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HORN OF AFRICA GATEWAY DEVELOPMENT PROJECT

PROJECT ID NO. P161305

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF CONSTRUCTION OF A BUILDING COMPLEX FOR THE UNIVERSITY OF NAIROBI

TERMS OF REFERENCE

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1. BACKGROUND

The Government of the Republic of Kenya (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a "credit" (hereinafter called "credit") toward the cost of the Horn of Africa Gateway Development Project. Part of the financing will be toward enhancing local capacity in management of social risks in projects, through facilitating partnership between Kenya National Highways Authority (KeNHA), on the one hand and academic institutions and industry, on the other hand in designing and offering training on social risks, and establishment – construction and equipping - of the center for land acquisition and resettlement (CELARS) at University of Nairobi.

CELARS has been established at the University of Nairobi with the objectives to: (a) develop practice-oriented training programs in land acquisition and resettlement; and (b) to conduct practice-oriented research in land acquisition and resettlement.

The focus of the training will initially be on Land Acquisition and Resettlement Management (LARM) with the objective of improving the management and implementation of land acquisition and involuntary resettlement in the context of public and private sector infrastructure projects, which is a major challenge facing execution of particularly infrastructure projects in Kenya. Currently, Kenya and the East African region have a dearth of knowledge and experience in the professional and technical processes in policy formulation, planning and management of risks associated with land acquisition and resettlement as witnessed on most projects including those financed by the Bank. This is the gap that CELARS seeks to address by extending the training beyond resettlement to ultimately cover other social sustainability areas such as management of gender-based violence (GBV) in infrastructure projects.

Focusing on involuntary resettlement risk management and mitigation strategies, the LARM course is designed to enhance the understanding and implementation of land acquisition and resettlement in all the phases of the project cycle - right from the planning, design, implementation, to the monitoring and evaluation stage. The main outcome of the training is to improve management and implementation of land acquisition and resettlement in Kenya that will be reflected in the increased capacity of practitioners to undertake resettlement work following the training. Thus, training facilities such as classrooms and accommodation for students are required as well as building the capacity of the trainers. The University of Nairobi has provided facilities to start with to ensure the training commences. Classrooms and hostels will be constructed on land that has been set aside by the University under the project.

2. OBJECTIVES OF THE ASSIGNMENT

The objective of the assignment is to plan, design, and supervise to completion the construction of the building complex to house offices, classrooms, and a hostel (CELARS Complex) plus related external works of landscaping and civil works.

The University of Nairobi has set aside 4.7 acres of land in Kilimani, Nairobi for CELARS. The proposed CELARS Complex is envisaged to be twin towers of twelve (12) floors each and will host offices and an executive guest house (of 50-60 self-contained rooms, a kitchen, dining hall and other guest house associated facilities). Planning and design will be for the proposed twin towers, however, Construction will be done in phases where in phase one, 1 No. tower will be constructed to completion. The offices, guest house and all associated facilities for the tower no.1 are to be completed and furnished ready for use at the end of the contract (Phase 1).

Other external works including but not limited to perimeter fence, landscaping sewer connection, drainage and other necessary civil works will be part of the works. A borehole will also be drilled to supplement other sources of water to cover all water requirements. Similarly, consideration is to be given to use of solar energy where feasible and making the Complex as "green" as possible.

The client therefore seeks to procure a competent consultancy firm or consortium thereof, to carry out the planning, design and construction supervision of the building complex and associated works.

3. SCOPE OF SERVICES

The scope of the assignment will be in two main tasks: (a) Master planning and design of the building complex involving architectural; structural and civil engineering; quantity surveying; mechanical and electrical engineering; environmental and social; land surveying and landscaping; preparation of bid documents; services and support of procurement process; and (b) supervision of the construction of the building upon successful completion of the design phase and a decision by the University to proceed with the works. Each task will constitute a separate contract.

The design of the building complex will involve but not be limited to the following:

(i) Building and Civil works
(ii) Design foundation for each tower that can bear twelve (12) floors
(iii) Electrical wiring and installation of fittings / equipment – and all power supply and transmission works, including the possible use of solar power
(iv) Plumbing, sewer, water systems and drainage works
(v) LAN
(vi) Provision and installation of projectors and screens including whiteboard screens
(vii) Air conditioning and mechanical ventilation works
(viii) Security surveillance installation works
(ix) Fire prevention and fighting services
(x) Access control to all floors as required by security expert
(xi) Paved walkways, and open / covered parking
(xii) Installation of lighting arrestors
(xiii) Harvesting of rainwater

(xiv) Landscaping works
(xv) Lift and Escalators installation, including provisions for the movement of the physically handicapped persons
(xvi) Foul and storm water drainage and sanitation works
(xvii) Borehole and any other relevant works
(xviii) Design ducts to carry the power, sewer, water, LAN etc.
(xix) Pedestrian walkways

3.1.Master Planning Stage:

(i) The consultant will be required to develop and justify an appropriate masterplan of CELARS on the 4.7 acres of land:
(ii) Preparing, describing, justifying (based on the demand), and illustrating preliminary Master Plan of the project showing proposed built-up areas (floor space, and complementary infrastructure), structures, internal roads, pavement network, parking area, and open spaces etc., as per engineering/architectural standards and the projected demand for the relevant training, research and development services.
(iii) Preparing and submission of the preliminary master plan report of the project.
(iv) Preparation and submission of final master plan.
(v) Recommendations for construction of the Complex and associated works in two Phases, with construction of one tower in each Phase

3.2. Design Stage for Phase 1

3.2.1. **Architectural Services**

As provided for under Architects and Quantity Surveyors Act CAP 525 Laws of Kenya-Schedule of duties for normal Architectural Services and Scale of fees to include Environmental Design services, Interior Design Services and Landscape Design Services for Phase 1.

Any additional services that may be required as authorized and approved by the client.

3.2.2. **Quantity Surveying Services**

As provided for under Architects and Quantity Surveyors Act CAP 525 Law of Kenya-Schedule of duties for normal Quantity Surveying services and Scale of fees.

Any additional services that may be required as authorized and approved by the Client.

3.2.3. **Structural & Civil Engineering Services**

As provided for under the professional Services by Engineers Board of Kenya under the Registration of Engineers Act Cap 530 Laws of Kenya-Schedule of duties for normal Civil and Structural Engineering services and Scales of fees.

Any additional services that may be required as authorized and approved by Client.

3.2.4. **Mechanical &Electrical Engineering Services**

As provided for under Professional Services by Engineers Board of Kenya under the registration of Engineers Act Cap 530 Laws Kenya-Schedule of normal Mechanical and Electrical Engineering and Scales of fees

Any additional services that may be required as authorized and approved by the Client.

3.2.5. **Land Surveying Services**

To undertake surveying services in accordance with Survey Act, Cap 299 Laws of Kenya.

3.2.6. **Landscape and infrastructure Architectural/Design services**

To undertake the services in accordance with the existing stipulated regulations.

4. DETAILED TASKS OF THE ASSIGNMENT

Overall, the duties of the Consultants shall include design and preparation of cost estimates for the full CELARS complex (Phase 1 and Phase 2) and assisting in the tender process and supervision of works for Phase 1, including post-contract administration.

4.1. Detailed Design Development Stage for Phase 1:

(i) Preparation of detailed Architectural and structural design of all buildings and allied structures as per prevailing architectural and engineering codes.

(ii) Preparation & Submission of detailed working/construction drawings of each component of building in soft and hard copy.

(iii) Preparation of modified drawings if required by the client during design/approval/construction.

(iv) Preparation of detailed layout plan: Architectural and structural design incorporating all allied electrical, mechanical and other internal and external services i.e. IT, water supply, sewerage, drainage, firefighting and fire alarm system, landscaping, roads, paths, street lights, cross drainage and sewerage disposal work, storm water drainage system, security system & CCTV.

(v) Preparation of Interior Design detail for the CELARS complex

(vi) Preparation of design/drawings/specification/load calculation of electrical systems with external electrification, such as substation, streetlights etc.

(vii) Preparation of design and drawings of ground water reservoirs, overhead tanks, and allied structures.

(viii) Preparation of cost estimates with rate analysis for Non-scheduled items.

(ix) Submission of detailed structural design calculation for all buildings and allied structures in soft and hard copy.

(x) Submission & recommendation of Detail Cost estimate, including a breakdown by key input materials and estimate of foreign currency requirement.

(xi) Separately, upon receiving the user requirements to operationalize the complex, the consultant shall prepare detailed cost estimates to fully equip and furnish the complex

(xii) Preparation of complete tender documents/cost estimate//BOQs in line with World Bank's Standard Bidding Documents for construction of Phase 1 works

(xiii) Preparation of a model for the proposed as- built building and CELARS complex.

4.2.Tender Assistance Stage

(i) Preparation of Bidding Documents with specific provision to minimize disruption/damage to the environment and local settlements due to construction and adherence to health and safety standards and regulations.
(ii) Preparation of Special terms & conditions specific to the project.
(iii) To assist the client in tendering process and evaluation of tenders including post-qualification of Contractors by adopting standard World Bank guidelines and procurement procedures.

4.3.Supervision Stage

The construction and supervision of the CELARS building complex (Tower No.1) will be undertaken in two stages, as follows:

4.3.1. **Stage 1: Construction Supervision.**

(i) To ensure that works for Tower No.1 are completed within Eighteen (18) months
(ii) The quality and quantity assurance shall be the sole responsibility of the consultants being the one in Charge of the Project.
(iii) Full time detailed supervision of the scheme since start of the work till final satisfactory completion of all components as mentioned in the scope of the works.
(iv) Developing and ensuring Quality Assurance mechanism as per engineering / Architectural standards.
(v) Expediting progress at the site as per work plan for timely completion of the project.
(vi) Preparation & presentation of monthly progress reports or any review / report to the client.
(vii) Taking measurements of work carried out by the contractor, preparation, submission, and verification of interim payment certificates (IPC) including final bill, security and any other advances extended to the contractors / sub-contractor (if any) as per contract terms and provisions.
(viii) Assessment of claims notified by the Contractor and potential claims and advise the Client on the appropriate action.
(ix) Ensure the Contractor introduces, establishes and maintains appropriate and mandatory health and safety measures and procedures on site.
(x) Submission of As-built drawings / inventories / Project Completion report after successful completion of Phase I of the project.
(xi) Ensure that the Contractor mobilizes and supplies to the site all plant, equipment and machinery that has been committed in the tender and ensure that all such items of plant remain on the site until their release has been authorized.
(xii) Approve the Contractor’s work program, method statements, and material sources.
(xiii) Ensure that quality of materials brought to the site and quality of construction activities is compliant with requisite specifications.
(xiv) Ensure the Contractor establishes testing laboratories and testing procedures including Quality Management System.
(xv) Conduct regular site inspections and prepare minutes and/or reports of the same.

(xvi) Prepare and submit reports as defined in the terms of reference

The detailed construction supervision shall include planning, guidance, programming, inspection, monitoring of construction activities, contractor's performance, quality /quantity control, implementation of work plans, drawings, design and specifications, preparation and verification of variation orders including drawings/sketches, correspondence with the contractor in the capacity of the engineer in charge, and to maintain a good liaison with the client office including all other duties pertinent to the construction phase of the project with the prime objective to complete the work in accordance with the contract terms and scope of works.

4.3.2. **Stage 2: Post Completion Tasks**

After issuing Certificate of practical Completion, the Consultant shall perform the following tasks during the Defects Notification Period:

(i) Prepare and submit detailed inventories of all the facilities including buildings, roads, drainage structures, traffic signs and all other basic construction details.
(ii) Check the completed works section by section and supervise the construction of the outstanding works and/or remedial works and issue necessary approvals.
(iii) One month before the end of the defects notification period, carry out joint inspection of the remedied/ completed works along with the Contractor's Representatives and those of the Client, and if found satisfactory, issue a Completion Certificate and thereafter prepare for commissioning of the facility and handover. The Consultant shall then prepare a Final Certificate of Payment to the Contractor and a Final Statement of Account, and make recommendations for the release of outstanding Contractor's bonds, guarantees, and retention monies.
(iv) At the end of the defects notification period, the Consultant shall secure and compile maintenance and operational manuals, occupational permits, fire protection certificates, Utility Inspector's Certificate for proper commissioning of the completed built premises.

The consultants will be accountable for any defects or losses or damages arising from professional negligence, proven faults, errors, or omissions on the part of the consultants during or after the completion of the work being the person In-charge.

The design of all works shall at all times conform to the requirements of the following;

(i) Applicable Statutory Laws of Kenya
(ii) National Building Code and associated manuals
(iii) All other relevant regulations and by-laws

5. THE CONSULTING FIRMS-MANDATORY REQUIREMENTS

5.1. Key staff Requirement and Qualifications

As a minimum, the consultant will be required to employ the following key staff with the following Experience and Qualifications:

(i) Project Director/Project Manager: The Project Director/Project Manager must be an Architect or an equivalent with a valid degree from a recognized university, be affiliated and registered with the appropriate professional organizations, and have at least 10 years of post-registration experience. The Project Director/Project Manager must have successfully completed at least 3 (three) building design and 3 (three) construction oversight projects as Project Director or Team Leader each having a works value of at least KES.1 billion.

(ii) Team Leader/Architect: The Team Leader must be an architect with a valid degree from a recognized university, be registered with the appropriate professional organizations, and have at least 8 years of post-registration experience. The Team Leader must have successfully completed at least 2 (two) building design and 2 (two) building construction oversight projects as Team Leader or Chief Architect each having a works value of at least KES.1 billion.

(iii) Civil/Structural Engineer: The Civil/Structural Engineer must have a valid degree from a recognized university, be registered with the appropriate professional organizations, and have at least 7 years of experience after registration. The Civil/ Structural Engineer must have completed at least 2 (two) building design and 1 (one) building construction supervision projects as chief structural engineer each having a works value of at least KES. 700 million.

(iv) Quantity Surveyor: The Quantity Surveyor must have a valid degree from a recognized university, be registered with the appropriate professional organizations, and have at least 10 years of experience since registration. As a principal quantity surveyor, the Quantity Surveyor must have successfully completed at least 2 (two) building design and 2 (two) building construction supervision projects, each having a works value of at least KES.1 billion.

(v) Mechanical Engineer: The Mechanical Engineer must have a valid degree from a recognized university, be registered with the appropriate professional organizations, and have at least 7 years of experience after registration. The Mechanical Engineer must have completed at least 2 (two) building design and 1 (one) building construction supervision projects as chief Mechanical Engineer each having a works value of at least KES. 700 million.

(vi) Electrical Engineer: The Electrical Engineer must have a valid degree from a recognized university, be registered with the appropriate professional organizations, and have at least 7 years of experience after registration. The Electrical Engineer must have completed at least 2 (two) building design and 1 (one) building construction supervision projects as chief Electrical Engineer each having a works value of at least KES. 700 million.

(vii) Interior Designer: The Interior Designer must have a valid degree from a recognized university, be registered with the appropriate professional organizations, and have at least 10 years of experience after graduation. As chief interior designer, the Interior Designer must have completed at least 2 (two) tasks with a total value of main building works of at least KES.1 billion

(viii) Landscape Architect: The Landscape Architect must have a valid degree from a recognized university, be registered with the appropriate professional organizations, and have at least 10 years of experience after graduation. The Landscape Architect must have completed at least 2 (two) related assignments as chief landscape architect, each with a value of main building works of at least KES.1 billion

(ix) Land Surveyor: The Land Surveyor must have a valid degree from a recognized university, be registered with the appropriate professional organizations, and have at least 10 years of experience after graduation. As chief surveyor, the Land Surveyor must have successfully completed at least 2 (two) building design and 2 (two) building construction supervision projects, each with a works value of at least KES.1 billion.

(x) Traffic Engineer: The Traffic Engineer must hold a valid degree from a recognized university, be registered with the appropriate professional organizations, and have a minimum of 7 years of post-graduate experience. 2 (two) traffic analysis tasks for infrastructure, each with a value of at least KES. 700 million., must have been previously completed successfully by the Traffic Engineer.

(xi) Geotechnical Engineer: The Geotechnical Engineer must hold a valid degree from a recognized university, be registered with the appropriate professional organizations, and have a minimum of 7 years of post-graduate experience. 2 (two) Geotechnical analysis tasks for infrastructure, each with a value of at least KES. 700 million., must have been previously completed successfully by the Geotechnical Engineer.

(xii) Hydrologist: The Hydrologist must hold a valid degree from a recognized university, be registered with the appropriate professional organizations, and have a minimum of 7 years of post-graduate experience. 2 (two) Hydrological analysis tasks for infrastructure, each with a value of at least KES. 700 million, must have been previously completed successfully by the Hydrologist.

(xiii) ICT expert: The ICT Expert must have relevant graduate or diploma level qualifications from a recognized institution, as well as at least 10 years of post-qualification experience. At least 2 (two) building design and construction supervision projects with a total value of at least KES.500 million must have been completed successfully by the ICT expert while undertaking the design and supervision of all relevant ICT provisions in buildings i.e. Local Area Network (LAN), internet connectivity, server Installation etc.

(xiv) Clerk of Works: The Clerk of Works must have relevant graduate or diploma level qualifications from a recognized institution, as well as at least 15 years of post-qualification experience. At least 4 (four) building construction supervision projects with a total value of at least KES.1.2 billion must have been completed successfully by the Clerk of Works.

(xv) Environmental Specialist: The Environmental specialist must have a valid degree from a recognized university, be registered with the appropriate professional organizations, and have at least 10 years of experience after graduation. The specialist must have completed at least 2 (two) related assignments as lead expert, each with a value of main building works of at least KES.1 billion

(xvi) Others/support Experts: The bidder shall also provide the services support personnel/experts on need basis with a minimum qualification of a degree, Minimum 7 year's professional experience in their areas of expertise to be engaged upon approval by the employer.

5.2.Key Staff estimated Inputs

Table 1 Key staff inputs

NO.	**Position**	**Design Phase**	**Construction Supervision period**	
			Construction Supervision	**Defects liability supervision.**
		(Expert- months)	(Expert- months)	(Expert-months)
(i)	Project Director/Project Manager(Contract management)	3	7	1
(ii)	Team Leader/Architect	5	18	1
(iii)	Civil/Structural Engineer	5	18	1
(iv)	Quantity Surveyor	5	8	0
(v)	Mechanical Engineer:	2	7	1
(vi)	Electrical Engineer	2	7	1
(vii)	Interior designer	3	6	0.5
viii)	Landscape architect	2	6	0.5
(ix)	Land surveyor	1	4	0
(x)	Traffic Engineer	1	0.5	0
(xi)	Geotechnical Engineer	2	0.5	0
(xii)	Hydrologist	2	2	0
xiii)	ICT expert	2	3	0

NO.	Position	Design Phase	Construction Supervision period	
			Construction Supervision	**Defects liability supervision.**
		(Expert- months)	(Expert- months)	(Expert-months)
xiv)	Environmental Specialist	2	3	
(xv)	Clerk of Works	0	18	1
xvi)	Others/support Experts	2	4	0
	TOTAL	**39**	**112**	**7**

6. REPORTS AND TIME SCHEDULE

6.1.Time Schedule

The duration for master planning, detailed design and documentation shall be 26 weeks from the date of commencement of design phase.

The construction supervision duration shall be 18 months from the date of commencement of supervision/construction phase

The Defects Notification Period shall be 6 months after the date of substantial completion.

Table 2 Time schedule per deliverable

Deliverable	**Client's Proposed Timeline**	**Cumulative time from date of commencement**
Inception Report	2 weeks	2weeks
Master plan report	3weeks	5 weeks
Preliminary Sketch Design Reports	3weeks	8 weeks
Draft Final Design Stage Report	8weeks	16 weeks
Design details, Production Drawings and Tender Documents Stage	5weeks	21 weeks
Approvals by Relevant Agencies	2 weeks	23 weeks
Final Report/Final Design BOQs Tender Action	3 weeks	26 weeks
CONSTRUCTION SUPERVISION		
Construction supervision monthly progress reports	Monthly for 18 months duration	
Construction Supervision progress reports (Quarterly)	Quarterly for 18 months duration	
Progress report (practical completion)	At practical completion before commencement of Defects liability period	
Draft completion report	1 month before end of Defects liability period	
Final completion report	1 month after receiving comments on the draft completion report	

6.2.Reporting

The Consultant shall in liaison with the Director, Facilities Management (University of Nairobi) report to the Director- Development, KeNHA on regular progress on design, documentation, and construction activities. The Lead Consultant shall, in close consultation with the Project Manager/Client arrange for consultative meetings with all stakeholders.

6.3.Deliverables

The consultant shall submit reports and documents from time to time during design and tendering stages as may be required by the client and these Terms of Reference but as a minimum, the following:

Table 3 Deliverable submission schedule

Deliverable	**No of Soft copy reports (in CD)**	**No of hard copy reports**
Inception Report	6	4
Master plan report	6	4
Preliminary Sketch Design Reports	6	4
Final Design Stage Report	6	4
Design details, Production Drawings and Tender Documents	6	4
Final Report/Final Design, BOQs, Tender Documents	6	4
CONSTRUCTION SUPERVISION		
Construction supervision monthly progress reports	3	3
Construction Supervision progress reports (Quarterly)	3	3
Progress report (practical completion)	3	3
Draft completion report	3	3
Final completion report	3	3

7. DATA SERVICES, PERSONNEL AND FACILITIES TO BE PROVIDED BY THE CLIENT

The Client will make available to the Consultant, the following data, documents and information:

(i) A brief to describe the essential requirements of the client. The Brief shall form the main basis of the consultants' designs, with further necessary inputs coming from interactions in Progress/Consultative Meetings.
(ii) Project Coordinator, who will form the contact-point for communication between the client and other stakeholders.
(iii) Communication and coordination necessary for processing and release of payments by the Client.
(iv) Provide a site and any clearances or other action necessary relating to land lease for the target plot.
(v) Adequate representation in all site meetings

With the exception of what is listed above, no facilities or resources will be supplied by the Implementing agency. Offices and transport, for the consultant's full time staff (all furnished and equipped together with appropriate services, maintenance and consumable stores) for the assignment will be provided through works contracts.

8. TRAINING

The Consultant will provide structured on-site training to at least two junior engineers, two technicians/inspectors assigned in all relevant aspects of site supervision and management. The trainees will be deployed to site on full time basis. The Consultant will include a section on training progress in his monthly and quarterly progress reports.

9. OVERSIGHT RESPONSIBILITY AND REPORTING

The consultant will be reporting to the Director Development Kenya National Highways Authority (KeNHA), from where the Beneficiary Agency the University of Nairobi shall be consulted and or provided with information and reports from time to time on all matters relating to the progress and any requirement that may be necessary to be provided for by the Beneficiary agency or is required to participate. All approvals will be done by the implementing agency (KeNHA) subject to concurrence from the beneficiary agency the University of Nairobi.