TERMS OF REFERENCE

1. POSITION INFORMATION

Project	Enhancing Capacities of the Ports of Aden and Mukalla (ECaPAM); Fishery Harbour Rehabilitation and Value Chain Development in Aden – Governance & Economic Recovery; and Engineering Operations Support at the UNDP Aden Sub-Office.
Title	Mechanical Engineer
Level	ICS -08 (through Stars Orbit Consultants and Management Development)
Duty station (City and Country)	Yemen, Aden
Type (Regular or Short term)	Short-term, deliverable-based assignment
Office- or Home-based	Office- and site-based, depending on the applicable workstream and project stage
Expected starting date	05 September 2026
Expected Duration	58 working days distributed across 5 active months with the possibility of extension, subject to availability of funds, satisfactory performance, andcontinuing need for the position
Payment basis	Lump-sum payments against working days and separately accepted deliverables under each workstream; no monthly or time-based payment

2. ROLE BACKGROUND AND DESCRIPTION

The Mechanical Engineer will support three complementary UNDP workstreams. The assignment combines implementation-stage mechanical/electromechanical supervision with an independent mechanical design-review function. The Engineer is expected to apply a consistent approach to technical review, quality assurance, documentation, contract support and reporting while tailoring the level of effort to the specific project stage and deliverable.

A) Enhancing Capacities of the Ports of Aden and Mukalla (ECaPAM):

The ECaPAM initiative aims to strengthen the operational capacity of the Ports of Aden and Mukalla by rehabilitating damaged facilities and procuring necessary parts and equipment. This initiative contributes to the efficient and cost-effective delivery of humanitarian assistance to the Yemeni population. The project focuses on improving port infrastructure, enhancing safety and sustainability, and building resilience against future shocks and stresses. The Mechanical Engineer will play a crucial role in ensuring the technical quality and successful implementation of infrastructure interventions within this project.

B) Under Engineering Operations Support at the UNDP Aden Sub-Office:

The UNDP Aden Sub-office, through its Engineering Unit, oversees activities to support both operational and programme needs. This includes managing construction and rehabilitation projects related to the Aden office, guesthouses, and associated buildings, as well as providing technical support to various programmes implemented by the sub-office. The Mechanical Engineer will provide implementation-stage support for mechanical and MEP works at UNDP premises and other facilities, including fuel systems, generators and associated fuel systems, water-supply and pumping systems, plumbing and drainage networks, water tanks, mechanical utilities and related installations. The role also includes assessment and development of the existing water-supply system and the technical integration of existing tanks with new tanks and associated systems being installed by the contractor.

C) Fishery Harbour Rehabilitation and Value Chain Development in Aden

The Fishery Harbour Rehabilitation and Value Chain Development in Aden Project aims to restore and strengthen the operational capacity of the Aden Fishery Harbour through the rehabilitation and upgrading of priority infrastructure and facilities. The project seeks to improve the functionality and sustainability of the harbour, strengthen the fisheries value chain, and support livelihoods and economic opportunities for

communities dependent on the fisheries sector. The Mechanical Engineer will play a key role in providing an independent technical review of the mechanical designs for the Cold Storage Facility and associated site works, ensuring that the proposed designs are technically sound, complete, coordinated, constructible, and compliant with the project requirements and applicable standards. The review will support the finalization and approval of the designs and ensure their readiness for procurement and subsequent implementation.

3. OBJECTIVE OF THE ASSIGNMENT

The objective of the assignment is to provide UNDP with qualified mechanical engineering support throughout the relevant stages of construction supervision, testing, commissioning, completion and handover, as applicable to each workstream. The Engineer shall support UNDP in identifying technical deficiencies and implementation risks at an early stage, verifying compliance with approved project requirements, maintaining clear technical and contractual records, and providing documented recommendations that enable timely and informed project decisions.
For the Fishery Harbour design-review workstream, the specific objective is to complete a structured and auditable review of the complete mechanical and fire-protection design packages, follow the designer/consultant's responses and revisions through closure, and provide a final technical recommendation regarding tender readiness.

4. SCOPE OF WORK

The Mechanical Engineer will provide technical support to the UNDP Engineering Unit for the review, supervision, monitoring and implementation of mechanical and electromechanical works under ECaPAM, the Fishery Harbour Rehabilitation and Value Chain Development in Aden Project, UNDP Aden Sub-Office facilities and other relevant operational or programme interventions assigned within the TOR. The Engineer shall work within the approved designs, specifications, BOQs, contractual requirements, project documents and applicable codes and standards identified for the relevant project.

Under the **ECaPAM Project**, the Mechanical Engineer will support the technical review, supervision and monitoring of mechanical and electromechanical works within the Port of Aden. The assignment will include mechanical and electromechanical systems associated with port rehabilitation and operational equipment, including, but not limited to, AC motors and Variable Frequency Drives (VFDs), PLC automation systems and HMI interfaces, ICCP systems, winch gearbox units, winches, drums and wire ropes, HVAC systems, and other related mechanical and electromechanical installations. The Engineer will support the review of technical submissions, supervision of installation works, monitoring of quality and progress, testing and commissioning, identification and resolution of technical issues, and verification of compliance with the approved designs, specifications, contractual requirements and applicable standards.

Under Engineering Operations Support at the UNDP Aden Sub-Office, the Mechanical Engineer will provide technical supervision and monitoring of ongoing mechanical and MEP works under implementation at UNDP premises and operational facilities. The scope will cover fuel storage and distribution systems, generators and associated fuel systems, water-supply and pumping systems, plumbing and drainage networks, water tanks, mechanical utilities, and other related equipment and installations. The Engineer will support the review of technical submissions, supervision of installation works, monitoring of quality and progress, testing and commissioning, identification and resolution of technical and interface issues, and verification of compliance with the approved designs, specifications, BOQs, contractual requirements, and applicable standards. In addition, the Engineer will support the assessment and development of the existing water-supply system, including the review and integration of existing water tanks with the new tanks and associated systems being installed by the contractor, identification of required modifications, and development of appropriate technical solutions for the associated tanks, pumps, piping, controls, and utility connections.

Under the **Fishery Harbour Rehabilitation and Value Chain Development in Aden Project**,

The Engineer will provide an independent technical review of the mechanical and associated fire-protection designs covering both the Cold Storage Facility and the wider harbour site works. The review shall cover the complete

design package, including design basis and reports, calculations and hydraulic models, drawings and P&IDs, technical specifications, compliance sheets, equipment schedules, BOQs, previous comments and responses, and relevant revised submissions to assess whether the proposed designs are technically sound, complete, coordinated, constructible, maintainable and compliant with the project requirements and applicable standards. The Engineer will identify design gaps, discrepancies, inadequate or inconsistent equipment capacities, missing requirements and coordination or constructability issues, review the consultant's responses to previous technical comments, and provide recommendations to support the finalization and technical approval of the designs and their readiness for procurement and subsequent implementation. The specific design-review activities and required outputs will be defined under the respective deliverables.

Across both components, the Engineer shall independently review the complete design package, including but not limited to all original and revised submittals, calculations, drawings, P&IDs, specifications, equipment schedules, compliance sheets, BOQs, technical clarifications, responses to previous comments and proposed design variations. The review shall confirm the technical adequacy, completeness, coordination, constructability, operational efficiency, maintainability and compliance of the designs; identify gaps and inconsistencies; and provide the recommendations and corrective actions required to produce a consolidated, technically sound and procurement-ready design package for fully functional, safe, reliable and sustainable facilities.

A. Cold Storage Facility

The review covers the mechanical systems serving the approximately 5,400 m² cold-storage and fish-processing facility, including but not limited to the cold rooms, blast freezer, chiller room, flake-ice plant, refrigeration and cold-chain systems, HVAC and ventilation, plumbing and drainage, mechanical fire protection, controls, instrumentation and associated equipment.

B. Harbour Site Works

The review covers the harbour's mechanical and fire-protection infrastructure, including but not limited to the wells, RO desalination plant, water-treatment, storage and distribution systems, sewerage-pumping station, fire-water storage and pumping systems, hydrants, piping, valves, controls, instrumentation and related SCADA and utility interfaces.

The key responsibilities include, but are not limited to, the following:

1. Support supervision and monitor the progress of infrastructure interventions
▪ Conduct field visits to locations requiring technical support and assessment, and based on the findings, recommend appropriate technical solutions for project implementation and contract management to minimize deviations and ensure timely delivery of work. ▪ Prepare technical reports, including progress updates, recommendations, and any required corrective actions. ▪ Collaborate with construction teams and contractors to address technical issues, provide technical guidance, and ensure project success. ▪ Support on-site monitoring of work quality, quantities, costs, schedules, occupational health and safety requirements, and environmental compliance in accordance with applicable laws, regulations, technical standards, and contractual obligations within the Republic of Yemen. ▪ Monitor and evaluate the ongoing construction works and identify any deviations from design specifications and shop drawings. In addition, ensuring the correct implementation of the works according to technical specifications, drawings, workmanship, and quality of materials. ▪ Monitor project progress against approved work programmes, contract schedules, budgets, and implementation plans, and prepare periodic progress reports highlighting achievements, delays, risks, constraints, and required actions. ▪ Immediately notify the Project Manager of any anticipated contract variations, technical issues, delays, or matters requiring approval. ▪ Prepare technical justifications and supporting documentation for contract variations and amendments for review and approval by UNDP management. Upon approval, prepare variation orders, including rate analyses and supporting documentation, and coordinate with UNDP

Procurement regarding contract amendments.

- Review and provide technical recommendations on contractor submissions, including material submittals, shop drawings, guidance, method statements, work plans, inspection requests, and requests for technical clarification.
- Support the preparation, review, and finalization of tender documents, including technical specifications, Bills of Quantities (BOQs), compliance requirements, and related engineering documentation, ensuring full alignment with UNDP procedures, applicable standards, and established engineering practices.
- Observe and witness tests related to materials, equipment, and systems, and formally notify UNDP and contractors regarding the acceptance or rejection of tested materials or equipment.
- Instruct contractors to remove, replace, or rectify non-compliant works, materials, or equipment in accordance with contract requirements and approved specifications.
- Recommend withholding payments for non-compliant works until corrective actions are completed and accepted by UNDP.
- Inspect completed works before concealment by the contractor, including documenting works through photographs, measurements, sketches, and inspection records.
- Maintain comprehensive photographic records of implementation progress, inspections, testing activities, and completed works in digital format for project documentation purposes.
- Coordinate implementation and supervision activities among all involved parties, including civil contractors, electromechanical and mechanical contractors, consultants, end users, Project Coordinators, Project Managers, and the Engineering Unit.
- Promptly report, coordinate, and follow up on implementation issues, risks, delays, conflicts, and technical challenges arising during project execution.
- Review contractors' interim payment certificates and running bills, verify completed quantities and executed works, and certify eligible payments in accordance with contractual requirements and actual implementation progress.
- Report discrepancies, anomalies, or unsupported claims to UNDP in writing and ensure such claims are not recommended for payment until clarification and approval are obtained.
- Verify completed works, measurements, and quantities executed by contractors through site inspections, records, measurements, photographs, and supporting documentation to facilitate certification and payment processes.
- Make recommendations to UNDP regarding costs for works not specified in the contract documents.
- Maintain an organized electronic filing system for project records, including site inspection reports, MAR, shop drawings, photographs, correspondence, site instructions, meeting minutes, measurements, approvals, technical submissions, reports and other relevant documentation.
- Determine the adequacy of the contractor's personnel and equipment, and the availability of materials and supplies to meet the program.
- Organize and participate in Bi-weekly and monthly progress meetings with contractors and consultants to review progress, technical issues, constraints, risks, and implementation schedules. Prepare and distribute meeting minutes documenting discussions, decisions, responsibilities, and follow-up actions.
- Support inspections for substantial completion and final completion, preparation of snag lists, verification of corrective actions, review of as-built drawings, operation and maintenance documents, warranties, and handover records.
- Support the preparation of completion reports, technical summaries, project handover documentation, and technical site visits or completion events.
- Provide timely reporting to the Project Manager, Engineering Unit, and relevant stakeholders on construction progress, technical issues, risks, delays, and required decisions.
- Perform any other engineering, technical, or project-related duties and assignments as requested by the Head of the Engineering Unit, in coordination with the relevant Project Manager(s), to support the timely and effective implementation of UNDP engineering activities and organizational priorities

2. Design Review the submitted mechanical design packages for the Cold Storage Facility and the associated harbour site works.

- Review the design basis, design reports, technical narratives, design criteria, assumptions, operating requirements and other supporting documentation to verify that they adequately reflect the intended functions and operational requirements of the facilities. The Engineer shall assess whether the adopted design parameters and assumptions are technically justified and consistent with the project requirements, site conditions, operational needs and approved design brief, and shall identify any missing, conflicting, unclear or unsupported assumptions that may affect system capacity, performance, safety, reliability or implementation.
- Review the complete design of the RO desalination and associated water-treatment system to verify that the proposed process configuration, equipment selection, capacities and operating parameters are appropriate for the characteristics of the source water, required treated-water demand and intended harbour operations. The review shall include, as applicable, the raw-water abstraction and transfer system, feed-water quality and design assumptions, pretreatment processes, chemical dosing systems, filtration, RO membrane system, high-pressure pumps, permeate and reject/brine streams, post-treatment and disinfection, treated-water storage and distribution interfaces, cleaning-in-place (CIP) and flushing systems, associated piping and valves, instrumentation, controls and monitoring systems.
- Review the relevant mechanical, thermal, refrigeration, ventilation and hydraulic calculations to verify the adequacy of the adopted methodology, input parameters, assumptions, design conditions and resulting equipment or system capacities. Where required, the Engineer shall undertake independent engineering checks or sample calculations to verify critical design parameters and confirm that the proposed systems and equipment are appropriately sized for the intended operating conditions.
- The review shall include, where applicable, refrigeration loads, cooling loads, ventilation requirements, water demand, flow and pressure requirements, pump duties, hydraulic losses, storage requirements, firefighting demand, drainage and sewage flows, equipment capacities and other relevant mechanical design calculations.
- Assess the overall configuration and operating philosophy of the proposed mechanical systems to verify that they can achieve the required operational performance under normal, peak, standby, emergency and maintenance conditions, as applicable. The Engineer shall assess, where applicable, system capacities, redundancy, duty/standby arrangements, operational flexibility, isolation arrangements, emergency operation, system interfaces, controls, alarms and interlocks, and verify that the proposed systems can operate safely and reliably under the anticipated normal, peak, standby, maintenance and emergency operating conditions.
- Review the selection, capacity, duty, performance characteristics and technical requirements of major mechanical equipment to ensure compatibility with the calculated design requirements and intended operating conditions. The Engineer shall also assess the suitability of the proposed equipment for the expected environmental and operating conditions and, where relevant, consider availability of spare parts, maintenance requirements and long-term operational sustainability.
- Review mechanical drawings, layouts, sections, details, schematics, hydraulic diagrams and other relevant technical documents to verify that they correctly represent the intended design and are consistent with the supporting calculations, equipment schedules, specifications and BOQ. The Engineer shall verify consistency between the drawings and the supporting calculations, design reports, equipment schedules, specifications and other technical documentation and identify missing information, discrepancies, unclear arrangements or conflicting requirements that could affect procurement, construction, installation, testing, commissioning, operation or maintenance.
- Assess coordination between the mechanical design and other relevant disciplines, including civil, structural, architectural, electrical, fire alarm, controls and instrumentation works.
- Review the technical specifications, compliance sheets and related technical requirements to verify that they are complete, technically appropriate and consistent with the drawings, calculations, equipment schedules and project requirements. The review shall verify that relevant requirements for materials, equipment performance, material manufactural availability, workmanship, installation, testing, commissioning, warranties, spare parts, consumables, training, operation and maintenance manuals and other required documentation have been adequately specified. The Engineer shall verify compliance with the codes, standards

and technical requirements specified in the approved design brief and project documents

- Review the mechanical fire-protection systems and their interfaces with the overall facility design, including, where applicable, fire-water storage, fire pumps, jockey pumps, hydrants, valves, controls, alarms and related equipment.
- Review the proposed controls, instrumentation, alarms, monitoring and automation requirements associated with the mechanical systems, including interfaces with PLC, HMI, BMS, SCADA, fire-mode controls or other monitoring systems, where applicable.
- Evaluate the proposed design from a constructability, operability and maintainability perspective. The Engineer shall identify design arrangements that may create difficulties during installation, inspection, testing, commissioning, operation, routine maintenance, equipment replacement or future repair.
- Identify technical and operational risks associated with the proposed mechanical systems and assess whether adequate mitigation measures have been incorporated into the design.
- review the proposed systems with respect to energy efficiency, water efficiency, refrigerant selection, discharge and drainage arrangements, waste or reject streams, equipment efficiency, noise, emissions and other environmental considerations.
- Review the mechanical BOQs against the drawings, specifications, calculations and equipment schedules to verify completeness, consistency and general accuracy.
- Perform an overall cross-check of the design package to confirm consistency between the design basis, calculations, hydraulic models, drawings, P&IDs, equipment schedules, technical specifications, compliance sheets and BOQs
- Review previous technical comments issued by UNDP or other relevant reviewers together with the designer's/consultant's responses and revised submissions. The Engineer shall verify whether each comment has been satisfactorily addressed and supported by appropriate revisions to the relevant calculations, drawings, specifications, schedules or BOQs. Comments that remain unresolved or inadequately addressed shall be maintained as outstanding items with clear recommendations for further action.
- Where the review identifies a technical deficiency, discrepancy, omission, coordination issue or non-compliance, the Engineer shall clearly describe the issue, explain its technical implication and specify the required corrective action. Where applicable, comments shall reference the relevant project requirement, approved design criterion, code, standard or good engineering practice forming the basis of the observation. The Engineer's comments shall be sufficiently clear and technically substantiated to enable the designer to understand and appropriately address each identified issue.
- The review documentation shall clearly record the documents reviewed, technical observations and findings, identified design deficiencies and discrepancies, required corrections or additional information, outstanding issues, status of previous comments, multidisciplinary coordination requirements, matters requiring confirmation from relevant authorities, and any other matters requiring further action by the designer. Following review of the designer's responses and revised submissions, the Engineer shall provide a clear technical recommendation regarding the status of the design, indicating whether it: is technically acceptable and ready to proceed; is acceptable subject to specified minor corrections or outstanding requirements; or requires further revision and resubmission before being considered technically acceptable and ready for procurement and subsequent implementation.
- Participate in technical coordination and design review meetings with UNDP, the consultant and relevant stakeholders to discuss review findings, resolve technical and multidisciplinary issues, clarify outstanding requirements, agree on corrective actions, and follow up on their incorporation into the revised design submission

3. Facilitate knowledge building and knowledge sharing on engineering monitoring and evaluation:

- Contribute to the dissemination and sharing of best practices and lessons learned for development planning and knowledge building, including those on gender-sensitive approaches, accessibility, and Climate resilient infrastructures.
- Collaborate and coordinate with government counterparts and other stakeholders on engineering issues, as well as conduct joint monitoring to strengthen cooperation and coordination.

- Train, coach, and mentor national institutions, contractors, implementing partners, and other stakeholders on the design, BoQ preparation, technical specifications, reporting formats, and on the supervision/monitoring of implementation, ensuring quality control and application of international standards.

5. INSTITUTIONAL ARRANGEMENT

The Mechanical Engineer will operate within a matrix management structure, reporting to the Project Manager of the ECaPAM Project, Manager of the Fishery Harbour Project and the Head of the Engineering Unit, under the overall guidance of the Head of the Aden Sub-Office, to ensure alignment with project and strategic objectives. The role requires regular communication and close coordination with all supervisors and relevant stakeholders to ensure efficient task delivery, proper prioritization, and timely implementation of activities. Collaboration with UNDP teams, contractors, consultants, end users, and local authorities will be essential to achieve project and operational objectives effectively.

6. COMPETENCIES

- Achieve Results: Ability to deliver high-quality output within the project timeline.
- Think Innovatively: Ability to propose creative solutions to technical challenges.
- Learn Continuously: Commitment to professional development and knowledge sharing.
- Adapt with Agility: Ability to work effectively in a dynamic and challenging environment.
- Act with Determination: Strong decision-making and problem-solving skills.
- Engage and Partner: Ability to build and maintain effective partnerships with stakeholders.
- Enable Diversity and Inclusion: Commitment to promoting gender equality and inclusivity.

Core	Level
Achieve Results	• LEVEL 2: Scale up solutions and simplify processes, balance speed and accuracy in doing work
Think Innovatively	• LEVEL 2: Offer new ideas/open to new approaches, demonstrate systemic/integrated thinking
Learn Continuously	• LEVEL 2: Go outside comfort zone, learn from others, and support their learning
Adapt with Agility	• LEVEL 2: Adapt processes/approaches to new situations, involve others in the change process
Act with Determination	• LEVEL 2: Able to persevere and deal with multiple sources of pressure simultaneously
Engage and partner	• LEVEL 2: Is a facilitator/integrator, brings people together, builds/maintains coalitions/partnerships
Enable Diversityand Inclusion	• LEVEL 2: Facilitate conversations to bridge differences, consider in decision making

Cross-Functional & Technical Competencies:

Thematic Area	Name	Definition
Business Management	Communication	Ability to communicate in a clear, concise, and unambiguous manner both through written and verbal communication totailor messages and choose communication methods depending on the audience.
Business Management	Partnership management	Ability to build and maintain partnerships with wide networks of stakeholders, Governments, civil society, and private sector partners, experts, and others in line with UNDP strategy and policies.
Business Development	Knowledge generation	Ability to research and turn hand-turn information into useful knowledge, relevant for context, or responsive to a stated need.
Business Development	Collective Intelligence Design	Ability to bring together diverse groups of people, data, information, ideas, and technology to design services or solutions.

Business Direction and Strategy	Effective Decision Making	Ability to make decisions in a timely and efficient manner in line with one's authority, area of expertise, and resources.
Business Direction and Strategy	Negotiation and Influence	Ability to reach an understanding, persuade others, resolve points of difference, gain advantage in the outcome of dialogue, negotiate mutually acceptable solutions through compromise, and create "win-win" situations.

Technical Competencies:		
Audit & Investigation - Audit	Performance key concepts and techniques	Ability to understand and use various concepts such as efficiency, effectiveness, and economy.
Audit & Investigation - Audit	Evidence handling procedures	Ability to acquire, compile, and safeguard information in a forensicallysoundmanner to keep evidence of integrity and chain of custody
Audit & Investigation - Audit	Investigation management and investigative techniques	The ability to manage an investigation, choose avenues of inquiry, and apply different techniques during an investigation, including investigative interviewing; seizure of documentary and electronic evidence; identification, collection, review, and analysis of all types of evidence, including project, procurement, and commercial business documentation and electronic communications; forensic analysis; verification site visits; open-source research
Audit & Investigation - Audit	Collection and analysis of evidence	Ability to extract and analyze all relevant types of evidence and be able to draw reasonable inferences and conclusions.
Digital & Innovation	Data analysis	Ability to extract, analyze, and visualize data (including Real-Time Data) to form meaningful insights and aid effective decision making.
Digital & Innovation	Data collection	Being skilled in Data Sorting, Data Cleaning, Survey Administration, Presentation, and Reporting, including the collection of Real-Time Data (, mobile data, satellite data, sensor data).
Digital & Innovation	Design thinking	• Solving problems by putting people at the center, visualizing ideas, and making them tangible to improve them through an iterative process of developing and testing. • Strong empathy skills, being able to put yourself " in someone else's shoes", understand needs, abilities, preferences, motivations, (everyday) experiences from different perspectives as well as their cultural, social, economic, and political contexts. • Ability to identify and challenge assumptions (cognitive and social) biases and dominant mental models by generating new perspectives and frames that help redefine the problem, solution, and opportunity space. • Being able to work with incomplete information, ambiguity, and opposing views, needs, and constraints and synthesizing them into solutions that are viable, technically feasible, and useful.

Digital & Innovation	Solutions mapping	• Ability to engage and build rapport with vulnerable communities and get consent, facilitate participatory processes, and navigate intricate power relations and cultural dynamics. • Having the sensitivity and ability to identify grassroots solutions, capacities, assets, and coping strategies that impacted communities have developed or used to address (emerging) development challenges. • Being able to understand these solutions from a people's perspective and learn about the conditions that enable or prevent communities from developing such grassroots solutions or coping mechanisms. • Understand how solutions and needs are paired, and how grassroots solutions can be used as an entry point to identify unaddressed or unmet development challenges, and how to use these insights to inform policy design. • Ability to reverse engineer solutions, understanding what aspects (artefactual, principles, conditions, configuration) can be scaled and how, being able to assess their potential to be transferred to other domains, regions, or contexts, and build a case for that. • Ability to appreciate and integrate various sources of knowledge (academic, experiential, observational, traditional, indigenous) in problem-solving processes. • Set up structures and processes to collect ideas, solutions, and facilitate matchmaking between the supply and demand of solutions.
Administration & Operations	Building, facilities & office space	Knowledge and ability to facilitate the renovation and upgrade of offices, including review of complex Electromechanical Drawings, negotiate technical agreements to ensure full operational
Administration & Operations	Management	Building infrastructure and services; design policy & procedure (POPP) for premises and facilities, including space standards; manage premises, and facilities; validate financial statement notes on leasehold data.

7. MINIMUM QUALIFICATIONS AND EDUCATION REQUIREMENTS

Education requirements	B.Sc. Degree in Mechanical Engineering.
Min. years of relevant work experience	Bachelor's degree + at least 7 years of relevant professional experience, or Master's degree + at least 4 years of relevant professional experience, in mechanical/electromechanical infrastructure, including design review, contract support and construction supervision.
Required Skills	• Demonstrated participation in at least three assignments/projects of similar nature and complexity. Relevant experience should include mechanical or complex infrastructure projects and substantial involvement in design review and/or supervision, technical submissions, QA/QC, testing/commissioning and contract administration. Ability to review technical calculations, drawings, specifications, equipment schedules and BOQs is required. • Experience using computers and office software packages (MS Word, Excel, etc.), Engineering Programs (AUTO-CAD electrical, OpenPLC, Modbus), and advanced knowledge of web-based management

	systems. • Knowledge of international standards for infrastructure projects and contracts management (ISO standards, British Standards, FIDIC contracts, IEC, etc.) and experience from international donor-funded infrastructure projects.
Desired skills in addition to the competencies covered in the Competencies section	• Experience with port, industrial, cold-storage/cold-chain, RO/water-treatment, pumping, fire-protection or facilities-related mechanical systems. • Experience working with multi-disciplinary design and construction teams and liaising with end users and local authorities. • A proven track of excellent communication skills, both oral and written. • Knowledge of UNDP program management and financial procedures and policies. • Knowledge and working experience with UNDP, the United Nations system, and INGOs, particularly with governance and recovery programmes.
Required Language(s)	Fluency in both written and spoken English and Arabic is required.
Professional Certificates	N/A

8. REQUIRED DOCUMENTS

THE FOLLOWING DOCUMENTS SHALL BE REQUIRED FROM THE APPLICANTS:

- Personal CV or P11, indicating all past positions held and their main underlying functions, their durations (month/year), the qualifications, as well as the contact details (email and telephone number) of the Candidate, and at least three (3) of the most recent professional references of previous supervisors. References may also include peers.
- A cover letter (maximum length: 1 page) indicating why the candidate considers him/herself to be suitable for the position.
- Methodology with all the annexes and supported documents for design review

9. PAYMENT MILLSTONE

It is envisaged that the consultant shall work for a total of 58 working days distributed across an active 5-month operational window within the overall 6-month project lifecycle. The consultant will deliver the following outputs in close coordination with UNDP Yemen, and based on the payments below:

Project	Deliverable with required Outputs	Working Days	Indicative Percentage of Total Contract
ECaPAM – Mechanical/Electro mechanical Supervision and Technical Support. **220 kW Slipway winch system (*Electromechanical Upgrading of the Main Slipway)***	**Deliverable 1: Inception, Design Review & Planning** covering: • Review of relevant contract documents, approved design basis, specifications, BOQs, contractor programme and current implementation plan. • Site verification and baseline condition record, including photographic documentation. • Coordination arrangements with the contractor, end user, UNDP and relevant stakeholders. • Review and verify and approved for technical submissions including all material submittals (MARs), shop/interface drawings, calculations, method statements, manufacturer data and certificates. Matrix logs all the supporting document. • Review of QA/QC arrangements, inspection and testing requirements, including FAT/SAT and third-party inspection requirements where applicable. • Verify and review of procurement/material delivery schedule and identification of long-lead items. • Initial technical issues, risks, NCR/action and coordination registers. • Creating a link to cover all project submittals and records. • Minutes of coordination meetings with contractors and stakeholders.	30 Days	51.72%

TERMS OF REFERENCE

Project	Deliverable with required Outputs	Working Days	Indicative Percentage of Total Contract
	Deliverable 2: Active Supervision & Site Monitoring • Tracking updates on the procurement plan and on-site material verification. • Technical issue corrective action records. • Comprehensive photographic records of on-ground activities. • Verification of equipment and materials delivered to site, including compliance with approved submittals, specifications and certificates. • Review and follow-up of outstanding technical submissions, MARs, shop drawings, method statements and RFIs. • Supervision and verification of mechanical/electromechanical installation works. • Progress against the approved programme, including delays, constraints and recovery actions. • Inspection records, NCRs, corrective actions and updated risk/action registers. • Identification and technical assessment of anticipated variations or additional works, where applicable. • Site coordination records and meeting minutes. • Updated photographic progress records. • Verification of executed quantities and recommendation on relevant interim payment applications. • Confirmation of readiness of the principal equipment/systems for pre-commissioning.		
	Deliverable 3: Testing, Commissioning & Pre-Handover Testing and Commissioning Report covering: • Review/acceptance of testing and commissioning procedures. • Participation in and witnessing applicable FAT, SAT, mechanical, electrical, control, no-load, load, functional and safety tests. • Verification and recording of test results, equipment settings and performance parameters. • Identification of deficiencies and required corrective actions. • Updated NCR, snag-list and corrective-action status. • Verification of integration and operation of AC motors, VFDs, PLC/HMI, ICCP, winch/gearbox systems and other relevant mechanical/electromechanical installations, as applicable. • Verification that critical deficiencies affecting safe operation have been rectified or addressed through an approved corrective-action plan. • Participation in trial operation with the contractor and end user. • Recommendation on system readiness for operational acceptance.		
	Deliverable 4 – Final Completion and Handover Report • Final implementation and physical-progress status. • Final status of technical issues, NCRs, corrective actions, risks and approved variations. • Participation in substantial/final completion inspections and verification of snag-list closure. • Review of as-built drawings, O&M manuals, equipment data sheets, warranties, certificates and spare-parts lists. • Verification of training provided to the end user and submission of relevant training records. • Final testing and commissioning records and operational acceptance documentation. • Verification of final executed quantities and recommendation on the contractor's final payment, as applicable. • Support to preparation of substantial/final completion certification. • Complete photographic and technical project records. • Final handover dossier and recommendations for any outstanding obligations during the applicable defects-liability/warranty period.		
Engineering Operations Support – UNDP Aden Sub-Office. **The overall Mechanical Project Budget is 110,000**	**Deliverable 1: Inception, Design Review & Planning** • Review of relevant contract documents, approved design basis, specifications, BOQs, contractor programme and current implementation plan. • Site verification and baseline-condition assessment of existing mechanical and MEP installations. • Coordination arrangements with the contractor, UNDP and relevant stakeholders. • Review of the proposed integration of existing water tanks with the new tanks and associated systems being installed by the contractor. • Identification of required modifications, interfaces, capacity constraints and technical gaps, with recommended engineering solutions • Review, verification and recommendation/approval, as applicable, of technical submissions including MARs, shop drawings, calculations, method statements, equipment data, manufacturer certificates and supporting documents. • Review of QA/QC arrangements, inspection and testing requirements, including FAT/SAT and third-party inspection requirements where applicable. • Verify and review of procurement/material delivery schedule and identification of long-lead items. • Initial technical-issue, risk, NCR/action and interface registers. • Establishment of an organized electronic project filing/link system for technical submissions, reports, approvals, correspondence and records. • Minutes of coordination meetings with contractors, end users, UNDP and relevant stakeholders.	12 Days	20.69%

TERMS OF REFERENCE

Project	Deliverable with required Outputs	Working Days	Indicative Percentage of Total Contract
	Deliverable 2: Active Supervision & Site Monitoring • Tracking updates on the procurement plan and on-site material verification. • Technical issue corrective action records. • Comprehensive photographic records of on-ground activities. • Verification of equipment and materials delivered to site, including compliance with approved submittals, specifications and certificates. • Review and follow-up of outstanding technical submissions, MARs, shop drawings, method statements and RFIs. • Supervision and verification of installation works for fuel storage/distribution systems, generator fuel systems, pumps, piping, plumbing/drainage, tanks, mechanical utilities and related MEP installations. • Verification of installation quality, quantity, workmanship, interfaces, levels, connections, supports and accessibility for operation and maintenance. • Monitoring of progress against the approved programme, including delays, constraints, recovery actions and interface issues. • Inspection records, NCRs, corrective actions and updated risk/action registers. • Identification and technical assessment of anticipated variations, additional works or required modifications. • Site-coordination records and meeting minutes. • Verification of executed quantities and recommendation on relevant interim payment applications. • Confirmation that the principal equipment and systems are complete and ready for pre-commissioning.		
	Deliverable 3: Testing, Commissioning & Pre-Handover • Review and acceptance/recommendation of testing and commissioning procedures. • Participation in and witnessing of applicable mechanical, electrical, functional, control, pressure, leakage, flow, pumping, fuel-system, no-load, load and safety tests. • Testing and verification of water pumps, tanks, piping, valves, controls, level systems and associated water-supply interfaces. • Verification of successful integration and functionality of the existing water tanks with the new tanks and associated pumping/distribution system. • Verification of generator fuel-storage and distribution systems, including applicable operational and safety tests. • Verification and recording of test results, equipment settings, operating parameters and performance. • Identification of deficiencies and required corrective actions. • Updated NCR, snag-list and corrective-action status. • Verification that critical deficiencies affecting safe and reliable operation have been closed or addressed through an approved corrective-action plan. • Participation in trial operation with the contractor and UNDP. • Verification of operational requirements and UNDP functionality. • Recommendation on system readiness for operational acceptance and handover.		
Engineering Operations Support – UNDP Aden Sub-Office. **The overall Mechanical Project Budget is 110,000**	**Deliverable 4 – Final Completion and Handover Report** • Final implementation and physical-progress status. • Final status of technical issues, NCRs, corrective actions, risks and approved variations. • Participation in substantial/final completion inspections and verification of snag-list closure. • Review of as-built drawings, O&M manuals, equipment data sheets, and warranties, certificates and spare-parts lists. • Verification of training provided to the end user and submission of relevant training records. • Final testing and commissioning records and operational acceptance documentation. • Verification of final executed quantities and recommendation on the contractor's final payment, as applicable. • Support to preparation of substantial/final completion certification. • Complete photographic and technical project records. • Final handover dossier and recommendations for any outstanding obligations during the applicable defects-liability/warranty period.		

Fishery Harbour Rehabilitation and Value Chain Development in Aden.			
Project	**Deliverable with required Outputs**	**Working Days**	**Indicative Percentage of Total Contract**
Cold Storage Facility – Comprehensive Mechanical Design Review & Tender Readiness	Comprehensive review of the complete mechanical design package, including calculations, drawings, P&IDs, specifications, compliance sheets, equipment schedules and BOQs. Preparation and maintenance of a Design Review Report / Comment Matrix, follow-up and review of the consultant's responses and revised submissions, verification and closure of technical comments, and final confirmation that the mechanical design and associated tender documents are technically complete, coordinated and ready for procurement.	8 Days	13.79%

Project	Deliverable with required Outputs	Working Days	Indicative Percentage of Total Contract
Harbour Site Works – Comprehensive Mechanical & Fire-Protection Design Review & Tender Readiness	Comprehensive review of the mechanical and fire-protection design package, including RO desalination, water treatment and distribution, pumping, sewerage, firefighting and associated systems, calculations, hydraulic models, drawings, P&IDs, specifications, compliance sheets, equipment schedules and BOQs. Preparation and maintenance of a Design Review Report / Comment Matrix, follow-up of consultant responses and revised submissions, verification and closure of technical comments, and final confirmation that the design and associated tender documents are technically complete, coordinated and ready for procurement.	8 Days	13.79%

- Payments shall be subject to satisfactory performance, ongoing implementation of activities on-site, and approval of the submitted deliverables by the Project Manager and the Engineering Unit.
- Each deliverable shall include the supporting records required to demonstrate completion, such as registers, inspection records, test results, meeting minutes, quantity verification, photographs, comment matrices, close-out evidence and other documents identified in the corresponding output.
- Partial, incomplete, unsupported or materially non-compliant submissions shall not be considered accepted deliverables. Where UNDP returns comments, the Engineer shall address the comments and resubmit the deliverable without additional remuneration until the agreed deliverable requirements are satisfactorily completed.
- For supervision workstreams, site presence is required at the critical stages relevant to the Engineer's scope, including inspections, installation, testing, commissioning, trial operation, completion and defect rectification, in accordance with the implementation requirements and UNDP instructions.
- For the Fishery Harbour design-review workstream, acceptance is based on the completeness, technical quality, traceability and close-out of the Design Review Report/Comment Matrix and final tender-readiness recommendation, rather than physical site implementation.
- In the event of a temporary suspension of works or services—whether instructed by UNDP for operational, security, or funding reasons, or due to Force Majeure—such intervals shall be treated as non-working periods. Unless expressly approved in writing by UNDP, these periods will not entitle the consultant to additional remuneration, standby fees, overheads, or compensation for idle time.
- Where progress of a supervision deliverable depends on contractor procurement, manufacturing, delivery, testing or other third-party actions, the Engineer shall proactively monitor the dependency, document delays/constraints and immediately notify UNDP. Such notification does not by itself create entitlement to additional remuneration or standby compensation
- UNDP reserves the right to withhold, reduce, or delay payment for incomplete, delayed, unsupported, non-compliant, or unsatisfactory deliverables, inadequate site presence, or failure to perform the required duties until corrective actions are completed and accepted by UNDP.
- The Engineer shall maintain proactive oversight and current records throughout the assignment. Final payment does not waive outstanding obligations that expressly remain under the applicable deliverable, warranty/defects follow-up requirement or contractual provisions.

10. APPROVAL

This TOR is approved by:

Petrus Vandepol

Team Leader, Governance and Peace Building Programme.

Signature: DocuSigned by: Petrus Vandepol 199261F574594AB...

Abdelmoneim Mustafa

Head of UNDP Aden Sub-Office.

Signature: Signed by: 03F53B89968A415...

DS

DS

DS

Initial