

## **Terms of Reference**

### **FOR SENIOR STRUCTURAL DESIGN CONSULTANT**

#### **UNDER THE GREATER COLOMBO WASTEWATER MANAGEMENT PROJECT**

**Expertise** :Structural Engineering in water retaining structures, Piling

**Expertise Group** :Engineering

**Source** :National

**Contract No** :

**Scope of the Project:** Rehabilitation and new construction of sewerage pump stations;  
Laying of sewer pipes using open cut and trenchless technologies;  
Rehabilitation of sewer systems using open cut and trenchless technology.

#### **Brief Description of the Project:**

The Greater Colombo Wastewater Management Project is a Project funded by the government through a loan obtained from the Asian Development Bank to rehabilitate 100 years old city sewerage system. The Project is executed by the Ministry of Public Administration, Home Affairs, Provincial Councils and Local Government and implemented by Colombo Municipal Council. The Project commenced in year 2011. Bulk of the work has been completed and two civil work contracts are under implementation and one civil contract is under the bidding stage. Out of the two contracts under implementation, the contract for rehabilitation of wastewater pumping stations is a Design and Built type contract whilst the other contract under implementation, sewer pipe line rehabilitation combined with carrying out a condition assessment of existing sewers is an add-measurement type contract. The contract under bidding is an add-measurement type contract. The Design and Built Contract is based on the Conditions of Contract of Engineering Advancement Association of Japan (ENAA) and the add-measurement Contract is based on the Conditions of Contract of FIDIC 2010 MDB version.

The locations of project sites are within Colombo Municipal Council area. The consultants' office is located at No. 86, Ananda Kumaraswamy Mw., Colombo 7.

**Scope of work including but not limited to:**

1. Review all structural design work submitted by the Design Build Contractor for pump stations including foundations.
2. Review of technical specifications, advice on best international and national practices in Construction methods
3. Review of approved design/construction drawings and designs and become fully familiar with the structural design work involved with the Pump Station new constructions and rehabilitation, Designs related to manholes; pressure dissipation chambers; shoring work for deep shafts, etc., as typically required in this type of project
4. Review of structural designs related to temporary works such as shoring for very deep excavations based on such systems as sheet piles, secant piles, etc. and structural support systems, formwork, etc.,
5. Carry out visits to each construction site on weekly basis and provide short dossier identifying key structural issues and proposed improvements - these shall cover construction practices/methods, providing consent to the proposed Design Modifications/shop drawings, improvement required in supervision procedures (witness and hold points), matters pertaining safety/risks, etc.
6. Participate in by weekly site meeting chaired by the Resident Engineer
7. Assist the Resident Engineer (RE) when assistance is sought to clarify technical matters, review of shop drawings, construction methods, etc.
8. Review of structural designs related to temporary works such as shoring for very deep excavations based on such systems as sheet piles, secant piles, etc. and structural support systems, formwork, etc.,
9. Supervise investigation and work related to structural condition assessment of existing structures/building and review of structural conditions assessment reports submitted by Contractors for adequacy and determine the appropriateness of structural improvements proposed therein
10. Preparation of scope of work and technical specifications for structural condition assessment of existing structures/building and review of structural conditions assessment reports submitted by Contractors for adequacy and determine the appropriateness of structural improvements proposed therein
11. Review of survey and site investigation reports
12. Preparation of Structural and Civil Works Specifications for new Contracts
13. Assist review of "Submittals" submitted by the Contractor (related to structural and civil works)

14. Review of structural and engineering drawings submitted by the Contractor
15. Attend third party inspections as necessary and provide certification on the quality of the supplies based on such inspections
16. Attend meetings and field visits as requested by the Employer or his representative, Project Manager/Engineer or the Technical Team Leader and submission of deliverables on time as agreed with the Employer/ Technical Team Leader
17. Any other work related to the overall project as requested by the Employer or his representative, Project Manager/Engineer and Technical Team Leader

### **Minimum Qualification Requirements**

**Minimum Educational Qualifications** : B.Sc Degree in Civil Engineering, preferably with postgraduate qualifications in structural engineering **with** corporate membership of a professional engineering body

**Minimum General Experience** : 15 years as civil (construction) and structural engineer

**Minimum Specific Experience (relevant to assignment)** : 7 years as structural design engineer with experience in carrying out designs and designs reviews for shoring systems for deep excavations; designs of pile and other types of foundations for water retaining structures; designs of pump stations or similar deep underground structures.

**Other Specific Experience (relevant to assignment)** : Ability to carry out (a) designs using computer software such as Prokon; StaadPro; SAP and (b) review of designed carried out using such software

**Work Arrangement:** Consultant shall report to the **Project Director** of the Greater Colombo Wastewater Management Project or an officer assigned by him/her to carry out the work coming under this assignment. The Consultant shall also report to a Technical Team Leader assigned by the Employer to coordinate and spearhead the work coming under this assignment. Consultants technical inputs are planned coordinated and managed by the Technical Team Leader unless otherwise informed.

**Deliverables:** As directed by the Employer or his representative, Project Manager/Engineer and the Technical Team Leader. Deliverables will include as the case may be: (a) Design Reports; (b) Design Review Reports; (c) Advice provided to the Employer verbally/in writing; (d) Technical Specification for Civil and Structural Work; (e) Structural and

reinforcement drawing reviews; and (f) any other reports requested by the Employer/Technical Team Leader related to structural and general civil engineering work

### **Office & Facilities**

- 1) Office space and necessary facilities will be provided by the Employer
- 2) Field (office – field – office) transport provided by the Employer
- 3) If requested by the Employer or his representative, Project Manager/Engineer the Consultants is required to attend meetings and field visits in weekends and holidays

**Assignment period:** From 1<sup>st</sup> May 2021 to 30<sup>th</sup> June 2021 (Extendable)

**Termination of the agreement:** One (01) month notice shall be served by either party

**Payment Terms:** Remuneration to the Consultant will be paid on daily rate basis for each workday except for weekends and Public Holidays unless work carried out on such days was on the request of the Employer, such as to attend meetings or field visits. Consultants shall submit a monthly time sheet giving the details of work carried out by him/her in each working day approved by the Technical Team Leader to the Project Director for payments.