



**KOCHI METRO RAIL LTD.**

*(A joint venture company of Govt. of India & Govt. of Kerala)*

**Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works ,Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and Validation.**

**CONTRACT NO: KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15**

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**KOCHI METRO RAIL LIMITED**

*(A joint venture company of Govt. of India & Govt. of Kerala)*

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**Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works, Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and Validation.**

**CONTRACT NO: KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15**

**TENDER DOCUMENTS**

**VOLUME – I**

**NOTICE INVITING TENDER**

**KOCHI METRO RAIL LIMITED**  
(A joint venture company of Govt. of India & Govt. of Kerala)  
**8<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi Kerala – 682011.**

**NOTICE INVITING TENDER (NIT)**

Kochi Metro Rail Limited (KMRL) invites Open Tenders from eligible applicants, who fulfil qualification criteria as stipulated in clause 1.3 of NIT, for the work, “**Contract KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15: Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works, Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and Validation.**”

The detailed scope of the work is provided in **Volume-II** of tender document.

**1.1 Brief description of work:**

Design Consultancy for construction of multi-storey residential staff quarters (**Phase-I**) at MUTTOM. The consultancy assignment is to be provided for construction of multi-storey residential staff quarters under Phase-I in approximate plot area of 5100 sqm and prepare development plan for remaining plot area termed as Phase-II for future expansion (Total plot area including phase-I = 22050 sq.m). Approximate construction cost of phase-I is Rs. 25 crores.

The consultancy is to be provided for construction of following buildings-

**Residential Staff Quarters:** - Staff quarters are to be built at given location for accommodation of KMRL staff. The Number and Type of these quarters are detailed below:

S. No	Grade	Designation	House Type	Approx. Plinth area per Unit (As per type) (Sq.m)	Scope of Work in Phase-I	Total Plinth area (sq.m) (Approx.)
1.	NE-5 to NE-8	Up to TOs Stn/ Depot / OCC Controllers, Jr. Es / Sr. ES	2BHK + Study	70	48 units	3360
2.	E-0 to E-3	Up to Manager	2BHK (Large) + Study	80	32 units	2560
3.	E-4 to E-6	Up to AGM	3 BHK + Servant Qtr.	95	16 units	1520
		<b>TOTAL :</b>			<b>96 units</b>	<b>7440 sq.m</b>

The location plan is enclosed at Annexure – A (Vol.-I). Plinth area of each unit with required amenities are based on MoUD norms, enclosed as Annexure - B (Vol.-I). The structures shall be multi-storey residential depending upon the allowed FAR and relevant building by-laws as per the locality.

## 1.2 Key Details

Cost of Tender documents	Rs.15000/- (Demand Draft in favour of “Kochi Metro Rail Ltd” payable at Kochi.)
Tender Security amount	INR 1.50 (one and half) Lakhs only
Completion period of the work	24 Months
Tender document Uploading	28.05.2015 (between 09.00 Hrs to 17.30 Hrs on working days)
Pre- bid Meeting and Clarification	06.06.2015 at 11:00 hrs
Date & time of Submission of Tender	17.06.2015 at 14:30 hrs
Date & time of opening of Tender	17.06.2015 at 15:00 hrs
Authority for tender documents, seeking clarification and submission of completed tender documents	General Manager (Civil) Kochi Metro Rail Limited, 6 <sup>th</sup> Floor, Revenue Tower, Park Avenue, Opp. Boat Jetty ERNAKULAM-682011

## 1.3 QUALIFICATION CRITERIA:

### 1.3.1 Eligible Applicants:

The tenders for this contract will be considered only from those tenderers (proprietorship firms, partnerships firms, companies, corporations, consortia or joint ventures) who meet requisite eligibility criteria prescribed as under:

- i. In the case of a JV or Consortium, all members of the Group shall be jointly and severally liable for the performance of whole contract.
- ii. Tenderers shall not have a conflict of interest. All Tenderers found to have a conflict of interest in this tender process shall be disqualified. Tenderers shall be considered to have a conflict of interest, if:
  - (a) One firm applies for tender both as an individual firm and in a Group.
  - (b) If Tenderers in two different applications have controlling shareholders in common.
  - (c) Submit more than one application in this tender process.
  - (d) If the Tenderer has participated as a consultant in the preparation of the

design or technical specifications of the works that are the subject of this tender.

- iii. A firm, who has purchased the tender document in their name, can submit the tender either as individual firm or in joint venture/Consortium. However in case of JV/ consortium:
  1. Lead partner must have a minimum of 50% participation in the JV/Consortium and the number of members to be restricted to three (3).
  2. Partners having less than 50% participation will be termed as non-substantial partner and will not be considered for evaluation which means that their financial soundness and work experience shall not be considered for evaluation of JV/Consortium.
  3. Lead partner's experience will only be counted and he will only be responsible and all delegations with him and no re-delegation to any other partner of JV.
  4. In case of JV/Consortium, change in constitution or percentage participation shall not be permitted at any stage after their submission of application otherwise the applicant shall be treated as non-responsive.
- iv. Tenderer must not have been blacklisted or deregistered by any central / state government department or public sector undertaking. Also no work of the tenderer must have been rescinded by client after award of contract during last 5 years. The tenderer should submit undertaking to this effect.
- v. Tenderer (any member in case of JV/consortium) must not be involved in frequent litigations during last 10 years. If otherwise, then the reasons and the details for the same need to be submitted. The tenderer should submit undertaking to this effect.
- vi. Tenderer (any member in case of JV/consortium) must not have paid liquidated damages of 10% or more of the contract value in a contract due to delay or must not have been penalized due to any other reason during last five years. If otherwise, then the reasons and the details for the same need to be submitted. The tenderer should submit undertaking to this effect.
- vii. Tenderer (any member in case of JV/consortium) must not have suffered bankruptcy/ insolvency during the last 5 years. If otherwise, then the reasons and the details for the same need to be submitted. The tenderer should submit undertaking to this effect.



### 1.3.2 Eligibility Criteria for the tenderers is give below:

**(A). Work Experience Criteria:** The tenderers will be qualified only if they have Experience of providing Design Consultancy for similar nature of work(s) i.e. Residential/ Institutional work during last Five(5) years ending 31.03.2015 and completed the same on the date of submission of tender or prior to that as given below :

- (i) One similar work of Design Consultancy for conceptualization, planning, design and supervision of Framed Structures, Multi-Storey RCC Building including Water supply, Sanitary and Electrical & Mechanical services of total construction cost of 25 Crores or more,  
'OR'
- (ii) Two similar works of Design Consultancy for conceptualization, planning, design and supervision of Framed Structured Multi-Storey RCC Building including Water supply, Sanitary and Electrical & Mechanical services of total construction cost of 12.50 Crores each or more,  
'OR'
- (iii) Three similar works of Design Consultancy for conceptualization, planning, design and supervision of Framed Structured Multi-Storey RCC Building including Water supply, Sanitary and Electrical & Mechanical services of total construction cost of 10 Crores each or more.
- (iv) At least one of the above consultancy works must be done for any Central or State Government Department or Public Sector Undertakings.

In case of JV/Consortium, the lead partner shall have the above experience.

**Notes:**

- The tenderer shall submit details of consultancy provided by them in the Performa of **Annexure - 1** for the works to be considered for qualification of work experience criteria. The total value of work shall be cost of the completed works. Documentary proof such as completion certificates from client clearly indicating the nature/scope of work, estimated cost/actual completion cost and actual date of completion for such work should be submitted. ***The offers submitted without this documentary proof shall not be evaluated.*** In case the work is executed for private client, copy of work order, bill of quantities, bill-wise details of payment received certified by C.A., T.D.S certificates for all payments received and copy of final/last bill paid by client shall be submitted.
- The work for which construction is in progress up to 31.03.2015 and scope of consultancy has been completed shall be considered for qualification of work experience criteria.
- For completed works, value of work done shall be updated to **31.03.2015** price

level assuming 5% inflation for Indian Rupees every year and 2% for foreign currency portions per year.

- In case of joint venture / consortia, full value the work, if it was done by the same joint venture or the entire work was done fully by any of the substantial member, shall be considered. If the work was done in other JV formation, the value in proportion of the participation in that JV by the lead member only shall be considered. No evaluation of work done by any non-substantial member shall be done.

## **B) Technical Qualification Criteria**

### **(I). Design Team:**

- a) The Principal Architect/Team leader of the firm/agency should be professionally qualified Architect having graduate degree Bachelor of Architecture and registered with council of architecture.
- b) The Consultant / Architects should have a professional reputation and the quality of works executed by them should be of acceptable standard. The works assigned to them should have been completed within the prescribed time. KMRL may inspect the works of the Agency to assess quality and performance.
- c) The Consultant / Architects should have in-house arrangement for providing consultancy for specialized works namely structural design, landscaping, plumbing, electrical, etc. or have tie-up with associate consultants for such works.
- d) The Consultant / Architect are required to attach the requisite satisfactory documents of educational qualification, design experience for team personnel as proof towards pre-qualification, along with their application. Failure to submit the same may result into rejecting the application. KMRL reserves the rights to cross check the information furnished and may obtain confidential report from their previous clients. KMRL reserves the rights to reject any or all applications at any stage without assigning any reason, thereof.
- e) In case a firm is proposing key personnel from education/research institutions, a 'No Objection' certificate from the concerned institution should be enclosed with the CV of the proposed key personnel committing his services for the instant project.
- f) In case the consultant intends to replace any of the key personnel during the pendency of the contract, he needs to get approval of KMRL for the same.

## **C) Financial Qualification Criteria**

### **T1 - Liquidity:**

It is necessary that the firm can withstand cash flow that the contract will require until payments received from the Employer. Liquidity therefore becomes an important consideration. This shall be seen from the balance sheets and/or from the banking reference. Net current assets and/or documents including banking reference, should show the applicant has access to or has available liquid assets, lines of credit and other financial means to meet cash flow of Rs. 15 Lacs for this contract, net of applicant's commitments for the other contracts. Banking reference should contain in clear terms the amount that bank will be in a position to lend for this work to the applicant/member of the joint venture/consortium. In case the Net current Assets (as seen from the Balance Sheets) are negative, only the Banking references will be

considered. Otherwise the aggregate of the Net Current Assets and submitted Banking references will be considered for working out the Liquidity.

### **T2 – Profitability:**

Profit before Tax should be Positive in at least 2 (two) years, out of the last five audited financial years.

In case of JV: The profitability of only lead member shall be evaluated.

### **T3 – Annual Turnover:**

The average annual turnover from consultancy of last five financial years should be >or = Rs. 60 Lacs

The average annual turnover of JV will be based on percentage participation of each member.

Notes:

- a. Financial data for latest last five audited years has to be submitted by the tenderer in Appendix-6 of FOT along with audited balance sheets. The financial data in the prescribed format shall be certified by Chartered Accountant with his stamp and signature. In case audited balance sheet of the last financial year is not made available by the tenderer, he has to submit an affidavit certifying that 'the balance sheet has actually not been audited so far'. In such a case the financial data of previous '4' audited financial years will be taken into consideration for evaluation. If audited balance sheet of any year other than the last year is not submitted, the tender will be considered as non-responsive.
- b. Where a work is undertaken by a group, only that portion of the contract which is undertaken by the concerned applicant/member should be indicated and the remaining done by the other members of the group be excluded. This is to be substantiated with documentary evidence.

### **D) DC Team for the project:**

- a) Planning and Architecture Team: Minimum no. and qualification of key personnel's of the Planning and Architecture team shall be as under. Consultant may however increase the staff/own requirement depending on his assessment of the work.

S.NO.	Description of Post	Minimum Qualification & Experience
1.	Principal Consultant	B.Arch with minimum 15 yrs. Experience of providing consultancy for similar work, with at least one work of Govt. Deptt. Or Public Sector Undertaking of value not less than 30 Cr.
2.	Assistant Architect	B.Arch with minimum 5 yrs. Experience of similar work.

3.	Lead Structural Designer	B.E/B.Tech(Civil) with minimum 15 yrs. experience Of designing Multi storey building, Framed RCC structures.
4.	Assistant Structural Designer	B.Tech/BE (Civil) with minimum 5 years experience in Design of RCC
5.	Plumbing and Sanitary Consultant	B.Tech/B.E Civil with 10 yrs. Or Diploma civil with 15 yrs. experience Of Designing water supply, drainage& sanitary services.
6.	Electrical & Mechanical Engineer	B.Tech/BE (Electrical) with 10 yrs. Or Diploma (with 15 yrs.) experience of electric supply and internal distribution in multi storey buildings.

**1.4** The Tender documents consist of:

**Volume – I**

Notice Inviting Tender (NIT)

Instructions to Tenderers (ITT)

Terms of Reference (TOR)

Form of Tender (FOT)

General Conditions of Contract (GCC)

Special Conditions of Contract (SCC)

Annexure – A: Location Plan

Annexure – B: MoUD Guidelines

**Volume – II**

Scope of Work

**Volume – III**

Financial Package

- 1.5** Late tenders (received after date and time of submission of bid) shall not be accepted under any circumstances.
- 1.6** Applicant must not have been blacklisted or deregistered by any government agencies or Public sector undertaking during the last 10 years. Also the applicant must not have resiled after award of contract.
- 1.7** Tenders shall be valid for a period of **120 days** from the date of submission of tenders and shall be accompanied with a tender security of the requisite amount as per **form B** in the form of a Bank Guarantee from Scheduled Commercial Bank in India.
- 1.8** KMRL reserves the right to accept or reject any or all the proposals without assigning any reasons. No tenderer shall have any cause of action or claim against the KMRL for rejection of his proposal.

General Manager (Civil)  
Kochi Metro Rail Ltd.

CONTRACT NO **KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15**

TENDER DOCUMENTS

VOLUME-1

INSTRUCTION TO TENDERERS (ITT)

**KOCHI METRO RAIL LIMITED**  
**(A joint venture company of Govt. of India & Govt. of Kerala)**  
**8<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi Kerala – 682011.**

## INSTRUCTIONS TO TENDERERS

**Contract: Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works ,Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and Validation.**

### PROPOSAL

- 1.1 The proposal should clearly specify who will be the lead member in the joint venture, consortium or and responsible for communication with KMRL.
- 1.2 A detailed Memorandum of Understanding (MOU) between the members of the joint venture consortium or partnership stating the inter-relationship and division of work between the members should be submitted along with the tender for examination by KMRL. Powers of Attorney from each member shall authorize the lead member to submit the tender and to negotiate the proposal on their behalf.
- 1.3 It should be noted that if any member of the group combines the functions of a consultant or designer with those of a contractor and/or manufacturer, all relevant information must be provided regarding such relationship, along with an undertaking to the effect that the members agree to limit their role to that of a consultant and/or designer to KMRL and to disassociate themselves, their associates/affiliates and/or parent firm from work in any other capacity (Including tendering related to any goods or services for any part of the work) on this work other than that of consultant and/or designer to KMRL.
- 1.4 If, in connection with the performance of the consulting services, any group member intends to borrow, hire temporarily, personnel from contractors, manufactures of suppliers, he must Include In his proposals all relevant information about such personnel. In such case, he will be acceptable only if those contractors, manufacturers, and suppliers disassociate themselves from work on this work (including tendering relating to any goods or services for any other part of this work) other than that of consultant.
- 1.5 The tenderer is required to confirm and declare in the Tender submittal that no agent, middleman or any intermediary has been, or will be engaged to

provide any services, or any other items of work related to the award and performance of this Contract. You will have to further confirm and declare in the submittal that no agency commission or any payment which may be construed as an agency commission has been, or will be paid and that tender price will not include any such amount.

- 1.6 The tender will be in Two Packet system: Tenderer is required to submit total Two packages in the initial stage:
1. Technical Package
  2. Financial Package.

## **2.0 TECHNICAL PACKAGE**

2.1 The technical package, clearly labelled TECHNICAL PACKAGE, will comprise:

- a. Tender document fee and bid Security in original in a separate sealed envelope.
- b. Issued tender Documents Vol. I & Vol. II duly signed and stamped on each paper.
- c. Attested copy of Power of Attorney to submit Tender
- d. Attested copy of Power of Attorney from each member in case of JV.
- e. The Memorandum of Understanding MOU for the consortium or joint venture in case of more than one member
- f. Undertakings according to annexure 5
- g. Technical Proposal
- h. Copy of latest income tax return field duly certified by CA.
- i. Financial data according to Annexure-6

2.1.1 The technical Proposal should cover in detail the following:

- a. The Documents required for qualification criteria.
- b. Understanding and comprehension of the work involved.
- c. The general approach and methodology proposed for carrying out the services covered in the Scope of Work, including such detailed information as deemed relevant.
- d. In addition, the technical proposal shall contain:
  - i. A detailed overall work program and a bar chart indicating the duration and timing of Assignment of each key staff or other staff member assigned to the project
  - ii. An organization chart together with clear description of the responsibilities ...of each key staff member within the overall work program.
  - iii. A task list of deliverables and delivery period from date of start of consultancy work, and the person responsible or performing the deliverable.
  - iv. The name, background, educational qualification and professional experience of each key staff member and associate consultants to be assigned to the project, with particular reference to his experience of

- a nature similar to that of the proposed assignment. The majority of the key staff shall be regular members of the firm for at least six months.
- v. The details of the name, background and CV of any sub-contracted staff who will be employed on the project and associate consultants.
- vi. Software packages, if any proposed to be used for the work.
- vii. Details of design facilities, together with their location.
- viii. The Offer should cover the entire Scope of Work as laid down in Appendices and Quality Assurance Plan
- ix. No information to estimated costs or financial terms of the services should be included in the Technical Proposal.
- x. The design proposals and 3D views shall be the property of KMRL and the architect will not claim any rights whatsoever thereafter.

**3 Deleted**

**4 FINANCIAL PACKAGE**

- 4.1 The financial package, clearly labeled **FINANCIAL PACKAGE**, will contain only the Financial Proposal.
- 4.2 The financial proposal, which is Volume-III of the Tender Documents, shall be separately completed and submitted in a separate sealed envelope. The Lump Sum price entered in the Form of Tender should include all costs associated with the contract. These will cover all overheads, remuneration for staff, services, transportation, equipment, printing of Documents etc.
- 4.3 The Lump Sum price quoted will include all tax liabilities (other than the service tax) and the cost of insurance related to this contract. Service tax shall be paid extra as per the actual.
- 4.4 All payments shall be subject to deduction of tax at source in accordance with the provisions of the Indian Income Tax Acts and any other applicable law.
- 4.5 The tenderer may quote his offer in Indian Rupees

**5.0 PERIOD OF VALIDITY OF PROPOSAL AND TENDER SECURITY**

- 5.1 The Tender shall be valid for a period of **180** days (both days inclusive i.e. the date of submission of tenders and the last date of period of validity of the tender) from the latest Date of Submission of Tenders. In exceptional circumstances, prior to expiry of the original tender validity period, the Employer



may request that the Tenderers extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing or by facsimile. A Tenderer may refuse the request without forfeiting his Tender Security. A Tenderer agreeing to the request will not be required or permitted to modify his tender, but will be required to extend the validity of his Tender Security for the period of the extension.

**5.2** The Tenderer shall submit with his Tender a Tender Security for the sum mentioned in NIT in any one of the following forms:

- (a) Irrevocable bank guarantee issued by a Scheduled Commercial bank based in India or from a branch in India of a scheduled foreign bank in the form given in **Appendix-2** to Instruction to renderers (ITT).
- (b) Demand Draft / Pay Order / Bank Draft in favour of Kochi Metro Rail Ltd. payable at Kochi from a Scheduled Commercial bank based in India

In case of Joint venture/consortia, Bank Guarantee or FDR for tender security shall be in the name of joint venture/consortia and not in name of individual members. The Tender Security, in form of Bank Guarantee or FDR shall remain valid. The tender security shall be submitted in a sealed envelope clearly marked on top **"Tender Security for Design Consultancy (DC) for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM"**.

**5.3** The "original" of this Tender security is to be submitted in a separate sealed envelope along with Technical Proposal, in the Technical Package envelope at the time of submittal. This envelope will be opened in the presence of the tenderer to determine compliance of this requirement. Offer submitted without the Tender Security or with invalid Bank Guarantees will be rejected out rightly.

**5.4** The Tender security of the tenderer will be returned upon receipt of a Performance Guarantee and signing of the Contract as required herein.

**5.5** Any Tender not accompanied by an acceptable Tender Security shall be rejected by the Employer considering it as non-responsive and their Technical package shall not be opened and if opened then it will NOT be evaluated.

**5.6** The tender Security of the unsuccessful Tenderers shall be released after unconditional acceptance of the Letter of Acceptance (LOA) by the

successful tenderer.

5.7 KMRL shall forfeit the Tender Security under the following circumstances-

- Withdrawal of tender during period of tender validity
- Failure to sign the contract if so awarded to the Tenderer.
- Failure to submit a Performance Guarantee.

Decision of KMRL shall be final and binding in this regard.

## **6 SUBMITTALS OF TENDER**

6.1 Tender submittals comprising of:

- Power of Attorney to submit the Tender
- Original of Tender document fee and Bid Security
- Issued tender Documents Vol. I & Vol. II duly signed and stamped on each paper
- Technical Package and
- Financial Package

**Late or delayed tender will not be accepted under any circumstances.**

**No corrections, over writings allowed in tender documents.**

6.1.1 Tender will contain TWO packages i.e. TECHNICAL PACKAGE INCLUDING TENDER DOCUMENT FEE AND BID SECURITY and FINANCIAL PACKAGE sealed and marked separately with the tender name and date of submission.

The two envelopes respectively shall be wrapped in an out envelope addressed to KMRL with the Contact Number, and the name and address of the Tenderer. On the day of submittal of tender the received tender will be checked for completeness of submittal. KMRL will open the envelope containing the Tender Security and the "Technical Package" in front of the tenderer who wish to be present. KMRL shall later commence tender evaluation under conditions of confidentiality.

## **7 EVALUATION PROCEDURE**

7.1 Technical Proposal

The evaluation committees appointed by KMRL will, carry out technical evaluation of submitted technical proposal to determine the eligibility of the tenderer and that the tenderer has a full comprehension of the work of the contract. Where a tenderer's technical submittal has major inadequacies his tender will be considered to be

non-compliant and will be rejected. This process is to ensure that only technically compliant and substantially responsive proposal will be considered. The object of the Technical package is to short-list the tenderers for opening of their financial bid i.e. the financial package of only those tenderers will be opened who shall be shortlisted as per the prequalification criteria.

7.2. KMRL will notify the qualified tenderers to attend the opening of the financial proposal. The financial proposal will then be opened in front of attending tenderers.

### 7.3 Financial Proposal

Financial Proposal shall be opened at the designated date & time in presence of the attending qualified tenderers as laid down in the Document:

7.3.1 Tenders determined to be technically acceptable will be checked by the employer for any arithmetical errors in computation and summation during financial evaluation. Errors will be corrected by the employer as follows:-

- a. Where there is a discrepancy between amounts in figures and in words, the amount in words will govern and

7.3.2 If a tenderer does not accept the correction of errors as outlined above, his tender will be rejected and the tender security forfeited.

## 8 AWARD OF CONTRACT

8.1 KMRL is not bound to award the Contract to the tenderer and reserves its rights without incurring any liability to any tenderer. KMRL will not provide reasons for acceptance or rejection of offer or part thereof.

8.2 KMRL will issue a Letter of Acceptance to the lowest evaluated, responsive and competent tenderer. The issue of the Letter of Acceptance shall constitute the formation of the Contract, and the DC shall commence work immediately thereafter.

8.3 Within 14 days from the date of issue of the Letter of Acceptance, the tenderer will be required to execute the Contract Agreement for the Design Consultancy (DC) services.

8.4 The location of work for the DC shall be in KOCHI. No space, rentals, furniture, conveyance etc. will be provided by KMRL.

## **9 PERFORMANCE GUARANTEE**

The Performance Guarantee will be **10% of the Contract Price** (including all reimbursable expenses, travel expenses, taxes and Provisional Sums) in the form of a Bank Guarantee issued by a Scheduled/commercial Bank based in India. The pro-forma for the Guarantee is included in these Documents. The Performance Guarantee should be submitted within 14 days after the DC receives the Letter of Acceptance.

The Performance Guarantee will be valid up to Twelve (12) months after the stipulated date of completion of contract and shall be extended if the completion is extended.

## **10 ADDITIONAL INFORMATION**

Every effort will be made to provide additional information to tenders that has been requested in writing. However, requests for additional information and any delay in providing information is entirely at tenderer's risk and shall not be considered as a reason for late delivery of tenders or a reason for delaying the submission of tenders by the stated date.

## **11 DATE OF COMPLETION**

The period of Completion of the services shall be 24 months (**4 Months** for Design, issue of GFC drawings and Tender Documents + 2 Months for finalization of Construction Tender by KMRL + 18 Months for design corrections during construction interfacing and Validation) from date of commencement. The completion time has been stipulated based on estimated construction time required. If construction schedule is extended, DC shall perform the services covered during extended period of construction without any extra cost to be charged from employer for services to be provided as referred in appendix B-2. The consultant is liable to revise the drawings during the course of execution, if found, required by the employer.

## **12 Rejection of tender**

12.1 KMRL may reject the tender if it is considered to be substantially non-responsive to the Requirements of the proposal. Such matters may include:

- Incorrect or Fraudulent Power of Attorney
- Incorrect or Fraudulent Tender Security.
- Qualifications relating to the Proposal
- Deviations relating to the Scope of Work

- Incomplete Technical Proposal
- Major inadequacies in the Technical Proposal (See Clause **2**)
- Tenderer requires an increase in Tender Offer price during negotiations
- Failure to sign the Contract
- Failure to provide the performance Guarantee.
- Any effort by a tenderer to influence the Employer/Engineer in the process of examination, clarification, evaluation and comparison of tenders and in decisions concerning award of contract.

## Appendix – 1

<b>S . N o</b>	<b>DESCRIPTION</b>	<b>REF. to Clause No.</b>	<b>REQUIREMENTS</b>
1	Amount of Tender Security	Clause 5.2 of ITT	1.5 (one and half) Lakhs
2	Amount of Performance Guarantee	Clause 9 of ITT & 3.2 of GCC	10% of the contract price in types and proportions of currencies in which the contract price is payable in the event of variations during the execution of the contract which results in payments to the consultant over and above the contract price, the performance guarantee shall be suitably adjusted.
3	Date of commencement of the work	Clause 1.2 of SCC	Date of receipt of Letter of Acceptance (LOA)
4	Time of completion of the work from the date of commencement of work	Clause 1.3 of SCC	The total scope of the work has to be completed within 24 months
5	Duration of liability of the whole work	Clause 11 of GCC	6 months after the date of issue of completion certificate for the whole of the work
6	Period in which all insurances have to be effected	Clause 34 of GCC	Within 4 weeks from the "date of commencement"
7	Consultant Name and Address	Clause 4 of SCC	
8	Employer's Name and Address	Clause 4 of SCC	Kochi Metro Rail Limited 8th floor, Revenue Tower Park Avenue Near Boat Jetty Kochi 682011

Place:

Date:

Signature of Authorized Signatory of the Tenderer

**FORM OF BANK GUARANTEE FOR TENDER SECURITY**

(To be stamped in accordance with Stamp Act, if any, of the country of issuing bank)

WHEREAS, .....(name of Bidder) hereinafter called 'the Bidder' has submitted his Bid dated .....(date) for the construction of .....(name of Contract hereinafter called "the Bid").

KNOW ALL PEOPLE by the presents that We .....(name of Bank) of .....(name of Country) having our registered office at .....(hereinafter called "the Bank") are bound unto.....(name of Employer) (hereinafter called "the Employer") in the sum of ..... for which payment well and truly to be made to the said Employer the Bank itself, this successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this .....day of .....20.....

THE CONDITIONS of this obligation are :

(1) If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of Bid;

OR

(2) If the Bidder having been notified to the acceptance of his bid by the Employer during the period of Bid validity:

- (a) Fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
- (b) Fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders; or
- (c) Does not accept the correction of the Bid Price pursuant to Clause 26.

We understand to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to an including the date.....days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE..... SIGNATURE.....

WITNESS..... SEAL.....

(Signature, name and address)

\* The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same in Clause 16.1 of the Instructions to Bidders.

\*\* 45 days after the end of the validity period of the Bid. Date should be inserted by the Employer before the Bidding documents are issued.

**Appendix- 3**

**FORM OF PERFORMANCE SECURITY (GUARANTEE) BY BANK**

**FORM OF PERFORMANCE SECURITY BANK GUARANTEE BOND  
(ON NON-JUDICIAL PAPER OF APPROPRIATE VALUE)**

To,  
Kochi Metro Rail Limited  
8<sup>th</sup> Floor, Revenue Tower,  
Park Avenue, Cochin 11

Dear Sir,

1. In consideration of the Kochi Metro rail Limited (hereinafter called "KMRL") having agreed under the terms and conditions of agreement no. .... dated.....made between ..... and ..... (herein after called "thesaid contractor(s)") for the ..... work (herein after called "the said agreement") for compliance of his obligation in accordance with the terms and conditions in the said agreement.

We ..... (indicate the name of the Bank) (herein after referred to as "as Bank) hereby undertake to pay to the KMRL and amount not exceeding Rs..... (Rupees ..... only) on demand by the KMRL.

2. We ..... (Indicate the name of the Bank) do hereby undertake to pay the amount due and payable under this Guarantee without any demure, merely on a demand from the KMRL stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs..... (Rupees..... only).

3. We undertake to pay to the KMRL any money so demanded notwithstanding any dispute or disputes raised by the contractor (s) in any suit or proceeding pending before any court or Tribunal relating therto our liability under this present being absolute and unequivocal. The payment made by us under this bond shall be valid discharge of our liability for payment to there-under and the contractor(s) shall have no claim against us making such payment.

4. We ..... (Indicate the name of Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the KMRL under or by virtue of the said agreement have been fully paid and it is claims satisfied or discharged or till Engineer-in-charge on behalf of the KMRL. Certified that he terms and conditions of the said Agreement have been fully and properly carried out by the said contractor(s) accordingly discharges this guarantee.

5. We..... (Indicate the name of Bank) further agree with the KMRL that he KMRL shall have the fullest liberty without our consent and without affecting any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any of the powers exercisable by the KMRL against the said contractor(s) and to forebear or enforce any of the terms and conditions relating to the said agreement we shall not be relieved from our liability by reasons of any such variation or extension being granted to the said contractor(s) or for ay forbearance act of omission on that part of the KMRL or any indulgence by KMRL to the said contract(s) or by any such matter or thing whatsoever which under the law relating to sureties



would, but for this provision, have effected or so relieving us.

6. The guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We..... (indicate the name of Bank) lastly undertake not to revoke this guarantee except with the previous consent of the KMRL in writing.

8. This guarantee shall be valid upto ..... unless extended on demand by KMRL.

Notwithstanding any thing mentioned above our liability against this Guarantee is restricted to RS..... (Rupees.....only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee, all our liabilities under the Guarantee shall stand discharged.

Dated the ..... day of 20....

For .....  
(Indicate the name of Bank)

**FORM OF CONTRACT AGREEMENT**

This Agreement is made at Kochi on the . . . . . day of . . . . . (month) **2015**  
 Between Kochi Metro Rail Limited, 8<sup>th</sup> Floor, Revenue Tower, Park Avenue, KOCHI  
 – 682011 hereinafter called "the Employer" of the one part and  
 (Name & Address of Consultant) hereinafter called "the Design Consultant" of the  
 other part. Whereas the Employer is desirous that (\*\* certain Goods and Services  
 should be provided and) the Works should be executed, viz. .. ....  
 (Name of work as mentioned in NIT) hereinafter called "the Works" and has accepted  
 a Tender by the Contractor for the execution and completion of such works (\*\*as  
 well as guarantee of such works) and the remedying of defects therein.

This agreement is signed between (for and on behalf of the  
 employer) and (for and on behalf of the Contractor)

NOW THIS AGREEMENT WITNESS as follows:

1. In this Agreement words and expression shall have the same meanings as are  
 respectively assigned to them in the Conditions of Contract hereinafter referred  
 to.
2. The following Documents shall be deemed to form and be read and construed as part  
 of this Agreement. These Documents shall be signed by.. .....  
 (for and on behalf of the Employer) and .....  
 (for and on behalf of the Contractor).
  - i. Notice Inviting Tender (NIT)
  - ii. Instructions to Tenderers (ITT) (Including Annexure)
  - iii. Terms of Reference
  - iv. Form of Tender (FOT)
  - v. General Conditions of Contract (GCC)
  - vi. Special Conditions of Contract (SCC)
  - vii. Location plan
  - viii. Scope of work
  - ix. Financial Package
  - x. Letter of acceptance (LOA)

Consultant proposal submitted along with the tender. Any other item as applicable

The modifications to the tender Documents communicated through the Addenda (.. ...  
 Numbers) issued to the tenderers at the time of tender have been incorporated in the  
 consolidated contract Documents. Hence, the Addenda (.. . Numbers) are not included in

the contract Documents. Copies of the Addenda are available with the Employer, Contractor and Employer's Representative. As and when required, they could be referred to and in case of any discrepancy between the corrections/modifications incorporated in the consolidated contract Documents and the Addenda, the provision of the Addenda shall prevail.

3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the works by .....and remedy any defects therein in conformity in all respects with the provisions of the contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying of defects therein, the Total Contract Price of being the sum stated in the letter of acceptance subject to such additions there to or deductions there from as may be made under the provisions of the contract at the times and in the manner prescribed by the Employer.

#### 5. OBLIGATION OF EMPLOYER

The Employer agrees, subject to the terms and conditions of the Contract Documents, to pay the consultant the amount specified, and at the rates and terms and in the manner set forth in the Contract Documents.

#### 6. OBLIGATION OF THE CONSULTANT

The contractor shall ensure full compliance with tax laws of India with regard to this contract and shall be solely responsible for the same. The contractor shall submit copies of acknowledgements evidencing filing of returns every year and shall keep the Employer fully indemnified against liability of tax interest, penalty etc. of the contractor in respect thereof, which may arise.

#### 7. JURISDICTION OF COURT

The Courts at KOCHI shall have the exclusive jurisdiction to try all disputes arising out of this Agreement between the parties.

IN WITNESS WHEREOF the parties hereto have caused their respective Common Seals to be hereunto affixed / (or have hereunto set their respective hands and seals) the day and year first above written.

For and on behalf of the Contractor

For and on behalf of the Employer

**Signature of the authorized official**

**Signature of the authorized official**

Name of the official

Name of the official

Stamp/Seal of the Contractor

Stamp/Seal of the Employer

By the said ... ..(Name) on behalf of the Employer in the presence of:  
behalf of the Contractor In the presence of :

Witness

Witness

Name

Name

Address

Address

**Note:**

\* To be made out by the Employer at the time of finalization of the Form of Agreement.

. Blanks to be filled by the Employer at the time of finalization of the Form of Agreement

\*\*\* To be deleted if not applicable

**CONTRACT NO: KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15**

**TENDER DOCUMENTS**

**VOLUME-1**

**TERMS OF REFERENCE (TOR)**

**KOCHI METRO RAIL LIMITED**

***(A joint venture company of Govt. of India & Govt. of Kerala)***

**8<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi Kerala – 682011.**

## **TERMS OF REFERENCE FOR DESIGN CONSULTANT (DC)**

### **1.0 Objectives**

The objective of this contract is to obtain Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works ,Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and Validation.

- 1.1** In development of the project designs, the desired objectives of the KMRL would be:
- Economy, durability, environment friendliness, occupant comfort, quality of service as well as safety in construction, maintenance and operation.
  - Maintainability, reliability and renewability of the system in the context of the Indian Socio-economic and technological environment.
  - Adoption of the State-of- the- art technology.

### **2.0 Technical Standards & Specifications**

The recommended design criteria, specifications, standards and codes of practice will be in accordance with the relevant Indian codes of practice/specifications. Where the standards and specifications are not available in the Indian codes of practice/Specifications, International codes of practice/Specifications will be adopted with the approval of KMRL.

### **3.0 Scope of services for the Design Consultant (DC)**

The scope of DC's services will cover consultancy for planning, Architecture, design, proof checking of detailed designs by 3rd party, procurement, contract administration, project monitoring, construction interfacing and validation of the construction of multi-storey residential staff quarters (Phase-I) at MUTTOM.

#### **3.1 The services of the Design Consultant may be broadly covered under the following Heads:**

- i. Geotechnical investigations, Design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works ,Horticulture and landscaping -

Design, Detailing, Tender documents with BOQ for construction contract, Construction interfacing and Validation.

- ii. Report of Rate Analysis for all BOQ items
- iii. Framing Maintenance Methodology, Maintenance Manuel and in total Self Sustainable & Compact Habitat.
- iv. Scheme for Sewage collection & Treatment.
- v. Rendering assistance to KMRL in selection through SAP tender process for "Construct only" contract.
- vi. Review and proof checking of designs by external agency as approved by KMRL in respect of works to be awarded to contractors on "construct only" basis.
- vii. Prepare tender documents for "Construct only" contract and assist in evaluation, Negotiation (if necessary) of bids invited by KMRL and award of contracts.
- viii. Construction interfacing and Validation including contract administration, safety, quality and Environment aspects.
- ix. The recommended specifications and design criteria will also cover the methods of construction, design of temporary works, disposal of excavated materials as also the external environment under which work would be required to be executed. The specifications will also prescribe the tests and acceptance standards for various components of works, obtaining approvals/sanctions from concerned authorities.
- x. It is to be ensured that the designs and specifications will meet the project requirement at reasonable cost, without imposing any limitations in regard to competitive bidding.
- xi. Based on the tender designs and accepted design criteria, specifications, standards and codes of practice, the Design Consultant shall prepare a suitable BOQ and estimated cost for the construction tender.

**4.0** The tender and contract documents for the construction tender will include:

Notice Inviting Tenders (NIT)  
Terms of Reference  
Form of tender  
Instruction to tenders  
General conditions of contract  
Special conditions of contract  
Technical specification  
Bill of Quantities  
Tender Drawings

Form of Contracts

Pre-qualification documents

Pre-qualification criteria

Tender evaluation criteria

Agreement

The bids would be invited by KMRL for construction contract on the basis of the tender documents prepared by the DC and accepted by KMRL.

## **5.0 Site Visits**

To undertake visit to the construction sites, monitor the contractor's activities for quality assurance, for safety assurance, for conformity to contract specifications and time frame. It should be noted that though the responsibility for correctness, completeness and adequacy of the works constructed by the contractors and for compliance with statutory obligations remain with the contractors. DC will be responsible for any deficiency in the design drawings, construction interfacing and validation. To monitor Contractor's activities with goal of minimizing adverse effects on public safety, traffic, residential and commercial activity, and the environment. DC shall keep KMRL informed of their findings and recommendations resulting from these site visits. The responsibility and urgency of taking corrective measures lies with

### **5.1 In the course of performing construction interfacing and validation for the project, DC will also:**

- I. Monitor all contract works in progress and identify any schedule or coordination conflicts, recommend measures to eliminate or mitigate problems and implement the recommended measures with the approval of KMRL.
- II. Conduct Performance reviews and bring in improvement in the works carried out by Contractors. DC shall forward two copies of all engineering drawings, calculations and data to KMRL as soon as the documents are available.
- III. DC will prepare site /working front plans, in consultation with various contractors, to enable smooth working and ensuring completion of works as targeted/scheduled.
- IV. DC will revise the drawings during the course of execution, if found, required by the employer without any extra cost to be charged from employer for services to be provided.

### **5.2 DC shall at all times exercise all reasonable skill, care and diligence in the discharge of his duties DC shall also be responsible for the accuracy and completeness of his works and commissioning.**



- 5.3** The tracings and other originals of all plans, drawings, engineering specifications and similar materials and any data and all records or documents pertaining to the work, including soft copies thereof, shall be treated as confidential by DC and shall not, without written consent of KMRL, be made available to any person and shall be delivered to KMRL upon completion of the work and shall become the property of KMRL. However, DC may retain, for its own record, copies of the said plans and documents.

## **6.0 Reporting System of the Progress of the Project.**

### **6.1 Inception Report**

An Inception Report (2 copies in English) shall be submitted by the DC to KMRL within 15 days from the starting date, presenting an initial technical appreciation of the services requirements and identifying both the overall work plan and the analytical steps (and associated assumptions) to reach solutions. It should prescribe the proposed service methodology, approach and provisional programme for completion of the Project.

### **6.2 Monthly Progress Report**

A monthly Progress Report (2 copies in English) shall be submitted by DC to KMRL. This Report shall be submitted by the 1st day of each calendar month and shall account. This for all work actually performed up to the end of the previous month. It should be submitted in a format approved by KMRL and shall contain sections/sub-sections.

It shall describe the status of work performed during the previous month, significant accomplishments, including critical items and problem areas, corrective actions taken or planned and other pertinent activities and shall in particular, address interface issues, problems and resolutions. The status of permanent and temporary staffing of DC.

### **6.3 Programme Update**

The monthly programme update which shall be prepared by recording actual activity completion dates and percentage of activities completed up to the end of the month of report together with estimates of remaining duration and expected activity completion based on current progress. The Programme Update shall be accompanied by an Activity report and a Narrative Statement.

**CONTRACT NO. KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15**

**TENDER DOCUMENTS**

**VOLUME – I**

**FORM OF TENDER (FOT)**

**KOCHI METRO RAIL LIMITED**  
*(A joint venture company of Govt. of India & Govt. of Kerala)*  
8<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi Kerala – 682011.

## Annexure - 1

**INFORMATION ABOUT DESIGN CONSULTANT**

1	Name and address of the Firm/Co. Including contact/Mobile/Fax/E-mail etc.	
2	Nature of firm/Co., whether Proprietary/Company Partnership (furnish full details)	
3	Year of Establishment	
4	Organization profile, infrastructure facilities etc.	
5	Name of Main (Principal) with Registration details with council of Architect (Valid certificate to be attached) i Telephone/Mobile No. ii Fax No. iii Email Id	
6	Name of Partner(s)/Associate(s), if any with their bio data	
7	Details PAN No. (Enclose copy of PAN card and latest income tax return filed)	
8	Name & address of the Bankers	
9	Detailed description and value of work done in the past five years and works in hand (to be furnished in the Format given in <b>annexure-2</b> )	YES/NO
	Details of Resources (manpower, tools and plan)/ infrastructure available (to be furnished in the Format given in <b>annexure-3</b> )	YES/NO
	Details of registration/empanelment with Govt Agencies Bank/PSUs (to be furnished in the format given in <b>annexure-4</b> )	YES/NO
	Undertakings ( <b>annexure-5</b> )	
	Financial Data ( <b>annexure-6</b> )	

Signature:

Name:

Date:

Seal:

*(Note: please enclose separate sheets/photographs/Documents as required.)*

**Annexure-2****Particulars in respect of similar works executed in the last five years**

S.no	Name of works executed with address	Name and address of the owner/client	Value of work executed	Date of completion	Stipulated time for completion	Actual time taken for completion

Please enclose copies of appointment letter/agreement for each job.

**Annexure-3****Details of Resources (Manpower, Equipment & Infrastructure)****1. Details of Manpower**

S.No	Category	Qualification	Experience	Remarks
1.	Architects			
2	Engineers			
3	Associated for specialized jobs			
4	Supervisor/Draughtmen/other staff			

2. Details of Equipment/Infrastructure:  
(Please indicate the infrastructure\ facilities available viz. Computer, software, plotter, office details, etc.)
3. Any other information:

**Annexure-4****Details of Empanelment with other Organization/Department**

S.No	Name and address of institution with contact No.	Registered/empanelled for value of work upto and other details	Date of empanelment and validity	Details of certificate/letter from the institution/Bank etc. if any

**Annexure-5**

**UNDERTAKING**

- i That the tenderer (any member in case of JV/consortium) is not involved in frequent litigations during last 10 years. If otherwise, then submit the reasons and the details for the same.
- ii. That the Tenderer (any member in case of JV/consortium) has not paid liquidated damages of 10% or more of the contract value in a contract due to delay or has not been penalized due to any other reason during last five years. If otherwise, then the reasons and the details for the same need to be submitted.
- iii That the tenderer (any member in case of JV/consortium) has not suffered  
.....bankruptcy/insolvency

**Annexure-6****Financial DATA**

Applicant's legal name \_\_\_\_\_ Date \_\_\_\_\_  
 Group Member's Legal name \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_ pages

Each applicant of member of JV must fill in this form

S No.	Description	Financial details for latest last 5 years (Indian Rupees)				
		2010-11	2011-12	2012-13	2013-14	2014-15
1	Total Assets					
2	Current Assets					
3	Total external liabilities					
4	Current liabilities					
5	Annual profits before taxes					
6	Annual profits after taxes					
7	Net worth (1-3)					
8	Liquidity (2-4)					
9	Returns on Equity					
10	Annual turnover from construction					
11	Gross Annual Turnover					

Attach copies of statements

- Separate proforma shall be used in case of JV/Consortium
- All such Documents reflect the financial data of the applicant or member in case of JV and not sister or Partner Company.
- Historic financial statements shall be attested by statutory Auditor of the company under the seal and stamp and shall be strictly based on audited annual financial results of the relevant periods. No statements for partial periods will be accepted.
- Historic financial statements must be complete including all notes to the financial statements.
- The above annexure shall be duly certified by Chartered Accountant/Company Auditor under the signature, stamp and membership number.
- In case the liquidity is inadequate, the tenderer may submit Banking reference to establish that they have access to the required working capital.



**CONTRACT NO. KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15**

**TENDER DOCUMENTS**

**VOLUME – I**

**GENERAL CONDITION OF CONTRACT (GCC)**

**KOCHI METRO RAIL LIMITED**  
**(A joint venture company of Govt. of India & Govt. of Kerala)**  
**8<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi Kerala – 682011.**

## GENERAL CONDITIONS OF CONTRACT (GCC)

### 1. Definitions

The following words and expressions shall have the meanings assigned to them except where the context otherwise requires:

- (i) "Project" means the project named in Special Conditions of Contract.
- (ii) "Services" means the services to be performed by the Design Consultant pursuant to this Contract,
- (iii) "Client" means the Kochi metro Rail Limited (also referred to as KMRL) which expression shall also include their legal successors and permitted assigns.
- (iv) "Design Consultant (DC)" means the party comprising single entity or the group/consortium/joint venture named in the agreement, which has to perform the services, and which expression shall include his/their legal successors and permitted assigns.
- (v) "Member", in case the Consultant comprises more than one entity means any of the entities "Members" means all the entities. "Member-in-Charge" means the Member authorized to act on the Members" behalf in exercising all the Consultants rights and obligations towards the Client under their contract.
- (vi) "Party" means KMRL or DC as the case may be and "parties" means both of them. "Third party" means any other person or entity as the context requires.
- (vii) "Agreement" means the Conditions of Service Agreement (GCC and SCC) together with NIT, ITT, FOT Location Plan & Basic Concept Plan, Volume-2 - Scope of Work, Volume-3 - Financial Package, Extracts of Technical Proposal of Tenderer, Extracts of concept design proposal, Addendum (if any), Minutes of Negotiation Meetings (if any), and Relevant Correspondences, Letter of Acceptance and Formal Agreement.
- (viii) "Employer's representative" means the KMRL or any of its officers nominated by KMRL and notified from time to time, to DC.
- (ix) "Engineer" means KMRL, or any of its officers by KMRL and notified from time to time to monitor the Design Consultants work.
- (x) "day" means the period between any one midnight and the next.
- (xi) "month" means the period of one month according to the Gregorian calendar commencing with any day of the month.
- (xii) "Rupees" means the currency of India.

(xiii) "Sub - Contractor" means the sub-consultant appointed by Consultant with the prior approval of the employer and in accordance with the procedure described in Special Conditions of Contract.

## **2. Interpretation**

- i. The headings in the Agreement shall not be used in its interpretation.
- ii. The singular includes the plural; the masculine includes the feminine and vice-versa where the context requires.
- iii. If there is conflict between provisions of the Agreement, the last to be written chronologically shall prevail, unless otherwise specified in the Special Conditions of Contract- SCC.

## **3. Obligations of DC**

### **3.1 Scope of Services to be performed by the DC**

- a. DC shall perform Services relating to the Project. The Scope of the Services is stated in **Volume-II**.
- b. DC shall exercise reasonable skill, care and diligence in the performance of his obligations under the Agreement.
- c. Where the Services include the co-ordination between the DC and other consultants and contractors employed on the Project, the DC shall provide such co-ordination. The DC shall obtain, co-ordinate and submit to the Employer's Representative for his information and approval all details, drawings, quantities, specifications arising from such co-ordination with others. Such co-ordination will take place throughout the period of the Services.

### **3.2 Performance Guarantee**

- i. As stated in the instruction to Tenderers the DC shall provide KMRL with a Performance Guarantee for 10% of the Contract Price in the currency in which the Contract Price is payable. The Performance Security shall be furnished to the Employer within 14 (fourteen) days of receipt of the Letter of Acceptance (LOA). The required Performance Security for the sum mentioned above may be submitted in any one of the following forms:
  - a. Irrevocable bank guarantee in the prescribed format, given in Appendix- 3 of Instruction to Tenderers (ITT), issued by a Scheduled Commercial Bank based in India or from a branch in India of a Scheduled foreign bank.
  - b. Bank Draft in favour of Kochi Metro Rail Ltd. payable at KOCHI from a Scheduled Commercial Bank based in India.

- ii. In case of joint venture/consortium, the Performance Security is to be submitted in the name of the JV/Consortium. However, splitting of the performance security (while ensuring the security is in the name of JV/Consortium) and its submission by different members of the JV I Consortium for an amount proportionate to their scope of work is also acceptable.
- iii. The Performance Guarantee should be valid for a period of 6 (six) months beyond the Defect Liability Period.
- iv. KMRL reserves the right to forfeit the performance Guarantee amount, in the event of termination of the Services in accordance with Clause 17.
- v. In the event of any defect coming to the notice of KMRL within the period of the Defects Liability Period as described in Clause - 11 herein and in the eventuality of the DC failing to rectify the same, KMRL will forfeit the amount of the Performance Guarantee.

#### **4. Change in Constitution**

DC shall promptly notify KMRL of any changes in the constitution of the DC. It shall be open for KMRL to terminate the Agreement upon death, retirement, insanity or insolvency of any person 'being the proprietor/partner in the DC, or on the addition or introduction of a new partner. This Agreement shall be in full force and effect notwithstanding any changes in the constitution of the firm by death, retirement, insanity or insolvency of any of its proprietors/partners or addition or introduction of any new partners. In case of death or retirement, the surviving or remaining partners of the firm shall be jointly and severally liable for the due and satisfactory performance of all terms and conditions of the Agreement, and likewise on the addition of a new partner, the latter will also become jointly and severally liable.

#### **5 Information**

KMRL shall within a reasonable time give to DC, free of cost, all information which is able to obtain and which may pertain to the Services.

#### **6 Decisions**

On all matters properly referred to in writing by DC, KMRL shall give a decision in writing within a reasonable time.

#### **7 Assistance**

KMRL shall assist in:

- i. Facilitating DC access to other organization for collection of information.

#### **8 Representatives**

For the administration of the Agreement the DC shall designate the official or individual to be his representative.

**9 Changes in Personnel**

If it is necessary to replace any person of DC, the latter shall immediately arrange for replacement by a person of comparable competence. This shall, however, be done with the approval of KMRL.

**10 Liability of DC to KMRL**

DC shall only be liable to pay compensation to KMRL, arising out of or in connection with the Agreement if a breach of Contract is established against him. Such compensation shall be limited to the amount of reasonably foreseeable loss and damage suffered as a result of such breach but shall not be more than the Contract value.

**11 Duration of Liability**

6 Months after the date of issue of Completion Certificate for the Whole of the Works.

**12 Agreement Effective Date**

The Contract shall come into effect from the date of receipt of the Letter of acceptance (LOA).

**13 Commencement and completion**

The services shall be commenced and completed at the times or within the periods stated in Part II of the Conditions of Contract subject to extensions in accordance with the Agreement.

**14 Modifications**

The contract can be modified in writing on application by either party only by a written agreement of DC and KMRL.

**15 Delays**

Time is the essence of the Contract. It shall be the bounden duty of the DC to strictly adhere to the time for performance of various services indicated in the Contract. In case of delays without valid reason for DC shall be liable to pay liquidated damages in accordance with Item-1.5 of SCC notwithstanding anything contained in Clause 10 herein and 28.

**16 Exceptional Circumstances**

If circumstances arise for which the DC is not responsible and which make it impossible for him to perform in whole or in part the Services in accordance with the Contract, the DC shall promptly dispatch a notice to KMRL. In these circumstances if certain Services have to be suspended, the time for their completion shall be extended until such circumstances no longer apply plus a reasonable period not exceeding 7 days for resumption of services.

**17 Abandonment, Suspension or Termination By Notice of KMRL**

- i. If KMRL considers that DC is not discharging his obligations KMRL can inform the DC by notice stating ground for the notice. If a satisfactory reply is not received within 7 days of receipt of notice by DC, KMRL can by further notice terminate the Agreement provided that such further notice is given within 15 days of the KMRL's former notice.
- ii. KMRL may suspend all or part of the Services or terminate the Agreement by notice of at least 15 days to DC who shall immediately make arrangements to stop the Services.
- iii. If DC is adjudged a bankrupt, or if he makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of his insolvency or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of breach of the Agreement, then KMRL may terminate the services of the DC as per the procedure given in **clause 17**.
- iv. KMRL may complete the project by whatever method may be deemed expedient and the DC shall not be entitled to receive any payment for services not rendered.

**18. Rights and Liabilities of the Parties.**

Termination of the Agreement shall not prejudice or affect the accrued rights or claims and liabilities of either party.

**19. Notice of suspension**

KMRL may, by written notice of suspension to the DC, suspend all payments to the DC hereunder if the DC shall be in breach of the Agreement or shall fail to perform any of its obligations under this Document, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the breach or failure, and (ii) shall provide an opportunity to the DC to remedy such breach or failure within a period not exceeding fifteen (15) days after receipt by the DC of such notice of suspension.

**20. Currency of payment**

The currency of payment will be in INR.

**21. Disputed Invoices**

If any item or part of an item in an invoice submitted by the DC is contested by KMRL, then KMRL shall give prompt notice with reasons and shall not delay payment on the reminder of the invoice.

**22. Languages and Law**

In Part II of the Conditions of Contract, there is stated the language or languages of the Agreement, the ruling language and the law to which the Agreement is subject.

**23. Assignment and Sub-Contracts**

- a. The DC shall not, without the written consent of KMRL, assign the benefits from the Agreement other than money.
- b. The DC shall not assign obligations under the Agreement without the written consent of KMRL.
- c. The DC shall not without the written consent of KMRL initiate or terminate any sub-contract for performance of all or part of the Services.

**24. Copy Rights**

The copyright of all DC documents and drawings prepared by DC in performance of the Services under the Agreement shall be vested in KMRL. Provided that the DC may retain copies of the DC documentation prepared by them and may use and adapt the contents of such DC documentation for his own use.

**25. Conflict of Interest**

Unless otherwise agreed in writing by KMRL, the DC and his personnel shall have no interest in claiming remuneration in connection with the Project except as provided in the Agreement. The DC shall not engage in any activity that might conflict with the interests of KMRL under the Agreement.

**26. Notices**

Notices under the Agreement shall be in writing and will take effect from receipt at the address stated in Part II of the Condition of Contract. Delivery can be by hand or facsimile message against a written confirmation of receipt or by registered letter or by e-mail subsequently confirmed by letter.

**27. Publication**

Unless otherwise specified, DC, either alone or jointly with others, can publish material relating to the Services. Publication shall be subject to approval by KMRL, if it is within two years of completion or termination of the Services.

**28. Claims for Loss or Damage**

Subject to Clause 10, any claim for loss or damage arising out of breach or termination of the Agreement shall be agreed between KMRL and the DC or failing the same shall be referred to arbitration in accordance with Clause 30.

**29. Taxes and Duties**

The DC and their personnel shall pay such taxes (other than the service tax), duties, cess, fees, and other impositions as be levied under the Applicable Laws, the amount of which shall be deemed to have been included in the Contract Price. Service tax only shall be paid extra as per the actual.

### **30. Conciliation and Arbitration**

- i. Any dispute or claim arising out of or relating to this Agreement or the breach, termination or the invalidity thereof, shall firstly be attempted to be settled by conciliation.
- ii. All disputes relating to this contract on any issue whether arising during the progress of the Services or after the completion or abandonment thereof or any matter directly or indirectly connected with this Service Agreement shall in the first place be referred to a mutually agreed sole conciliator to be appointed by KMRL.
- iii. The conciliator shall make the settlement agreement after the parties reach agreement and shall give an authenticated copy thereof to each of the parties.
- iv. The settlement agreement shall be final and binding on the parties. The settlement agreement shall have the same status and effect as that of an arbitration award.
- v. The views expressed, or the suggestions made or the admissions made by either party in the course of conciliation proceedings shall not be introduced as evidence in any arbitration Proceedings.
- vi. Any dispute that cannot be settled through the Conciliation procedure shall be referred to Arbitration in accordance with the Rules stipulated in Part II of the Conditions of Contract in force on the effective date of Agreement.
- vii. The parties agree to comply with the awards resulting from arbitration and waive their
- viii. Rights to any form of appeal insofar as such waiver can validly be made.

### **31. Representatives of Consultants**

In the case of difference of opinion between the Employer and the Consultant on any important matters involving professional judgment that might effect the proper evaluation or execution of the project, the Employer shall allow the Consultant to submit promptly to the Employer a written report for consideration.

### **32. Priority of DC Documents**

The DC documents forming the contract are to be taken as mutually explanatory of one another. If there is an ambiguity or discrepancy in the DC documents, the Engineer shall issue any necessary clarification or instruction to the contractor, and the priority of the DC documents shall be as follows:

- a. The contract Agreement
- b. The Letter of Acceptance
- c. Note Inviting Tender
- d. Instructions to Tenderer
- e. Terms of Reference



- f. Form of Tender
- g. Scope of Work
- h. General Conditions of Contract
- i. Special Conditions of Contract
- j. The Contractors proposal
- k. Any other DC documents forming part of the contract

### **33. Consultants Warranty of Designs**

- I. The Consultant shall be fully responsible, for the suitability, adequacy, integrity, durability and practically of the consultant's proposal.
- II. The consultant warrants that the consultant's proposals meet the Employer's Requirements and is fit for the purpose thereof. Where there is any inadequacy, insufficiency, impracticality or unsuitability in or of the Employer's Requirements or any part thereof, the consultant's proposal shall take into account, address or rectify such inadequacy, insufficiency, impracticality or unsuitability at consultant's own cost.
- III. The Consultant warrants that the works have been or will be designed to the highest standards available using proven up to date good practice.
- IV. The consultant shall indemnify the Employer against any damage, expense, liability, loss or claim, which the Employer might incur, sustain or be subject to arising from any breach of the Consultant's design responsibility and or warranty set out in this clause.
- V. The consultant further specified and is deemed to have checked and accepted full responsibility for the consultant's proposal and same meets the Employer's Requirements:
  - a. Notwithstanding that such design may be or have been prepared, developed or issued by the Employer, any of Consultant's or his sub-consultant and/or his qualified personnel/persons or cause to be prepared, developed or issued by others.
  - b. Notwithstanding any warranties, guaranties and/or indemnities that may be or may have been submitted by any other person.
  - c. Notwithstanding that the same have been accepted by the Engineer.
- VI. The Consultant shall be fully responsible for the drawings, designs etc. & preparing developing and coordinating all design works to enable that part of the works to be constructed and/or to be fully operational in accordance with the contract's requirements.
- VII. No claim for additional payment or extension of time shall be entertain and or the consultant shall not be relieved from any obligation/liability under the contract, for any delay, suspension, impediment to or adverse effect upon the progress of the works due to any mistake, inaccuracy, discrepancy or omission in or between the consultant's the Definitive design and the final design, or any failure by the consultant to prepare any design data or submit the same the Engineer in

due time and consultant to prepare any design data or submit the same to the engineer in due time and the consultant shall promptly make good any such defect at his own cost.

### **34. Force Majeure**

If, at any time during the currency of the Contract, the performance in whole or in part by either party of any obligation under this Contract shall be prevented or delayed by reason of any war, hostilities, invasion, acts of public or foreign enemies, rebellion, revolution, insurrection, civil commotion, sabotage, large scale arson, floods, earthquake, large scale epidemics, nuclear accidents, any other catastrophic unforeseeable circumstances, quarantine restrictions, any statutory rules, regulations, orders or requisitions issued by a Government department or competent authority or acts of God (hereinafter referred to as "event") then, provided notice of the happening of such an event is given by either party to the other within 21 days of the occurrence thereof .

- i. Neither party shall by reason of such event be entitled to terminate the Contract or have claim for damages against the other in respect of such non-performance or delay in performance.
- ii. The obligations under the Contract shall be resumed as soon as practicable after the event has come to an end or ceased to exit.
- iii. If the performance in whole or part of any obligation under the Contract is prevented or delayed by reason of the event beyond a period mutually agreed to if any, or 90 days, whichever is more, either party may at its option terminate the Contract
- iv. In case of doubt, or dispute, whether a particular occurrence should be considered an "event" as defined under this clause, the decision of the Engineer shall be final and binding.
- v. Works that have already been measured shall be paid for by the Employer even if the same is subsequently destroyed or damaged as a result of the event. The cost of rebuilding or replacing any work that has been measured shall be borne by the Employer.
- vi. If the Contract is terminated under this Clause, the Contractor shall be paid fully for the work done which has been destroyed or damaged before its measurement. The Employer shall have the option to take over any plant and material lying at site, at rates provided for in the Contract, failing that, as per rates, which are determined to be fair and reasonable by the Engineer.

If neither party issues notice regarding the event within 21 days of its occurrence, the said event shall be deemed not to have occurred and the Contract will continue to have effect as such.

**CONTRACT NO. KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15**

**TENDER DOCUMENTS**

**VOLUME – I**

**SPECIAL CONDITION OF CONTRACT (SCC)**

**KOCHI METRO RAIL LIMITED**  
***(A joint venture company of Govt. of India & Govt. of Kerala)***  
**8<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi Kerala – 682011.**

**CONTRACT  
SPECIAL CONDITIONS OF CONTRACT (SCC)**

**1. DEFINITIONS:**

The Project is "Contract : **Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works ,Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and Validation.**

- 1.1 The Performance Guarantee will be 10% of the Contract Price and shall be submitted within 14 days from date of issue of letter of acceptance.
- 1.2 Date of commencement shall be the date of receipt of Acceptance Letter by KMRL.
- 1.3 The period of Completion of the services shall be 24 months from date of commencement. The completion time has been stipulated based on estimated construction time required. If construction schedule is extended, DC shall perform the services covered during extended period of construction without any extra cost to be charged from employer for services to be provided during extended period of construction.
- 1.4. Duration of Liability shall be for a period of 6 months from date of completion of construction work.
- 1.5 Liquidated damages shall be incurred for the delay in delivery of Documents from DC side as indicated in clause No. – 9 of Volume-II @ Rs. 5,000/day, exercising due attention to the genuineness and reasonability of such delays.
- 1.6 One Key Person from DC shall be placed at KMRL office for contract period/as desired by KMRL to liaison all activities, for whom reasonable space will be provided by KMRL.

**2. Contract Price**

The Lump Sum price of contract as quoted in financial proposal shall cover the sum total of all costs incurred by the DC for performing the Services. This shall not only include salaries, overheads and non-salary expenses, transportation, allowance for contingencies, fees and profits but all other costs and expenses incurred in carrying out the requirements of the Services and taxes (other than the service tax), duties, cess, fees and other impositions under the Applicable Laws. Service tax only shall be paid extra as per the actual.

Dc shall conduct review meetings, making presentations etc. irrespective of any limit as required by KMRL.

### 3. Language

Language of the Agreement shall be English. The Agreement shall be interpreted, construed and governed by the Laws of India.

### 4. Notices

Notices shall be delivered to:

**(A). For KMRL:**

Attention : GM(Civil) KMRL  
Kochi Metro Rail Ltd.,  
6<sup>th</sup> Floor, Revenue Towers, Park Avenue,  
KOCHI-682011 Kerala.

**(B). For the Consultant:**

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### 5. Arbitration

5.1 If the effort to resolve all or any of the disputes through conciliation fails, then such disputes shall be referred within 30 days to Arbitration in accordance with the following provisions:

- a. Matters to be arbitrated upon shall be referred to a sole Arbitrator where the total value of claims does not exceed Rs. 1.50 millions. Beyond that claim limit of Rs. 1.50 millions, there shall be three arbitrators. For this purpose KMRL will make out a panel of Engineers with the requisite qualifications and professional experience relevant to the field which the Contract relates. This panel will be serving or retired Engineers with the requisite qualifications and professional experience relevant to the field to which the Contract relates. This panel will be serving or retired Engineers of Government Departments or of Public Sector Undertakings.
- b. For those disputes to be decided by sole Arbitrator, the KMRL shall prepare the panel of three Engineers, out of which the DC will choose one.

- c. For those disputes to be decided by three Arbitrators, the KMRL shall prepare the panel of five Engineers. The DC and KMRL shall choose one arbitrator each and the two so chosen shall choose the third arbitrator from the said panel, who shall act as the presiding Arbitrator of the Arbitration Panel.
- d. If in a dispute subject to item (b) and (c), the DC fails to appoint the arbitrator with thirty (30) days after the KMRL has nominated the panel, the KMRL may apply to the Secretary, Indian Council of Arbitration, Delhi to nominate an arbitrator from the panel of arbitrators, for that dispute.
- e. If, in a dispute subject to item (c), the two chosen arbitrators fail to appoint the third arbitrator within 30 days after they have been appointed, the KMRL or the DC may apply to the Secretary, Indian Council of Arbitration, Delhi, India to nominate the third arbitrator from the panel, for the Matter in dispute.
- f. In case, three arbitrators are to be appointed, the award by the majority will prevail upon. Neither party shall be limited in the proceedings before such arbitrators/s to the evidence or arguments made before the Engineer for the purpose of obtaining his decision. No decision given by the Engineer in accordance with the foregoing provisions shall disqualify him from being called as a witness and giving evidence before the arbitrator/s. The arbitration hearings shall be held in KOCHI only. The language of the proceeding, that of Documents and communications shall be English and the awards shall be made in writing in English. The arbitrators shall always give item-wise and reasoned awards in all cases where the total claim exceeds Rs. One million.
- g. The reference to arbitration shall proceed notwithstanding that Works shall not then be or be alleged to be complete, provided always that the obligations of the Employer, the Engineer and the Contractor shall not be altered by reasons of arbitration being conducted during the progress of Works. Neither party shall be entitled to suspend the work to which the dispute relates on account of arbitration.

## 5.2 Rules Governing the Arbitration Proceedings:

The arbitration proceedings shall be governed by Indian Arbitration and Conciliation Act 1996, as amended from time to time including provisions in force at the time the reference is made.

5.3 Interest on Arbitration award:

Where the Arbitration Award is for payment of money, no interest shall be payable on whole or any part of the money for any period, till the date on which the award is made.

5.4 Cost of Arbitration:

The Cost of Arbitration shall be borne by the respective parties. The cost shall, interalia, include the fees of the arbitrator (s) as per the rates fixed by KMRL from time to time.



**KOCHI METRO RAIL LTD.**  
(A joint venture company of Govt. of India & Govt. of Kerala)

**Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works, Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and Validation.**

**CONTRACT NO: KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15**

## **TENDER DOCUMENTS**

### **VOLUME – II**

### **SCOPE OF WORK**

**KOCHI METRO RAIL LIMITED**  
(A joint venture company of Govt. of India & Govt. of Kerala)  
8<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi Kerala – 682011.



## **SCOPE OF WORK**

### **1. INTRODUCTION**

#### **1.1 Purpose of this Document:**

This Document describes the General Scope of Services to be provided for **Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM** including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works, Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and Validation as detailed in Document below:

The DC shall follow acceptable standards and design procedures akin of best industry practices wherever not explicitly mentioned. The scope will include not only items described under the scope of work but, also those items referred anywhere in the tender documents.

#### **1.2 Brief description of work:**

Design Consultancy for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM. The consultancy assignment is to be provided for construction of multi-storey residential staff quarters under Phase-I in approximate plot area of 5100 sqm and prepare development plan for remaining plot area termed as Phase-II for future expansion (Total plot area including phase-I = 22050 sq.m). Approximate construction cost of phase-I is Rs. 25 crores.

##### **1.2.1 Scope of work for PHASE-I**

State of art residential multi storey buildings with green rating are to be built at MUTTOM.

Plot Area allocated for Phase-I work	5100 sq.m (Approx.)
Type of proposed construction	State of art residential multi storey buildings with self-sustainable and compact habitats
Scope of construction in Phase-I	96 units (Plinth area = 7440 sq.m) (approx..)
No. of stories	Up to G+8 with G/floor for parking

The" structures shall be State of Art multi-storied RCC Framed structures, Stilt and Upper Floors depending upon the permissible FAR, permissible height and relevant building by-laws. The proposed Project is to be most modern and designed as Green Building system with green and energy saving advantages arising out of it say: solar and renewal energy, electricity, HVAC, water cycle, sewage collection and treatment, interior space and exterior environment, landscaping, internal Road system, Drainage, Compound wall, Firefighting system. Rain water Harvesting etc.

It is in the scope of DC to frame Maintenance Methodology and Maintenance Manual for Routine, Periodic, Annual and Long term basis.

### **1.3 Scope of Work for PHASE-II:**

It is in the scope of work of DC to prepare a development plan for the Phase-II area with optimum utilization of available space for locating essential amenities and services which includes future building blocks, road network, drainage, open spaces, parking etc.

**Note:** Phase-II works are covered in para 1.3 of this document. The remaining paras of this document are applicable to Phase-I work.

### **1.4 Engineering Design, Building Services, Tender Support Services:**

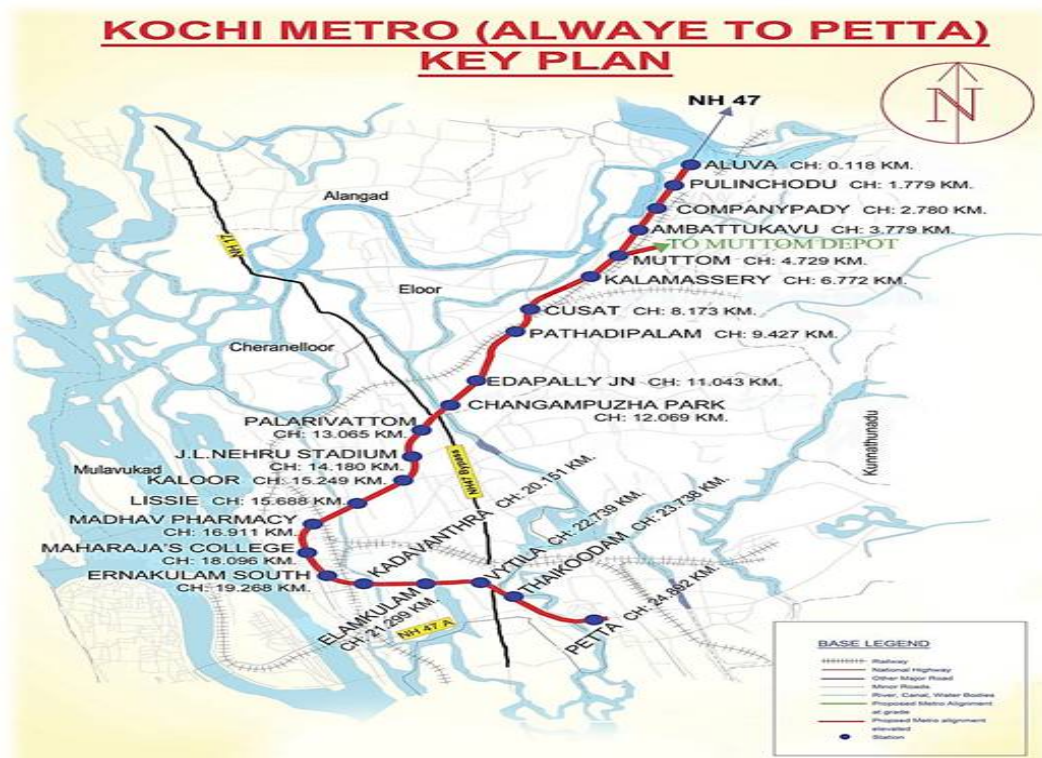
The architectural, structure, civil, E/M and building services, Geo-technical investigations, designs, approvals, architectural, structural and engineering drawings, Proof checking of designs and drawings by external agency, tender Documentation for construction tender, BOQ and construction interfacing and validation during construction stage etc. are in the scope of DC. Only land plan, typical layout, number of units required and minimum amenities as per MoUD guidelines will be provided by KMRL.

### **1.5 Project Back Ground:**

Kochi Metro Rail Corporation (KMRL), a Joint venture Company of the Government of India (GOI) and the Government of Kerala (GOK) implementing the Kochi Metro Rail Project, has been mandated by Ministry of Urban Development (MoUD) to undertake value capture from property development initiatives for sustainable revenue generation for the KMRL vide its Policy Circular No K-14011/8/2000-MRTS (Pt.)'dt 30.3.2009.

The objective of the project is to build a world class, state-of-the art urban transport for the city of kochi that will not only facilitate rapid and easy passenger movement, but also will act as a catalyst for the urban renewal of the city kochi and its balance

development.



The proposed "Residential Staff Quarters at Muttom", is located in Muttom area on National Highway 47 adjacent to the Metro Corridor.

## 1.6 Approach:

The Vehicular access to site is from subway connecting the highway to the project site.

## 1.7 Broad project brief:

The Design Consultants shall plan mainly but are not limited to:

- Multi storey Residential buildings with state of art and most modern design as Green Building system.
- Aesthetical building with instant appeal.
- Economical space utilization with all required amenities
- Independence, inbuilt flexibility/ divisibility, privacy and workability of spaces
- Design of attractive but efficient entrances, lift and stair lobbies and exits.
- Indicative furniture layout plans and interior of selective spaces.
- Proposal for aesthetical but durable architectural finishes of floor, wall, ceiling, door, windows etc. governed by level of finish to be targeted.

- h) Layouts of fittings and appropriate saving devices for water, sanitary and electrical accessories and devices.
- i) Appropriate joinery determined by lighting, ventilation, view, sound control and HV& AC and maintenance issues etc.
- j) Building and parking management systems
- k) Landscaping
- l) Compound wall
- m) SHE standard
- n) Facade Design.
- o) Common amenities: Recreation, Association, Society, Super Market, Provisional Store, Gym, Swimming Pool etc.
- p) Maintenance scheme and guidelines for the same.

## **2) DUTIES AND RESPONSIBILITIES OF THE DC:**

### **2.1 Design Stage**

The duties and responsibilities of DC mainly contain but are not limited to:

- a. The DC shall perform the Services relating to the Project according to the Generally Accepted Professional Practice. The overall scope of services to be performed by the DC under this Agreement is more specifically set forth in the agreement.
- b. The Consultant shall exercise reasonable skill, care and diligence in the performance of its obligations under this Agreement. The DC shall always act, in respect of any matter relating to the Services, as faithful advisors to the Client and shall at all times support and safeguard the Client's legitimate interests.
- c. The Client shall not be liable for any action under the Third Party Agreement, obligations under which shall be the sole responsibility of the DC.
- d. In discharging obligations the DC shall pay due consideration to relevant applicable laws, rules, codes or regulations.
- e. The DC shall hold the Client's interests paramount.
- f. The DC shall review and check the correctness and /or accuracy of works performed by Sub- consultants in terms of field surveys, designs and relevant information including interface prepared by them. The DC shall be fully responsible for the work and services performed by any such Sub-Consultant. The DC shall vet all the technical drawings/shop floor drawings prepared by the vendors/ contractor.
- g. The DC shall arrange and involve itself in all investigations, meetings, and in any other activities as are or may be necessary for producing the design,

drawings and Documents to such details that KMRL can go for bidding.

- h. Taking client's instructions and develop the designs.
- i. Site evaluation, analysis and impact of existing and/or proposed development on its immediate environs, site survey etc.
- j. The DC shall carry out the Services in accordance with its own methods, in compliance with the provisions of the Agreement. Any and all changes necessary to ensure that the DC's design, drawings and Documents conform to the intent and purpose set out in the Agreement shall be made at the DC's own expense.
- k. The DC represents that it is a professional and experienced consultant providing full consultancy services, and hereby agrees to bear full responsibility for the correctness and technical merit of the services performed, their compliance to standard design codes, accuracy of calculations, design, drawing & detailing and suitability for execution. DC shall deploy the competent professional for each discipline i.e. architectural, civil & structural and electrical & mechanical works.
- l. The DC shall be fully responsible for compliance of standard design codes, accuracy of design calculation and drawings detailing and suitability for executing the design and drawings.
- m. The DC shall be fully responsible for correctness and accuracy of conceptual plans with regard to FAR, Ground Coverage, parking requirement and other building by-laws in force. The consultant shall certify in writing that the designs are in accordance with the up to date & relevant building by- laws.
- n. The DC shall present the schemes to various local authorities and prepare Documents and models as required and obtain necessary approval of competent authorities, statutory bodies required according to local bylaws, acts and regulations.
- o. Getting all statutory approvals from local, statutory bodies shall be responsibilities of DC. KMRL shall provide Support if required, KMRL shall bear the cost of statutory fee to be deposited to local bodies/statutory bodies if any.
- p. To provide Design Consultancy services for entire duration of the Project till its commissioning & submission of As-built drawings to KMRL.

## **2.2 Approval stage:**

- a) The DC should prepare all, submission detailed drawings and Documents taking into account all directions given during the various meetings & up to date applicable provisions in acts, byelaws, law, policies, guidelines, rules, regulations, instructions or all relevant codes, standards and norms etc.
- b) It shall be absolute responsibility of the DC to obtained approval of detailed

submission drawings and Documents of the project from all concerned statutory authorities like Fire Dept., GCDA or any other authority, department, commission agency, with a view to carry unhindered construction.

- c) The DC should prepare all detailed submission drawings and Documents taking into account and considering all services, its layouts and detail for prevalent applicable design data, technology, sizes, numbers, codes, practices, standards, rules, instructions, levels and surveys etc.
- d) It shall be absolute responsibility of DC to get the drawings approved from all such authorities. All requisite data and details required by the authorities for approval of submission drawings shall be provided by DC including liaison with various authorities and obtaining approvals from them.
- e) It shall be absolute responsibility of the DC for proof check of designs and drawings by external agency and their approval. He shall prepare all drawing presentation and model for the same and all cost on this account shall be deemed to include in the fee. Design Consultant shall extend full cooperation to Proof Consultant/KMRL and shall carry out necessary modification and design, drawings as suggested by Proof Consultant /KMRL. In case of any difference in the opinion of Design Consultant and Proof Consultant, decision of Employer shall be final.
- f) It shall be absolute responsibility of DC for undertaking necessary corrections/ amendments / modifications, if required, for approvals from Statutory Authorities.

### **2.3 Construction and Completion Stage:**

The duties and responsibilities of DC mainly contain but are not limited to:

- a. Issue GFC ( Good for Construction) Drawings
- b. Interfacing and validation of Designs & Drawings during construction to ensure it according to their scheme as also to resolve coordination issues amongst various agencies at work.
- c. Issuing clarifications and attending co-ordination meetings from time to time at site for providing technical guidance during the construction to help KMRL in solving special problems, if any
- d. Studying and finalization of construction/installation methods proposed by contractor including verification of construction shop drawings and recommendation for approval.
- e. Site visits and validation of all construction activities and finishing works as per the approved drawings
- f. Assisting Clients in obtaining from the contractors "As installed Drawings" and as built drawings.



- g. The DC should prepare all completion detailed drawings and Documents
- h. It shall be absolute responsibility of the DC to obtained detailed completion drawings and Documents of the project from all concerned statutory authorities like Fire Dept., GCDA or any other authority, department, commission agency, with a view to obtain completion and occupancy certificate, taking into account applicable provisions in MPD 2021, BBL, other acts, byelaws, policies, guidelines, rules, regulations, instructions or all relevant codes, standards and norms etc.
- i. The DC should prepare all detailed completion drawings and Documents taking into account and considering all services, its layouts and detail of design data's, technology, sizes, numbers, codes, practices, standards, rule&, instructions , levels and surveys etc.
- j. It shall be absolute responsibility of DC to get the completion drawings approved from all such authorities. All requisite data and details required by the authorities for approval of submission drawings shall be provided by DC including liaison with various authorities and obtaining approvals from them.
- k. It shall be absolute responsibility of DC for undertaking necessary corrections/amendments/modifications, if required, for approvals of completion from Statutory Authorities and issue of occupancy certificate.
- l. It shall be the responsibility of DC to get Environmental clearances and approvals, attending and clearing environmental disputes, preparing statements of facts, affidavit and appear before the respective forums on and behalf of client if entrusted, reply to Right of Information Act, petitions from public and other court cases, legal notices, MoUD queries etc.
- m. It is in the responsibility of DC to frame Maintenance Methodology and Maintenance Manual for Routine, Periodic, Annual and Long term basis.

### **3.0 SERVICES TO BE PERFORMED BY THE DESIGN CONSULTANCY**

#### **3.1 Available Information**

The DC shall study all the available information and drawings issued or made available to it in the Scope of Services, carryout all necessary analysis, and request any further information or data which is necessary for its design development from KMRL.

### **3.2 Design Alternatives**

The DC shall prepare conceptual design and drawings with different alternatives about layout, building sizes, type of structure, maintenance equipment and facilities, etc. the object of which should be to optimize construction cost without adversely affecting its functional requirements such as ease of effective maintenance. Preparation of different alternatives shall be provided within stipulated period and shall not require any extension of design or construction time. Design alternatives so decided shall be presented within 3 weeks of the date of acceptance of tender. This shall be presented in sufficient detail including.

- a. A description of the difference between the conceptual design and the proposed design alternative and the comparative advantages and disadvantages of each. Clearly illustrated sketches, drawings, diagrams, calculations, published reports or other means that allows evaluation shall accompany the written description.
- b. A detailed estimate of the amount of savings in construction cost and/or time
- c. Relative merit of DC proposal to highlight ease of operation maintenance and management of building, spaces and services.
- d. Once the proposed design is approved by the KMRL, all further work of design development will be prepared as per the approved alternatives

### **3.3 Geo-technical investigations:**

DC has to carry out all necessary Geo-technical investigations in the area proposed for construction in comprehensive manner by deploying necessary equipment and expertise required to analyze the soil strata of the proposed area for construction of buildings to ascertain the data required for most effective and safe design of the structures with sufficient factor of safety.

- I. The soil exploration shall be done as per standard procedures as laid down in IS codes so as to obtain sufficient data needed for design calculations.
- II. Minimum, but not limited to, one set of investigations under each Building Block shall be carried out in the area proposed for Phase-I as per the requirement.

### **3.4 Civil and Structural Design**

The DC shall perform all Detailed Design, Architectural, Planning, Structural, Building Services and E/M Services within the contract limits, including the preparation of calculations, drawings, outline specifications, cost estimates and other Documents as required.



### 3.5 Design Submission and Reviews

**3.5.1** Preliminary, Tender and Contract Drawings shall be prepared and issued by the DC in accordance with the current requirements issued to it by the Employer's Representative (*refer to 9*) Matrix Of Design Submission, Reviews & Procedure for submission of Documents. All drawings shall be produced in A-1 size using CAD graphic systems compatible with the KMRL system and as approved by the Employer's Representative. Drawings are defined as follows:

- I. Preliminary drawings and Documents are prepared by the DC prior to their acceptance by the Employer's Representative as Tender Drawings
- II. Approval drawings and Documents are prepared by the DC and approved by the concerned statutory authorities, departments, agencies, commission etc. containing drawings, Documentations, letters, instructions, minutes and certificates etc. (including Architectural, Structural, Plumbing, Drainage, E& M and other Development works)
- III. Tender drawings and Documents are drawings prepared by the DC and approved by the KMRL which, with other relevant Documentation, contain all the information necessary for tendering purposes.
- IV. Working/ Detailed drawings and Documents are drawings that have been prepared by the DC from Tender drawings that have been approved by KMRL and which, together with other relevant Documentation will form the construction contract. These Drawings shall be stamped "issued for Construction"/ "Good for Construction" and will be added or revised as noted in Matrix of Submission, Review & Procedure.
- V. Completion, as built drawings and Documents & occupancy certificate are prepared by the DC and approved by the concerned statutory authorities, departments, agencies, commission containing drawings, Documentations, letters, instructions, minutes and certificates etc. for completion purposes and occupation certificate. Services level connection certificates. As built drawings are prepared by contractor checked and approved by DC.

**3.5.2** DC shall submit to the Employer's Representative as part of a progress register, a list showing drawing numbers, titles, scales and the progress status of all drawings planned for inclusion in the Documents for obtaining tenders. The format of the progress register shall be as approved by the Employer's Representative. The DC shall update the register as required. All drawings shall be checked for compliance with design specifications and for accuracy by the DC's design staff and shall also be subjected to

the checking procedures as detailed in Section 5 thereof.

**3.5.3 Documents** produced by the DC shall be listed as part of the Progress Register.

#### **3.5.4 Computer Programs**

The DC shall submit details and verification of all computer application programs it intends to use to the Employer's Representative for acceptance prior to use in making calculations. These shall include the computer program manuals, input and output printout of a typical example and previous records of its use by the DC. The DC may also be required to perform test calculations using the program so that the results may be compared with those obtained by other means.

#### **3.5.5 Detailed Design**

The DC shall prepare detailed design based on the approved conceptual drawings and Documents at the design alternative stage. The DC shall incorporate the relevant seismic criteria and earthquake design as required by design criteria.

#### **3.5.6 Issue of Good for Construction drawings**

On approval of final review submission, the DC shall submit Good For Construction drawings including all categories i.e. Civil, Electrical & Mechanical and deliverables as listed under final review submission. Complete submission shall be made within 15 weeks. This period shall also include review and approval period of 14 working days by Employer Representatives, Review comments and design changes if any shall be incorporated and resubmitted by DC within a week. This period shall be deemed to be included in the overall period of 15 weeks.

Design Submission, Reviews and Procedure Submission of Documents details are appended at 9) Matrix of Submission, Review & Procedure

### **4.0 SCOPE OF WORK (DISCIPLINE WISE)**

#### **4.1 General scope of work**

The scope of work and responsibilities of Design Consultancy is successful completion of project within time all-encompassing from concept to scheme proposal, statutory approvals, engineering and design, tender Documentation and support services, construction validation, completion and obtaining occupation certificate, as built drawings. Consultant shall provide the services involving following scope of services which inter alia include but not limited to:

##### **(A) Architectural and Support Services**

- a) Architectural Design
- b) Site Development and Landscaping

- c) Presentations, Project Information Memorandum and Support Services

**(B) Engineering Design, Structural Design and Building Services**

- a) Structure
- b) Water cycle including plumbing, water supply, sewerage, drainage etc.
- c) E&M Services including Fire Fighting Services, HV& AC and Elevators.
- d) Data, Communication , Security, Parking and Building Management Systems
- e) Preparation of construction methodology and details of temporary works
- f) BOQ, Cost Estimate, Specification s and Tender drawings & Documentation with Support services.
- g) Report of Rate Analysis for complete BOQ items.

**(C) Services to be Performed pre, during and post Construction**

- a) Approval and completion from-Statuary Authorities with occupancy certificate and as built drawings, data, Documentation for approval
- b) Issue of Good For Construction (GFC) drawings
- c) Coordinated drawings will be supplied by the consultant for various services (CSDs & SEMs)
- d) Construction validation.

The DC is required to provide services by taking clients instructions, broad roadmap, scope of work and instruction laid out on following pages and in this Document Including his own know how, professionalism, expertise and experience.

**4.2 Detailed Scope of Work for Architectural and Support Services:**

Architectural Services shall include the detail design of all architectural & landscaping works, preparation of drawings, specifications, cost estimates and other Documents as required, in order to obtain tenders and to construct the works. System wise architectural items in the drawings and tender Documents shall also include but not limited to:

- a. Architectural Design of building and site development and work plan of other agencies. General arrangement drawings. Area calculations
- b. Details of useful areas, services areas, circulation areas, plinth area, porches, ledges etc.
- c. Indicative furniture layout plans and Interior design of selective places lift, lobby etc, with electrical layout.
- d. Complete structural services, design and incorporation in architectural proposal and drawings and thereafter preparing SEM

- e. Complete roads, landscape, horticulture, external works and street lighting in synchronization with work plan of other agencies at site. Boundary wall, check post and fencing if required and incorporation in architectural proposal and drawings.
- f. Complete water cycle with water supply, plumbing, drainage, sanitary, and sewerage design, STP in architectural proposal and drawings. Rooftop and Rain Water Harvesting, etc and incorporation in architectural proposal and drawings.
- g. Complete electrical, LT, HT, HVAC, power back up /UPS, emergency lighting, solar energy systems Lifts and other mechanical works and incorporation in architectural proposal and drawing.
- h. Complete fire detection, fire, protection and security systems etc. in architectural proposal and drawings.
- i. Complete data communication and telephone system
- j. Complete Building and parking management system
- k. Finishes Schedules; specifications, Elevation treatment, floor finishes, wall and column finishes, ceiling systems. railing, barriers and gates
- l. Graphic design and signage.
- m. Metal works like shutters, grills, railings, doors etc
- n. Stair and handrail details;
- o. Joinery: doors, window, ventilators, glazing and frames.
- p. Kitchen, pantry, toilet details.
- q. Details of all Civil and electrical fixtures.
- r. Identification of all fixtures fittings, plug points, switches & efficient space planning in relation to these wherever required
- s. Attending coordination meetings
- t. Plans, Sections, Elevations and Details.
- u. Presentation in '3D walk through'.
- v. Presentation on precast, prefabricated readymade structures, new construction methodology, if available, for easy and early construction without affecting the stability and strength.

As listed in the project scope, the DC is to prepare working drawings, It is to be clearly understood that the number of drawings cannot be limited to any fixed number for the detailed / execution stage & the appropriate number of drawings shall have to be made as per project requirements & following good engineering practices

S. no	DRAWING	SCALE (Relevant)
1	Preparation of detailed working drawings & finalization of the drawings on the basis of KMRL comments.	Appropriate scale
2	Develop & draft, detailed construction drawings centered i.e., plans, elevations, & sections	1:100, 1:50
3	Detailing of toilets, staircases, ramps, reception lobbies, cores etc. in consultation with and under guidance of KMRL	1:25
4	Preparation of wall sections/ elevations for internal & external walls, indicating the material of finishes & their colors	1:25
5	The external wall sections to include elevations indicating the material & color of finishes grooving patterns, along with matching cross section plans of fenestration systems in Detailed door , window & joinery schedules including expansion joint details, elevations & cross sectional details for each type	1:25/1:50 or any relevant scale

- A. Schedule of finishes indicating the materials & color shall be prepared on the basis of room coding & nomenclature.
- B. The DC shall prepare Standard Specifications for architectural standard design elements and for the supply and installation of architectural standard finishes and materials. He shall also include specifications for any site-specific non-standard material that is to be incorporated into the design.
- C. The DC shall present the conceptual schemes to KMRL and prepare Documents and models as required and necessary for approval of competent authorities, statutory bodies required according to local bylaws, acts and regulations.
- D. Getting all statutory approvals from local, statutory bodies shall be responsibilities of DC. KMRL shall provide support if required. KMRL shall bear the cost of statutory fee to be deposited to local bodies/statutory bodies if any.

### **4.3 Detailed Scope of work for Engineering Design, Structural Design and Building Services**

#### **4.3.1 General:**

The DC shall produce suggested construction programs based upon its assumed methods of construction and work sequences. The program shall include interface activities with system-wide and other contractors. The programs shall be submitted to the Employer's Representative for review of compatibility with other programs and for any subsequent amendment as required. The DC construction implementation schedule

shall demonstrate that the design can be constructed within the schedule guidelines of the Contract Documents. This shall include significant schedule milestone events based on logic restraints, reasonable resources, achievable production rates, and solid construction practices.

During the design review stages of the approved construction program the Employer's Representative may require the DC to make adjustments based on the DC's professional judgment.

#### **4.3.2 Structural Designs and Drawings:**

- a. Complete structural design and incorporation in drawings with preparation of CSDs & SEMs.
- b. Commented and approved concept drawings are to be taken up for starting the Structural work, a copy of the same to be submitted with the final Structure drawings.
- c. Structure design Basis Report viz. the assumptions to be made in Structure analysis and Design shall be got approved from KMRL before start of the work.
- d. Structural System to be worked out in close co-ordination with Design Division of KMRL and internal architectural layout design and the same to be approved before start of Space Frame Analysis.
- e. Coordination with other disciplines (Electrical) for their requirements of the structural elements sizes/ cutouts/ inserts etc.
- f. The structural system has to be worked out so as to achieve an economical and safe design keeping in view the Serviceability requirements.
- g. Super-structure and sub-structure, Columns, beams, slab etc.
- h. Loads- Complete description of Basic loads, member loads, Earthquake and wind loads including load combinations. This shall also include any special loads like equipment loads, dynamic loads etc. for water containing structures, hydraulic pressures to be considered appropriately.
- i. STAAD / STRAP or any other approved appropriate software analysis modeling the building as appropriate space frame(s) – The structural elements shall be accordingly sized to obtain the optimal designs based on the criteria as decided & approved by KMRL.
- j. Appropriate checks for deflections of structure as well as the individual members so as to restrict the same within permissible codal limits. Only Space Frame modeled with Dynamic Input & Analysis will be considered.
- k. Complete structural designs of all elements of sub & super structure. This shall include the designs of beams, columns, slabs, footings/ rafts -so that the design

information can be readily converted into the detailed execution drawings.

- l. Detailed execution drawings as well as any revisions there in arising out of site constraints or any other requirements like changes in the other discipline drawings.
- m. Wherever the construction planning has to be specifically suited to certain design requirements, the sequence of construction shall also be identified appropriately.
- n. All responsibilities concerning with the stability of Structure, Structure drawings, compatibility with architecture drawings, etc. lies with DC. A Structural Stability Certificate in line with KMRL's requirements/project requirement is also to be finished by the consultant.
- o. Relevant codes (latest), standards & the prevailing good engineering practices shall be followed in carrying out the above work. Details/References (of same) shall be furnished so as to facilitate the checking of design calculations etc.
- p. Design Consultant shall extend full cooperation to Proof Consultant and shall carry out necessary modification and design, drawings as suggested by Proof Consultant. In case of any difference in the opinion of Design Consultant and Proof Consultant, decision of Employer shall be final.
- q. Final in principle approved drawings from KMRL are to be signed by two Structural Engineers of consultant Organization before forwarding the same to KMRL
- r. Approval & clearance from KMRL shall be obtained for all the designs & drawings.

#### **4.3.3 Roads**

1. Complete roads, landscape, horticulture, irrigation, external works and street lighting in synchronization with work plan of other agencies at site. Boundary wall, check post and fencing if required and incorporation in and drawings for preparation of CSDs & SEM
2. Planning and designing road layout- Alternative road layout in order to minimize cost and finding co-ordinates of road center line at the interval of not more than 20 m on straight line and at all and 10m on junctions, curve, turning points.
3. Alternative road layout to optimize cost of excavation and filling keeping in view the better serviceability.
4. L-section showing chain age, Ground level, formation level, depth of cut, depth of fill, longitudinal slope, location of culvert etc.
5. Design of typical road cross in cutting, filling. Depth, camber design etc.
6. Design of horizontal curve, vertical curve, super elevation, retaining wall, culverts and any other works related to road work, if required.
7. Pavement systems
8. Planning and designing road drainage system.
9. Synchronization with other engineering services and landscape design.



#### **4.3.4 Water Supply**

- a. Complete water cycle with water supply, plumbing, drainage, sanitary, and sewerage design, STP in architectural proposal and drawings. Rooftop and Rain Water Harvesting, etc and incorporation in drawings for preparation of CSDs & SEM.
- b. Identification of different source of water and their potential to deliver, river, bore well, etc.
- c. Assessment of water requirement for building and facilities.
- d. Planning and designing of external water supply system -rising main/gravity and branch pipe.
- e. Design of bore well, water treatment plant, underground storage tanks cum pump house.
- g. Planning and designing of internal water supply system for building. Calculation of fixtures unit, size of riser, down take and horizontal pipe. Head loss, Pressure check at delivery point. Storage capacity of terrace tank. Details of valve and fixtures.
- h. Design of water treatment plant, pump house, piping for water supply scheme.
- i. Design and layout drawings of over head tanks over the buildings, including mechanical pipe fittings, valves and connections.
- j. The plumbing drawings shall indicate the size and location of the pipes, details and plan view, and supporting details of equipment and plumbing fitting & fixtures along with locations, legends, notes etc. complete.
- k. Ro System or other purification system for drinking water

#### **4.3.5 Sewerage System**

- a. Complete water cycle with sanitary and sewerage design and incorporation in drawings for preparation of CSDs & SEM .
- b. Planning and designing of internal sewerage system. Size, slope and specification of soil pipe, waste pipe, vent pipe. Details of sunken area co- ordination with structural drawings for beam/slab sleeve details. Details of Floor trap, floor drain, FCO and plumbing system.
- c. Assessment of sewage discharge from each building. Design of external sewerage system. Details of Manhole, Gully Trap, Cradle, Junction etc.
- d. Design of sewage/effluent treatment plant Process details, Capacity of treatment facilities of sewage / waste water.

#### **4.3.6 Storm Water Drainage system**

- a. Complete water cycle with drainage, rooftop and rain water harvesting, etc. and incorporation in drawings for preparation of CSDs & SEM



- b. Design of roof drainage, provision of rain water pipe, gutter etc. for disposal of rain water.
- c. Disposal system of storm water besides building / complex.
- d. Storage system of rain water for recycling.
- e. Design of external storm water drainage scheme and final disposal system.
- f. Detailed design of rain water harvesting system.
- g. Formation level of buildings and surrounding areas for surface drainage.
- h. Design for Reuse / recycle of rain water.

#### **4.3.7 Fire Fighting System**

- a. Complete fire detection, fire protection and security systems etc. and incorporation in drawings for preparation of CSDs & SEM.
- b. Identify minimum requirement of firefighting system as per latest building bylaws and NBC, also considering the local authority guidelines and standards followed by KMRL for buildings in station box.
- c. Design of internal/external firefighting system including main fire ring, yard hydrant, fire tank, pumping system and all other items required as per latest by laws.
- d. Design of internal firefighting system such as wet riser, down comer, first aid hose reel, sprinkler system and all other accessories as per latest code.
- e. All approval of concept drawings/working drawings pertain to the fire safety system from the concerned local authority.

#### **4.3.8 Electrical and Mechanical Services**

- a. Complete electrical, LT, HT, HVAC Hi side , Lo side, power back up /UPS, emergency lighting, solar energy systems, Lifts and other mechanical works, complete data, communication and telephone system, building and parking management system and incorporation in drawings for preparation of CSDs & SEM
- b. The Electrical and Mechanical services shall include the design of all E & M services. The scope shall include the preparation of drawings, outline specifications, cost estimates and other Documents, as required This shall include
- c. Sub Station.
- d. Emergency Power Back up arrangement & its metering and Distribution.
- e. Electrical Distribution including earthing and lightning protection.
- f. Lighting (Indoor & Outdoor) including software simulation
- g. HV&AC
- h. PA. System
- i. Security System.
- j. Communication System
- k. Lifts etc.
- l. Fire Detection, Fire Protection System& Fire Fighting System

**Note:-**

Unless otherwise stated, the E&M system design shall comply all applicable local regulations issued by the agencies listed below:

1. Indian Electricity Rules
2. Indian Electricity Act
3. . National Building Code
4. Central Pollution Control Board
5. Local Bodies
6. **Fire services**
7. Kerala municipal rules
8. National Safety Council

## **5.0 Services to be performed pre, during and post Construction**

### **5.1 Tender Support Services:**

#### **5.1.1 Civil, Electrical and Mechanical Works**

The DC shall prepare and submit to the Employer's Representative, construction cost estimates. These estimates shall be based on quantity take-off from prepared drawings, but where no drawing exist the quantities shall be determined by using similar job information and typical relationship of quantities.

#### **5.1.2 Tender Documentation**

The responsibility for preparing the construction tender Documents in electronic format shall be that of the DC based on the guidelines of the Employer's Representative. The DC shall prepare the Bills of Quantities, Special Conditions of Contract and technical drawings and specifications including the Scope of Work.

#### **5.1.3 Tender support and Amendment to Tender Documents**

The DC shall support the tendering process for the proposed tender by assisting the Employers Representative in responding to questions from the tenderer and in preparing addendum, if required. The DC shall also assist the tender evaluation process, if required.

#### **5.1.4 Contract Drawings**

The DC shall submit to the Employer's Representative, prior to the award of construction contract, a complete set of "Good For Construction" drawings.

#### **5.1.5 BOQ and Quantity Variation**

DC shall take utmost care with full responsibility to ensure that the BOQ and quantities indicated therein conform to actual construction contract requirements and final design approved at 'Good for Construction' drawing stage, within variation limits as prescribed in Tender Documents.

Any variation in quantities beyond specified limits shall be pointed out timely, and the DC shall be fully responsible for additional contractual cost variations arising on account of design changes.

#### **5.1.6 Additional Contract Drawings**

Additional contract drawings or revisions to the contract drawings previously issued for construction shall be prepared by the DC and submitted to the Employer's Representative. Where changes to the contract drawings are required, the DC shall be responsible for preparing all data related to the detailed design onto drawings to be issued to the Contract. The Employer's Representative will then issue the drawings to the contractor for construction of the Works.

### **5.2 Construction Methodology, interfacing and Validation:**

#### **5.2.1 Construction Methods and Temporary Works**

The DC shall review shop and working drawings, material samples and bar bending schedules produced by the Construction Contractor, Furthermore the DC shall examine, approve and report to the Employer's Representative, the Construction Contractor's proposed construction methods and temporary works design viz. staging, scaffolding, shuttering etc. with respect to their effect on the permanent works. These shall be incorporated in monthly reports to be submitted by DC.

#### **5.2.2 Site Meetings**

DC shall conduct weekly site meetings for work Review, Programme and construction support etc. This shall be covered under construction support activity by DC for which no extra payments shall be applicable.

#### **5.2.3 Construction interfacing and Validation**

The interfacing and validation of construction activities shall comprise but not limited during period of construction. The consultants may suggest any other activities required for

successful and timely completion with high quality workmanship and with good construction practices. The project should be planned for completion not exceeding 18 months excluding defect liability period. Monitoring during construction to ensure it according to their scheme as also to resolve co-ordination issues amongst various agencies at work.

The DC shall undertake overall responsibility of interfacing and validation of various construction activities to be performed by Construction agency as per approved designs and drawings. DC shall exercise close watch of all construction activities.

In disputes between the Employer and Contractor DC shall prepare the arbitration/conciliator data required, attend arbitration meetings and make efforts to prevent any negative awards against the Employer.

### 5.3 Approvals

#### 5.3.1 Documentation for approvals and as built drawings

Approval of drawings and documents prepared by the DC and approved by the concerned statutory authorities, departments, agencies, commission etc. containing drawings, Documentations, letters, instructions, minutes and certificates etc. DC is to prepare all submission detailed drawings and Documents taking into account all directions given during the various meetings & up to date applicable provisions in MPD 2021, BBL, other acts, byelaws, law, policies, guidelines, rules, regulations, instructions or all relevant codes, standards and norms etc. to obtain approval of detailed submission drawings and Documents of the project from all concerned statutory authorities like Fire Dept., GCDA or any other authority, department, commission agency, with a view to carry unhindered construction. He is to prepare all detailed submission drawings and Documents taking into account and considering all services, its layouts and detail for prevalent applicable design data's, technology, sizes, numbers, codes, practices, standards, rules, instructions, levels and surveys etc.

Completion certificate from all local bodies and permission for occupation prepared by the DC and approved by the concerned statutory authorities, departments, agencies, commission containing drawings, Documentations, letters, instructions, minutes and certificates etc. for completion purposes and occupation certificate. Services level

connection certificates. DC to obtained completion of detailed completion drawings and Documents of the project from all concerned statutory authorities like Fire Dept., GCDA or any other authority, department, commission agency, with a view to obtain completion and occupancy certificate, taking into account applicable provisions in MPD 2021, BBL, other acts, byelaws, policies, guidelines, rules, regulations instructions or all relevant codes standards and norms etc. DC should prepare all detailed completion drawings and Documents taking into account and considering all services , its layouts and detail of design data's, technology, sizes, numbers , codes, practices, standards, rules, instructions, levels and surveys etc. It shall be absolute responsibility of DC for undertaking necessary corrections/amendments/modifications, if required, for approvals of completion from Statutory Authorities and issue of occupancy certificate. It shall be absolute responsibility of DC to get the completion drawings approved from all such authorities. All requisite data and details required by the authorities for approval of submission drawings shall be provided by DC including liaison with various authorities and obtaining approvals from them.

As built drawings are prepared by Contractor, checked and approved by DC. The DC shall review the Contract drawings as revised for as-built information submitted by the contractors to KMRL on a continuous basis prior to the issuance of the Certificate of Completion for the construction contract.

## **6.0 STANDARD OF SERVICES**

### **6.1 General**

The DC shall be responsible for the correctness and technical merit of its designs, calculations, drawings and all other Documentation prepared by it in carrying out the services.

The DC shall ensure that qualified and experienced staffs are employed in sufficient number, and that accurate, consistent, clear and easily read drawings and Documents are produced in time.

The DC shall comply with the provisions and procedures covering standards and codes, drawings and calculations outlined below.

### **6.2 Standards and Codes**

The standards and codes referred to and to be used in the detailed design, drawings outline specifications and Documents shall be quoted and the standards used should be

made available to the Employer's Representative.

### **6.3 Extent of Information**

All designs and Documentation produced by the DC shall provide sufficient information and detail for tenderers to determine accurately the extent of the Works, and submit firm prices.

Tender and Contract Drawings, Specifications and other information produced by the DC for construction, or revisions of such Documents, shall be submitted to the Employer's Representative, in sufficient time for review and further issuance of a comprehensive package to the Contract. The DC shall ensure that these Documents are produced in a timely manner such that the Construction Contractor is able to plan and execute its works in accordance with the contract, including the construction program.

Drawings for construction shall be in such detail as not to require further design or detailing to be carried out by the Construction Contractor except as provided under Section 4.6 hereof. The DC's drawings shall show or include details of any unusual features of construction and shall include reinforcement drawings.

### **6.4 Calculations**

Calculations shall be prepared according to the best professional standards and compiled into sets that relate to particular aspects of design. Important calculations shall include, but not be limited to, a method statement including

Calculation for foundations of the structure

- Calculation of the structure, choice of a particular structural system
- Calculation of water supply system layout and other services requirement such as drainage etc.,
- Calculation for area drainage and other utility services

Each set of calculations shall be bound and shall include a cover sheet and index. A statement certified by DC's Authorized and Approved Project Manager that the accepted checking procedures have been carried out in full shall be attached to each set of calculations submitted to the Employer's Representative.

### **6.5 Original calculations**

Original calculations shall be submitted to Employer's Representative for proof checking. Each sheet shall be signed in accordance with the requirements. Original calculations shall be returned and retained by the DC and shall be produced at such times as may be required by the Employer's Representative. The original calculations shall then be handed

to the Employer's Representative on completion of the services.

## **7.0 CHECKING PROCEDURES**

### **7.1 General**

The DC shall establish a Quality Assurance Plan (QAP) and a system of internal checking and approval of all designs, including calculations, drawings and other Documents prepared and issued by it, to the Employer's Representative for acceptance.

The purpose of the checking shall be to ensure accuracy and consistency, as well as compliance with current requirements, standards, codes and the requirements of this Document. Certification of such a

check has been carried out shall be issued to the Employer's Representative with each batch of Documentation for acceptance at the final submission and subsequent submissions.

Internal checks shall be carried out by personnel who have experience and competence equal or superior to the originator, but who have not been involved in producing the original design.

### **7.2 Design Calculations**

Each page of design calculations, including any amendments thereto, shall be endorsed as checked and approved prior to issuing to the Employer's Representative by being initialed and dated by both the originator and the checker. The checker shall append a statement explaining the method of checking used.

### **7.3 Drawings and Documents**

Each Document and drawing, including any provisions thereto, shall be endorsed as checked and approved prior to issue to the Employer's Representative by being initialed and dated by both originator and checker and signed by Lead Architect /Project Manager or its authorized nominee. In addition to compliance with the requirements of the Documentation, each drawing, where appropriate, shall be checked to ensure compliance with the DC's certified design calculation.

### **7.4 Certification**

A certificate signed by the Lead Architect /Project Manager of the DC or his accredited representative stating that all drawings and Documents have been checked and approved in accordance with the DC's approval QA Plan shall accompany all Documents and

drawings issued by the DC to the Employer's Representative for acceptance.

### **7.5 Quality Assurance Plan**

The Quality Assurance Plan (QAP) shall be submitted by the DC to the Employer's Representative for approval within two weeks from the date of issue of LOA before any work is submitted by the DC for approval by the Employer's Representative.

The QAP shall identify the personnel, procedures, instructions, records and forms necessary to implement the plan with the following minimum requirements:

- a. Certification process of drawings and Documents for issue
- b. Organizational structure
- c. Design Control - including study and design input/analysis
- d. Checking of Documents
- e. Document Control
- f. Sub-contractor Control
- g. Internal Quality Audit
- h. Corrective actions
- i. SHE Conditions

The DC shall also identify the requirement of Quality Level and incorporate a Quality Level List in the QAP for each construction contract.

### **7.6 Quality Audits/Monitoring**

Quality audits and monitoring of the DC's QAP will be conducted by Employer's Representative at intervals commensurate with the DC's activities.

### **7.7 Responsibility**

Notwithstanding acceptance by the Employer's Representative, the DC shall remain responsible for the quality of the Documents.

## **8.0 ORGANISATION OF THE DESIGN CONSULTANT**

### **8.1 General**

The DC shall establish an efficient organization for carrying out all services according to programme requirements. The organization shall provide effective management of the tasks of the contract including those that must be carried out concurrently by separate disciplines and teams. The organization shall also ensure that all information that becomes available during the design period is directed to the appropriate design teams and effective checking procedures are continuously maintained to ensure that required standards are



met.

Upon its appointment, the DC shall promptly commence setting up its organization to the satisfaction of the Employer's Representative and shall be housed in Kochi. All work by DC shall be performed in Kochi unless otherwise approved by KMRL in advance. Team will be headed by a Project Manager assisted by Dy. Project Managers of different disciplines along with other engineers.

One Key Person from DC shall be placed at KMRL office for contract period/as desired by KMRL to liaison all activities, for whom reasonable space will be provided by KMRL.

## **8.2 Performance**

Notwithstanding any change in its organization structure, staff or manning schedules, the DC shall remain wholly responsible for providing the services. If, in the opinion of the Employer's Representative, the progress or performance of the DC's work is seen to be at any time inadequate to meet those requirements, the DC shall take the necessary steps to improve them on being so notified. If within a reasonable period the DC has not improved its progress or performance, the KMRL may by written notice, require it to take additional measures, including changes in its organization, at no additional cost to KMRL. Such notice shall in no way be deemed to constitute a waiver of KMRL's rights to terminate the Agreements by reason of the DC's breach of contract. Failure by the KMRL to issue such a notice shall not relieve the DC of its obligation to achieve the required rate of progress and quality of work.

**9.0 MATRIX OF DESIGN SUBMISSION, REVIEWS & PROCEDURE**

<b>S No</b>	<b>MATRIX OF DESIGN SUBMISSION, REVIEWS &amp; PROCEDURE</b>	<b>Submission of Documents</b>
<b>9.1</b>	<p>Preliminary, Tender and Contract Drawings shall be prepared and issued by the DC in accordance with the current requirements issued to it by the Employer's Representative. All drawings shall be produced in A-1 size using CADD graphic systems compatible with the KMRL system and as approved by the Employer's Representative. Drawings are defined as follows:</p> <p><b>(I). Preliminary drawings and Documents</b> are prepared by the DC prior to their acceptance by the Employer's Representative as Tender Drawings.</p> <p><b>(II). Approval drawings and Documents</b> are prepared by the DC and approved by the concerned statutory authorities, departments, agencies, commission etc. containing drawings, Documentations, letters, instructions. minutes and certificates etc. (including Architectural, Structural, Plumbing, Drainage, E&amp; M and other Development works).</p> <p><b>(III). Tender drawings and Documents</b> are drawings prepared by the DC and approved by the KMRL which, with other relevant documentation, contain all the information necessary for tendering purposes.</p> <p><b>(IV). Working/ Detailed drawings and Documents</b> are drawings that have been prepared by the DC from Tender drawings that have been approved by KMRL and which, together with other relevant documentation, will form the construction contract. These Drawings shall be stamped "<b>issued for Construction</b>"/ "<b>Good for Construction</b>" and will be added or revised as noted in IV Below.</p> <p><b>(V). Completion, as built drawings and Documents &amp; occupancy certificate</b> are prepared by the DC and approved by the concerned statutory authorities, departments, agencies, commission containing drawings, documentations, letters, instructions, minutes and certificates etc. for completion purposes and occupation certificate. Services level connection certificates. As built drawings are prepared by contractor checked and approved by DC.</p>	<p>Consultant shall prepare an overall schedule of release of drawings as per the schedule given by KMRL before start of work as per schedule.</p> <p>Working drawings for all disciplines (Arch, Civil/structural, PHE, E/M) will be submitted to KMRL for approval.</p> <p>The drawings may undergo minor/major revisions as per requirement of project/ Site condition /Customer and the same shall be carried out by the consultant for all disciplines appropriately in the stipulated price.</p> <p>The DC shall deliver to the Employer's Representative the drawings and Documents as listed in hard copies as mentioned below and 1 soft copy of each Document as directed by the Employer's Representative.</p> <p>Drafting aspects: All drawings are to be made as per CAD standards adopted by KMRL based on the following:</p> <ol style="list-style-type: none"> <li>Directory structure.</li> <li>File naming.</li> <li>Layer naming.</li> <li>Color.</li> <li>Pen thickness.</li> <li>Text style &amp; size.</li> </ol>

9.2	<p><b>Other deliverables as following but not limited to :</b></p> <ol style="list-style-type: none"> <li>The standard of services and checking procedure should be set at minimum bench mark of clause 6 and 7.</li> <li>Signed certificate by DC that all drawings and documents have been checked and approved in accordance with the DC's approval QA</li> <li>Progress register, a list showing drawing numbers, titles, scales and the progress status of all drawings and Documents</li> <li>All computer application programs for acceptance prior to use in making calculations. These shall include the computer program manuals, input and output printout of a typical example and previous records of its use by the DC.</li> </ol>	
9.3	<p><b>Quality Assurance Plan:</b></p> <p>The Quality Assurance Plan (QAP) shall be submitted by the DC to the Employer's Representative for approval <b>within two weeks from the date of issue of LOA</b> before any work is submitted by the DC for approval by the Employer's Representative.</p>	<p>2 copies of the Quality Assurance Plan comprising but not limited to</p> <ul style="list-style-type: none"> <li>• Certification process of drawings and Documents for issue</li> <li>• Organizational structure</li> <li>• Design Control-including study and design input/analysis</li> <li>• Checking of Documents</li> <li>• Document control</li> <li>• Subcontractor control</li> <li>• Internal Quality audit</li> <li>• Corrective action</li> </ul> <p>The DC shall also identify the requirement of Quality Level and incorporate a Quality Level List in the QAP for each construction contract.</p>
9.4	<b>PRELIMINARY DRAWINGS &amp; DOCUMENTS</b>	
1	<p><b>Design Alternatives and Architectural Review (Combined for all element of work):</b></p> <p>Design Alternatives and a preliminary Architectural Review of the DC's design proposals shall be done within 3 weeks after the Date of Commencement of the Contract. This period shall include Employer Representatives review/approval period of 7 working days. The DC shall prepare and present drawings describing the architectural design which shall, at minimum, include:</p>	<ol style="list-style-type: none"> <li>Site Plan</li> <li>Plan of each floor level with structure</li> <li>Sections and Elevations</li> <li>Perspective sketches</li> <li>Landscape conceptual design</li> <li>Services conceptual plan</li> <li>Structure conceptual plan</li> <li>Any other considered important</li> </ol>

2	<p><b>First Review Procedure:</b></p> <p>The Employer's Representative will complete the Design Review of all details submitted within approximately 7 working days and furnish the DC with his review comments either in writing or on marked up drawings. Within 3 days of receiving the comments the DC shall meet the Employer's Representative to discuss the review comments such that further actions can be determined for the DC to proceed with its services in a timely and efficient manner.</p>	<p>Within seven (7) days of this meeting the DC shall deliver to the Employer's Representative 2 copies of the minutes of the meeting together with its responses to all comments.</p>
3	<p><b>First Review Submission:</b></p> <p>The design, including preliminary drawings and drafts of the proposed bill of quantities and specifications, shall be substantially developed to define the works, including locations, shapes and sizes and submitted to the Employer's Representative for the first Review within 5 weeks.</p> <p>Indicative costs are to be prepared for all design alternatives proposed by DC.</p> <p>Detailed cost estimate will be required for those design alternatives approved/adopted by KMRL.</p> <p>The First Review Submission shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>• Architectural Proposal</li> <li>• Drawings detailed to define the scope of works to be executed</li> <li>• Technical specifications in sufficient detail of materials and workmanship to permit tenderers to tender for the work</li> <li>• A design brief for E&amp;M services covering the basis / principles / norms followed for various activities</li> <li>• Design calculations to reflect the definition and scope of the works to be executed</li> <li>• An environmental impact mitigation plan</li> <li>• An outline construction program with consideration of alternative construction methods, if appropriate</li> <li>• A draft description of assumed construction methods and alternate construction methods, if considered appropriate</li> <li>• Bill of Quantities for all the works with sufficient accuracy to be able to proceed to tender</li> <li>• Construction cost estimates</li> </ul>	<p>2 full size (A-1) sets of drawings (including 5 additional sets of full size (A-1) utility drawings</p> <p>2 half size (A-3) sets of drawings</p> <p>2 sets of draft Specification</p> <p>2 sets of draft Bill of quantities</p> <p>2 sets of design calculations</p> <p>2 sets of Construction Cost Estimates</p> <p>2 copies of the Design Report</p> <p>2 copies of the topographic and field survey</p>

4	<b>Delivery of Tender Drawings, BOQ's, Cost estimate and Specification:</b> These Documents comprising of materials for inclusion in tender Documents issued to construction contractors viz. tender drawings, BOQ, cost estimate and specifications etc. shall be submitted complete in all respect after drawings; incorporation the first review comment within a week of receipt of final comments.	One full size (A-1) set of Mylar reproducible 10 sets of full size (A1) drawings 5 half size (A-3) sets of drawings 10 sets of Bill of Quantities 10 sets of special specifications 5 sets of Cost Estimates
9.5	<b>APPROVAL OF DRAWINGS &amp; DOCUMENTS:</b> Approval of Statuary Authorities drawings & Documents approved by concerned statutory authorities, departments, agencies, commissions etc. containing drawings, documentations, letters, instructions, minutes and certificates etc. Approval of local/statutory authorities.	Soft copies in CD, editable and in PDF format 2 sets of drawings and documents as approved, stamped and signed.
9.6	<b>TENDER DRAWINGS &amp; DOCUMENTS</b>	
(i)	<b>Final Review Procedure/ Tender drawings &amp; Documents:</b> The Employer's Representative will complete the Final Review of all details submitted within approximately 7 working days and furnish the DC with his review comments either in writing or on marked up drawings. Within 3 days of receiving the comments the DC shall meet with the Employer's Representative to discuss the review comments such that further actions can be determined for the DC to proceed with its services in a timely and efficient manner	Within seven (7) days of this meeting the DC shall deliver to the Employer's Representatives, 2 copies of the minutes of the meeting together with its responses to all comments.
(ii)	<b>Final Review Submission / Tender drawings &amp; Documents:</b> The Final Review submission shall include, but not be limited to: <ul style="list-style-type: none"> <li>• Architectural Proposal</li> <li>• Drawings sufficiently detailed to define the Works, complete and checked, including reinforcement drawings</li> <li>• Combined Services Drawings (CSDs)</li> <li>• Structural-Electrical-Mechanical Drawings (SEMs)</li> <li>• Design calculations which are indexed and checked</li> <li>• Design Report and Geotechnical Design Summary Report</li> <li>• Design basis report</li> <li>• A detailed construction programme</li> <li>• A detailed description of the assumed construction methods</li> <li>• Construction cost estimates, estimate</li> </ul>	2 full size (A-1) sets of drawings (including 5 additional sets of full size (A-1) utility drawings) 5 half size (A-3) sets of drawings 5 sets of design calculation 5 copies of the Design Report 5 copies of the Construction Program 5 copies of the Construction Cost Estimates

	<p>reconciliations with prior estimates, and back-up data</p> <ul style="list-style-type: none"> <li>Integrated Services Drawings, indicating both existing and proposed services, utilities, structural and architectural elements, electrical and mechanical system, fire protection system and other sanitary and plumbing building services.</li> </ul>	
(iii)	<p><b>Delivery Tender Drawings, BOQs, Cost estimate and Specification:</b></p> <p>These Documents comprising of materials for inclusion in tender Documents issued to construction contractors viz. tender drawings, BOQs, cost estimate and specifications etc. shall be submitted complete in all respect after incorporation of the first review comments within a week of receipt of final comments.</p>	<p>One full size (A-1) set of Mylar reproducible</p> <p>10 sets of full size (A1) drawings</p> <p>5 half size (A-3) sets of drawings</p> <p>10 sets of Bill of Quantities</p> <p>10 sets of specifications</p> <p>5 sets of cost estimates.</p>
<b>9.7</b>	<b>WORKING/ DETAILED DRAWINGS &amp; DOCUMENTS</b>	
(i)	<p><b>Issue of Good for Construction drawings/ Contract drawings &amp; Documents:</b></p> <p>On approval of final review submission, the DC shall submit Good For Construction drawings for all categories viz. Civil, Mechanical &amp; Electrical and deliverables as listed under final review and submission. Complete submission shall be made within 15 weeks. This period shall also include review and approval period of 14 working days by Employer Representatives, Review comments and design charges if any shall be incorporated and resubmitted by DC within a week.</p>	
(ii)	<p><b>Submission of Originals drawings &amp; Documents:</b></p> <p>When all the comments of the Final Review submission are incorporated, the submission of originals shall be made to the Employers representative. This will consist of all documents prepared by DC including the Design report submission. Procedures for review shall follow those of final review.</p>	<p>1 half size (A-2) sets of prints of drawings</p> <p>1 copy of Construction Cost Estimates</p> <p>2 sets of CDs in Auto_CAD format of all drawings</p> <p>2 copies of Final Design Summary Report (Vo.1)</p> <p>3 sets of Quality Take off Sheets</p> <p>3 sets of floppy diskettes /CD's for construction cost estimates.</p>
(iii)	<p><b>Delivery of Documents:</b></p> <p>After the Employer's Representative has accepted the submission of the Originals, the DC shall deliver in electronic format on diskette all Documents prepared by it to the Employer's Representative. Original full size Tender Drawings shall be ready for reproduction. The original Documents, typed but not bound, shall</p>	



	have been proof read, reviewed approved and certified, and be ready for reproduction. The DC shall furnish a complete set of CAD diskettes to the DC, prepared in accordance with requirements within 60 days of the submittal of the original drawings. A CAD File Control Log, which describes the contents of the CAD diskettes, shall also be furnished.	
(iv)	<p><b>Final Design Summary Report drawings &amp; Documents (combined for all element of work):</b></p> <p>The Final Design Summary Report shall include, but not be limited to:</p> <p>The purpose of this report is to provide a convenient reference to the design and operation of the system. The report shall be based on "As Built Drawings".</p>	<ul style="list-style-type: none"> <li>• Scope of Work</li> <li>• Work Description</li> <li>• Drawing Index</li> <li>• Key Design drawings from all disciplines</li> <li>• Site plan</li> <li>• Structural configuration</li> <li>• System Operation</li> <li>• Construction Description</li> <li>• Design Criteria</li> <li>• Technical Description</li> <li>• Statutory compliance certificates</li> </ul>
(v)	<p><b>Weekly Progress Meetings:</b></p> <p>DC will attend weekly progress meetings with KMRL. The DC will be required to produce:</p> <ul style="list-style-type: none"> <li>• An updated copy of the computerized project schedule and a design chart showing scheduled and actual start and finish dates and estimated percentage completion for each major design activity</li> <li>• An updated copy of the Progress Register showing the titles and status of all drawings and Documents</li> </ul>	
<b>9.8</b>	<b>COMPLETION, AS BUILT DRAWINGS &amp; DOCUMENTS &amp; OCCUPANCY CERTIFICATE</b>	
(i)	<p><b>Completion formalities drawings &amp; Documents:</b></p> <p>Approved completion by concerned statutory authorities, departments, agencies, commission etc. containing drawings, Documentations, letters, instructions, minutes and certificates etc.</p>	<p>1 copy of Soft copies in CD, editable and in PDF format</p> <p>5 sets of drawings and Documents, size as per approved- stamped and signed</p>
(ii)	<b>Submission of "As Built" Drawings &amp; Documents:</b>	<ul style="list-style-type: none"> <li>• Three sets of "As Built" Drawings endorsed by the DC</li> <li>• 5 Sets of Final Design Summary Report (Vol.- 2)</li> </ul>



**KOCHI METRO RAIL LTD.**  
(A joint venture company of Govt. of India & Govt. of Kerala)

**Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works, Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and Validation.**

**CONTRACT NO: KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15**

**TENDER DOCUMENT**

**VOLUME-3**

**FINANCIAL PACKAGE**

APPENDIX- B1 - FINANCIAL PROPOSAL

APPENDIX- B2 - FORM OF FINANCIAL PROPOSAL

APPENDIX- B3 – PAYMENT SCHEDULE

APPENDIX- B4 - COMPLETION TIME/PROGRES

**KOCHI METRO RAIL LIMITED**

**(A joint venture company of Govt. of India & Govt. of Kerala)**  
**8<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi Kerala – 682011.**



**APPENDIX- B1**

**CONTRACT**

**FINANCIAL PROPOSAL**

**FROM**

**TO**

General Manager(C),  
Kochi Metro Rail Limited,  
6<sup>th</sup> Floor, Revenue Tower,  
Park Avenue,  
KOCHI-682011 Kerala.

Sir,

**Contract - Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works ,Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and validation.**

I/We----- Consultant/consultancy firm herewith attach  
Appendix- B 2 the Lump Sum Price Proposal for selection of my/our/organization  
as Design Consultants for above mentioned Contract No.

---

Yours faithfully,

Signature-----

Full Name-----

Designation-----

Address-----

(Authorized Representative)

**Note: If the Consultant consists of more than one entity, they should also appear as signatories or submit the POA in favor of the authorized signatory**

**APPENDIX - B2**

**CONTRACT**  
**FORM OF FINANCIAL PROPOSAL**

To

Kochi Metro Rail Limited,  
 8<sup>th</sup> Floor, Revenue Tower,  
 Park Avenue,  
 KOCHI-682011 Kerala.

Sir,

Having examined the Tender Documents for Contract No- **KMRL/PRJ/STAFF QTRS @ MUTTOM-162/2014/TEN 03-15** as set out in your Notice of Invitation to Tender, Instructions to Tenderers, the Conditions of Contract and the matters set out in the other tender Documents, we undertake to carry out Design Consultancy work as per scope of services given and detailed in tender Documents with the Lump Sum price proposal as submitted in the next page.

(The tenderer may quote his offer either only in Indian Rupees. The lump sum amount quoted in Indian Rupees by the tenderer shall be distributed in the manner specified in Appendix B3 of Financial Package for all purposes).

Item of Work	Lump sum Price in INR (In fig.)	Lump sum Price in INR (In words)
Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works ,Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and validation from concept to commissioning with following scope but not limited to "Architectural Design, Site Development and Landscaping, Presentations, Project Information Memorandum, Geotechnical investigations, Engineering Design, Structural Design and Building Services, Structure, Water cycle including plumbing, water supply, sewerage, drainage, rain water harvesting etc., EM Services including Fire Fighting Services, HV& AC and Elevators, Data Communication, Security, Parking and Bidding Management Systems, Preparation of construction methodology and details of temporary works, Construction Tender Documents, BOQ, Cost Estimate, Specifications and Tender drawings & Documentation with Support services, Approval and completion from Statuary Authorities with occupancy certificate and as built drawings, Construction interfacing and validation during construction, preparing development plan for Phase-II area as defined in scope of work and as per <b>payment schedule</b> given in Appendix B3.		

TOTAL:

**APPENDIX – B3****CONTRACT****Percentage distribution of Lump sum price for Design Consultancy services mentioned in Appendix- B2**

S. No	Scope of Work		
	Design Consultancy Services for construction of multi-storey residential staff quarters (Phase-I) at MUTTOM including planning and design of Architectural, Civil, E & M, Finishing, Water Supply, Sanitary Installations, HVAC, External Development Works ,Horticulture and landscaping - Design, Detailing, Tender documents with BOQ, Construction interfacing and validation from concept to commissioning with following scope but not limited to “Architectural Design, Site Development and Landscaping, Presentations, Project Information Memorandum, Geotechnical investigations, Engineering Design, Structural Design and Building Services, Structure, Water cycle including plumbing, water supply, sewerage, drainage, rain water harvesting etc., EM Services including Fire Fighting Services, HV& AC and Elevators, Data Communication, Security, Parking and Bidding Management Systems, Preparation of construction methodology and details of temporary works, Construction Tender Documents, BOQ, Cost Estimate, Specifications and Tender drawings & Documentation with Support services, Approval and completion from Statuary Authorities with occupancy certificate and as built drawings, Construction interfacing and validation during construction, preparing development plan for Phase-II area as defined in scope of work and as per <b>payment schedule</b> given below:		
	<b>ACTIVITY COMPLETED</b>	<b>% payment of Lump Sum amount</b>	<b>Cumulative</b>
1	On submission of Inception Report & Geo-technical Report:	5%	5%
2	On submission of detailed designs & GFC drawings:		
(i)	Up to Foundation level	15%	20%
(ii)	Up to G + 4 / intermediate level	15%	35%
(iii)	Up to Final Level	15%	50%
3	On submission of Development plan for Phase-II	10%	60%
4	On submission of CSDs & SEMs, details and drawings for Fire, OHT, GLR, Lifts, Plumbing etc.	8%	68%
5	Rate analysis report for all BOQ Items	2%	70%
6	On submission of Tender Documents for construct contract, Pre Bid replies, Assistance in Tender Evaluation etc.	10%	80%
7	During Construction interfacing and Design Validation, following stage payment shall be made:		
(i)	At the end of 6 months of construction	5%	85%
(ii)	At the end of 12 months of construction	5%	90%
(iii)	At the end of 18 months of construction or completion of work whichever is earlier	5%	95%
8	On submission of As-built drawings from contractor	5%	100%

**CONTRACT**

**COMPLETION TIME / PROGRESS SCHEDULE FOR COMPLETION  
TIME OF 24 MONTHS**

The period of Completion of the services shall be 24months (4 Months for Design, issue of GFC drawings and Tender Documents + 2 Months for finalization of Construction Tender by KMRL + 18 Months for design corrections during construction interfacing and Validation) from date of commencement. The completion time has been stipulated based on estimated construction time required. If construction schedule is extended, DC shall perform the services covered during extended period of construction without any extra cost to be charged from employer for services to be provided in refer appendix B-2.

Work envisaged in construction interfacing and validation services shall start immediately after commencement of execution of works. The intervening period of about 2 months, during which the bidding process will be completed, will be used by the consultant to prepare detailed structural, architectural drawings and working drawings to be issued to the bidders I executing contractor along with bid document. The stipulated period of completion of the project after award of execution of work contract is 18 months (excluding 6 months defect liability period) during which the construction interfacing and validation services will be provided by the consultant.

The works should be completed within stipulated period of completion. In exceptional circumstances, the time period stated in this clause may be extended in writing by mutual consent of both the parties.

## **ANNEXURE - A: LAYOUT PLAN**

## **ANNEXURE – B: MoUD GUIDELINES**



## **PRESS BRIEF NOTE**

Subject: New Plinth Area Norms- for General Pool Residential Accommodation (GPRA) to be constructed for Central Govt. Employees and its applicability to all Govt. Departments

Ministry of Urban Development (MOUD) is the Nodal Ministry for providing houses under General Pool Residential Accommodation (GPRA) to be constructed for Central Govt. Employees all over India. The present Plinth area Norms had been fixed in 1987 by Ministry of Urban Development for Type I to Type VI catering to the needs of the Govt. employees at that time and has not been revised since then. However the lifestyle has changed drastically since then, therefore need was felt to revise these plinth area norms specifications keeping in mind modern household gadgets like refrigerator, washing machine, microwave, AC's etc., Car parking requirements instead of Scooter/Cycle have also increased manifold.

New trend of multistoried construction in place of Low rise construction, because of scarcity land, resulting in space crunch for certain facilities like clothes drying space. Hence a separate balcony for drying of wet clothes in the form of utility balcony has been provided in all the categories of houses in the revised plinth area norms for Type-I to Type-VIII qtrs. **The Comparison between Existing Plinth Area Norms & New Plinth Area Norms 2012 is as under:**

New Plinth Area Norms for Dwelling Units from Type- I to Type-VI and new Plinth Area Norms for Type –VII & Type VIII Quarters to be constructed for Central Govt. Employees in General Pool and its applicability to all Central Govt. Ministries / Departments shall be as per Table below;

Type	Eligibility as / Grade Pay / Fixed Pay	Area	Unit Area (Main	Stairs/ Circulation	Balcony	Utility area / Balcony	Cycle/Scooter shed/ Garage	Remarks
			Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	
Type- I		Existing	34.00	5.0	7.45	NIL	2.50	Cycle shed -100%
	Rs. 1300 - 1800	New	40.80	7.00	6.50	2.50	As /Parking Norms	
Type- II		Existing	45.00	5.0	7.45	NIL	2.50	Cycle shed -100%
	Rs. 1900 - 2800	New	54.00	7.00	6.50	2.50	As /Parking Norms	
Type- III		Existing	55.75	5.00	7.45	NIL	4.20	Scooter shed -100%
	Rs. 4200 - 4800	New	63.00	7.00	6.50	3.50	As /Parking Norms	
Type- IV Main Unit Servant Qtr-1		Existing	83.60	5.5	7.60	NIL	4.20	Scooter shed -100%
	Rs. 5400 and above	New	86.00 17.00	7.00 -	12.00 2.50	3.50	As per Parking Norms	Servant room shall be part of the house without provision of separate staircase,

								however Kitchenette & toilet be provided within the unit area specified for servant room.
<b>Type- IV (Special)</b>		Existing	111.48	6	8.52	NIL	4.20	Additionally covered parking space as per local master plan norms subject to minimum one car per quarter will be provided
Main Unit Servant Qtr-1	Rs. 6600 and above	New	106.00 17.00	7.00 -	12.00 2.50	3.50	As per Parking Norms	Servant room shall be part of the house without provision of separate staircase, however Kitchenette & toilet be provided within the unit area specified for servant room.
<b>Type- V</b>		Existing	139.35 18.60	6.00 4.50	9.85	NIL	20.90	Garage – 75%
Main Unit Servant Qtr-1	Rs. 7600 and above	New	145.00 21.50	7.00 7.00	12.00 3.50	4.50	As per Parking Norms	Independent Servant Quarter having Room, Kitchen, Toilet and separate staircase being shared by two DU's * Nos. of Quarters - 1 Nos. for TypeV
<b>Type- VI</b>		Existing	203.50 21.50	7.00 7.00	21.50 3.50	NIL		Garage – 75%
Main Unit Servant Quarter-1	Rs. 10000 and above	New	203.50 21.50	7.00 7.00	21.50 3.50	4.50	As per Parking Norms	Independent Servant Quarter having Room, Kitchen, Toilet and separate staircase being shared by two DU's * Nos. of Quarters - 1 Nos. for Type VI
<b>Type- VII</b>		Existing	There are no norms for multi-storeyed buildings.					



<b>Type- VII</b>								
Main Unit	Rs. 75000 (Fixed)	New	287.00	7.00	35.00	9.00		Independent Servant Quarter having Room, Kitchen, Toilet and separate staircase being shared by two servant qtrs. * Nos. of Quarters - 2 Nos. for Type VII
Servant Quarter-2			21.50	7.00	4.00			
<b>Type- VIII</b>		Existing	There are no norms for multi-storeyed buildings.					
Main Unit	Rs. 80000 (Fixed) and above	New	403.00	7.00	45.00	12.00		Independent Servant Quarter having Room, Kitchen, Toilet and separate staircase being shared by four servant qtrs. * Nos. of Quarters - 4 Nos. for Type VIII
Servant Quarter-4			21.50	3.50	4.00			

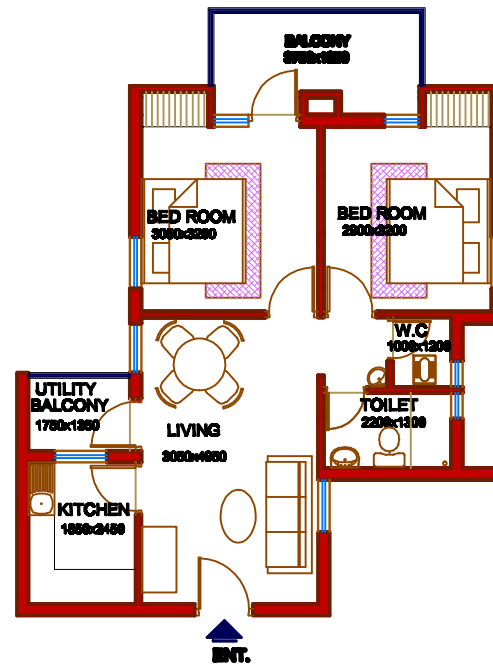
For multistoried flats, where the provision of lifts and lift lobbies, wider staircase, additional Fire Escape staircases and extra space for their entry is necessary, additional area over and above the standard plinth area have been provide in all the categories of houses in the revised plinth area norms for Type-I to Type-VIII qtrs.

After lot of deliberations enhanced Plinth Area Norms for various categories/type of quarters i.e. Type I to Type VIII & specifications have been finalized and approved by MOUD. Complete proposal of Revised Plinth Area norms & specifications is uploaded on the website of CPWD.

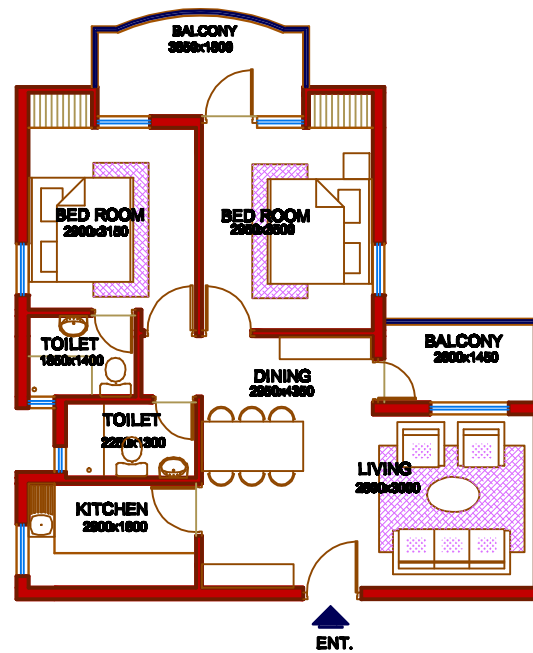




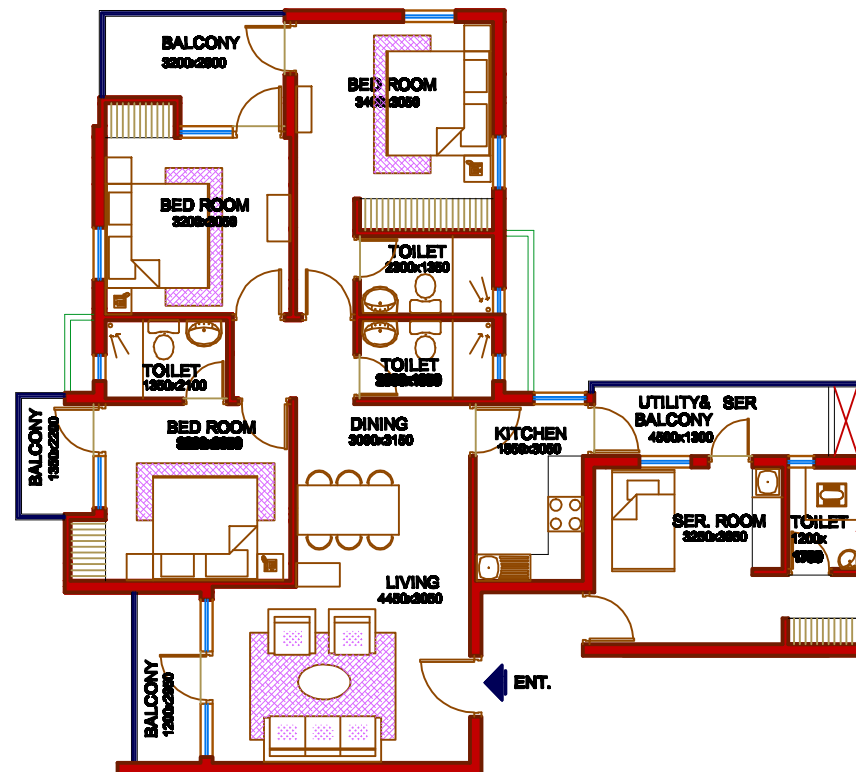
**UNIT DESIGN (TYPICAL) FOR TYPE- II QRTS**  
**(AS PER NEW NORMS)**



**UNIT DESIGN (TYPICAL) FOR TYPE- III QRTS**  
**(AS PER NEW NORMS)**

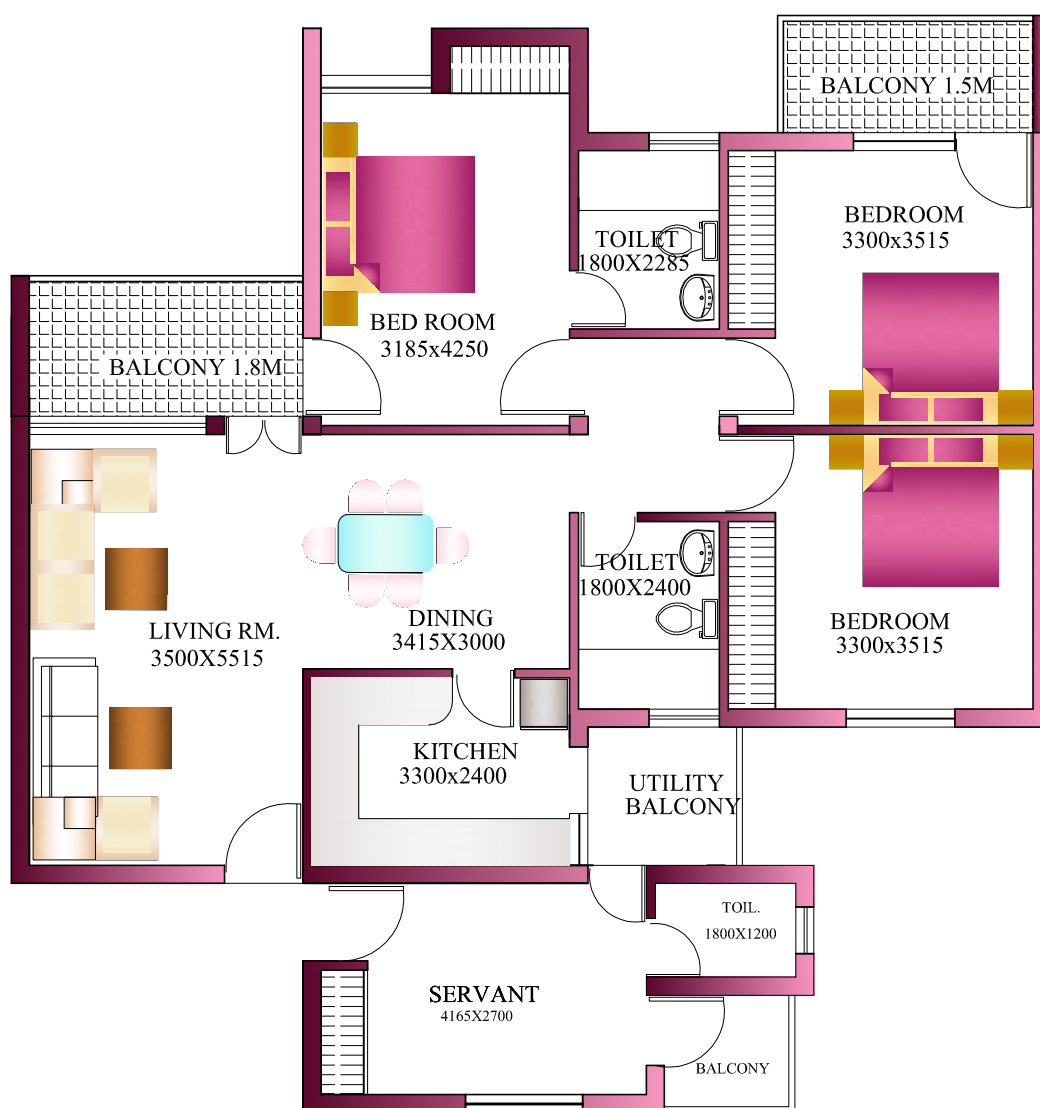


**UNIT DESIGN (TYPICAL) FOR TYPE- IV QRTS**  
(AS PER NEW NORMS)



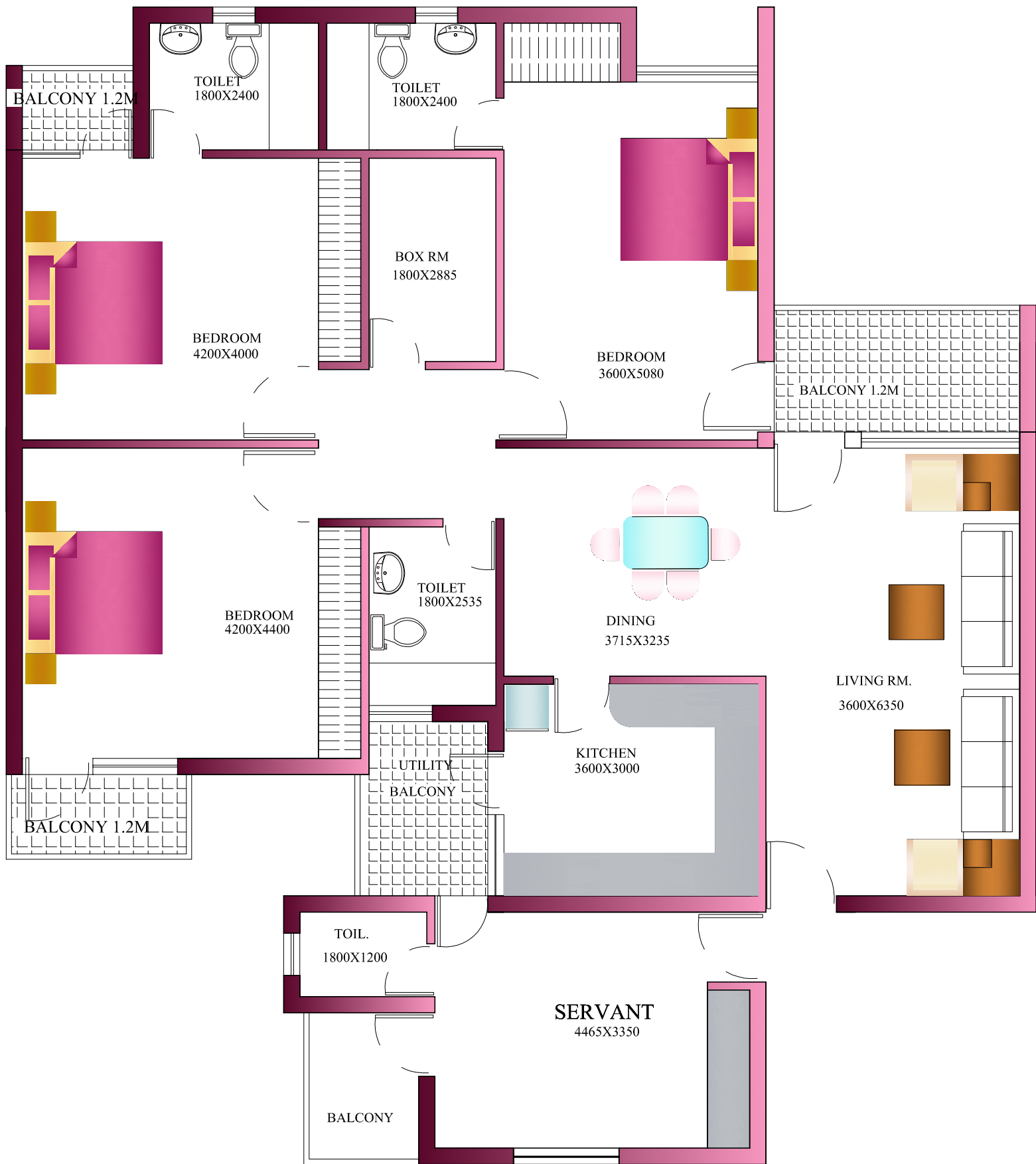
# UNIT DESIGN FOR TYPE -4S QRTS.(TYPICAL)

## AS PER NEW NORMS



# UNIT DESIGN FOR TYPE-V QRTS. (TYPICAL)

## AS PER NEW NORMS





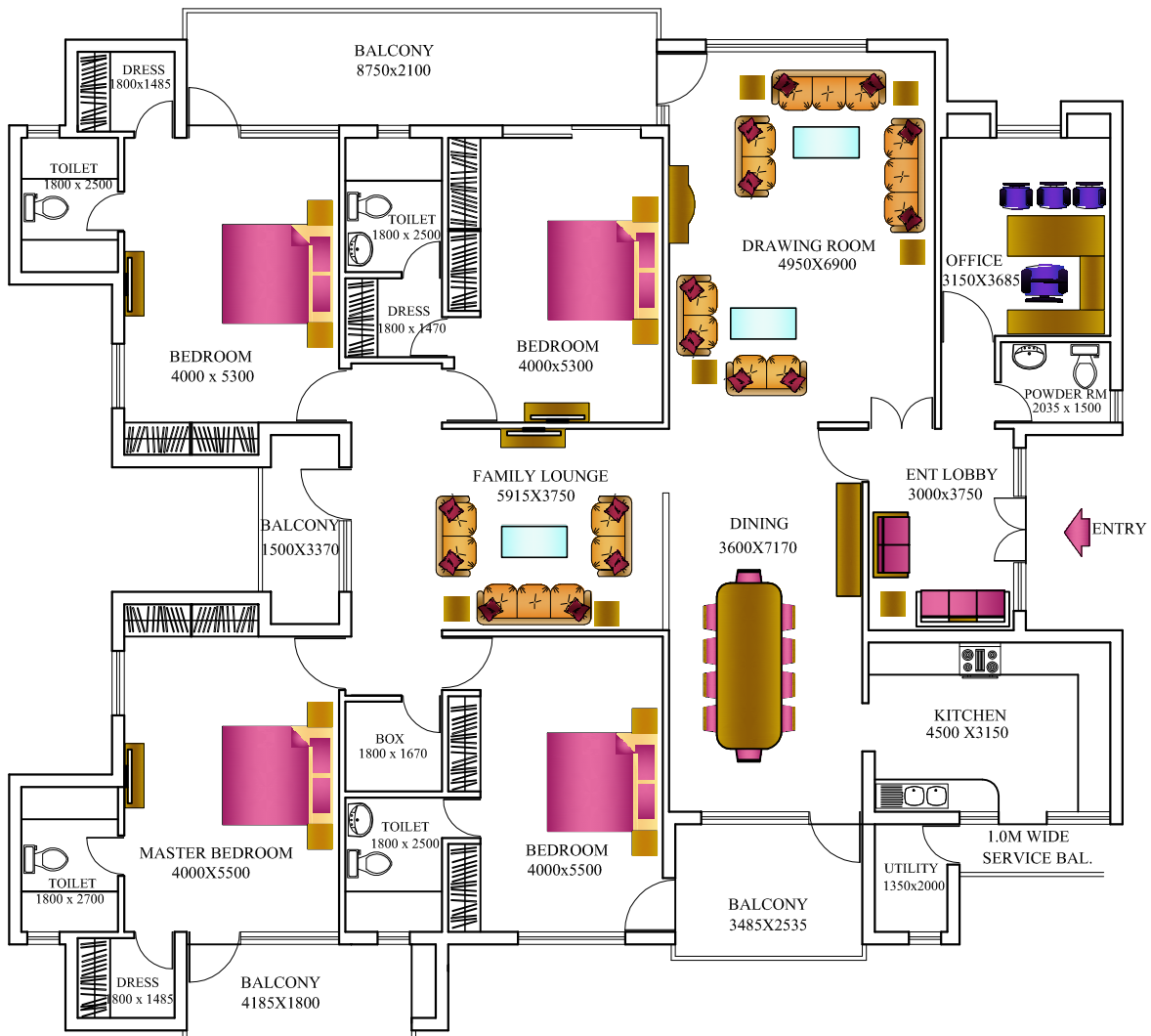
# UNIT DESIGN FOR TYPE-VI QRTS.(TYPICAL)

## AS PER NEW NORMS



## UNIT DESIGN FOR TYPE-VII QRTS. (TYPICAL)

AS PER NEW NORMS



## UNIT DESIGN FOR TYPE-VIII QRTS. (TYPICAL)

AS PER NEW NORMS

