1200mm size)</b>			
	Providing and laying vitrified matt finish decorative type tiles of size 600 mm x 1200 mm (Thickness to be specified by manufacturer) FOR FLOORING AND SKIRTING using approved quality double charged vitrified ceramic tiles as per IS: 15622 (of approved make) and approved colour (All colours) with straight edge, joints laid with a gap of 3mm and over 5-8mm thick polymer modified cement based tile adhesive of approved make suitable for fixing vitrified tiles and finishing to required level, curing, required spacers, protection of tiles etc. as per manufacturer's specifications, drawings etc. complete at all heights. : Note: Grouting of joints will be measured elsewhere as a separate item. Cost of Vitrified tile Rs. 70-75/Sft delivery at site exclusive of taxes. (Approved brands: JOHNSONS, NITCO, KAJARIA, SPARTEK, REGENCY, NAVIN, BELL, SOMANY, RAK, SIMPOLO)	Sqm	311.00	
<b>3</b>	<b>GROUTING OF TILE JOINTS (3mm width and 7mm depth)</b>			
	Providing and laying tile joint, spacing of width and thickness specified below using high polymer modified, water and stain resistant grout with the mixture of synthetic polymer modified additive of approved shade / colour of approved make. The width & depth of the joint between the tiles specified below shall be ensured using good quality PVC spacers each at every joint. The joint shall be prepared for free from efflorescence, laitance, dirt and other loose materials using dry brushing. All the joint shall be cleaned down by washing with water containing detergent and then with clean water and should be dry enough before grouting. The mixing and application shall be done	Mtr	715.00	

	strictly as per the manufacturer's specifications and authorized applicators. Enough care shall be ensured for staining risk/discoloration. The rate shall be inclusive of all materials, labors, tools and plants etc. complete at all heights.			
<b>4</b>	<b>CEILING PAINT</b>			
	Providing and applying ceiling painting with two or more coats of luster paint of interior grade having low VOC content that meets the LEED VOC criteria as per Indian Green Building Council, from approved brand and manufacturer on old work to give an even shade with one or more coats of suitable primer as per manufacturers specification including cleaning the surfaces, filling the crevices with approved filler, scaffolding charges, curing, applying additional coats wherever required, to achieve even shade and colour etc complete at all heights/depths as per approved drawings and specifications.	Sqm	315.00	
<b>5</b>	<b>WALL PAINT</b>			
	Providing and applying internal Wall painting with two or more coats of lustre paint of interior grade having low VOC content that meets the LEED VOC criteria as per Indian Green Building Council, from approved brand and manufacture on old work to give an even shade with one or more coats of suitable primer as per manufacturers specification including cleaning the surfaces, filling the crevices with approved filler, scaffolding charges, curing, applying additional coats wherever required, to achieve even shade and colour etc complete at all heights/depths as per approved drawings and specifications	Sqm	234.00	
<b>6</b>	<b>TEXTURE PAINT</b>			
	Providing and applying Textured paint of approved texture and colour (Archi Concrete/Torino/selected texture in Asian Paints or equivalent) for internal walls/surfaces which includes preparing the surface, applying primer, putty & paint to required number of coats to achieve desired texture & applying protective coat to give a finish acceptable to the engineer and any additional coats if required shall be at the cost of the contractor, as per manufacturers specification and technical manual including required cleaning of the surfaces, curing etc. complete to the entire satisfaction of the Engineer. Rate shall be inclusive of surface preparation to line & level with all necessary tools & tackles, etc. maintaining proper line, level and grooves etc complete at all heights/depths as per approved drawings and specifications.	Sqm	91.00	
<b>7</b>	<b>ENAMEL PAINT</b>			
	Providing and applying two or more coats of epoxy paint of approved colour to new/old structural steel work in buildings, including scaffolding charges if necessary, cleaning and preparing the surface (including appropriate primer coat) etc complete at all heights/depths as per approved drawings and specifications	Sqm	23.00	
<b>8</b>	<b>MELAMINE POLISH</b>			
	Providing and applying melamine polish of approved shade on wooden work of the existing hand rail which shall include removing of	Sqm	10.00	

	existing polish, preparing the base for polish including scraping, putty work etc and applying 2 or more coats of polished till desired finish is achieved. The work shall be completed with all accessories, labour etc complete at all heights/depths as per approved drawings and specification			
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**Table 3 - Civil work Part II**

<b>Civil work Part II - Dismantling Existing windows/walls and providing glazed wall</b>				
<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Approx QTY</b>	<b>PRICE</b>
	<b>Civil Works - Part II</b>			
1	Site preparatory works inside the building as per plan for installation of proposed interior works including dismantling and removing doors, windows and clearstory windows (steel or wood) shutters (Of area 3sqm and below) without damaging the structure including chowkhats, archi-trave, holdfasts, including necessary cutting, grinding etc; complete and stacking within 150mtrs lead as directed.	Each	18.00	
2	Charges for demolishing brick masonry in cement mortar (approximately 6cum), sill concrete works including cutting of steel reinforcement if any including stacking of serviceable material and disposal of unserviceable material within 150mtrs lead as directed.	JOB	1.00	
3	Charges for providing temporary barricading and cordoning the proposed construction area with suitable tarpaulin and necessary frame work support using MS pipe/ jacky or suitable means till the completion of work to prevent entry of dust and unauthorized entry inside the library hall. Note : Cordoning is required to carry out upto the proposed opening level from FFL. Item will be measured in sqm for the area cordoned etc all as directed.	Sqm	210.00	
4	Chipping and removing the old plaster or skirting, raking out joints, and cleaning the surface for new plaster including disposal of rubbish to the dumping ground within 150mtr lead etc complete as directed.	Sqm	30.00	
5	Plastering 12mm thick with cement mortar using fine aggregate specified below, finished rough including mixing of admixtures of Ceraplast LMP at 200ml/50kg or equivalent, scaffolding charges, curing, etc; complete for EXTERNAL SURFACES inclusive of sills, jambs, soffits, ceilings, etc; complete all as per specifications at all heights as per approved drawing. Mix specified is for cement : Fine aggregate (Uncrushed sand/Crushed stone sand as per IS1542: 1992, 2003). NOTE: i) CM 1:3 OR CM 1:4 is generally applicable for ceilings and RCC surfaces unless otherwise specified.			
5.1	With C.M. 1:4.	Sqm	25.00	
6	Plastering 15mm thick with cement mortar using fine aggregate specified below, finished smooth including mixing of admixtures of Ceraplast LMP at 200ml/50kg or equivalent, scaffolding charges, curing, etc; complete for INTERNAL SURFACES of walls, beam ribs, sills, jambs, etc; complete all as per specifications at all heights as per approved drawings.			
	Mix specified is for Cement: Fine aggregate (Uncrushed sand/Crushed stone sand as per IS1542: 1992, 2003). NOTE: CM 1:3 OR CM 1:4 is generally applicable for ceilings and RCC surfaces unless otherwise specified.			

6.1	With C.M. 1:5	Sqm	8.00	
7	Providing and fixing rigid PVC SWR (soil, waste and rain water) drainage / rain water pipe conforming to Type-A IS 13592-1992, including accessories like bends and fixing with pipe clips, adhesive at joints all as per manufacturer's specifications to required length etc., complete all as per specifications and approved drawings			
7.1	75mm dia OD pipes with minimum wall thickness of 1.80 mm	Mtr	30.00	
8	Providing wall painting with ULTRA DURABLE HIGH PERFORMANCE EMULSION paint of exterior grade (formulated with pure acrylics latex based on nanotechnology) with suitable base coats/primer, based on PU and silicon technology of approved brand and quality (having 10 years or more manufacturer performance warranty of waterproofing and antialgal) to give a smooth and glossy (70% at 60° angle) finish with desired colour and shade including cleaning the surfaces, filling the cracks and holes with cement mortar or putty, priming the surfaces with exterior acrylic primer or waterproof putty of the same brand and quality as the paint, scaffolding charges, curing, etc., complete at all heights/depths as per approved drawings, specifications and directed by EIC. Note: The paint shall have protection against fungal growth, flaking, fading, alkali and UV degradation. The paint shall also have a low VOC content that meets the LEED VOC criteria as per Indian Green Building Council, and a unique fibre reinforcement that offers crack bridging ability of up to 2 mm.			
8.1	New work (Two or more coats including suitable base coats/primer applied as per manufacturers specification)	Sqm	10.00	
9	Providing and fixing 12 mm thick frameless high performance toughened fixed glazing for full height (maximum up to 2.80m) of approved brand/colour make with approved make SS304 grade patch fittings as per manufacturers specification including cost of all materials, its wastage, labour charges for fabrication, installation, transportation of all materials to the site, loading and unloading at all points. The rate is inclusive of providing seamless joints between glass with suitable heavy duty silicon sealants as per manufacturer specification etc. complete as per specification and direction all heights/lifts. (Note: SHGC value of the glass shall be less than 0.44).	Sqm	57.00	

Table 4 - Interior and Furnishing Work

Item No.	Item Description			
A	MODULAR FURNITURE			
B	CARPENTRY AND ALLIED WORK			
C	FALSE CEILING			
D	MISCELLANEOUS ITEMS			
Item No	Item Description	UNIT	QTY	PRICE
<b>A</b>	<b>MODULAR FURNITURE</b>			
<b>1</b>	<b>INTERNET BROWSING TABLES (WS) (4 seater cluster)</b>	Nos	4.00	
	<p>Providing, fabricating and fixing in position Pane/Tile based modular 4 seater workstations cluster as per design which Includes Partition &amp; work surface. Work surface will be in 25mm thick exterior grade prelaminated Particle board with 2mm thk PVC imported edge banding tape. The bottom surface of the table shall also be laminated. The worktops shall be supported on intermediate partitions. The worktops shall be provided with PVC wire manager for cabling.</p> <p>Intermediate Partition thickness will be 50mm with an inside gap for cable management. Frame Horizontals will be of 1mm thick CRCA sheets &amp; the verticals will be of Aluminium Extrusions of 1.5mm thick Frame and will be in line with the Top trims &amp; end trims.. All the frames shall be duly powder coated. The partitions shall be provided with leveling bolts / screws to take care of undulations in the floor level.</p> <p>Panel Tiles: The panels shall be constructed out of particle board/ Medium Density Fiber Board (MDF) and covered laminate of approved colour with 8mm thick toughened glass panels above.</p> <p>Wire management: Internal Concealed Raceways will be provided below work surface at skirting level and second raceway above table top with switchboard arrangement for Power &amp; Data along with PVC Wire manager with Grommet / scallops &amp; Individual Raceway arrangement for Data/ Power cable. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction. (Reference image as indicated in Table-5)</p>			
<b>2</b>	<b>CENTRE TABLE (T1) (TABLE SIZE:900mm(L) X 900mm (D) X 450mm (HT)</b>	Nos	4.00	
	Providing & installing in position table made of S.S. 304 framework under structure and 12 mm ply with 12mm thick solid acrylic surface top of approved colour, texture & design. Solid acrylic top shall be buffed to achieve the required finished. All materials shall be of			

	approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5).			
<b>3</b>	<b>CORNER TABLE (T2) (TABLE SIZE:600mm (L) X 600mm (D) X 450mm (HT)</b>	Nos	4.00	
	Providing & installing in position table made of S.S. 304 framework under structure and 12 mm ply with 12mm thick solid acrylic surface top of approved colour, texture & design. Solid acrylic top shall be buffed to achieve the required finished. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5)			
<b>4</b>	<b>REVOLVING CHAIRS (C1) (approx SIZE: mid back: 475mm (W) X 580mm (HT), seat: 470mm (W) X480mm (HT)</b>	Nos	20.00	
	Supplying and placing in position armed revolving medium back chairs of approved make colour & design. The chair shall have seat made up of hot pressed moulded reconstituted wood of 1.2 +/- 0.1cm thickness and back shall be in two part injection moulded plastic. The chair shall have High Resilience polyurethane foam moulded with density of 45 kg/m <sup>3</sup> and Hardness load of 16-/+2 kgf as per IS:7888 for 25% compression. The chair shall be 360 degree revolve type. The armrests shall be height adjustable and the arm rest top shall be in moulded PU. The chair shall have tilt mechanism with upright position locking, single point control, tilt tension adjustment, back support etc.. The chair shall have pneumatic height adjustment .The pedestal shall have nylon base and fitted with twin-wheel castors. The chair shall have synthetic leather/fabric/mesh type upholstery for seat and back as per design. (basic rate of Rs 400/rm).Chair mid back size shall be in range of 47.5 cm. (W) x 58.0 cm. (H) and seat size shall be in range of 47.0 cm. (W) x 48.0 cm.(D) All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5)			
<b>5</b>	<b>SOFA TYPE 1 (S1,S2</b>			
	Supplying & placing in position sofa of approved design, colour and size having solid frame structure with inner frame made of kiln chemical treated approved high quality pine wood. The seat & back cushion shall be made of multi layered foam and outer layer of polyester polyfill of 180 gsm to keep the upholstery wrinkle free & soft. The thread used shall be nylon bonded to provide lasting stitch strength. The outer finish shall be of superior quality leatherette (up to Rs.600 per metre) stitched with nylon bonded thread. The legs shall be of SS304 grade sections. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5). (Seat Height - 400-450 mm)			



a	<b>2 SEATER SOFA (S1) (approx SIZE:1350mm(L) X 750mm(D) X 400 450mm(HT)</b>	Nos	2.00	
b	<b>1 SEATER SOFA (S2) (approx SIZE:800mm(L) X 750mm(D) X 400 450mm(HT)</b>	Nos	8.00	
6	<b>SOFA TYPE 2 - 1 SEATER (S3) (approx SIZE:800mm (L) X 750mm (D) X 400-450mm (HT)</b>	Nos	8.00	
	Supplying & placing in position lounge sofa of approved design, colour and size having solid frame structure with inner frame made of kiln chemical treated approved high quality pine wood. The seat & back cushion shall be made of multi layered foam and outer layer of polyester polyfill of 180 gsm to keep the upholstery wrinkle free & soft. The thread used shall be nylon bonded to provide lasting stitch strength. The outer finish shall be of superior quality artificial leather (upto Rs. 600 per metre). The legs shall be prong type/having base plate in SS 304 grade sections. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5). (Seat Height - 400 - 450mm mm).			
<b>B</b>	<b>CARPENTRY AND ALLIED WORK</b>			
1	<b>LIBRARY FRONT DESK (B1) C shape (Size- 4800mmx700mmx1100mm - 1no + 1000mmx700mmx1100mm - 2nos)</b>	Nos	1.00	
	Providing & fixing in position table in 19 mm thick Marine BWP IS : 710 (boiling water proof) plywood with top, ledge & front fascia in 19mm the ply Marine BWP ply & finished with 6mm solid acrylic surface, 4mm veneer & 1mm laminate of approved color/texture externally and 1mm the laminate internally as per detail design. The table shall have 3 keyboard trays in 19 mm thick Marine BWP IS : 710 plywood with 1 mm laminate finish on both the sides. Table shall be provided with 2 fixed drawer units in 19 mm thick Marine BWP IS : 710 plywood front fascia, 12 mm thick Marine BWP IS : 710 plywood for sides and back, with 6 mm thick Marine BWP IS : 710 plywood Marine BWP plywood for base & finished with 1mm thick laminate externally and 1mm thick laminate internally and shall be supported on stainless steel telescopic side mounted channels. The drawer unit shall have central locking arrangement & handles in SS 304 brush finish (100 mm). The table shall be provided with 2 cabinets, with shutters in 19 mm thick Marine BWP IS : 710 plywood fixed on brass hinges in SS brush finish & single shelf in 19 mm thick Marine BWP IS : 710 plywood fixed on SS finished shelf buttons & finished with 1mm thick laminate externally & 1mm laminate internally. Cabinet shutters shall be fixed with solid handles in SS 304 brush finish. All exposed edges shall be finished with second class teak wood lipping. All veneer surfaces and lipping shall be finished with 2 to 3 coats of melamine polish of approved shade with necessary labour, hardware, accessories etc. complete. Provision shall be made for wire management to take care of basic			

	wiring requirement for providing power data- voice switches on a modular switch plate. Table shall have independent wire manager. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5).			
<b>2</b>	<b>SECURITY DESK ( Size -1650mmx700mmx1100mm) (B2)</b>	Nos	1.00	
	Providing & fixing in position table in 19 mm thick Marine BWP IS : 710 (boiling water proof) plywood with top, ledge & front fascia in 19mm the ply Marine BWP ply & finished with 6mm solid acrylic surface & 1mm laminate of approved color/texture externally and 1mm the laminate internally. The table shall have 1 keyboard tray in 19 mm thick Marine BWP IS:710 (boiling water proof) plywood with 1 mm laminate finish on both the sides. Table shall be provided with drawer unit in 19 mm thick Marine BWP IS : 710 (boiling water proof) plywood front fascia, 12 mm thick Marine BWP IS : 710 (boiling water proof) plywood for sides and back, with 6 mm thick Marine BWP IS : 710 (boiling water proof) plywood for base & finished with 1mm thick laminate externally and 1mm thick laminate internally and shall be supported on stainless steel telescopic side mounted channels. The drawer unit shall have central locking arrangement & handles in SS 304 brush finish (100 mm). All lipping shall be finished with 2 to 3 coats of melamine polish of approved shade with necessary labour, hardware, accessories etc. complete. Provision shall be made for wire management to take care of basic wiring requirement for providing power data- voice switches on a modular switch plate. Table shall have independent wire manager. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5).			
<b>3</b>	<b>LIBRARIAN STORAGE CABINET ( Size-4800mmx450mmx750mm) (B3)</b>	Sqm	3.60	
	Providing & fixing in position up to 450mm depth Storage cabinet in 19 mm thick Marine BWP IS : 710 (boiling water proof) plywood & finished with 1mm thick laminate externally and 1mm thick laminate inside. Back sheet shall be in 8mm thick Marine BWP IS : 710 plywood. Cabinets shall have shutters in 19mm thick marine BWP ply fixed on brass hinges in SS brush finish & single shelf in 19 mm thick Marine BWP IS : 710 plywood fixed on SS finished shelf buttons & finished with 1mm thick laminate externally & 1mm laminate internally. All exposed edges shall be finished with second class teak wood lipping with 2 to 3 coats of melamine polish to match the shade of laminate. Cabinet shutters shall be fixed with solid handles in SS 304 brush finish. All exposed edges shall be finished with second class Indian teak wood lipping with 2 to 3 coats or more of melamine polish to match the shade of laminate & complete with necessary labour, hardware, cleaning, placing in position etc. complete All materials shall			

	be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5)			
<b>4</b>	<b>PIGEON HOLE BAG STORAGE ( Size-2000mmx400mmx750mm) (B4)</b>	Sqm	1.50	
	Providing & fixing in position up to 400mm depth pigeon hole type open shelf storage in 19 mm thick Marine BWP (boiling water proof) plywood & finished with 1mm thick laminate externally and 1mm thick laminate inside. Sides, back, shelves shall be in 19mm Marine BWP IS : 710 plywood & finished with 1mm thick laminate on all sides. All exposed edges shall be finished with second class teak wood lipping with 2 to 3 coats of melamine polish to match the shade of laminate complete with necessary labour, hardware, cleaning, placing in position etc. complete. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction.			
<b>5</b>	<b>VENEER PANELING (B5)</b>	Sqm	14.00	
	Providing & fixing in position 150mm depth wall panelling in aluminium framework with 12 mm thick Marine BWP IS : 710 plywood and 4mm thick veneer of approved shade & finish/texture. The panelling shall have horizontal & vertical framework at 600mm c/c in 38x50mm aluminium sections supported from wall/slab soffit. Framework shall be finished with 12 mm thick Marine BWP IS : 710 plywood with 4mm veneer of approved pattern fixed on it as per detail drawing. Provision shall be made for wire management to take care of basic wiring requirement if required. All exposed edges of plywood shall be finished with teak wood lipping/veneer with 3 coats or more of melamine polish of approved shade with necessary labour, hardware, cleaning, placing in position etc. complete. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction			
<b>6</b>	<b>VENEER FINISH FRAME (around external glass openings, doors) (B6)</b>	Sqm	19.50	
	Providing & fixing in position frame in 19 mm thick Marine BWP IS : 710 (boiling water proof) double plywood of required width & length and thickness of 45mm finished with 4mm thick veneer of approved shade & finish/texture. All veneer surfaces shall be finished with 3 coats or more of melamine polish of approved shade with necessary labour, hardware, cleaning, placing in position etc. complete. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction.			
<b>7</b>	<b>VENEER &amp; LAMINATE PANELLING (on parapet wall)</b>	Sqm	18.50	
	Providing & fixing in position panelling on parapet wall of height equal to parapet wall height and projecting out from face by 100mm in 19 mm thick Marine BWP IS : 710 (boiling water proof) plywood finished			

	with 4mm thick veneer & 1mm thick laminate of approved shade & finish/texture as per design. Panelling shall overlap on top of parapet wall by 50mm. The panelling shall have horizontal & vertical framework at 600mm c/c. along the length of parapet wall. Plywood shall be finished in 4mm veneer of approved pattern fixed on it and shall have a recessed band finished in 1mm laminate as per detail. All veneer surfaces shall be finished with 3 coats or more of melamine polish of approved shade with necessary labour, hardware, cleaning, placing in position etc. complete. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction			
<b>8</b>	<b>ACOUSTIC BOARD PANELLING ( on wall along counter)</b>	Sqm	11.39	
	Providing & fixing in position 150mm depth wall panelling in aluminium framework with 12 mm thick Marine BWP IS : 710 (boiling water proof) plywood and finished with 9-10mm thick acoustic boards panels of approved shade/ colour. The panelling shall have horizontal & vertical framework at 600mm c/c in 38x50mm aluminium sections fixed from wall/slab soffit. Framework shall be finished with 12 mm thick Marine BWP IS : 710 plywood and covered with acoustic boards. The acoustic boards shall have 9-10mm thickness and have a material composition of polyester fibre board (1900/200GSM) and size 1.22x2.44mm. The boards shall be cut to required size & shape as per design and shall be pasted on plywood surface with required adhesive. The boards shall have good acoustic performance and shall be resistant to humidity & moisture. The boards shall be of required color shade and may be custom printed if required. Provision shall be made for wire management to take care of basic wiring requirement if required. All exposed edges of plywood shall be 1mm thick laminate of approved shade with necessary labour, hardware, cleaning, placing in position etc. complete. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction			
<b>9</b>	<b>LASER CUT SCREENS ( Size-1350mmx100mmx2100mm)</b>	Nos	3.00	
	Providing & fixing in position laser cut screen having frame of size 50mmx100mm in 19 mm Marine BWP IS : 710 (boiling water proof) plywood finished with 1mm thick laminate and 12mm thick laser cut mdf as per design fixed using 12mm thick wooden beading in second class teak wood lipping on all sides. MDF shall be finished with duco paint of approved shade and texture. All exposed edges of plywood shall be finished with 1 mm thick laminate and second class Indian teak wood lipping shall be finished with 2 to 3 coats of melamine polish to match the shade of laminate complete with necessary labour, hardware, cleaning, placing in position etc. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction.			
<b>10</b>	<b>GLASS DOOR (SIZE- 1500mm(L) X 2100mm(HT)</b>	Nos	1.00	

<b>C</b>	<b>FALSE CEILING</b>			
<b>1</b>	<b>CALCIUM SILICATE PLAIN FALSE CEILING</b>	Sqm	355.00	
	<p>Providing and fixing 8mm thick calcium silicate board suspended false ceiling false ceiling in horizontal / vertical surfaces, stepped, cove (straight &amp; curvature). The calcium silicate board having density of 850 to 950kg/m<sup>3</sup>, shall be made from Siliceous &amp; Calcareous material reinforced with fiber, made in Laminar process and then autoclaved to give stable crystalline structure. The framework shall consist of approved make Galvanised iron (GI) Perimeter Channel of 0.55mm thickness, two unequal flanges of 20 mm and 30 mm and web of 27mm fixed to surrounding walls / partition by using nylon sleeves and screws at 450 mm centres. Approved make Galvanised iron (GI) Intermediate Channel of 0.9 mm thickness having two equal flanges of 15mm each and a web of 45 mm shall be suspended from the soffit at 1220mm centre with G.I. Cleat and steel expansion fasteners. Galvanised iron (GI) Ceiling section of 0.55 mm thickness having web of 50.5 mm and flanges of 26mm each with lips of 10.5 mm shall be fixed to the intermediate channel with connecting clips across to the intermediate channel at 457mm centres respectively. Calcium silicate boards of 8 mm thickness having taper edge /Square edge shall be screw fixed across the ceiling sections with 25 mm long self drilling. The item shall include providing markings and cutouts for electrical fixtures, sprinklers, smoke detectors, diffusers, curtains etc. on the ceiling and also providing &amp; fixing templates in the ceiling made of 12/19mm BWP (boiling water proof) plywood. All material shall be of approved make. Measurements shall be considered wall to wall without any deductions. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction.</p>			
<b>2</b>	<b>ACOUSTIC CLOUDS &amp; SHAPES</b>			
	<p>Providing and Fixing Acoustical Clouds/Shapes in Hexagonal Cloud made up of polyester fibre board of high density and rigidity and having square edge profile. The thickness shall be 40mm derived from 20mm layers of two board securely pasted with required adhesive and with a joint. The density of boards shall be 200kg/m<sup>3</sup> and weight 7-8 kg/m<sup>2</sup>. The acoustic clouds shall be suspended from the slab soffit upto desired height using hanging clips with wire and hook as per the design of the architect. The panels shall be ASTM E 84 - Class A fire retardant (SGS), shall have humidity and moisture resistance upto 95%, NRC of 0.9 and thermal conductivity of 0.038W/mK as per (EN 12667:2001). The boards shall be made of 70% Recycled PET material. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction</p>			
a	1350MM DIAMETER HEXAGON	Nos	32.00	
b	1000MM DIAMETER HEXAGON	Nos	16.00	

<b>3</b>	<b>GROOVES IN FALSE CEILING</b>	Rm	270.00	
	Providing and finishing grooves on calcium silicate board/gypsum plasterboard panelling/partition of 8-10mm width and 4mm depth as per design. The item shall include making the grooves in proper line and level and uniform depth and finishing to achieve straight edges. All works shall be complete with necessary labour, tools, cleaning, placing in position etc. All material shall be of approved make. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction			
<b>D</b>	<b>MISCELLANEOUS ITEMS</b>			
<b>1</b>	<b>ROLLER BLINDS</b>	Sqm	77.83	
	Providing & fixing in position roller blinds (horizontal) of approved fabric with aluminium extruded rail powder coated in white. Control unit to be made of high strength reinforced plastic. Roller tube to be color anodised extruded tube of high strength alloy, including all necessary fittings and fixtures like idler, head rail, control unit, roller tube, bottom rail, operating chain, fixing brackets, clamps, etc. complete. Fabric shall be 1-2mm thick of approved make, color, length, texture. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table5)			
<b>2</b>	<b>VINYL FROSTED FILM</b>	Sqm	54.00	
	Providing & installing in position PVC frosted translucent glass film with self adhesive & laser cut to required design and pasted on glass. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction. (Basic rate Rs 55/sqft)			
<b>3</b>	<b>VINYL ARTWORK (related to ISRO launch vehicle/hall of fame/history on wall above glass openings)</b>	Sqm	52.00	
	Providing and fixing in position vinyl artwork of approved design, colour/custom color printed/laser cut to design in PVC film with self adhesive and pasted on surface like partition/wall in line & level so as the joints are invisible. Vinyl used shall have matt lamination with eco solvent printing. The rate shall include the designing of artwork composition options for approval. The artwork composition related material/ information/ data/photos etc shall be provided by client. All materials shall be of approved make and complete works as per the approved drawing, technical specification and direction. (Basic rate Rs 65/sft)			
<b>4</b>	<b>NATURAL PLANTS WITH PLANTER</b>	Nos	8.00	
	Providing and planting natural green alive plants like Chefflera, Xanadu, Agloenema, Rhapsis palm, Areca palm, Syngonium (height 900 to 1200 mm maximum) for indoors including PVC pot (size : around 300mm dia x 400mm height) and placing it in stainless steel 304 grade cylindrical planter, size (around 450mm dia x 600mm			

	height) complete with soil, manure, watering and handing over to client etc. All materials shall be of approved make and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5). (Basic rate shall be in the range of Rs. 450/- to 800/-)			
<b>5</b>	<b>PHOTO FRAME (Dr. Vikram Sarabhai &amp; Satish Dhawan) (SIZE- 1000mm(L) X 2100mm(HT))</b>	<b>Nos</b>	<b>2.00</b>	
	Supplying & fixing in position approved design photo with frame in digital printing on digital printing paper with synthetic frame & lamination. The photos shall be provided by the client and shall be of a good resolution for printing. The details shall be as per the instructions of Engineer/Client. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5)			
<b>6</b>	<b>LETTERS OF BUILDING NAME (on wall behind library counter)</b>	<b>Nos</b>	<b>32.00</b>	
	Providing and fixing in position building name letters laser cut from acrylic board of approved colour & having width 15-20 mm x height 200-250 mm and projecting 25mm from the wall/partition/panelling and fixed at specified height in line and level with silicon/3m tape/durable adhesive for permanent fixing purpose and any other accessories etc. complete. All materials shall be of approved make as indicated in Table-6 and complete works as per the approved drawing, technical specification and direction (Reference image as indicated in Table-5).			

**Table 7 - Electrical and Lighting Works**

All materials shall be of approved make as indicated in Table 10

Sr. No	Description	Unit	Approx Qty	PRICE
A	LT Cables			
B	MCB DISTRIBUTION BOARDS:			
C	POINT WIRING			
D	EARTHING			
E	POWER BOARD & WIRING			
F	RACEWAY AND TRUNKING SYSTEM FOR POWER DISTRIBUTIO			
G	INDOOR LUMINAIRES			
Sr. No	Description	Unit	Approx Qty	PRICE
<b>OFFICE BUILDING</b>				
<b>A</b>	<b>LT Cables</b>			
1.0	Supply of multi core, stranded copper conductor, FRLS PVC insulated PVC overall sheathed, unarmoured cable, 1.1 KV grade, for following sizes complete as required. The cable/drum shall bear ISI certification mark			
1.1	4C X 10.0 sq.mm copper conductor cable (PDB/UDB)	Mtrs	80	
2.0	Supply of following size 1.1kV grade Flexible multicore FRLS PVC copper cable with multistranded annealed bare electrolytic copper conductor, PVC insulated and PVC over all sheathed cable confirming to IS 694-1990 with latest amendments.			
2.1	3 Core x 4.0 sq.mm (LDB)	Mtrs	40	
<b>INSTALLATION CHARGES</b>				
<b>LT CABLE LAYING:</b>				
3.0	Laying of 2 / 3 / 3.5 / 4 core, 1.1 KV grade FRLS cables / XLPE cables unarmoured, aluminium / copper conductor cables / on cable tray/ on Cable Management system/ on wall / floor / ceiling / above false ceiling / below false floor			
3.1	2.5/4/6/10/16 Sq.mm	Mtr	120	
<b>End Terminations of LT Cables</b>				
4.0	Providing end terminations for 2 / 3 / 3.5 / 4 core, 1.1KV grade PVC / XLPE insulated armoured / unarmoured, copper / Aluminium conductor cables including supply of brass compression cable gland, lugs, neoprene bushes and other materials and tools required complete with terminal connections, earthing of glands and as required and as directed by Engineerin-Charge.			
4.1	2.5 / 4 / 6 / 10 / 16 Sq.mm.	Each	7	
<b>B</b>	<b>MCB DISTRIBUTION BOARDS:</b>			
1.0	Supply of following Double door type TPN MCB DBs (IP 43) of 16			



	SWG CRCA sheet steel enclosure, dust and vermin protected, fully factory fabricated rated for 440V, 3 phase, 50 Hz AC supply operation, inclusive of busbar of suitable capacity, neutral link with required outgoing, DIN bar, earthing terminals and with silicon based fire/ Heat resistant coating applied inside the DB and powder coated suitable for incorporating SP/DP/TP MCB as specified below conforming to IS 8623-1&3 and IEC 61439 (with latest amendments) including suitable adaptor boxes but excluding supply of MCBs complete as required.			
1.1	Suitable for 16 / 25/ 32 / 63 Amp TPNMCB / TPNMCB Isolator or four pole ELMCB as incoming control and 4 ways per phase 6 / 10 / 16 / 20 / 25 / 32 Amp SP MCB as outgoing.			
1.1.1	As above in item 5.1 but with 6 ways / phase as outgoing.	Each	1	
1.2	Suitable for 16 / 25/ 32 / 63 Amp TPNMCB/ Isolator or four pole ELMCB as incoming control and 4 ways / phase 6 / 10 / 16 / 20 / 25 / 32 Amp SP / DP / TP MCB as outgoing. (VERTICAL DB) including suitable adaptor boxes but excluding supply of MCBs complete as required.			
1.2.1	As above in item 1.2 but with 8 ways / phase as outgoing.	Each	2	
2.0	Supply of single phase MCB double door type DB enclosure similar to the item 1.0 above but for 230 V, 50 Hz single phase operation with DP / SP MCBs as specified below, but excluding supply of MCBs.			
2.1	Suitable for 10 / 16 / 20 / 25/ 32 / 63 AMP DPMCB /Isolator / 2 pole ELMCB as incoming control and 4 ways 6 / 10 / 16 / 20 / 25 / 32 AMP SP /DP MCB as outgoing including suitable adaptor boxes but excluding supply of MCBs complete as required.			
2.1.1	As above in item 2.1 but with 8 ways / phase as outgoing.	Each	1	
3.0	Supply of Miniature circuit breakers of 10 KA breaking capacity with trip free mechanism conforming to IS/IEC 60898 with latest amendments of following capacities:			
	<b>Single Pole breakers</b>			
3.1	6A/10A/16A/20A/25A/32A	Each	55	
	<b>Triple Pole Breakers</b>			
3.2	6A/10A/16A/20A/25A/32A	Each	5	
	<b>RCBO (ELMCB)</b>			
4.0	Supply of RCBO operational on 415V, 3 Phase, 50 Hz, AC, 4 Pole specifications for earth leakage protection but provided with over current and short circuit protections complete of the following leakage current tripping sensitivities and current ratings.			
	Incomer			
	RCBO 100 mA sensitivity			
4.1	32 A, 4 Pole	Each	2	
4.2	63 A, 4 Pole	Each	1	
5.0	Supply of RCBO operational on 230V, 1 Phase, 50 Hz, AC, 2 Pole with specifications for earth leakage protection but provided with over current and short circuit protections complete of the following leakage current tripping sensitivities and current ratings			

	RCBO 30 mA sensitivity			
5.1	25 A, 2 Pole	Each	1	
	<b>INSTALLATION CHARGES</b>			
	<b>LT Switchgear:</b>			
	<b>Distribution boards:</b>			
6.0	Installation of single phase / 3 phase and neutral distribution boards on wall with angle iron frame work including supply of MS angles, cutting, welding, grouting, two coats of anti-corrosive painting and with all materials required earthing as per specifications and complete and as directed by Engineer-inCharg			
6.1	All SPN MCB DB's	Each	1	
6.2	4 way / 6 way/TPN MCB DB	Each	1	
6.3	8 /12 Ways TPNMCB DB/All TPNMCB Vertical DB	Each	2	
	<b>MAINTENANCE WORKS</b>			
	<b>Replacement of MCB/MCCB DB:-</b>			
7.0	The work includes disconnection and dismantling of the DBs with incoming and outgoing cables, conduits with runs of mains, installation of new one with minor modification on existing fixing arrangements, including interconnections of outgoing and incoming conduits/cable terminations with existing glands and lugs, earthing etc. and returning dismantled items to CMD store complete as required and as directed by the Engr.-in-Charge			
7.1	TPNDB up to 8ways with MCB as outgoing	Each	1	
<b>C</b>	<b>POINT WIRING</b>			
<b>1.0</b>	<p>PRIMARY POINT: (PARTIALLY CONCEALED/SURFACE RUN CONDUIT WIRING ) Supply and wiring for primary light point with 1.5 sq.mm, 1.1 kV grade, ISI marked, FRLS PVC insulated single core, stranded Copper conductor cable conforming to IS:694 (with latest amendments) in 20 mm dia. high grade (2mm thick) electrical grade FRLS PVC conduit partially concealed in ceiling, or wall od column and partially surface run with high grade PVC spacers and saddles on wall or ceiling, or column or false ceiling including supply &amp; fixing of 3 plate ceiling rose, 1 no 6 Amps modular type control switch fixed in suitable size metal box with modular plates and earthing with 1.5 sq.mm FRLS PVC insulated copper wire run inside the conduit under false ceiling including supply of all fixing materials, accessories and interconnections complete as required.</p> <p>NOTES:</p> <p>1. Rates for all the point wiring items are inclusive of necessary circuit mains from the distribution board to the first switch board and also sub circuits from one switch board to the subsequent switch boards in the same circuit.</p> <p>2. The secondary point in case of point wiring shall include necessary wiring looped from the primary light point as indicated in the electrical</p>	Point	12	

	<p>layout drawings.</p> <p>3. Rates for the power point wiring items are inclusive of necessary power circuit from the DB to the power socket</p>			
<b>2.0</b>	<b>SECONDARY POINT - (SURFACE RUN PVC CONDUIT WIRING)</b>			
	<p>Supply and wiring with 1.5 sq.mm., 1.1 KV grade, ISI marked FRLS PVC insulated, stranded copper conductor cable conforming to IS:694 (with latest amendments) in 20 mm dia, high grade (2 mm thick) electrical grade PVC conduit surface run with high grade PVC spacers and saddles on wall or ceiling, or column including supply and fixing of 3 plate ceiling rose, without control switch, earthing with 1.5 sq.mm FRLS PVC insulated copper wire run inside the conduit including supply of all fixing materials, accessories, and interconnections complete as required.</p> <p>Notes:</p> <p>1. Rates for all the point wiring items are inclusive of necessary circuit mains from the distribution board to the first switch board and also sub circuits from one switch board to the subsequent switch boards in the same circuit.</p> <p>2. The secondary point in case of point wiring shall include necessary wiring looped from the primary light point as indicated in the electrical layout drawings.</p>	Point	116	
<b>3.0</b>	<b>6 AMP 3 PIN SOCKET OUTLET POINT: - PARTIALLY CONCEALED/SURFACE RUN</b>	Point	11	
	<p>Supply and wiring for 6 A, 3 pin socket outlet point with 1.5 sq.mm, 1.1 kV grade, ISI marked, FRLS PVC insulated single core, stranded Copper conductor cable conforming to IS:694 (with latest amendments) in 20mm dia high grade ( 2mm thick) electrical grade FRLS PVC conduit partially concealed/surface run in ceiling, or wall, or column, or floor including supply &amp; fixing of 6 A, 3 pin Modular type socket and 1No. 6A single pole, Modular type control switch in metal box with modular plate and earthing with 1.5 sq.mm FRLS PVC insulated copper wire run inside the conduit including supply of all fixing materials, accessories and interconnections complete as required</p>			
<b>4.0</b>	<b>16 AMP 3 PIN SWITCH SOCKET OUTLET: - PARTIALLY CONCEALED/SURFACE RUN</b>	Point	8	
	<p>Supply and wiring with 2.5 sq.mm 1.1 kV grade, ISI marked, FRLS PVC insulated, single core, stranded Copper conductor cable conforming to IS:694 (with latest amendments) in 20 mm dia high grade (2mm thick) electrical grade FRLS PVC conduit partially concealed/surface run in ceiling, or wall, or floor, or column including supply and fixing of 16 AMP Modular type switch and 3 pin Modular type socket outlet fixed in metal box with modular plate and earthing with 2.5sq.mm FRLS PVC insulated copper wire run inside the conduit including supply of fixing materials, interconnections complete as</p>			

	required.			
<b>5.0</b>	<b>16A+6A MODULAR SWITCH SOCKET OUTLET – PARTIALLY CONCEALED/SURFACE RUN</b> Supply and wiring with 2.5 sq.mm 1.1 kV grade, ISI marked, FRLS PVC insulated, single core, stranded copper conductor cable conforming to IS:694 (with latest amendments) in 20 mm dia high grade (2 mm thick) FRLS PVC conduit partially concealed/surface run in ceiling, or wall, or floor, or column, or ACP Sheet including supply and fixing of 1 no. 16 Amps, 3 pin and 1 No. 6 Amps., modular 3 pin combined Switch socket fixed in a suitable size Metal sheet box suitable for switches and sockets, with modular plate and earthing with 2.5 sq.mm FRLS PVC insulated copper wire run inside the conduit/in CMS including supply of all fixing materials, accessories and interconnections complete as required	Point	8	
<b>6.0</b>	<b>COMPUTER POINT WIRING:</b> Supply and wiring generally same as item No. 5.0 above but with 3 Nos,6A Modular type sockets, and 3 Nos 6A Modular type one way control switch.	Point	4	
<b>D</b>	<b>EARTHING</b>			
<b>1.0</b>	Supply and laying of electrolytic copper wire of following sizes including supply of fixing clamps and accessories when laid inside the building and inclusive of excavation & refilling of earth when laid outside the building and tinning of copper wires, interconnections with earth pit and equipment, terminations / interconnections in an approved manner as per IS 3043 (with latest amendments) inclusive of supply of all hardware complete as required.			
	<b>CU WIRE:</b>			
<b>1.1</b>	12 SWG	Mtr	80	
<b>E</b>	<b>POWER BOARD &amp; WIRING</b>			
<b>1.0</b>	Supply and fixing of power boards with 3 x 6A modular type switch socket in suitable size plastic box directly on wall/Aluminium partition/computer work table including supply and fixing of box, cover plates, sockets etc complete as required and as directed by EIC	Each	16	
<b>2.0</b>	Supply and laying of following sizes of 1.1 kV grade FRLS PVC insulated single core, stranded copper conductor cable conforming to IS:694 (with latest amendments) in already fixed cable management system / mini trunking / PVC casing & capping / PVC / MS conduits etc. complete as required and as directed by EIC.			
<b>2.1</b>	3 Run x 2.5 Sq.mm	Mtr	250	
	<b>CONCEALED CONDUIT:</b>			
<b>3.0</b>	Supply and laying of following sizes of ISI marked 16 SWG HGMS conduit concealed in wall / on floor / ceiling / column, including chipping the wall, laying the conduits plastering, finishing the surface, supply of all fixing materials and supply and drawing of high-grade nylon as fish wire etc complete as required and as directed by EIC.			
<b>3.1</b>	25 mm dia	Mtr	20	

<b>F</b>	<b>RACEWAY AND TRUNKING SYSTEM FOR POWER DISTRIBUTION</b>			
<b>1.0</b>	Supply and installation of following sizes of compartmentalised metallic under floor cable management system, factory fabricated with 16SWG, specially treated corrosion proof pre-galvanized sheet steel, double folded and spot welded together to form rectangular profiles to withstand a maximum load of not less than 1.33 Ton force(metric) including supply & fixing of joint sleeves and installed concealed under floor including supply of fixing materials, interconnecting, clamps, screws, necessary civil works as required and as directed by the Engineer-in-charge			
<b>1.1</b>	100mm x 38mm - 1 compartment, (Under floor cable management system)	Mtr	30	
<b>1.2</b>	300mm x 38mm - 3 compartment (Under floor cable management system)	Mtr	50	
<b>2.0</b>	Supply and Installation of 150 x 150 x 50 mm Raceway GI Junction Box	Each	32	
<b>3.0</b>	Supply and installation of following size Prefabricated hot dip galvanised perforated cable tray with cover including all necessary bends, tees, reducers, coupler plates, fasteners, supports etc. Cable tray shall have necessary provision for clamping the cables on the tray. The cable tray shall be fixed on wall by providing support with ISA 40 x 6mm thick at an interval of 900mm including angular support as an additional support of horizontal angle including fabrication, grouting to wall, cutting, welding, painting etc./using 10mm Dia threaded rod with socket fixed at ceiling for supporting the cable tray and all other accessories required and as directed by the Engineer-in-charge. Note: Drawing of the cable tray and support arrangements shall got cleared by engineer in charge before supply / fabrication			
<b>3.1</b>	150 x 50mm, 2.0 mm thick	Mtr	40	
	<b>UPVC MINI TRUNKING</b>			
<b>4.0</b>	<b>Supply and Installation of UPVC mini trunking of the following sizes:</b>			
<b>4.1</b>	38mm x 25 mm	Mtr	70	
<b>G</b>	<b>INDOOR LUMINAIRES</b>			
<b>1.0</b>	<b>Supply of following LED light fittings</b> a) LED shall be of high power, white LED (Unless otherwise specified) with suitable optics / lenses (for increase in area of illuminations). b) Lumen efficacy shall not be less than the indicated efficacy against each luminaire if specified. c) The luminaire wattage indicated are maximum values & shall not exceed the same if specified. d) Driver shall be constant current electronic driver & driver efficiency shall be more than 90%. e) Fitting shall be with efficient heat dissipative design for heat sink. f) LM 79 certification for luminaire / LM 80 certification for LED shall be submitted.			

	<p>SPECIAL CONDITION:</p> <p>a) The LED light fitting and its driver unit etc. shall have warranty for a period of 5 years from the date of installation and commissioning. Guarantee certificate shall be provided along with the light fitting.</p> <p>b) LED MAKES: NICHIA / CREE / PHILIPS LUMILED / OSRAM / CITIZEN / SEOUL SEMICONDUCTOR.</p>			
<b>1.1</b>	<b>PENDANT SUSPENDED MOUNTING TYPE</b>	Each	3	
	Supply of 20W, 250mm dia, 1600 mm Height Suspended mounting Pendant type LED light fittings suspended from slab soffit, as directed by EIC. (Similar to Philips make, Model No. 582019 or 582018 or 58017 as per colour or technically equivalent as per the list of CEPO Approved makes)			
<b>1.2</b>	<b>DOWN LIGHT FITTINGS</b>	Each	61	
	Supply of 25W Recessed down light fittings conforming to IS: 10322 / part 5 / Sec:1 with extruded aluminium powder coated housing, AL heat sink, high efficiency SMD LED, glare free, CCT >5000K, system efficacy >100 lum/W with driver tested as per IS 15885 Part- 2/Sec 13, PF>.95, THD <10% having life: L70B50 @ 50,000hrs. The LED light fittings shall be suitable for working on 230Volts, 50Hz single Phase AC supply.			
<b>1.3</b>	Supply of Suspended 10W LED down lighters (Track lights)Luminous flux (Luminaire): 850 lmLuminous flux (Lamps): 800 lm Luminaire Wattage: 10.0 W Luminaire classification according to CIE: 100CIE flux code: 99 100 100 100 106Fitting: 1 x LED (Correction Factor 1.000). (Similar to Philips make, Model No. STO33T-LED-83010W WB or technically equivalent as per the list of CEPO Approved makes)	Each	42	
<b>1.4</b>	Supply of 2M track for mounting lights for SI no. 1.3 above.	Each	14	
<b>1.5</b>	Supply of LED Strip light Max. 5 W IP20 class having minimum efficacy of 90 lumen/W, CCT upto 3500K, operating range of 230270V, Life class of 30,000 Hrs at L70B50 including driver with all accessories. (Similar to Philips make, Model No. LS170 S LED 4827 IP20 L5000G2 or technically equivalent as per the list of CEPO Approved makes)	Mtr	60	
	<b>INSTALLATION CHARGES</b>			
<b>2.0</b>	<b>LIGHT FITTINGS</b>			
	Installation of light fittings on ceiling/ Truss complete with supply of all materials like balancing socket / round blocks / junction boxes / conduit pipe, nipples, check nuts, bolts, nuts, suspension rod / chain/clamps/screws etc., required for such installation as per specifications for the following fittings including painting the down rod / round blocks with approved synthetic paint, white colour and necessary interconnections in an approved manner. The work includes supply and providing 3 way, 16A UPVC connector and 20mm flexible conduit, interconnection, earthing etc. complete as required and as directed by EIC			

<b>2.1</b>	LED Track light / Strip light fittings suspended from wall/ceiling with high grade screws / anchor fasteners and OEM recommended suspension, non-integral flexible LED strip with driver along the cover of false ceiling with all fixing materials complete as required. materials complete as required for installation	Each	102	
<b>2.2</b>	LED Down light fittings on false ceiling using 1No 16 SWG GI chain and 1 No 6mm dia anchor fastener etc. for recessed Down light fittings.	Each	64	

Table 8 - ELV System

ELV SYSTEM SUMMARY				
Sr. No	Description			
A	TELEPHONE SYSTEM			
B	DATA NETWORKING SYSTEM			
C	MISCELLANEOUS WORKS			
<b>ELV System Estimate for VSSC Library</b>				
Sr. No	Item Description	Unit	Approx Qty	Price
<b>A</b>	<b>TELEPHONE SYSTEM</b>			
	Junction Box			
1.0	Supplying, erecting & commissioning 10 pairs FR junction box with moulded plastic enclosure	Each	1	
2.0	Supplying, erecting & commissioning 10 pair module for connection & disconnection of telephone cable	Each	1	
3.0	Supplying, installing, testing & commissioning push button telephone instrument desk top unit as per specification complete	Each	4	
4.0	Telephone wiring			
4.1	Supply and drawing of following 0.5 mm dia PVC insulated annealed copper conductor unarmoured telephone cables in the already laid conduits/cable management system. The work includes making interconnections at the telephone tag box end, telephone junction box end, providing identification etc. Complete as required as directed by EIC.(2 Pair)	Meter	80	
4.2	Supply and drawing of following 0.5 mm dia PVC insulated annealed copper conductor unarmoured telephone cables in the already laid conduits/cable management system. The work includes making interconnections at the telephone tag box end, telephone junction box end, providing identification etc. Complete as required as directed by EIC.(10 Pair)	Meter	40	
5.0	Supplying, installation and testing of suitable size modular metal / plastic box, modular plate and cover complete with RJ-11 connector (modular telephone socket) including concealed metal box/ surface GI/ PVC Box, modular plate, punching, identifying, complete as Required.			
5.1	RJ-11 modular socket	Each	4	
<b>B</b>	<b>DATA NETWORKING SYSTEM</b>			
1.0	Supplying, Installing, Testing, commissioning of FULLY MANAGED & loaded Layer 3, 8 P, 10/100/1000, Non PoE switch, 92Gbps/ 68.45Mpps, with Min. 24 access ports, with device management licensed software, 2Gb + 2xCombo uplink ports with key Features of Performance, Management, Security, Multicasting, VLAN etc	Each	1	



2.,0	Supplying, fixing, and configuring 24 ports + (4 SFP+) ports Managed Layer 2 switch of and web View/CLI, 6KV surge protection on ethernet port and console port for management as per specification complete.	Each	2	
3.0	Supplying, installation and testing of suitable size modular metal / plastic box, modular plate and cover complete with RJ-45 connector (modular LAN socket TX1000/ CAT6) including concealed metal box/ surface GI/PVC Box, modular plate, punching, identifying, complete as required. (For CCTV & DATA Networking)			
3.1	CAT B	Each	51	
4.0	Supplying and fixing 24 port patch panel with tool-less keystone jacks in provided U Rack complete (For CCTV)	Each	2	
5.0	Supplying and fixing 1 meter length, UTP Patch cord of Cat 6 type in position (For CCTV & DATA Networking)	Each	32	
6.0	Supplying and fixing 2 m UTP patch cord of cat 6 type in position as per specification No. WG-COC/PC (DATA Networking)	Each	2	
7.0	Supplying and installing cat-6 cable with rodent proof and anti-termite jacket suitable for networking as per standard specification and as directed by Engineer In Charge.	Meter	1,300	
8.0	Supplying, installing & testing UTP Connector (RJ-45) (For CCTV & DATA Networking)	Each	32	
C	<b>MISCELLANEOUS WORKS</b>			
1.0	Supplying and fixing 12U wall mount rack (Dimension-DxWxH – 500x600x367 mm) as per specification	Each	1	
2.0	Supply and laying of 25 mm dia sizes of ISI marked FRLS PVC conduits conduit concealed in wall / ceiling / column, including chipping the wall, laying the conduits plastering, finishing the surface, supply of all fixing materials and supply and drawing of high-grade nylon as fish wire etc complete as required and as directed by EIC	Meter	38	
3.0	Supply and installation of 100 x 50 mm UPVC cable management system for power supply distribution including provision to fix power sockets, including supply of fixing materials, interconnecting, clamps, screws as required. UPVC cable management system consisting of snap-fit lids 2 Nos cable divider and allied accessories such as internal tees, external tees, flat tees etc. It shall have provision to accept mounting boxes that snap fit in to the profile complete as required and as directed by EIC	Meter	30	

Table 9 – Fire Alarm System

Fire Alarm System Estimate for VSSC Library				
Sl. No	Description	Unit	Approx Qty	Price
<b>H</b>	<b>ADDRESSABLE FIRE ALARM SYSTEM</b>			
1	<p>Supply and installation of photo electric Analog addressable optical smoke detectors (Photo thermal multi sensor detector) suitable for detecting a wide range of smoke from slow smouldering and fast flaming fire. The detector shall have following features and also including supply of all fixing materials</p> <ul style="list-style-type: none"> <li>i) Solid state addressing arrangement in combination with a handheld programmer to configure the sensor address.</li> <li>ii) Electronics free mounting base</li> <li>iii) Sensitivity of minimum 0.7 obscuration/feet.</li> <li>iv) Twin alarm LEDs for 360 Degree viewing and shall have Blinking LED facility.</li> <li>v) Automatic compensation for smoke sensor contamination.</li> <li>vi) Photo electric sensor shall have a removable chamber for ease of cleaning or replacement.</li> <li>vii) Shall have a built-in test facility which allows the fire alarm control panel to adjust the alarm threshold levels to compensate for contamination and shall have a maintenance alarm display when threshold can no longer be adjusted.</li> <li>viii) Operating temperature - 10 Deg. C to 50 Deg. C and operating RH at 40 Deg. C - 95% RH. (Make-Morley)</li> </ul>	Each	5	
2	Supply and Installation of visual type response indicators with LED indicating lamp, housed in suitable MS enclosure with acrylic cover fixed in flush with wall or fixed on false ceiling to operate in conjunction with Smoke / Heat detectors operating on 24 V DC installed above the false ceiling or below the false floor, complete with all accessories and fixing materials as required and as directed by Engineer-in-Charge. (Make-Morley)	Each	5	
3	Supply and installation of addressable manual call stations with in built monitor module and press / break and resettable capability constructed of high impact LEXAN sheet with clearly visible operating instructions on the cover and the word "FIRE" shall appear on front and suitable for surface mounting / flush mounting as complete as required. (Make-Morley)	Each	1	
4	Supply and Installation of loop powered base addressable sounders complete with all fixing materials complete as required.	Each	1	

	(Make-Morley)			
5	Supply and wiring with 2C x 1.5 sqmm FRLS twisted pair shielded, 500V grade PVC insulated unarmoured copper conductor cable, PVC overall sheathed cable in already embedded conduit with ISI certification mark, interconnections complete as required and as directed by EIC.	Meter	76	
6	Supply and laying of ISI marked FRLS PVC conduit surface run on wall / ceiling / column using high grade PVC spacers and saddles at an interval of 60 cm and drawing of high-grade nylon as fish wire etc complete as required and as directed by EIC			
A	25 mm dia	Meter	35	
7	Charges for design of the building layout and configuration of additional detectors proposed in the extension in the Software at Fire station as required and as directed by EIC	Job	1	