INTERNATIONAL MECHANICAL & ELECTRICAL COMPANY

PROJECT QUALITY PLAN

Master Copy – Assigned to Client (Western Region Municipality)
Project Quality Plan Revision: **00**
Date: **14-07-2014**

Project Title: **Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi.**

Contract No.: **WRM/PTC/004/AS/PRFD/O&M/301/MRF**

IMECO Project No.: **P594**

CONTROLLED
(IF RED)

PROJECT QUALITY PLAN

Project Title:	**Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi**
IMECO Project No.:	**P594**
Contract No.:	**WRM/PTC/004/AS/PRFD/O&M/301/MRF**
Client:	**Western Region Municipality (WRM)**
Main Contractor:	**IMECO**
PQP Revision No.:	**00**
Contract Duration:	**3 Years**

Revision Status Log

Rev. No.	Date	Prepared/Revised by	Reason for Issue
00	14/07/2014	Ibrahim Hindi	Issued for Approval

Prepared by	Reviewed by		Approved by		
Planning Engineer	Manager - Project	Sr. Manager - QHSE	Director - Projects Non Oil & Gas	Chief Operation Officer	**Chief Executive Officer**
Ibrahim Hindi	Adel Badr Al Deen	Jimmy Rached	Mazen Al Badry (Acting)	Mazen Al Badry	Ibrahim Salloum

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REVISION STATUS LOG

Section No.	PQP Rev. No.	Description	Date of Issue	Issued By
ALL	0	Issued For Approval	17th July 2014	IMECO – Manager - Project

QUALITY PLAN HOLDERS

COPY NO.	QUALITY PLAN HOLDERS
MASTER	CLIENT (WESTERN REGION MUNICIPALITY)
1	CHIEF EXECUTIVE OFFICER
2	CHIEF OPERATION OFFICER
3	DIRECTOR – NON OIL & GAS
4	SR. MANAGER - QHSE
5	MANAGER – PROJECT
5	PLANNING ENGINEER

Controlled Copy No.: *MASTER* Issued To: *CLIENT*

The registered holders of this manual must incorporate any amended section of this manual immediately on receipt.

This QA/QC Manual, with revision number and effective date shown in the Revision Status Log, and any subsequent revision(s) hereto, shall be used and implemented throughout the execution of this contract and shall serve as the governing guideline for on-site QA/QC activities.

Any revision to this QA/QC Manual shall be reviewed by the Manager-Projects and Sr. Manager – QHSE, and approved by the Director, Projects, COO and CEO, and shall be issued to all Controlled Copy Holders. However, for amendments or revisions, which do not have any bearing on the Policy, Procedures and Control Forms, revisions will be notified to the concerned Controlled Copy Holders only. (E.g. Issue of additional copies or correction of minors typographical errors, which do not reflect any changes to the contents of the document).

INTERNATIONAL MECHANICAL & ELECTRICAL COMPANY

Project Quality Plan

SECTION 1 - QUALITY SYSTEM

Project:

Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi

SECTION 1 - QUALITY SYSTEM

1. *PROJECT QUALITY POLICY*

It is the policy of **International Mechanical & Electrical Co. (W.L.L.)** to provide a consistent level of work performance that meets or exceeds the quality standards set forth in this Quality Plan. Quality is herein defined as conforming to the requirements and specifications cited within this plan in all matters of construction, fabrication, and materials, procurement control.

With regards to the project, ***Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi***, the program set forth in this plan in conjunction with IMECO's Quality Health Safety & Environment (QHSE) Manual becomes the mandatory, specific vehicle of enforcing the policy of IMECO on the project.

The Quality Plan is established to ascertain that all activities are performed in complete conformance with the approved requirements and all applicable standards & specifications. This plan shall be made available to Clients or Clients representative for review, comments of which will be taken to IMECO's senior management for proper interpretation and revision of the information therein.

The overall responsibility to maintain the program rests with the Manager – Project. His responsibility is to ensure that all Client requirements for this project, together with the integral Quality Plan and procedures are strictly adhered to. The Manager – Projects shall guide in any work activity until compliance with the manual is achieved.

Any discipline engineer shall not overrule the Manager – Project in his exercise of all functions controlling quality of works, fabrication, erection, materials and test procedures in project site. Hence, any disputes or conflicts shall be brought to the attention of the CEO for resolution.

IMECO shall cooperate and coordinate with Client on all matters relative to the quality program, and all personnel directly involved in this project shall be continuously kept informed of contract requirements as work progresses.

This Quality Plan is binding on all IMECO personnel of this project and shall be followed without any deviation.

Chief Executive Officer: _____

2. *QUALITY OBJECTIVES*

To define requirements for carrying out all the works as mentioned in the contract documents. To execute the following scope of work in conformance to all applicable standards and the project specifications.

2.1 Scope of Work:

The Scope of work for the Project consists of the following:

- Operation of Irrigation Network Systems
- Operation of Irrigation Pump Stations/Booster Stations including MCC, Switch boards, Generators, etc
- Operation of Well-fields and Associated Infrastructures
- Operation of Parks and Related Facilities like Play Equipment, Garden Lights, Water features, Fountains, Toilets, Water Coolers, Public Address System
- Maintenance of Irrigation Network Systems
- Maintenance of Irrigation Pump Stations/ Booster Stations
- Maintenance of Well-fields and Associated Infrastructures
- Maintenance of parks and Related Facilities like Play Equipment, Garden Lights, Water features, Fountains, Toilets, Water Coolers, Public Address System
- Maintenance of Soft Landscapes/Farms
- Maintenance of Miscellaneous Civil structures
- Maintenance of Reservoirs and Associated Structures
- Maintenance of Mainlines and Associated Valves and Chambers
- Maintenance of Animal Husbandry Farms
- Maintenance of Main and Lateral Pipelines for Storm water Networks/Sub-surface Drainage Networks
- Maintenance of Manholes, Collection Chambers, Gullies, Outfalls etc connected to the Storm Water networks/Sub-surface Drainage Networks

2.2 Preparation:

The Quality Plan is prepared in accordance with the company quality assurance/control procedures and also in compliance with the clients' norms & guidelines as mentioned in contract documents as per ISO 9001:2008 standard.

2.3 Requirements:

The work shall be performed throughout the execution period in accordance with the client technical specifications, specific job order requirement and approved drawings and in compliance with company procedure and work instructions. The applicable technical specifications of the client and IMECO QHSE Management System shall be referred to.

2.4 Availability of Documents:

The project procedures shall be reviewed, updated and revised and issued when required. Manager - Project shall check the availability of current client reference standards and shall arrange non available standards from the client. He shall also maintain current copies of all specifications required for this contract. Quality and HSE documents shall be filed accordingly at IMECO Head Office and it shall be available upon request of the client.

3. ORGANIZATION STRUCTURE

3.1 Allocation of Responsibilities

The responsibility of key personnel on quality related activities are as indicated in 'Assignment of Responsibility' below. In case of conflict in responsibilities assigned between System Procedure Manual and this Quality Plan arises, the responsibilities mentioned in this PQP will prevail.

3.2 Authorized Representative

The Planning Engineer is the authorized quality representative of IMECO for this project. He is responsible to interface with Client for all matters pertaining to the Quality Program.

3.3 Assignment of Responsibility

Chief Executive Officer
The CEO is ultimately responsible for the efficient supply of resources and the smooth running of all processes and services within IMECO. He shall approve IMECO QHSE Policy, Objectives & Targets and ensure their implementation and maintenance along with IMECO business plans and contract bidding. The CEO shall also ensure that the project is managed effectively to the satisfaction of the Client and that the QHSE system is fully implemented and working effectively. He shall ensure that the roles & responsibilities for Health, Safety & the Environment are properly assigned within the management structure and accepted at all levels. He shall ensure the necessary resources are made available to maintain a workplace free from injury, accident, illness & keeping waste generation and other discharges to the environment to a minimum.

Chief Operation Officer
The Chief Operation Officer reports to the Chief Executive Officer and is responsible for the smooth running of all projects. He shall be responsible for the monitoring and control of the progress of all projects to confirm that they are executed as per contractual obligation and time schedule. He shall lead and direct the Project Support Division & Project Execution Division of IMECO to ensure overall profit, quality, safety and efficiency targets of the division are met. He is responsible for overseeing the preparation of the Project Execution Plan and all related documents for the projects at hand. He shall ensure that all functions are carried out in accordance to company QHSE policy and procedures. He shall be in charge of allocating resources in order to ensure that the needs and requirements for the health & safety of the employees are met and that there is continuous awareness and training vis-a-vis the proper measures and procedures to follow.

Director – Non Oil & Gas
The Director – Non Oil & Gas reports to the Chief Operation Officer and is responsible for the smooth running of the non oil & gas projects under his responsibility. He is responsible for the proper planning and execution of all related non oil & gas contracting projects and for overseeing the preparation of the Project Execution Plan and all related documents for the projects at hand. He shall ensure that all functions are carried out in accordance to the company QHSE policy and procedures. He shall be in charge of allocating resources in order to ensure that the needs and requirements for the health & safety of the employees are met and that there is continuous awareness and training vis-a-vis the proper measures and procedures to follow.

Sr. Manager - QHSE
The Sr. Manager - QHSE reports to the Chief Operations Support Officer and is responsible for the implementation and smooth running of a cost effective integrated Quality Management System in the company. He shall be carrying out the duties with authorities on quality functions in addition to

all Management Representative duties & responsibilities. He shall ensure that all functions are carried out in accordance to company QHSE policy and procedures.

Manager - Project

The Manager - Project reports to the Director – Non Oil & Gas and is responsible for the effective control of this project and all site activities. He will be responsible for ensuring that the work is performed in accordance with the contract specifications. He shall arrange the necessary manpower, plant, machinery and materials to complete the activities in accordance with the contract requirements. He shall ensure the procurement of material with the Procurement & Logistics Dept. is carried out appropriately and punctually.

He shall ensure that all site functions are carried out in accordance to the company QHSE policy and procedures.

Planning Engineer

The Planning Engineer shall report to the Manager - Project and, in the absence of the Manager - Project, shall fill in as the acting Manager when required. He shall assist the Manager - Project with the direction and management of the project activities; implementation and resolution of the project schedule; and in the overall management of this project. Whenever required, he shall coordinate and liaise with the Client on all issues related to this project and shall attend any required meetings with the Client. He shall ensure the day to day activities are planned and executed as per contract requirements. He shall manage the resource and equipment level requirements and arrange procurement to suit the activity requirements. He shall review and monitor the progress, prepare reports for submission to the Client.

Agricultural Engineer

The Agricultural Engineer shall report to the Manager - Project. He shall plan, supervise and manage all activities related to plant irrigation, drainage, flood and water control systems. In addition to the supervision and management of the agricultural machinery, equipment and instrumentation, he shall also be responsible for overseeing the construction of farm and other related buildings (storage facilities, etc.).

The Agricultural Engineer shall develop methods/techniques to conserve soil and water and to improve the processing of agricultural products. He shall ensure that the work is performed in accordance with the contract specifications and in accordance to the company QHSE policy and procedures. He shall ensure health and safety is adequately observed at all times.

Irrigation Engineer

The Irrigation Engineer shall report to the Manager - Project and is responsible for overseeing that all trees/shrubs and green areas are adequately irrigated as per contractual agreement. He shall ensure that the irrigation water is used efficiently and follow the proper maintenance and operation of all irrigation equipment. He shall ensure that the work is performed in accordance with the contract specifications and in accordance to the company QHSE policy and procedures.

Veterinary Doctor

The Veterinary Doctor shall report to the Manager - Project and is responsible for the study, treatment of animal injuries and diseases. He shall advise on feeding and breeding strategies to achieve maximum production. In addition to his daily task i.e. immunize, inspect and vaccinate healthy animals against disease, he shall also ensure that the safety standards on food supplies are strictly followed. He shall ensure that the work is performed in accordance with the contract specifications and in accordance to the company QHSE policy and procedures.

Mechanical/Electrical/Instrument Engineer

The Mechanical/Electrical/Instrument Engineer shall report to the Maintenance Engineer. He shall control and monitor the actual execution of all related works of the project to ensure that the project

will be executed in accordance with all the approved plans, contract documents, specifications and all applicable standards.
He shall be responsible for implementations of all related works at site and shall monitor the actual physical works at site. He shall supervise, organize and plan all related activities and ensure that the area is safe for the workforce to work with.
He shall direct, supervise, monitor and control the respective Foreman and/or assigned workforce to ensure the work is carried out as per method statements and contractual requirements.
He shall ensure adequate protection of equipment is provided at all times and that Health, Safety and Environmental regulations are adequately observed.

QA/QC Engineer

The QA/QC Engineer shall report to the Manager - Project. He shall be responsible for ensuring that the approved Project Quality Plan is effectively implemented in the contract and the inspection and test results are properly documented. He shall conduct inspections to ensure compliance of all activities with the approved Method Statements and Project Quality Plan. He shall verify and ensure that quality records are being documented accordingly.
Among the main activities, the QA/QC Engineer shall carry out the following:

- *Review of all modification and amendments to the Project Quality Plan (under supervision of the Planning Engineer), as to be listed in the Revision Status Log.*
- *Ensure all regular inspections are conducted and tests made are recorded.*
- *Ensure compliance of all activities to contract plans and specifications and the attainment of quality level as work progresses.*
- *Ensure that Client's approval and/or the required factory or supplier compliance certificates have been obtained upon delivery of available material at the project site.*
- *Ensure that all non-conforming activities/materials are noted and proper corrective actions have been done to avoid reoccurrence.*
- *Coordinate with the Planning Engineer with regards to all QA/QC related documents to be submitted to the Client for their record or for approvals.*
- *Ensure that the issue, amendment and recall of controlled documents and other essential records are done in conformance with the IMECO QHSE Management System, ISO 9001:2008 and the project specific Quality Plan.*

Landscape Architect

The Landscape Architect reports to the Manager - Project, and is responsible for all activities related to the preservation of landscaped area. He shall ensure that the vision of Client regarding landscaping is properly implemented and he shall be responsible for the planning of the landscape as per Client requirements.

Hydro geologist

The Hydro geologist shall report to the Maintenance Engineer, and is mainly responsible for planning and supervising groundwater investigations. He shall monitor water levels, pollution content, generating notes and reports of what is found in his investigations. He shall propose or alter methods of research and investigation into water formations as necessary.

Civil Engineer

The Civil Engineer shall report to the Manager - Project. He shall control and monitor the actual execution of all civil related works of the project to ensure that the project will be executed in accordance with all the approved plans, contract documents, specifications and all applicable standards.
He shall be responsible for implementations of all related civil works at site and shall monitor the actual physical works at site. He shall supervise, organize and plan all civil activities and ensure that the area is safe for the workforce to work with.
He shall direct, supervise, monitor and control the respective Foreman and/or assigned workforce to ensure the civil work is carried out as per method statements and contractual requirements.

He shall ensure adequate protection of equipment is provided at all times and that Health, Safety and Environmental regulations are adequately observed.

Project Surveyor

The Project Surveyor reports to the Manager - Project and is in-charge of all surveying work related to the project. He shall prepare the details of the survey and reports them in an approved format.

Quantity Surveyor

The Quantity Surveyor reports to the Manager - Project. He shall measure the work done, materials on-site etc. and prepare the evaluation and final account in accordance with the Client procedures. He shall review, monitor and report on financial status and shall liaise with Client with respect to financial matters as necessary.

Officer - HSE

The Officer – HSE shall report to the Manager-Project on all HSE related matters with regards to this contract. He shall ensure that the HSE system and rules are strictly respected and followed on-site. He shall be responsible for the induction training of all personnel on matters affecting Health, Safety and Environment and he shall issue Monthly Statistics and reports related to HSE.

The Officer – HSE shall oversee the site security and ensure that first aid and welfare facilities and procedures are provided and properly maintained. In addition to carrying out and recording regular safety inspections, he shall organize safety drills.

Foreman (related discipline):

The Foreman (as per discipline) reports to the respective Engineer (as per discipline). He shall be responsible for implementing, conducting & coordinating the technical aspects of the project day-to-day works. He shall manage, supervise, control and direct the manpower assigned to him so as to ensure the work is carried out as per the requirements. He shall mobilize the physical and human resources within the site efficiently and effectively to carry out the work activities. He shall follow-up the execution of the project as per Execution Plan / Work Schedule and administer the day to day work at site; and shall ensure the works are carried out as per contractual requirements and as per planned schedule.

Storekeeper

The Storekeeper reports to the Manager-Project on all store related matters with regards to this contract. He is responsible for receiving and issuing all items (fixed assets, inventory, expenses etc) in the stores on-site. He shall prepare, maintain and submit the relevant documents/records such as MRV's, MIV's, MTV's etc; prepare the Material Requisitions, if required, as per instructions from his/her Supervisor. He shall also prepare periodic reports of Fixed Assets, Inventory, Materials and submit the same to his/her Supervisor. He shall ensure all calibration tools & equipments are fit for use on site and coordinate with the Stores & Assets Dept. on all activities related to the calibration process. He is responsible for handling, shelving, maintaining and controlling all inventories, tools and equipments in the store while updating the stock cards and the list of vehicles, equipments & tools. He shall ensure all Fixed Assets on-site are fitted with the Fixed Assets No., Green/Red Tag (as applicable) and coordinating with the Stores & Assets Dept. regarding the same.

4.0 APPLICABLE PROCEDURES

4.1 QUALITY PROCEDURES:

4.1.1 **Control of QC Documents** – Planning Engineer shall establish and maintain the following records and files. It shall be his responsibility to see these records are properly maintained and stored after project completion and that each of the sub-contractors (if any) on this contract establish and maintain similar records:

a). A record of all checklists/work reports filed sequentially and by work categories.
b). A file of consolidated periodic report filed as well as periodic QC Report concerning all work activities done for duration of the project.
c). A file for maintaining the record of all vendor's and technical approvals filed consecutively by submittal number and index (when applicable). The file shall also include the Material Approval Form for all submittals (if applicable).
d). A file of current and governing contract plans and specifications, variation orders and technical standards issued by the client.
e). Contract materials receiving report file.
f). A record/documentation file of properly logged non-conformance reports (NCR's) to be issued for future reference and evaluation purposes.

All QA/QC documentation shall be in the English language and of legible and microfilmable quality for easy processing/ reproduction. Client's project inspection team shall have access to records and documentation filed and maintained by IMECO, and shall also have copies of all test reports. A list of outstanding items shall be documented and transmitted to the client prior to project completion.

4.1.1.1 Project Execution Plan

<u>HSE Related Execution Plan</u>
The Project Execution Plan includes the Project Quality Plan, Project HSE Plan, Project Risk Assessment and Project Emergency Response Plan.

HSE Plan & Emergency Response Plan are prepared by the Officer- HSE, reviewed by the Manager- HSE and approved by the Manager – Project. The Activity Risk Assessment is prepared by the assessment team of the project. This team will vary and includes as applicable the Manager-HSE, Officer-HSE, QAQC Engineer, the Project Engineer(s) and the workforce if needed. The Manager–Project shall have the final approval of the Risk Assessment.

<u>Quality Plan</u>
The Chief Executive Officer shall have final approval of the Project Quality Plan after being reviewed by the Sr. Manager- QHSE and Manager–Project. Any revisions to the project Quality Plan shall mean that the Quality Plan shall become the next revision and the revisions shall be noted on the revision log.

The first document submitted to the Client for approval shall be issued as per Client required revision number (Ex. 0). Should any amendment take place, the revision number shall be updated accordingly as per Client requirement. All obsolete documents must be removed from the site upon amendment and issue of a new revision. The last revision of the Quality Plan issued must be available at all points of use. All manuals shall be distributed according to the master distribution list, as approved by the Management

Representative. Any controlled hard copy of the manual shall be stamped "CONTROLLED" with a red ink stamp.

Plan Distribution

The Project Execution Plan containing the project Quality Plan, project HSE Plan, project Risk Assessment and project Emergency Response Plan as applicable for each project shall be scanned and posted on the internet based QHSE Database under Section II for instant document transmission, better storage and easy access. They shall be continually controlled and maintained up-to-date by the QHSE Department.

Access shall be restricted for internal use within IMECO and only to the holders as specified on the Manual Holder's List. The list of all manual holders with their username and passwords shall be approved by the Chief Executive Officer and controlled by the IT Department.

The "log update" section of the database as well as email notification shall provide a means for all users to acknowledge the manual revision and/or issue. If required, hard copies of the controlled manuals shall be distributed with a "Document Transmittal Notice" as a means for recipients to acknowledge receipt of document and/or revision. All documents issued will be legible, clear and readily identifiable.

4.1.1.2 Audit Checklists

The contents / questions listed systematically on each Internal Audit Checklist shall be approved by the Sr. Manager-QHSE / Manager-HSE as appropriate in order to ensure the scope of audit is covered before carrying out the actual audit. The contents of each Internal Audit checklist shall address the following points:

- Does the checklist cover all aspects of the procedure?
- Does the checklist cover all aspects of the standards?
- Does the checklist cover all aspects of working practices?
- Procedure number, revision and description.

Internal Audit Checklists and their issue, approval and revisions shall be controlled by the Sr. Manager-QHSE & Manager-HSE relative to their scope of work and responsibilities.

4.1.1.3 QHSE Forms

QHSE Forms are prepared, numbered, approved, registered, distributed, revised and filed in accordance with detailed instructions and procedures. All QHSE forms, documents, reports or checklists shall be given an individual number (i.e. Form 001) which will have the revision date underneath it. All obsolete documents must be removed and destroyed / deleted, except those documents which might be needed in the future for legal purpose. They must be kept, clearly marked, in a separate file.

4.1.1.4 General Procedure

Document numbering, control and hierarchy:

All project documentation are prepared, numbered, approved, registered, distributed, revised and filed in accordance with detailed instructions and procedures.

The QA/QC related documentation (Method Statements, Inspection Test Plan, QC Forms-Checklists) and project technical documents/drawings (including the planning package documents) shall be uniquely numbered and/or shall be identified by a document name.

No duplicate numbers can be registered for the same document. If documents are declared "void", the document number shall not be re-used.
A document's version shall be controlled through the establishment of a revision number for each document.
IMECO shall use a project specific unique numbering string for all QA/QC and project technical documents/drawings for this project. The Site Administrator shall be responsible to ensure the numbering and control system for all project documentation is abiding with procedure requirements.
Where required, IMECO shall use Client numbering conventions which are dictated by Client needs and contractual requirements. In such cases, IMECO Site Administrator shall list and indicate the documentations that are being numbered as per Client numbering conventions.
All QA/QC related documentation (including the Method Statements) are prepared, numbered, approved, registered, distributed, revised and filed in accordance with detailed instructions and procedures.

Any revision carried out to the Method Statement, Forms (QA/QC related) shall be controlled in order to ensure acknowledgement of the revision and the withdrawal of outdated documents. Any revision change shall be documented on a Revision Status Log. The last revision of the issued document must be available at all points of use and it shall be identified, and their distribution shall be controlled. All documents, of external or internal origin, shall be identified and their distribution controlled.

Drawings are identified as superseded through a log sheet where all revisions are documented and recorded. Superseded drawings shall be identified through the label "superseded", they must be kept, clearly marked, in a separate file from the latest drawing revision currently in use

Every Department/Division Manager & Manager–Project is responsible for the documents preparation, review and distribution within their area of responsibility. They are also responsible for the withdrawal and destruction (if required) of all outdated documents.

All obsolete documents must be removed and destroyed (if required)/ deleted, except those documents which might be needed in the future for legal purpose. They must be kept, clearly marked, in a separate file.

All QA/QC documentation shall be in the english language and of legible and micro filmable quality for easy processing/reproduction. Client's project inspection team shall have access to records and documentation filed and maintained by IMECO, and shall also have copies of all test reports.

A list of outstanding items shall be documented and transmitted to the Client prior to project completion.
(With reference to IMECO System Procedure Manual 423 – Control of Documents)
(With reference to ISO 9001:2008 – 4.2.3 Control of Documents)

The hierarchy of the quality programme documentation of the IMECO QHSE System documentation is as follows:
This QHSE Management of IMECO consists of a Quality, Health, Safety & Environment Manual, System Procedure Manual, HSE General Procedure Manual, controlled Forms and Work Instructions. The QHSE Manual, System Procedure Manual, HSE General Procedure Manual are documented, maintained, implemented and satisfy the requirements of ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007 Standards.

The QHSE Manual is considered as a first tier document and outlines the overall quality, health, safety & environmental management system, in which IMECO's QHSE Policy,

objectives and targets have been included. The System Procedure Manual and the HSE General Procedure Manual are the second tier documents. The System Procedure Manual describes in sufficient details, the responsibilities and methods to be followed for carrying out the various activities and tasks necessary for the quality, health, safety and environment through effective planning, operation and control of processes which are related to IMECO's operation. The HSE General Procedure Manual describes in sufficient details, the responsibilities as well as the methods to be followed for carrying out various activities and tasks. These methods shall conform to National, International standards and other applicable requirements of health, safety and the environment.

In order to meet the requirements of the QHSE Management System and the Client, the project execution plan shall be produced including specific project Quality Plan, HSE Plan, Risk Assessment and Emergency Response Plan which are generated to control and document processes, operations or services. All process procedures, work instructions and / or plans shall be reviewed & approved prior to implementation.
These plans are prepared and documented while taking into account the different requirements of the QHSE Management System of IMECO, the QHSE Manuals of IMECO (QHSE Manual, System Procedure Manual, HSE General Procedure Manual) and the ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007 Standards requirements.

The hierarch of the quality programme documentation for this project will be as follows:

The project Quality Plan is considered as a high level document with regards to this project, and it outlines the related QA/QC processes, procedures and activities to be adopted in this project.
Supporting the Quality Plan shall be Quality Processes/Procedures for the works. The responsibility for review and approval of Quality Processes/Procedures is with the Client.

As part of planning, the Project Organization Chart, Project Schedule and Manpower / Equipment Lists produced shall be the foundation upon which the works shall be planned, executed, monitored and controlled.

Where applicable, the project specific Method Statements, QC Forms shall be prepared and submitted to the Client for review, and shall be controlled documents.

If any revisions are carried out to the above mentioned documents (i.e. Project Organization Chart, Project Schedule and Manpower / Equipment Lists, Method Statements, and Quality Forms) during the course of project execution, the revised document shall be considered as the final document and the previous document - as obsolete.

4.1.2 **Control of Quality Records –**

The Planning Engineer shall develop and implement a system for filing all quality records of the project in such a way that it can be easily traceable, accessible and legible.

Project related QHSE records unless otherwise stated, or as requested by the Client, shall be retained for the period of the contract plus one year. Those records which are needed by a court of law due to any dispute shall be retained until the dispute is settled. IMECO shall allow the Client, reasonable access to QHSE records which pertains to their contracts.

They are to be filed, stored and maintained in such a manner to make them readily retrievable. All quality records of the project shall be stored in a suitable manner to prevent loss, damage and deterioration during retention period. The same shall be archived in the Central Filing Room for a period of 5 years and faxed documents on thermal paper shall be copied on plain paper and then stored accordingly.

Filing, Indexing, Storage, and Retention:

All QHSE Records shall be stored in a suitable manner to prevent loss, damage, and deterioration during the retention period.

Project related QHSE records unless otherwise stated, or as requested by the Client, shall be retained for the period of the contract plus one year.

Records of contract review and main contracts shall be kept and filed by the Project Execution Team in charge for the duration of the contract plus one year. Original copies of tenders and main contracts shall be kept with the Chief Executive Officer.

All manuals, specifications, operations manuals and catalogues shall be retained indefinitely or until replaced through revision or updates.

Records related to customer communication shall be kept during the different stages of the contract with the Project Execution Team. All communication between IMECO and the Client must be documented, recorded and adequately filed. These shall be retained for the period of the contract plus one year. This includes the following:

- Requesting clarifications for any ambiguity in the Contract Document.
- Reporting to the Client any discrepancy found between IMECO's Quotation and the Contract Document.
- Reporting to the Client all plans, agendas, charts and reports that IMECO find necessary to keep them informed about, or as per contract requirements.
- Whenever required, getting the approval of the Client for the materials to be used, modified or replaced for the project as well as project execution plans to be implemented onsite.
- Getting feedback from the Client in terms of complaint or satisfaction of the services and works rendered by IMECO.

For major material requiring Client approval, a material inspection Form shall be filled after inspection of the material received against the material approval report in the presence of the Client's QA/QC representative. The specifications should match the ones documented in the material approval report. Records shall be kept and retained for the period of the contract plus one year.

All records for material identification and traceability shall be held within the Stores & Assets Department for a minimum period of 5 years. The register of calibrated equipment, the master list of equipments and all calibration records shall be held by the Stores & Assets Department. Records shall be kept for duration of contract plus one year.

All records for customer's supplied products shall be controlled and maintained by the Manager - Project. These shall be retained for the period of the contract plus one year.

Progress Report (monthly, weekly or daily as applicable) shall be submitted to the Client at the end of each period reflecting the status of the project. Records of these reports shall be kept with the Project Execution Team. They shall be retained for the period of the contract plus one year.

All original Internal Audits Reports and any Non-Conformance/Corrective Action Reports shall be filed within the QHSE Department as appropriate and a record log kept, after completion and close-out for a minimum period of 5 years.

All records related to the ***Control of Production and Service Provision*** and ***the Validation of Process for production and service provision*** shall be held within the appropriate division and controlled. Like all project related records, they shall be retained for the period of the contract plus one year.

(With reference to IMECO SPM 424 – Control of Records)
(With reference to ISO 9001:2008 – 4.2.4 Control of Records)

4.1.3 **Quality Plan** –

The Project Quality Plan (PQP) shall be prepared by the Planning Engineer. This Quality Plan will contain the following items: (applicable items shall be 'referred to as attachments' in this PQP and maintained as standalone documents and shall be submitted to Company).

a) Assignment of responsibilities
b) Applicable Quality Procedures
c) Resources List – (standalone documents – Quality Plan attachment)
d) Method Statements – (standalone documents – Quality Plan attachment)
e) Project Schedule – (standalone documents – Quality Plan attachment)f)
f) Checklists/Reports – (standalone documents – Quality Plan attachment)
g) Organization Chart of the Project – (standalone document – Quality Plan attachment)

The Sr. Manager- QHSE and Manager- HSE shall prepare an Audit Plan scheduled for the whole year. Audits are considered an important tool to ensure the compatibility of the process, services, and installations with the applicable QHSE Procedure and Work Instructions. The Manager–Project identifies the need of any tool, equipment, machinery or instrument. He shall plan to have them in timely manner to avoid any interruption of the processes.

The Manager-Stores & Assets shall maintain a master list of measuring and testing equipment and must generate a plan for their calibration date, when necessary.
(With reference to IMECO SPM 545.4 – QHSE Management System Planning)
(With reference to ISO 9001:2008 – 5.4.2 Quality Management System Planning)

4.1.4 **Responsibility, Authority and Communication** –

The responsibilities and authorities of all staff in the project shall be defined by the Manager–Project, and the job descriptions shall be detailed and signed by each employee. The overall implementation of the Quality System on the project shall be done by the Sr. Manager-QHSE/QAQC Engineer. Any problems or issues that might affect the quality of work or services shall be directed to the Manager–Project for review and action to remedy them.

The Organization Chart of the project shall show the line of communication and reporting between each category in the project. IMECO has installed a LAN system for better communication between the Site and the Head Office for Material Requisitions, Material Receipt Vouchers, reports from the Manager–Project, transfer of manpower between different projects, correspondence, memos, etc.

4.1.5 **Training Records** – Training records shall be documented by using a "Training Record Sheet" which contains the following:

- Training description/subject matter
- Date of training session
- Duration of training session
- Instructor
- Instructor qualification (as applicable)
- Signature of trainee and instructor

Training files of all employees of the project shall be kept for the whole duration of the project.
(With reference to IMECO SPM 622.5 – Training Records)
(With reference to ISO 9001:2008 – 6.2.2 Competence, Training and Awareness)

4.1.6 **Review of Requirements Related to the Products** – For the the pre-tendering stage all information received is reviewed by the Manager–Project as designated by the CEO/COO. He shall make sure that all the requirements are clearly defined, documented and understood and any ambiguities must be clarified in writing with the Company or his representative. The tender documents shall be signed by the Chief Executive Officer or his delegate when submitting the bid. For post-tendering stage, if IMECO is the successful bidder, then confirmation is received from the Client accordingly. When there are any differences between the contract and tender requirements, it will be resolved with the Client prior to acceptance of the contract. Once the contract has been signed for acceptance by the Chief Executive Officer, he shall inform the Manager–Project and Top Management of the acceptance and date of commencement of the project. A meeting will be held to review the project requirements and to designate actions to be taken to mobilize and start work at site. Internal Job Number will be assigned to the project, sub-contractor requirement (if required) shall be checked, and records of contract review and main contract shall be kept for the whole contract duration plus one year.

(With reference to IMECO SPM 724 – Review of requirements related to the Product)
(With reference to ISO 9001:2008 – 7.2.2 Review of requirements related to the Product)

Sub-Contractor Management:
As applicable, the CEO/COO will consider during the tender stage the sections of the works to be subcontracted. Technical submittals and shop drawings from approved subcontractors to be submitted through IMECO and be reviewed by IMECO to ensure completeness/ applicability. This decision will be influenced by:

- Commercial aspects
- Availability of IMECO's manpower to undertake any work
- Known workload of sub-contractors
- Contract requirements
- Capability of sub-contractor

Final approval to place subcontract orders will be given by the Chief Executive Officer. For major sections of the work, this decision will be made at the post tendering meeting. For other sections of the work, this decision will normally be made during the operational job or in the contract review stage to ensure commencement of the work as required by the contract.
(With reference to IMECO SPM 724 – Review of requirements related to the Product)
(With reference to ISO 9001:2008 – 7.2.2 Review of requirements related to the Product)

Depending on the scope of work of the sub-contractor (if any), they shall produce as per contract requirement, before the start of any work, the scope of work of its organization, CV's of the key staff working in the project. Upon initiation of the project, applicable method statements based on the scope of work shall be prepared by IMECO with the input of the subcontractor for their part of the work. During the course of the project, periodic reports of the work carried by the sub-contractor shall be submitted to the Manager–Project in charge so as to be included as part of the regular progress reports.
(With reference to IMECO SPM 744.4 – Outsourced Processes)
(With reference to ISO 9001:2008 – 4.1 General Requirements)

4.1.7 **Customer Communication** –
The Manager–Project shall have continuous and permanent communication with the Client or his representative, to avoid any ambiguities in the interpretation of the contract. Feedbacks shall be gathered from the Client in terms of complaints or satisfaction of services and works rendered by IMECO. All communication between the Client and IMECO will be documented, recorded and adequately filed.

Customer Communication & coordination shall be carried out at various stages including, but not limited to, the following:

- Preparation of quality plan
- Subcontractor requirement
- Contract clarifications/ambiguities
- Contract amendment
- Contract discrepancies
- Material approval
- Material receipt
- Product & service provision
- Validation of process for production and service provision
- Monitoring, measurement & reporting
- Project completion
- Feedback from the Client in terms of complaint or satisfaction of the services and works rendered by IMECO.

(With reference to IMECO SPM 725 – Customer Communication)
(With reference to ISO 9001:2008 – 7.2.3 Customer Communication)

4.1.8 **Purchasing** –

Material to be used in this project shall be defined by the Manager–Project and should approval be required, it shall be obtained by the Client or any of his representative prior to order and purchase.

For all local purchases, Material Requisition will be signed by the Manager–Project, and then it will be sent to the Procurement & Logistics Dept. The Procurement & Logistics Dept. shall source goods and services along with the prices as per the Approved Vendors List. They shall document all purchases on a Purchase Order. A copy of the PO will be sent to the Manager–Project to make sure that the materials are ordered as per requirement. Once the goods are received as per Purchase Order and any possible non-conformance is closed, then IMECO will pay the vendor. Upon request and as per Client requirement, major items requiring Client approval shall be inspected in coordination with the Client.

For international purchases, Material Requisition will be sent to the Procurement & Logistics Dept and shall be processed as per SPM 744.1 of Local Purchasing. Any product which are supplied wrongly, damaged or not in accordance with the Material Requisition requirement shall be documented into a non-conformance report and processed as per SPM 83.
(With reference to IMECO SPM 74 - Purchasing)
(With reference to ISO 9001:2008 – 7.4 Purchasing)

Preservation of Product:

The project storekeeper shall be directly responsible to control the delivery, handling and storage of the physical resources to preserve them and prolong their usage over time. He shall ensure the required cleaning, protecting, handling, storage, packaging and delivery of equipment / material is undertaken appropriately so as to prevent damage or deterioration.
It shall be the responsibility of the Manager – Project to enforce compliance to this procedure and for all employees and personnel onsite to comply with this procedure whilst using/handling all IMECO/Company materials and equipments.

4.1.9 Identification and Traceability – The scope of this procedure is to cover the receiving identification, issue and stock control of all products and services that affect the quality of products and services and ensure their full traceability. It shall be the responsibility of the Manager–Project or his designated representative to ensure control and compliance to this procedure. All operational equipment is identified and traceable by IMECO asset number

where a master list and their numbers are maintained. All vehicles are identified by a registration / plate number.
Once the materials are received and accepted, all items are recorded onto stock cards and also on the computer. Code numbers are assigned which references the shelves location in the store. Stock balance is updated accordingly. All records for identification and traceability shall be held within respective departments.
(With reference to IMECO SPM 753 – Identification and Traceability)
(With reference to ISO 9001:2008 – 7.5.3 Identification and Traceability)

4.1.10 Customer Property – The scope of this procedure is to cover all Client equipment which IMECO's personnel come in contact with and to ensure adequate control of all Client equipment and facilities at various locations. Any Client product supplied to IMECO's personnel shall be checked and recorded. The same will be reported to the Client and the Manager–Project shall be informed. No work will commence unless discrepancies are actioned.

All records of discrepancies will be recorded to individual file, such that if there is any Non-Conformance Report and Corrective Action taken, it shall be documented as per procedures – Corrective Action. Upon completion of the project, all Client supplied products shall be returned as per the original record. All records shall be controlled and maintained by the Manager–Project.
(With reference to IMECO SPM 754 Customer Property)
(With reference to ISO 9001:2008 – 7.5.4 Customer Property)

4.1.11 Internal Audits – Internal Audits in the field shall be performed to verify quality activities are in accordance with written procedures and general provisions of the contract. The Sr. Manager – QHSE shall be responsible to coordinate the whole internal audit program. When required, the Sr. Manager- QHSE shall initiate and ensure audits are conducted on the project. All audits shall be conducted using approved checklist generated by the Sr. Manager- QHSE. The auditor shall take random samples and checks to prove the effectiveness and implementation of procedures being audited, and that they are being adhered to comply with ISO 9001: 2008. Audit Checklists also act as the final Internal Audit Report and the auditor shall request the auditee to agree and sign the report accepting the aspects of the audit, including any areas requiring Non-Conformance Report and Corrective Actioning. Results of the audit shall be recorded and documented. A copy of the reports shall be issued to the concerned Manager–Project for reference, after completion and closed-out.

(With reference to IMECO SPM 822 – Internal Audit)
(With reference to ISO 9001:2008 – 8.2.2 Internal Audit)

Based on the receipt of and type of the project, the Audit Plan shall be updated to include the project taking into consideration the scope of work and duration of the awarded works. Whenever required, after conducting the audits, an Audit Report based on the audit findings shall be sent to the Client for information purpose.

4.1.12 Monitoring and Measurement of Product –
This procedure shall define the monitoring and measurement of the received materials as well as the operational activities.

The Manager–Project, Manager–Stores & Fixed Assets, and the Manager–Procurement & Logistics are responsible to ensure compliance to this procedure.
The scope of this procedure is to ensure that goods are received in good order and any damage or deterioration shall be recorded for proper action. After checking the description, part numbers and the quantity of items delivered against supplier's delivery documents and IMECO un-priced LPO copy, and after identifying if order is complete or partially delivered,

the Material Receipt Voucher is prepared and shall be sent to Stores & Fixed Assets Dept. upon completion of delivery. No equipment or material shall be booked to a project or released from its location to any site until all calibration and verification as well as maintenance requirements are complete.

In-process inspection and checking shall be carried out according to the relevant contract documents and specifications. The Manager–Project shall inspect the jobs on site and in case of non-conformance a Non-Conformity Report shall be raised as per procedure. The testing resources should be organized to be available as the work is installed and test results provided as soon as reasonably possible.

(With reference to IMECO SPM 824 – Monitoring and Measurement of Product)
(With reference to ISO 9001:2008 – 8.2.4 Monitoring and Measurement of Product)

4.1.13 Control of Suppliers / Manufacturer

Vendors/suppliers to IMECO shall be evaluated, approved and included in IMECO's Approved Vendors List (AVL) if one or more of the following criteria is met:

- The vendor has a proven satisfactory past performance record.
- Customers requirements
- The vendor has a certified quality system in accordance with ISO 9001:2008 or international equivalent and can supply a valid copy of certification.
- The vendor has supplied a satisfactory IMECO Vendor Quality Questionnaire.
- The vendor has passed a IMECO external audit of it's Quality Management System.
- The vendor is a recognized distributor of a ISO 9001:2008 manufacturing establishment.
- Unique supplier / vendor of a certain product or service.

The evaluation and re-evaluation of the suppliers/subcontractors shall be carried out through microsoft access based software. Regarding the evaluation process of new suppliers, supporting documents/records such as Questionnaire, Certificates, Add./Del. Of Vendor Form etc. shall be retained and maintained within the evaluation documents.

As for the re-evaluation process of existing suppliers, an in-depth analysis shall be carried out for all suppliers/subcontractors and scores shall be assigned for all sub-divided criteria associated with the product's delivery, quality and after sales services. Based on the final score obtained and the supporting documents available (NC/RR, Manager–Project memo, etc.) the vendor shall either remain on the AVL or be deleted. Once an evaluation is carried out, the previous records shall be sent to history and the supplier/vendor shall remain on the AVL for a period of one year until the due date of re-evaluation. The QHSE Department shall ensure overall conformance to the AVL.

The list of all suppliers shall be integrated into the system to allow the Procurement Department easier access when sourcing the supplier and preparing the LPO.

4.1.14 Control of Non-Conforming Product –

The scope of this procedure is to ensure that any non-conforming product is identified, documented, controlled and actioned accordingly and prevented from unintended use or installation.

Any product, vehicle or IMECO equipment during goods receiving, operations, maintenance, testing, inspection or transportation, found to be non-conforming (and/or that cannot be put back in compliance within 24 hrs.) shall be documented on a Non-Conformance/Rejection Report and investigated, actioned, action taken to prevent recurrence and close-out accordingly. Removal and replacement of any equipment/material shall be re-inspected in accordance with applicable procedures.

Controls to restrict further processing or installation of a non-conforming product or defective items, pending a decision on its disposition, shall be established and maintained. NCR's initiated by the QA/QC Engineer shall be reviewed by the Manager–Project to classify its category. Upon classification of non-conformities, proposed corrective action/repair procedure shall be submitted for approval. All non-conformance reports shall be documented and filed as part of quality control documentation.

Items shall be checked for functionality and damage and (where applicable) shall be controlled through Status Labels ('Green' Label for 'Working' / 'Red' Label for 'Not Working') and System Asset Number. Any vehicle, piece of plant equipment, items from the Store (at any time or during goods receiving), lifting equipment, operational accessories (i.e. pressure gauges) or safety equipment found to be faulty, damaged, incorrect or otherwise found not to be fit for service shall be fitted with a red "DO NO USE" label. Where necessary, a Non-Conformance/Rejection Report shall be documented. Any item with a "DO NOT USE" label shall not be used until the problem is solved or NC/RR report is closed-out. All items noted above shall be acceptable if not fitted with a red "DO NOT USE" label. If possible, any item fitted with a "DO NOT USE" label, shall be placed in a Quarantine Area until the non-conformance has been actioned and closed out. All non-conforming products that require repair or re-work shall be re-inspected or tested prior to use.

Materials or work activities which fails inspection or test shall be identified by either stopping further work from proceeding on the activity, by placing a material in a quarantine situation, and/or by clearly marking the issue. The Manager–Project shall inspect the jobs on site and in case of non-conformance a Non-Conformity Report shall be raised as per procedure. This stopping of work, quarantine or marking shall be maintained on the material or work activity, until it passes the agreed additional inspections or tests. Major defects in work will be listed and the works shall be re-inspected after completion.

Processing of Non-Conformity Reports shall be done through proposition of the resolution and disposition measures; and closure through verification of proposed action as per the implementation date. All reports shall be noted with a trend analysis code, disposition code and rejection code as per the notes on the overleaf of the report. This information shall be periodically reviewed by the QHSE Department when applicable and any trends shall be noted. IMECO shall evaluate each deficiency for potential Corrective Action to ensure avoiding recurrence of the problem and implement Corrective Action. It shall be the ultimate responsibility of the Manager–Project to ensure the action, control and implementation of the corrections, corrective actions is carried out and the non-conformance is closed as per the proposed date.

(With reference to IMECO SPM 83 – Control of Nonconforming Product)
(With reference to ISO 9001:2008 – 8.3 Control of Nonconforming Product)

(With reference to IMECO SPM 824 – Monitoring & Measurement of Product)
(With reference to ISO 9001:2008 – 8.2.4 Monitoring & Measurement of Product)

The time within which non-conformances are to be recorded and reported shall be agreed with the Company.

4.1.15 Production of Progress Reports

Progress Report shall be submitted at the end of each period reflecting the status of the project.

The type of progress report to be submitted shall be as per Client requirements and/or based on the type and nature of scope of work of the contract.

The report shall summarize all the work carried out and completed as well.

4.1.16 Corrective and Preventive Action –

The Corrective and Preventive Action reporting procedure shall be used as a management tool for correcting deficiencies, non-conformances or Client complaints affecting the quality of organizational and operational activities.

Conditions that may require correction, corrective or preventive actioning may be detected and documented in the following areas, processes or operations, but not limited to:

a) Feed-back through quality improvement meetings or forms
b) Non-conforming product reporting
c) Trend analysis
d) Company feedback or complaints
e) Third party audits
f) External supplier audits
g) Quality records
h) Equipment breakdown or failure
i) Inspection and testing operations
j) Suppliers performance records
k) Significant environmental impact
l) Health and safety hazards

All Corrective and Preventive actions and their associated non-conformances shall be documented. It shall be the responsibility of the management to control and implement Corrective and Preventive actions. All Corrective and Preventive Action Reports shall be issued from the QHSE Department. Corrective actions will be initiated to upgrade QC function on the failure of the system up to a significant date. Following the agreed completion date, a check will be made to verify that the Corrective Action has been implemented and appears to be effective and efficient.

(With reference to IMECO SPM 852 – Corrective Action)
(With reference to ISO 9001:2008 – 8.5.2 Corrective Action; and ISO 9001:2008 – 8.5.3 Preventive Action)

5.0 RECORDS

Quality Records shall be generated, maintained, submitted to the Client for review / approval. Prior to submittal of Dossier/hand-over documents & records to the Client, these shall be checked and reviewed by the Manager-Project (in conjunction with the QA/QC Engineer).

It shall be the responsibility of all Department Managers to maintain their Quality Records pertaining to their Departments or Manager-Project pertaining to their ongoing projects in conjunction with the QHSE Department. It is the decision of the Chief Executive Officer to decide how to dispose the QHSE Records at the end of the retention period.

(With reference to IMECO SPM 424 – Control of QHSE Records)
(With reference to ISO 9001:2008 – 4.2.4 Control of Records)

6.0 AUDIT

Where required, audits shall be carried out internally as per 4.1.11– Internal Audit. A report shall be issued on completion of each audit giving summary of the findings and recommendations for Corrective Action if necessary. When Corrective Actions are recommended, the time limit for their implementation should be stated. The activity concerned should be audited/inspected again at the expiration of the time limit to verify correction of the identified non-conformance (if any).

Audits shall be conducted by IMECO Quality Auditors and the frequency of conducting the audits shall be based on the receipt of the project taking into consideration the scope of work, results of previous audits, extent of improvement and duration of the awarded works.

(With reference to IMECO SPM 822 – Internal Audit)
(With reference to ISO 9001:2008 – 8.2.2 Internal Audit)

INTERNATIONAL MECHANICAL & ELECTRICAL COMPANY

Project Quality Plan

SECTION 2 - RESOURCES

Project:

Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi

Note:

- *Refer to the Manpower & Equipment Lists – These constitute as a part of this Quality Plan. These shall be maintained and controlled as stand-alone documents.*

INTERNATIONAL MECHANICAL & ELECTRICAL COMPANY

Project Quality Plan

SECTION 3 - **CONFORMITY OF THE SERVICES**

Project:

Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi

Note:

- *Refer to the Method Statements – The Method Statements produced for all activities constitute as a part of this Quality Plan. These shall be maintained and controlled as stand-alone documents.*
- *Any specific Method Statements revised during the course of the project shall automatically constitute as a part of this Quality Plan.*

INTERNATIONAL MECHANICAL & ELECTRICAL COMPANY

Project Quality Plan

SECTION 4 – WORK PLANNING

Project:

Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi

Note:

- *Refer to the Project Schedule – It shall constitute as a part of this Quality Plan. It shall be maintained and controlled as stand-alone document.*

INTERNATIONAL MECHANICAL & ELECTRICAL COMPANY

Project Quality Plan

SECTION 5 – WORK INSTRUCTIONS

Project:

Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi

OUTLINE

I HANDLING OF MATERIALS

The stores Personnel at sites, as well as at the Main Stores, shall carry out the activi
Mentioned below for compliance of Handling of Materials :

A.1 LIFTING BY HAND

Personal protective equipment's such as safety shoes, helmets and hand gloves shall be worn before commencing the lifting operations.
Strength of legs and not the back should not used while lifting.
Load should be sized up and assistance sought if necessary
Slipping hazards should be taken care of.
Any moving machinery around? If so proper care should be taken.
Surroundings should be kept clean and clear.
Know the contents of the package.
Always hold the packages close to the body.
If there are two people or more involved in the lifting operation, one of the team members should lead for proper synchronised action.

A.2 WHEEL BARROWS

Keep in good condition and effect repairs as and when required.
Eliminate slipping hazards.
Balance the load properly.
Tie up the loads where necessary.
Maintain sufficient room clearance for moving the load.
Observe the rules of the road.

A.3 FORK LIFTER

A trained and skilled operator to be deployed.
The equipment should be properly maintained and in proper operational condition.
If any malfunctioning /defect is noticed in the equipment during operation the equipment should be stopped immediately & rectified before further use.
Limit the loads to 80% of the lifting capacity of the equipment.
Never stand in front of a loaded fork lifter.
Do all vertical movements of the fork in a stationery position.
Do not use the fork lifter for pulling and pushing loads.

A.4 CRANE

A trained and skilled operator to be deployed.
The equipment should be properly maintained and in proper operational condition.
If any malfunctioning / defect is noticed in the equipment during operation, the equipment should be stopped immediately & rectified before further use.
Limit the loads to 80% of the lifting capacity of the equipment.
Never stand under a handling load of a crane.
Never stand on top of a load being lifted by a crane.

A.5 HANDLING OF FRAGILE MATERIALS

Handle in properly packed condition.
Glasses should be carried using proper Glass clips.
Packages containing breakable items should be kept or carried in a vertical position only.
The packages should be properly secured with suitable cushioning (such as thermocouple etc.) to avoid transit damage.
The fragile items shall be packed where necessary in saw-dust, hay and such other materials to avoid transit damage.

A.6 HANDLING OF OVER-DIMENSIONAL CONSIGNMENTS

Study the dimensions and weight of the consignment (such as porta cabins, containers
Plan the operation in advance.
Use a suitable crane for the operations.
Use 'D' shackles with nylon slings for lifting porta cabins.
Use chain for lifting containers.
Use "spacing bar" for lifting porta cabins.
'D' shackles, slings, chains etc. should be of right capacity and should be supported by test certificates.
Before lifting, ensure that all connections are removed from the porta cabins and
Never stand under a swinging porta cabin / container during operation.
The doors shall be properly secured before lifting porta cabins and containers.

A.7 HANDLING OF BARRELS AND CABLE DRUMS

Barrels and cable drums should not be rolled down from vehicles and allowed to fall free onto rubber tyres etc.
Barrels and cable drums should be rolled down under controlled condition by using ramps.
Always use spindles and slings to lift cable drums.
Drums should not be stacked one on top of the other

A.8 HANDLING OF GAS CYLINDERS

Gas cylinders should not be rolled from vehicles and allowed to fall free on rubber tyres etc., but should be lowered to the ground under controlled conditions. If more than one cylinder is to be lifted, a properly designed cradle shall be used.

A.9 GENERAL

Look above and around - watch for hazards wherever you are.
Stay clear of cranes, overhead work and suspended beds.
Wear the correct personal protective equipment.
Use the right equipment for the job.
Sling loads correctly

II STORAGE AND PRESERVATION OF MATERIALS

The Stores Personnel at site, as well as at the Main Store, shall carry out the activities as mentioned below for compliance of Storage and Preservation of Materials:

B.1 STORAGE CLASSIFICATION

B.1.1 Main stores building with proper racking and binding arrangements shall be utilised for storage of general stores. The items include general electrical, pipe fittings, valves and fittings, iron-mongery, general hardware, personal protective equipment, small tools & tackles and miscellaneous items. Small materials of pilferable nature shall be stored in steel under lock and key.

B.1.2 Air-conditioned storage facility shall be available to store paints, electronic instruments and components etc.

B.1.3 Covered storage sheds for timer items, cement and allied items, power and control cables, electrical panel boards, tiles, castings and other heavy miscellaneous items. The storage sheds shall have proper security barriers to prevent pilferage of materials.

B.14 Bulk items such as structural steel, heavy pipes, heavy machinery etc., shall be stored in open yard on suitable dunnage. The yard shall be duly fenced and secured with gates. Provision shall be made for passage of handling equipment such as Forklift, crane etc., in the open yard PVC / HPVC and GI pipes of smaller sections shall be stacked on suitable pipe-racks in the open yard.

B.2 STORAGE AND PRESERVATION OF MATERIALS

B.2.1 **Cement & Allied Items**

Shall be stacked on a dry raised platform or on suitable dunnage inside covered shed with not more than 10 bags piled vertically in each stack. The stacks shall be kept as close as possible and covered with tarpaulins.

B.2.2 **Cement Blocks**

Shall be stored in open yard on suitable pallets for ease of handling.

B.2.3 **Steel & Allied Items**

Shall be stacked in open yard on suitable dunnage such as wooden or concrete sleepers. The items shall be segregated size-wise and section-wise. All finished steel sections should be received a coat of rust preventive oil.

B.2.4 **Timber items**

Shall be stacked in covered shade on suitable dunnage and duly covered with tarpaulins.

B.2.5 **Glass & Fragile Items**

Shall be stored in segregated area to avoid contact with other stores, in a covered shed. Glass sheets in suitable packing shall be kept in upright position.

B.2.6 **Adhesives, Fillers & Sealants**

Shall be stored in air -conditioned premises.

B.2.7 **Tiles**

Shall be stacked in pallets in covered shed, suitably secured to the pallets with metal or plastic strip to prevent slippage.

B.2.8 **Paints**

Shall be stored in air-conditioned premises.

B.2.9 **Electrical fittings and consumables**

Shall be stored in Main Stores building on steel racks.

B.2.10 **Cable Drums**

Shall be stacked in open yard with suitable stoppers to prevent roll-over.

B.2.11 **Electrical Hardware**

Shall be stacked in open yard on suitable dunnage.

B.2.12 **Pipes**

Shall be stored on suitable pipe racks in open yard. However, pipe of heavier sections shall be stacked on suitable dunnage in the open yard. The pipes shall be segregated size-wise and type-wise.

B.2.13 **Machinery**

Shall be stacked in open yard on suitable dunnage and duly covered with Tarpaulins

B.2.14 **Utility Items**

Heavy items shall be stacked in covered shed under a tarpaulins cover, smaller assets shall be stored on racks in a separate room.

B.2.15 **Hand Tools & Miscellaneous Stores**

Shall be stacked on racks in the Main Store Building.

B.2.16 **Electronic & Instrumentation Items**

Shall be stored in air-conditioned premises.

B.2.17 **Industrial Gases**

Shall be stored in gas godown and kept in separate enclosures as per the type of gas. The godown shall have access to proper ventilation and fire extinguishers shall be available at the godown for any eventually.

B.2.18 **Hazardous Items**

All hazardous items shall be stored in a way to comply with International Safety Rules and Regulations.

B.3 SECURITY OF MATERIALS

B.3.1 **Main Stores**

The main stores building shall not have large unprotected or easily accessible windows and ventilators.

B.3.2 **Yard Lighting**

The areas adjoining the stores building and the storage yards shall be properly illuminated in the night time for safety and security.

B.3.3 **Fire Protection**

Proper fire fighting appliances like water buckets, sand buckets, fire extinguishers for different types of fires, shall be provided at suitable points in and around the stores, and the stores staff shall be trained on the operational aspects in the event of a fire accident. The stores building, covered sheds, storage yards and Gas godown shall be a "NO-SMOKING" Zone with suitable posters displayed at appropriate places.

B.3.4 **Cleaning**

The stores building and storage yard shall be kept meticulously clean by periodical cleaning.

III PACKAGING OF MATERIALS

The Stores Personnel at sites, as well as at Main Stores, shall carry out the activitie mentioned below for compliance of Packing of Materials.

C.1 CEMENT AND ALLIED ITEMS

These items are normally purchased in bags and packets. It should be ensured tha the bags / packets are stacked properly on the trailers / trucks so that they remain firmly within the body of the vehicle. In order to ensure safety and prevent lateral movement of the bags during transit, the carriers shall be provided with side grills The bags shall be covered with tarpaulins properly secured to the carrier with suitable nylon ropes in order to prevent spillage and ingress of moisture through rain water

C.2 STEEL AND ALLIED ITEMS

Steel sections and reinforcement bars are normally received from Suppliers in bundles. In case loose items are supplied. It should be ensured that such items are properly bundled by using appropriate steel carriers to facilitate easy handling of the material with forklift / crane etc.

C.3 TIMER ITEMS

Ply woods, White wood, Red wood etc., are normally received from suppliers in bundles. While despatching these items to sites. It will be ensured that proper dunnage is kept on the carriers and the bundles are covered with tarpaulins duly secured to the body of the carrier as a safety measure. In case small quantities of timber are to be despatched to sites, the items should be properly bundled by using steel / nylon straps taking care to see that the timber edges are suitably protected by hard board / thermocole packing.

C.4 CHALK BOARD, CHIP BOARD, FORMICA SHEETS ETC.

These items shall be packed in suitable wooden boxes / crates. To prevent movement of the items inside the boxes during transit, suitable Thermocole and other such packing materials shall be used. The Wooden boxes should have built-in dunnage facility for handling convenience.

C.5 STEEL AND ALUMINIUM DOORS & WINDOWS

These items shall be kept in vertical position in the carrier providing suitable packaging such as thermocole, hard board and thick polythene sheets between the layers of Doors and Windows to prevent scratches and transit damage. The consignments shall be covered with tarpaulins secured to the body of the carrier.

C.6 **GLASSWARE**

Glassware shall be packed in suitable wooden boxes using thermocole, saw dust, paper wool etc., Glasses shall be kept in a vertical position inside the boxes and tl wooden boxes shall be marked outside with a vertical arrow and further dunnage for handling convenience.

C.7 **PAINT ITEMS**

Small quantities of paints are normally received in tins packed inside cartons. The cartons are stacked on the carrier body ensuring that the top level of the cartons is well within the body of the carrier. Wherever required, suitable packing with gunny wrapping, thermocole, hard board etc. shall be provided. The Consignment shall be covered with tarpaulins duly secured to the carrier body with nylon ropes. Paints received in drums are stacked directly on the carrier body and the gaps between the drums are filled with suitable packing material. Drums shall not be stacked one above the other. The consignment shall be covered with tarpaulins duly secured to the body of the carrier. As a precautionary measure against transit damage, one layer of hard board material shall be used as base on the body of the carrier.

C.8 **CERAMIC / TERRAZZO / INTER LOCKING TILES**

C.8.1 Ceramic tiles are normally received in cartons. These are stacked directly on the Carrier body taking care to see that no gaps are left between the cartons. Suitable packing with thermocole etc. shall be provided on the fringes of the consignment so that the cartons carrying the tiles may not collide with other materials loaded on the carrier causing damage.

C.8.2 Terrazzo / inter locking tiles shall be received on suitable wooden pallets and the tiles are properly secured to the pallet by steel straps. These pallets are loaded on to the carriers taking care to provide suitable hard board / thermocole packing between the pallets to prevent lateral movements and damage during transit.

C.8.3 The consignment shall be covered with tarpaulin duly secured to the carrier body. This should be ensured especially in case of movement over long distances.

C.9 **SANITARY WARE**

Sanitary ware shall invariably be packed in wooden boxes using thermocole, saw dust etc., to prevent transit damage.

C.10 **GRP TANKS**

Special care should be taken to cover the consignment with tarpaulin duly secured to the body of vehicle and tighten using a suitable mechanical device.

C.11 **CABLE DRUMS**

Cable drums shall be secured to the carrier body with suitable chains to prevent movement during transit and consequent damage. Suitably designed wooden stoppers shall also be used to prevent rolling-over the drums.

C.12 **LAMPS AND LUMINARIES**

These being fragile items should be packed in suitable cartons with thermocole separators kept in wooden boxes.

C.13 **ELECTRICAL / ELECTRONICS / INSTRUMENTATION ITEMS**

These items are to be packed in suitable cartons and further safeguarded against ingress of moisture and dust by packing in polythene bags where necessary.

C.14 **PIPES**

Metal pipes received in loose condition shall be properly bundled using steel or G.I.Wire of appropriate size, before being transported in cargo vehicles.

INTERNATIONAL MECHANICAL & ELECTRICAL COMPANY

Project Quality Plan

SECTION 6 –CHECKLISTS/REPORTS

Project:

Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi

Note:

- *Refer to the Checklists/Reports – These shall constitute as a part of this Quality Plan. They shall be maintained and controlled as stand-alone document. (Types of checklists/reports to be prepared and submitted shall be as per Client and contractual requirements)*

INTERNATIONAL MECHANICAL & ELECTRICAL COMPANY

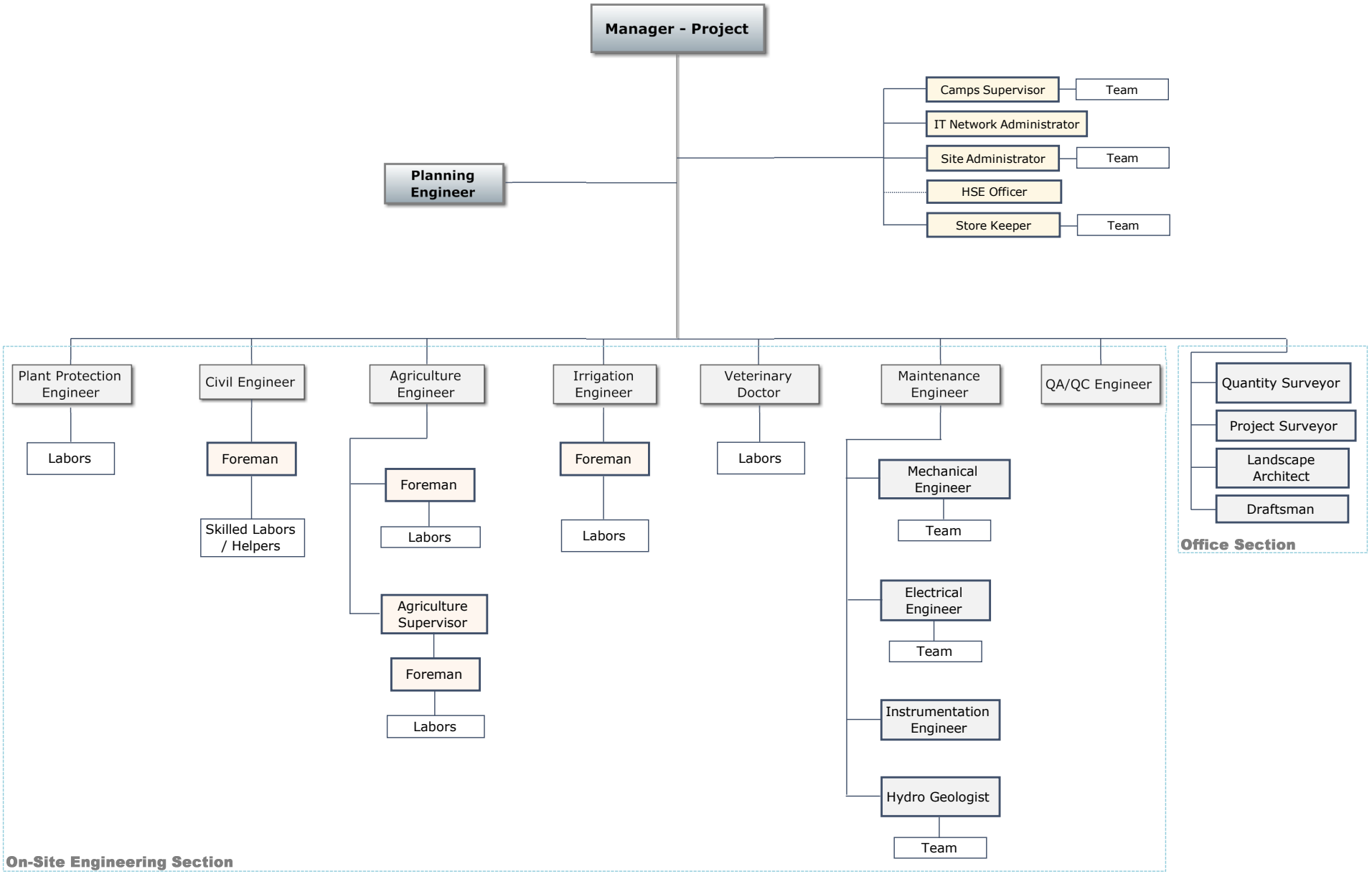
Project Quality Plan

SECTION 7 – ORGANIZATION CHART

Project:

Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi

P594 - Organization Chart - Operation & Maintenance Team



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ATTACHMENT – MANPOWER/EQUIPMENT LIST

PROJECT QUALITY PLAN

Contract No.:
WRM/PTC/004/AS/PRFD/O&M/301/MRF

Operation & Maintenance of Parks, Landscapes, Recreational Facilities & their related Infrastructure of Assets for Madinat Marfa, Western Region, Emirate of Abu Dhabi

B12. PERSONNEL (CV's, Histogram and Bar Charts)

Tel.: 6444700
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IMECO
Abu Dhabi
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International Mechanical & Electrical Co.

IMECO
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PROPOSED MANPOWER RESOURCES (CV's, Histogram and Bar Charts)

Tel. 6444700
Fax 6440445
IMECO
Abu Dhabi
P.O. Box 46527

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PROPOSED REQUIRED MANPOWER - KEY STAFF

No.	JOB POSITION	NO.	REMARK
1	Project Manager	1	Based full time at site
2	Planning Engineer	1	Based full time at site
3	Civil Engineer	1	Based full time at site
4	Maintenance Engineer	1	Based full time at site
5	Electrical and Instrumentation Engineer	1	Based full time at site
6	Hydrologist (wells)	1	As Required
7	Veterinary Doctor	1	As Required
8	Mechanical Engineer	1	Based full time at site
9	Irrigation Engineer	1	Based full time at site
10	Landscape Architect	1	Based full time at site
11	Agriculture Engineer	1	Based full time at site
12	Plant Protection Engineer	1	As Required
13	QA/QC Engineer	1	As Required
14	Quantity Surveyor / Assistant QS	1	Based full time at site
15	Health and Safety Officer	1	Based full time at site
16	Office Support	1	Based full time at site
17	Store keepers	1	Based full time at site
18	Surveyor	1	Based full time at site
19	Draftsman	1	Based full time at site
		19	

International Mechanical & Electrical Co. الشركة العالمية للميكانيك والكهرباء ذ.م.م
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ISO 9001
ISO 14001
OHSAS 18001
BUREAU VERITAS
Certification

MANPOWER HISTOGRAM

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OPERATION AND MAINTENANCE OF PARKS, LANDSCAPE, RECREATIONAL FACILITIES AND THEIR RELATED INFRASTRUCTURE OF ASSETS FOR MIRFA, WESTERN REGION, ABU DHABI EMIRATES
MANPOWER DISTRIBUTION

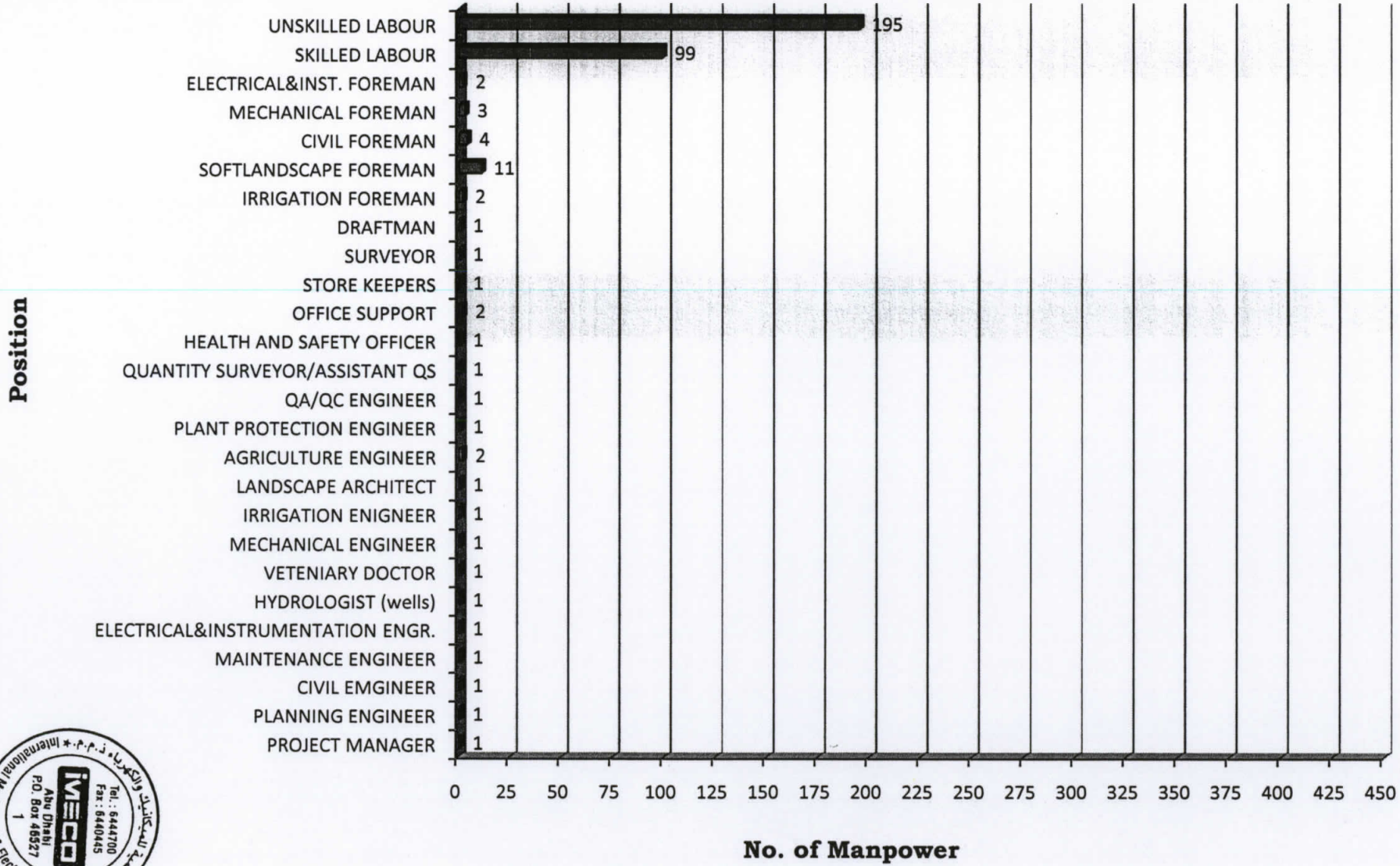
SLN	Position	QUARTERS																			
		1	2	3	3	3	3	3	3	3	3	3	3	3	6	7	8	9	10	11	12
1	PROJECT MANAGER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	PLANNING ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	CIVIL EMGINEER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	MAINTENANCE ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	ELECTRICAL&INSTRUMENTATION ENGR.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	HYDROLOGIST (wells)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	VETENIARY DOCTOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	MECHANICAL ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	IRRIGATION ENIGNEER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	LANDSCAPE ARCHITECT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	AGRICULTURE ENGINEER	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12	PLANT PROTECTION ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	QA/QC ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	QUANTITY SURVEYOR/ASSISTANT QS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	HEALTH AND SAFETY OFFICER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	OFFICE SUPPORT	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	STORE KEEPERS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	SURVEYOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	DRAFTMAN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	IRRIGATION FOREMAN	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21	SOFTLANDSCAPE FOREMAN	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
22	CIVIL FOREMAN	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
23	MECHANICAL FOREMAN	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
24	ELECTRICAL&INST. FOREMAN	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25	SKILLED LABOUR	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
26	UNSKILLED LABOUR	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195

NOTE: MANPOWER WILL BE AS PER TENDER & SEASONAL REQUIREMENTS

International Mechanical & Electrical Co. IMECO Abu Dhabi P.O. Box 46527 Tel.: 6444700 Fax: 6440445

MIRFA

PERSONNEL BAR CHART



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OPERATION AND MAINTENANCE OF PARKS, LANDSCAPE, RECREATIONAL FACILITIES AND THEIR RELATED INFRASTRUCTURE OF ASSETS FOR MARFA, WESTERN REGION, ABU DHABI EMIRATES
EQUIPMENT DISTRIBUTION

SLN	Description	QUARTERS																				TOTAL
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
	MACHINERY																					
1	DUMPER	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	120
2	SPRAY DUMBER	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
3	SPRAY MACHINE	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
4	RIDE-ON MOWER	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	160
5	PUSHING MOWER	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	120
6	HEDGE TRIMMER	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	120
7	EDGE TRIMMER	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	120
8	CHAIN SAW Petrol	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	160
9	GRASS VACUME CLEANER	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	80
10	WASHING MACHINE	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	80
11	BLOWER CLEANING MACHINE	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	80
12	AERATION AND DETACHING EQUIPMENTS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
13	CLEANING TOOLS	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.	AS REQ.
14	TRACTOR - 3T	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ
15	WELDING MACHINE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
	VEHICLE																					
1	STATION CAR	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
2	D.C. CAR 4WD	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	80
3	SALOON CAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
4	BUS / MINI BUS	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	80
5	PICKUP 3.5 TON	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
6	TIPPER TRUCK 4X4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40

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OPERATION AND MAINTENANCE OF PARKS, LANDSCAPE, RECREATIONAL FACILITIES AND THEIR RELATED INFRASTRUCTURE OF ASSETS FOR MARFA, WESTERN REGION, ABU DHABI EMIRATES
EQUIPMENT DISTRIBUTION

SLN	Description	QUARTERS																				TOTAL
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
7	WATER TANKER 4X4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	80
8	SPRAY TANKER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
9	DIESEL TANKER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
10	MOBILE WORKSHOP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
11	TRAILER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
12	ATV BIKE Motorcycles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
13	BASKET CRANE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
14	COMBINATION TANKER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
	EQUIPMENT																					
1	DOZER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
2	EXCAVATOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
3	MOBILE CRANE	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
4	GRADER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
5	SHOVEL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
6	JCB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
7	BOBCAT	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
8	TRUCK MOUNTED CRANE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
9	ROLLER Compactor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
10	MOBILE COMPRESSOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
11	MOBILE GENERATOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
12	AIR COMPRESSOR	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
13	WOOD CUTTER	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	80