
Employers requirements / Scope of work

1.0 PROJECT OVERVIEW

M/s IIT MADRAS RESEARCH PARK (“IITMRP”), a company registered under Section 25 of the Companies Act, 1956 and promoted by Indian Institute of Technology, Madras (“IITM”) with the approval of the Ministry of Human Resources Development, Government of India, having its registered office at Electrical Sciences Block, IIT Madras Campus, Chennai -36

IITMRP is desirous of extension of Research Park at Kanagam Road, Chennai, by adding additional buildings and facilities which shall comprise Construction of 1.1 million Sq. ft of warm shell (Including MLCP) with finishes of the common areas and rest rooms and high side services, external finish.

IITMRP is set up with prime objective of:

- a. Creating a collaborative environment between industry and academia through joint research projects and consulting assignments
- b. Creating a self-sustaining and technologically fertile environment
- c. Encouraging and enabling R & D activities that are aligned to potential need of the industry.
- d. Providing world class infrastructure for R & D activities.
- e. Enabling development of high quality personnel and motivating professional growth for researchers in the companies through part time Masters and PhD Programs.

2.0 INFORMATION ON BUILDINGS

| Sl no. | Building Name | Block Name | No.of Floors | Remarks |
|--------|---------------|------------|--------------|--|
| 1 | Building 1 | A - Block | G+10F | IT & Industry lab |
| | | B – Block | G+10F | Mechanical lab |
| | | C - Block | G+10F | SGRI - 5 floors, Bio Lab - 5 floors & Alumni - 1 floor |
| | | D – Block | G+9f | Food court, cafeteria IT & Industry lab |
| 2 | Building 2 | E – Block | G+5F | Multi level car parking |

3.0 Not Applicable

4.0 SCOPE OF WORK

4.1 Detailed scope of this design build work is as under

1. Design

Connecting bridge between Blocks A and D the main building at 3rd floor level; Metal pergola in the corridors of 3rd and 6th floors

The following components of the bridge structure may be required to be considered by the bidder

Piling – Suitable dia and depth under reamed piles as per bidder

Pile cap / pedestal over the pile

MS support structure for the bridge deck

Bridge floor / deck – Suitable material to be proposed

Hand rail

Painting / Coating

Electrical work (only conducting)

The following components of the bridge structure may be required to be considered by the bidder

Base plate and support structure arrangement for vertical member of pergola over end beam C-section

Horizontal and vertical MS structural members for pergola as per Architectural concept

Painting / Coating

All designs will be proof checked by IITM/ IITMRP's structural consultant

2. BOQ to be prepared by the bidder based on the approved structural drawing and approval for the BOQ shall be obtained from IITMRP/PMC.

3. Execution

5.1 PRELIMINARIES AND SETTING OUT WORK

5.1.1 Layout and reference points of building

Contractor to ensure himself to follow the correct layout /reference points / coordinates / bench marks for all buildings and other structural members. Contractor to get it recorded in the form of taking over the site for further construction

5.2 CONCRETE WORK

5.2.1 All concrete work shall be of design mix of the grade specified in drawings

5.2.2 The PCC/RCC work shall allow for

- A All test on materials and cube testing or any other testing as instructed by the PMC as per IS from time to time, including third party testing shall be at Contractor's cost.
- B All architectural effects like Form Finishes, chases, ledges, moulds, grooves, chamfers, brackets etc. shall be created by using approved form work including making special size mould, staging arrangement, etc.
- C Work at all depths, heights and leads.
- D If different grades of concrete are used at junctions, spillover of richer concrete required from practical considerations shall be included in the rate.
- E The concrete shall include ingredient material, batch mixing, transporting, hoisting to any height and lowering to any depth, pumping, pouring or laying, consolidating, leaving pockets, holes and protecting them till the next operation or completion of work, hacking the surface (except Form Finished Concrete surfaces) to provide key for further work including cleaning, wetting, surface curing, etc. and preparing construction joints. The price built-up shall include the loading, unloading, weighing and storing of cement in good conditions.
- F Admixtures as required and should conform to IS 9103.
- G Water proofing compound, as required.
- H Cement grouting with non shrink grouting compound
- I Dewatering to keep area dry.
- J Special additives / admixtures required and as approved by the Structural Employers / PMC

5.3 FORM WORK

- 5.3.1 Form work shall be carried out as detailed in technical specification. a) All formwork shall be fair face finished with using waterproof plywood / Steel panels as directed by IITMRP / PMC.
- 5.3.2 Contractor should obtained approval of design for Structural stability and method statement from IITMRP/PMC and Structural Employer prior to commencement of the work.
- 5.3.3 The staging or formwork design shall be submitted to the Structural Employer & PMC for approval before proceeding to erect the same.
- 5.3.4 Item shall include
- a) All materials with wastage & all labour
 - b) Handling, cutting, shifting, jointing, welding etc.
 - c) Rigid base of plywood / steel plates with leak proof joints
 - d) Steel prop or system designed staging system. (Timber / Bambu props staging not allowed)
 - e) Moulds of correct size, shape with flexibility to dismantle without kicks
 - f) Erection with required camber at all heights, leads, lifts and depths.
 - g) Erection to collect line, level, plumb and within tolerances as specified.
 - h) Shuttering oil
 - i) Maintaining in position till concrete attain desired strength
 - j) Dewatering to keep site dry
 - k) Maintaining in position till concrete attain desired strength.
 - l) Temporary openings in the forms for pouring concrete and removing rubbish.
 - m) Fixing inserts and openings at the correct line and level and any required stage to support the same at the directed height and place.

- n) Platforms, if any, required to keep check on form while the concreting is in progress
- o) Cleaning the shuttering.
- p) Providing recesses, cornices and ledges to slabs, beams, columns, walls, providing openings in slabs, walls, beams, making provisions for fixing inserts, sleeves etc.

5.4 REINFORCEMENT WORK

5.4.1 Reinforcement work shall be carried out as detailed in technical Specifications. Reinforcement shall be conforming to mechanical properties of IS 1786, grade 500 and shall be of Type TMT (Thermo Mechanically Treated) as manufactured by SAIL/TISCO/RIL.

5.4.2 The rate shall include

- a) Testing of each batch of steel brought to site.
- b) Loading, unloading, weighing of each lot of steel to conform weight/Rmt, storing in proper forms and good conditions on suitable platforms, handling, straightening, cutting, bending, cranking, jointing, doing, welding, providing chairs, spacer pin, approved overlaps as required and as directed by the Employer / PMC including binding, securing and protecting in position.
- c) Cleaning of bars.
- d) All wastages and rolling margins.
- e) Binding wire
- f) Work at all height, depths and leads
- g) PVC cover blocks or concrete cover blocks of same grade concrete used
- h) Dewatering to keep site dry
- i) Protecting the reinforcing bars in their virgin form or in the fabricated form, or when placed and tied up position or as dowels left for future continuation of work or at construction joint against corrosion due to exposure to weather if left exposed and un-encased for more than three weeks from the date of delivery to the site.

5.4.3 NA

- 5.4.4 NA
- 5.4.5 The Contractor will have to prepare and submit bar bending schedule prior to start of reinforcement work for approval of PMC/ Employer as directed. The approved Bar Bending Schedule, duly verified at site, shall form the basis of payment to the Contractor.
- 5.4.6 The actual quantity of consumed in reinforcement bars, pins, chairs, spacers and authentic laps provided shall be measured & paid.
- 5.4.7 No additional quantity shall be considered for payment with regards to rolling margin or wastage.

5.5 STRUCTURAL STEEL

- 5.5.1 Work should be carried out as per specification and drawings.
- 5.5.2 The work shall include
- a) Preparing shop drawings based on approved architectural and structural drawings with required connections, all conforming to standards, code of practices, instructions of IITMRP/PMC.
 - b) Take actual site measurement prior to fabrication and incorporate into shop drawings accordingly.
 - c) Coordinating, scheduling and doing works as per site programme.
 - d) Straightening, cutting, bolting, bending, welding including layout and assembly and one coat of shop primer.
 - e) Erecting, aligning, making plum and leveling to correct position as per shop drawings including required site repairs/adjustments
 - f) Sand blasting, priming with two coats of zinc rich primer.

5.6 PAINTING WORK

The work shall include

- a) All materials with wastage
- b) All labour
- c) Preparation of surface

- d) Primer and filler
- e) Under coats as specified by manufacturer
- f) Finish coats to satisfaction of Architect
- g) Scaffolding (Independent double legged scaffolding)
- h) Protecting till handover and touching
- i) Coordinating with other agencies.
- j) Epoxy coating – as per bidder’s proposal and approval of IITMRP/PMC