
Terms of Reference

Construction Supervision for Ayidan Landfill

1. BACKGROUND

The Government of Ghana has received financing from the World Bank to support the implementation of the Greater Accra Resilient and Integrated Development (GARID) project. The project aims at supporting critical investments to deal with Climate Change impacts in the Odaw catchment in the Greater Accra Region (GAR). The key interventions will focus on dealing with challenges with Drainage and Solid Waste Interventions in the Odaw Channel.

The Ministry of Sanitation and Water Resources (MSWR) through the Environment Health and Sanitation Directorate (EHSD) has the responsibility for policy formulation and monitoring for the sanitation and solid waste sub-sector and has commissioned the implementation of an Emergency Solid Waste Management Improvement Programme since 2015. This plan identified short-term actions and investments required to improve solid waste management in Greater Accra. As part of this plan, the government has identified a number of potential sites for landfill and transfer stations and is currently seeking investments to construct it.

The Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana are responsible for the management of solid waste in their local government areas according to the Local Governance Act, 2016, (Act 936). Most of the urban local governments have in place relatively good collection systems with the private sector responsible for the collection. In most of the assemblies in GAR, there are several tricycles which support collection services in the medium- and low-income communities.

There are two engineered transfer stations, albeit privately owned which serve as transit points for the tricycles. In addition, there are two privately owned recycling and composting facilities catering for approximately 1,000 tonnes of waste per day.

Environmental sanitation has become a significant urban challenge for the Greater Accra Region (GAR) in the past decade and contributed significantly to increased flood risk. The GAR generates between 3,000 and 4,000 tons of solid waste daily, out of which an estimated Seventy (70) percent is collected and yet not all of that is treated or efficiently and effectively disposed of. These problems have been exacerbated by factors such as poorly managed land use and unregulated development of settlements. The key issues around solid waste management are (i) absence of effective collection, segregation and recycling systems, (ii) limited disposal capacity, (iii) lack of community awareness, and iv) inadequate enforcement of relevant bylaws. Due to the lack of adequate collection points and transfer stations, some waste collected often ends up in the main drainage channel and the tributaries (Nima and Kaneshie) which leads to the flooding experienced in various sections of the Odaw and its tributaries.

Compounding the current challenge, the only sanitary landfill serving the Greater Accra Region, located at the Kpone Landfill, near Tema and about 45 km east of the Odaw channel, is virtually full, fueling the recourse to illegal dumping by the formal and informal waste collectors. Additionally, waste from the region is transported to a second disposal site at Adipa in Eastern Region. The urgent need for a new sanitary facility for the region cannot be overstated.

The MSWR has acquired a site at Ayidan in the Ga South Municipal Assembly for an Engineered Sanitary Landfill and prepared a detailed design report with related drawings and specifications.

In this regard, the Ministry of Sanitation and Water Resources through the GARID Project is seeking a Consultant to supervise construction of this landfill facility.

2. OBJECTIVES OF THE ASSIGNMENT

The Consultant is to assist the Employer to Supervise the construction of the landfill facility.

3. SCOPE OF SERVICES

The Consultant will carry out the following activities listed in the objectives based on:

- a. GARID Solid Waste Improvement Strategy-2021
- b. Detailed Engineering Design Report
- c. Environmental and Social Impact Statement/Report

The scope of services is divided into two parts namely:

Part 1 – Supervision of construction work, and

Part 2 – Post construction services covering defect liability period

Part one: Supervision of Construction

Review the Construction Phasing and Operational Plan to guide development of facility:

The construction of the sanitary landfill will initially involve all fencing, access road, gatehouse, drainage, offices and overall site infrastructure. In phases, portions of the site will be developed for placement of the solid waste in cells. These phased portions of the landfill will include associated excavation, base preparation, lining, leachate collection, and leachate treatment facilities.

The consultant shall execute continuous supervision of all works including the monitoring of work progress and adherence to specified work standards (quality control).

Specifically, these services will include, inter alia:

- Providing Contractors with the necessary data, benchmarks, coordinates and any other relevant information for setting out the works; and subsequently checking and approving the detailed setting out;

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- Checking and approving the contractors' work plans and implementation for the most efficient and expeditious methods of carry out works;
 - Checking and approving the environmental management systems;
 - Revising the operation and maintenance manual to reflect asbuilt;
 - Issuing all necessary instruction to contractors and continuously supervising the work to ensure that they are carried out in accordance with the contract documents;
 - Carrying out during the execution of the works; inspection of all working areas and installations;
 - Monitoring execution and compliance with the environmental management plan
 - Checking and approving materials used and examining contractors' installations, accommodation, construction equipment and laboratories to ensure that these conform to agreed specifications and proposals;
 - Checking and approving all working drawings prepared by contractors;
 - Checking contractors' work measurements and certifying payment claims;
 - Negotiating with contractors any contractually permissible changes in price or rate for which the need may arise and making recommendations on these to the client.
 - Informing the client of any problem which arise or might arise in connection with civil work contracts and making recommendations for their solution;
 - Evaluating all claims during the contract periods for additional payments and time extensions submitted by contractors, and making recommendations on these to the client and;
 - Assisting the client in any dispute during contract periods that may arise with contracts and giving all the elements on which the judgments are based.
 - Organise monthly site meetings and submit minutes of meetings one week after site meetings.
 - Prepare and submit to the MSWR, five (5) copies of monthly progress reports one week after the reporting month.

Part Two: Post Construction Activities

During this phase, the Consultant shall perform the following:

- Inspection of works prior to the expiry of the Contractor's one (1) year defect liability period, preparation of a final deficiency list, if required, supervision of remedial works and recommendation to the Client as to the date of the Final Inspection of Works;
- Carry out final inspection of the works together with representatives of MMA, the Ministry of Sanitation and Water Resources and the Contractor;
- Preparation and issuance of Final Acceptance Certificate;
- Preparation of Final Payment Certificate.

4. OUTPUTS AND REPORTS

The following will be the outputs:

a. Construction Phasing Plan to guide development of facility

Consultant should submit a phasing plan in conjunction with the selected Contractor detailing works development not later than 2 weeks after commencement of this assignment.

b. Monthly Reports

The key issues that will be addressed in the monthly reports will be the safety at work, the quality of the work, the progress of the work, the work program, the resources, challenges and their resolution, unresolved issues, contract management and the control and approval of the Contractor's expenses as well as the description of the works and adequate interim payments. Below is a list of some outputs expected in the construction and defects liability stage:

- Signed contracts
- Approved construction program
- Construction documentation
- Progress reports
- Record of meetings
- Financial control reports.
- Valuations for payment certificates.
- Progressive and draft final account(s)
- Certificate(s) of practical completion and coordination of defects list
- All statutory certification and certificates of compliance as required by the Local and other Statutory Authorities
- Facilitate and expedite receipt of occupation certificates
- Report on Environmental Social Health and Safety
- Commissioning Plan

c. Final Report on Works

The Consultant will submit a final report not later than one month after the Completion Certificate is issued. The report shall contain at least:

- Copies of requests for issuance of a takeover certificate;
- A list of approved As-Built Design submitted by the Contractor showing all the modifications in relation to the Main design elements or surveyor of performed works;
- Quality assessment of materials and workmanship;
- Data on the technical difficulties encountered and how they were solved;
- Comment on the As-Built Design

- List of Instructions for Use and Maintenance
- Final Report on Contractor’s ESHS performance (Code of conduct, compliance with EMP, EIA, consent/permits and other relevant project requirements.
- Commissioning Report

d. Defects Liability Period Report

This report will contain all the details of remedies performed by the Contractor to correct the observed defects and failures noted, including all ESHS issues occurred during the Defects Liability Period. This report is to be submitted no later than 2 weeks after the issuance of the end of the Defects Liability Period.

5. TABLE OF DELIVERABLES

Reports will be drafted in English and the Consultant will provide both soft copy and 5 hard copies.

| No. | Description of Deliverables | Due Date-Estimated |
|-----|---|---|
| 1 | Construction Phasing Plan | 2 weeks after commencement |
| 2 | 1 st Monthly Progress Report | 4 weeks after construction phasing plan |
| 3 | Monthly Progress Report | 1 week after ensuing Month |
| 4 | Draft Completion Report | 18 Months after commencement |
| 5 | Review by Employer | 3 weeks after submission of draft completion Report |
| 6 | Final Completion Report | 2 weeks after review |
| 7 | Defect Liability Report | 12 months after construction completion |

6. CONSULTANT STAFFING

The consulting company or consortium should have significant experience in delivering the objectives of this assignment. The company / consortium should have the following:

- at least 15 years’ experience in municipal engineering services,
- 10 years’ experience in solid waste sectors,
- experience in preparation of detailed designs and supervision of construction for landfills or tailings storage facility,
- experience in cost estimates, contract administration and project implementation schedules,
- at least 3 similar projects in developing countries context.

It is envisaged that the key staff in the following disciplines would be required for the assignment

Project Manager

The Team Leader must be a professional civil engineer, Postgraduate in Project Management. He/she must have at least 15 years of cumulative experience related to large scale infrastructure construction project management.

Resident Engineer (Sanitary/Environmental Engineer)

He/she must be a professional sanitary/environmental engineer. Postgraduate qualifications in environmental engineering, should have at least 10 years' relevant experience. Experience in Solid Waste Management – design, construction supervision of landfill or tailings dam. At least 3 assignments of similar (landfill) nature.

Quantity Surveyor

Must possess a Bachelors degree in Building Technology or Geodetic engineering. He/she must be a professional quantity surveyor, should have at least 10 years in quantity surveying. Postgraduate qualifications in Building Technology.

Geotechnical Engineer

MSc degree in Civil Engineering. Ten years' (10) general experience. Must demonstrate experience on at least 2 sanitary landfill or similar infrastructure projects. Must demonstrate experience in the use of industry standard geotechnical analysis and design software. Must demonstrate experience in overseeing sampling and material testing for large urban infrastructure projects. Fluency in the English language. Must be a member of an Engineering professional body

Occupational Health and Safety Specialist

He/She should have Bachelor's degree in engineering, or construction, or occupational safety and health. He/She must possess a professional qualification (NEBOSH IGC, IOSH, OSHA) in Health and Safety. At least 3 years of previous experience in comprehensive workplace safety and compliance programs. Should possess solid knowledge of state and local statutes and ordinances on fire safety and prevention, loss control, building, electrical, noise pollution and the environment.

Clerk of Works

He/She must have a minimum qualification of a Higher National Diploma (HND) in Construction Technology, must have at least five (5) years' experience in supervision of construction and/or working in the management of transfer stations.

Environmental and Social Safeguards Expert

The Expert will be responsible for supervising implementation of Environmental and Social Management Plan. The Expert shall have a degree in environment management or related discipline. He/she must have cumulative experience of at least eight (8) years in environment and social impact assessments or similar.

7. PROJECT DURATION

The Project duration is 18 months with a total time input of 89 man-months.

8. CONTRACT MANAGEMENT

The Employer will provide to and collaborate with the Consultant in making available all data, maps and reports relevant to the project subject to the extent of availability of such information.

Employer will also facilitate the Consultant's access to government and local authorities.

As this assignment is largely construction supervision based in Accra – Ghana, we expect the firm to deploy all necessary resources to the Employers base of operations. Total estimated time input abroad should not exceed 10%.

9. REMUNERATION

The total remuneration for this assignment will be time based in accordance with milestones set out in the deliverable table, section 5. Total estimated time input is **90-man months**.
