Twredat Industrial Services

ELECTROMECHANICAL AND INDUSTRIAL WORK

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Twredat Industrial Services

Introduction

Formerly Twredat , Works as a Specified trader and **MEP Contractor**, Design, Build, Construct, Supply, Install, Service, Upgrade, Maintenance Electro-Mechanical Systems & Networks, Utilities and Equipments – our facilities covering Engineering, Documentation, Submittals Approval, Shop drawings, Coordinating Drawings, Commissioning, Start-Up, As-Built Acc. To Contract Programs, Project Time Schedules Complying Consultant Specifications, International Standards & Codes, Safety & Quality Plans.
Our Business activity extends to cover all areas of electromechanical works including but not limited to;

Substation & Plants Works	**Electrical Networks & Works**
Reverse Osmosis system	**Electrical & Mechanical Works**
Sewage Treatment System	**Electrical & Mechanical Works**
Low Current Networks	**Tele-Communication & Security Systems**
Mechanical Works	**Piping & Plumbing Works**
HVAC Works	**Ducting & Thermal Insulation Works**
Fire Fighting Works	**Industrial Installations Works**

Aramco Vendor No: 10058700

Royal Commission Vendor No: 13917

King Fahad Military Medical Complex – KFMMC Vendor: 04770

SWCC Vendor No: 1624957

Saudi Authority for Industrial Cities and Technology Zones (MODON) Vendor No: 518974

TWREDAT is implementing its previous business & disciplines inside and outside SAUDI ARABIA, within the highest efficiency and in accordance with the latest technologies and conformity with international standards of quality, security and safety and the preservation of the environment and through suitable trained and experienced staff crews for the implementation and delivery according to the timetables adopted and a Commitment to contract terms, conditions.

TRWEDAT has specialized Departments in accordance with the previous classification - each department is divided into a set of Divisions To cover the different types and styles of property, plants, buildings and constructions which had become much distinctive and feature character's;

Residential & Housing	**Commercial & Businesses**
Administrative & Organizations	**Governmental & Public**
Touristic & Hotels, Resorts	**Educational & Cultural**
Trade Centers & Malls, Hyper	**Sport & Clubs**
Industrial & Factorial	**Sites & Open Areas**

Execution in accordance with strategic and technical & financial programs to fit the distinctive character of the construction and investments and to achieve the maximum benefit for our customers As we taking extend our sincere thanks for your interest, we hope fruitful cooperation brings us together and ensure **TWREDAT** to your approved Vendor / MEP Contractor lists.

Managing Director's Message

"TWREDAT INDUSTRIAL WORKS" is one of the prestigious company, classified as Electro-Mechanical Contracting Co. It deals with varied types of Electrical goods, Reverse Osmosis system , Sewage Treatment System , Air Conditioning, Mechanical, Plumbing, Fire Fighting and Fire Alarms.

Through recognizing the tremendous potential of the construction industry in Saudi Arabia we decided to concentrate solely in this area and now Belgium is one of the leading and most innovative contractors. An important component of our vision that distinguishes it from our competitors is it stringent criteria in the designing and placement of its constructions.

Our Engineers and technicians are certified for the installation and practicing Electrical, Mechanical and Plumbing works. We have successfully concluded number of electro-mechanical plumbing deals under various consultancies.

Our quality policy is to satisfy the customers through solutions that are comprehensive, cutting edge and reliable by ensuring that our people stay focused to the customers constantly growing needs. With our processes streamlined and driven by key quality objectives, our aim is to deliver you the best solution.

Mr.Ahmed Al-Otaibi
General Manager

COMPANY PROFILE

Do you know?
TWREDAT

Active since 2012, this major player in Construction and Electromechanical fields has a good C.V for Supplies and Turnkey Projects and well known customers in Saudi Arabia market.
Our Primary purpose is to complete the supply, install, service and upgrade chains in the Electro Mechanical fields. With our staff experience and technical know-how, We have become a one stop shop for our clients' total Electro-Mechanical needs.

TWREDAT **enjoys a strong presence on various markets; in**

TRADING	**CONTRACTING**	**SERVICES**
MAINTENANCE	**MANUFACTURING**	**DEVELOPMENT**

Within a very competitive position, this is the result of high efficiency and full autonomy in phases of:

PLANNING	**ENGINEERING**	**QUALITY CONTROL**
COORDINATION	**PERSONALITY**	**AFTER SALES.**

Today *TWREDAT* is one of the leading MEP Contractors operating in MEP sectors, and is capable of offering full range of Industrial Equipments, Construction, Contracting, Engineering Services in the fields Energy, Electrical, Lighting, Electro-mechanical (MEP), Steel structure, Metal & Metal Workings, Safety & Security, Measurements & Meters, Process Equipments, Motors, Generators, Pumps, Water, Drainage, Plumbing, Pipe lines & Fittings, Oil & Gas field Services, Factorial Installations, Marking, Fencing and Automatic Control, BMS & Automation.

Every day, *TWREDAT* offers (Optimum & Economical) Quotes to its customers, required for MEP Services & Solutions according to approved standards and an ever wider range of Products & Services. You are very welcomed on *TWREDAT* website http://www.twredat .com for a detailed presentation of the company.

Please do not miss the opportunity to send us your inquiries (Fax: +966 13 894 4825)

Email: (ahmed@twredat.com); Att. MR. Ahmed Al Otaibi General Manager.

BUSINESS SEGMENTS

❖ REVERSE OSMOSIS

Twredat offers unlimited capacities and a wide range of Reverse osmosis plants that will fit the client's needs & expectations, some of Twredat plants have been used as part of a unique composition where precise and flawless parameters are mandated. Our Domestic, Clinic, and Laboratory standard product range has a capacity of (10 – 1000 m3/d). The higher demand plants are custom designed for unlimited capacities. Such plants are used the Industrial, Domestic, and Irrigation fields with such capacities as 10,000m3/d and above The basic components of any Reverse osmosis plants consists of membranes, pressure vessels that contain the membranes coupled with the structure which cohere the configuration, as well as high pressure pumps and pre/post treatments of the plant.



Twredat considers the material selection of Reverse Osmosis plants an important issue, as appropriate selection will prolong the plant's life expectancy, Stainless Steel (S.S.) piping is used for feed/reject and high pressure lines; where PVC piping is usually used for low TDS and low pressures. Furthermore; properly selected monitors / controls and displays are chosen so that the plant's performance will be sustained and monitored properly.



Twredat plant module consists of spiral wound membranes inserted in GRP vessels; racking system is designed & built to meet the module configuration, as the spiral wound contour is most successful for domestic & wastewater effluent. The plant's configuration can be arranged either in parallel to provide adequate hydraulic capacity or in series to affect the desired degree of demineralization, with respect to the site layout.

Quality Control is implemented by stringent procedures throughout the procurement and manufacturing processes. Our procurement department insures that all materials and equipment used meets or exceeds the standards set by the customer. On the other hand, our manufacturing personnel are responsible for supplying and installing QC calibrated gauges which are placed to reflect the actual conditions, as well as product and reject flow indicators that are used to monitor & adjust flows in accordance to the design parameters.

❖ ***SEWAGE TREATMENT SYSTYEM***

➢ DOMESTIC/MUNICIPAL

Municipal or domestic wastewater is that which is generated from households, Hotels, commercial and institutional Facilities in the urbanized areas. Twredat handles a huge spectrum of Municipal Wastewater Treatment plants that vary in their processes and capacities. These capacities range from 100 to 3 million Capita.

Domestic wastewater treatment is normally associated with sewage, which is characterized by many components most importantly: BOD and Suspended Solids (SS). Twredats Sewage Treatment Plants provide very wide ranges, Capacities and Technologies for their applications requiring aerobic, anaerobic or anoxic treatment processes for BOD, SS, Nitrogen and Phosphorous removal.

Twredat municipal scale sewage treatment plants are implemented through:

- Process and Hydraulic Design.
- Electro-Mechanical Equipment Selection and supply.
- Equipment installation.
- Plant commissioning and operation.
- Supervision.

These plants are comprised of all or some parts of the following components:

- Primary Treatment equipment:

  - Raw Sewage Pumping Stations (submersible, dry pit, screw, etc).
  - Screens (Coarse, and Fine, Mechanical and/or manual racked).
  - Flow Splitters, Distribution Chambers and Parshall Flume.
  - Primary Clarifiers.
  - Grit and Grease Removal units.

- Secondary treatment equipment:

  - Mechanical Surface Aerators (Fixed or Floating), Submerged Aerators, Air Blowers, and submerged Diffusers for Aerobic Basins (Tanks, ditches or Ponds).
  - Anaerobic Basins Attached or non- attached growth.
  - Circular or rectangular Secondary Clarifiers (Three, Two Arm and Peripheral Type clarifiers).
  - Trickling media-filters and rotating biological contractors.

- Sludge Handling and disposal Equipment:

  - Sludge Digesters (aerobic and anaerobic).
  - Sludge Dewatering Systems (Drying beds, belt presses, Gravity thickeners, vacuum filters, and screens)
  - Screw pumps, and Sludge conveyors for sludge disposal.

- Advanced / Tertiary Treatment Units and operations:

  - Disinfections (Chlorine Dosing Set, UV filtration).
  - Filtration (Gravity or pressurized single and multimedia filters).

➢ **INDUSTRIAL**

Industrial Wastewater includes the liquid discharges from Industrial process such as manufacturing (chemical, Pharmaceutical, Steel, etc) and food processing (slaughterhouses, sugar mills, etc). This recycling of water is used to separate oil and water, separate emulsified oils, and provide our customer with a quality of water that can be reused for their processes.

During the past decade, environmental concerns have escalated around the world. Governments are responding by applying regulations and pressure on various industries to reduce unproductive consumption of chemicals and discharge of hazardous Wastes.

Twredat Specialized Team of Engineers works in partnership with clients to solve most of their Environmental Problems caused by Industry.

Numerous processes and state-of-the-art technologies are applied at Twredat to treat wastewaters of diverse types of industries, such as Physical, Physiochemical, Biological and Bio-chemical Processes.

Physical Processes

Physical Processes are either alone or combined with other processes, and they contribute in almost all treatment phases(primary ,secondary, and advanced or tertiary) .
Twredat caters very wide spectrum of Physical unit operations and equipment, the following is some of physical equipment implemented commonly in industrial W.W.T.P:

- Screens (Coarse, fine, and sieve, Mechanical or manual)
- Primary clarifying units (primary separators, Clariflocculator, Dissolved Air Flotation (DAF) Tank)
- Surface or Submerged Aerators.
- Mechanical sludge dewatering processes

Twredat utilizes different sludge concentration mechanisms depending on the type of sludge (whether granular or crystalline, sticky, thyrotrophic, gelatinous, cohesive or fibrous), required consistency and cost of transport.

- Cooling Towers.
- Clarifiers.
- Separation Processes
  membrane separation processes are used for such applications as: removal, recovery or concentration of metals; sterile filtration in the medical industry; recovery or concentration of electro coat paint; textile sizing; oil; and fractionation of whey.
- Filtration units (Rapid, Slow rate, Gravity, and Pressurized)

Chemical-Physical Processes:

Chemical-physical processes are used for removal of many metals through hydroxide precipitation and alkaline chlorination removal of oils and fats, removal of suspended solids and improving sludge consistencies.

- Chemical Dosing Systems (Polyelectrolyte, Caustic Lime, and Coagulant Dosing Systems) implemented in Physical Processes.
- Nutrient Dosing Systems (Phosphorus, and Nitrogen dosing units).
- Odor Control Systems

Biological and Biochemical Processes

These processes are mainly used for removal of BOD, COD TKN and Organics (BTEX, MTBE, PCB, TCE, Pesticides, Chlorinated Solvents, Phenols, Aromatic Amines, etc).

- Conventional Activated Sludge Processes (based on sludge recycle to the Biological Reactors).
- Aerobic Ditches.
- Pond Processes.

- **Separation Processes**

The membrane separation processes are used for such applications as: removal, recovery or concentration of metals; sterile filtration in the medical industry; recovery or concentration of electro coat paint; textile sizing; oil; and fabrication of whey.

- **Mechanical Sludge Dewatering Processes**

Twredat utilizes different sludge concentration mechanisms depending on the type of sludge (whether granular or crystalline, sticky, thyrotrophic, gelatinous, cohesive, or fibrous) required consistency and cost of transport.

❖ ***Filtration system***

There are many different methods of filtration, but all aim to attain the separation of two or more materials. This is achieved by some form of interaction between the substance or objects to be removed and the filter. In addition the substance that is to pass through the filter must be a fluid, i.e. a liquid or gas.

➢ **SandFilters:**

Sand filtration is frequently used and very robust method to remove suspended solids from water. The filtration medium consists of a multiple layer of sand with a variety in size and specific gravity. When the filters are blocked with solids, the flow direction is Reversed (Backwash) to clean the filter again

- Gravity filtration

Twredat provides a wide range of Gravity Sand Filters which are used to remove suspended solids from raw surface water as a final treatment unit before chlorinat0ion. In addition, these filters can be used in wastewater treatment during the final stages and after the biological treatment to provide more polishing to the secondary treatment effluent as tertiary treatment gravity sand filters. (Please refer to our **Domestic Wastewater Treatment** section for a more detailed explanation of the wastewater treatment process).

Twredat provides design, manufacturing, supply, and installation services for all types of Gravity Sand Filters such as slow gravity and / or rapid gravity. The filters designed based on the demand required by our clients and the design provided by our Environmental Team.

- Pressure filtration

Pressurized filtration is the most common pretreatment method used in of water treatment. The pressurized filtration requires a filter feed pump(s) and a filter vessel(s). The purpose of pressurized filtration is the removal of suspended solids and other contents of water. The operating pressure ranges from 2.5 - 6.0 bar, the size and constituents of the filter depend on its purpose. Mainly two support layers one a top another followed by another smaller grain size supportive layer as well as an active layer. The active layer may be sand for filtration of suspended solids, birm for removal of iron, carbon for removal of chlorine & odor, anthracite for fine filtration, etc…

The design of the filter vessel requires a case study on the application and varies from one to another.

The Silt Density index should be maintained below 3. Proper periodic backwashing insures longer and better operating regimes.

❖ ***Leisure equipment***

The “fun” part of our work is positioned around our recreational and leisure facilities. Twredat has the capability to provide its clients with any and all of their water related recreational and leisure facilities. Our previous range of projects covered swimming pools, hot tubs, Jacuzzi’s, spas, and fountains. Such systems when installed can be made to run manually, semi, or fully automatic giving our clients a fun and easy to use unit.

It is not strange for a company in our field and with our background to be involved in such projects. In fact, we take pride in such projects and as any of our other projects we enjoy providing our customers with a product that is up to their standards.

Twredat line of products and equipment is designed for the following:

Jet stream Pumps
Water Filters
Water Sanitation (chlorine or ozone)
Electronic Control of Chlorine and PH
PH Adjustment Dosing
Heat Exchangers
Pool Ladders
Pool Lighting
Pool Cleaning Equipment

❖ ***Chemical***

As part of Twredat's commitment to total water management, Twredat's chemical division compliments its other divisions and provides a service that is badly needed in the water industry. The chemical product range includes:

- Reverse Osmosis Chemicals
- Boiler Water Chemicals
- Cooling Water Chemicals (open and closed)
- Potable Water Chemicals
- Resins and Polyelectrolyte
- Maintenance Chemicals

The chemicals are developed in house using the latest technological advances in the field. The chemicals are produced at Twredats facility where strict quality control is observed.

Twredat's laboratories have an extensive range of instruments to carry out all types of analysis that is needed in the water industry. These labs are run by qualified chemists who have extensive knowledge in the water treatment field.

Twredat Engineers will advise and implement the best treatment program for a particular application. Application Engineers will then ensure through regular visits to customers that the program is applied correctly and the best system protection is achieved. Customers are always advised to do their own monitoring using test kits.

So, if you are looking for a selection that is high in quality, competitive in pricing, fast in delivery feel free to contact us. When it comes to chemicals we don't have a limit, chemicals are manufactured and supplied to your own requirements, "you name it and you'll get it".

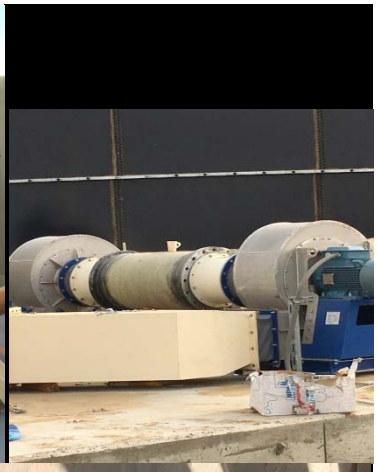
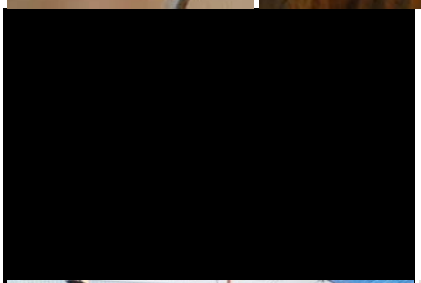
❖ ***Electrical Work***

- Power distribution systems
- Lighting and power
- Structural cabling
- Security systems & ELV network
- Instrumentation and Access control works
- Telecommunication systems
- Looping
- Earthling
- Transformer work, LV Switchgear Panels, Capacitor Bank
- We do temporary supply of electrical connection

❖ ***Plumbing Work***

- ♦ Connection of Drainage and Sewage systems.
- ♦ Water Supply
- ♦ Process piping and Pipelines
- ♦ Construct of underground piping systems.
- ♦ Waste water treatment systems
- ♦ Installing all types of horizontal and vertical pumps
- ♦ Connection of all types of water tank (GRP PANEL TANKS, PLYCON TANKS, AND UNDERGROUND TANKS)
- ♦ We do temporary supply of water connection




❖ Fire Fighting & Fire Alarm Works:

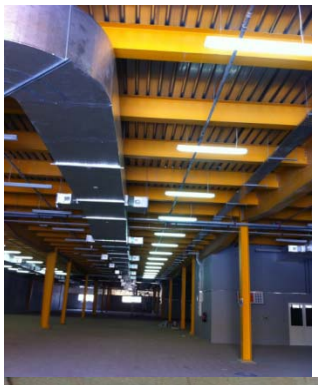
- ♦ Installation of Fire Fighting and fire Alarm as required and approved by the Civil Defense.
- ♦ Fire detection and alarm systems.
- ♦ Installation of Emergency and Exit Lights.



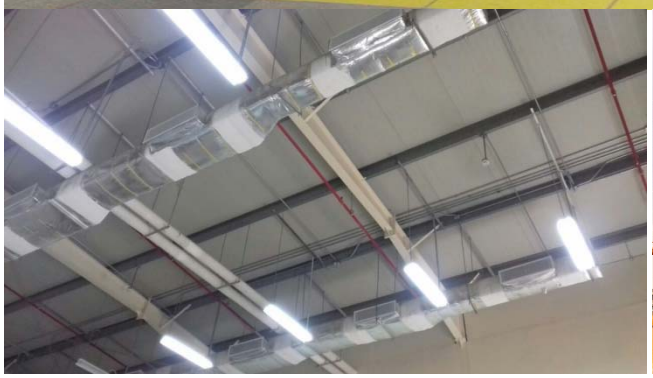


❖ ***HVAC Work***

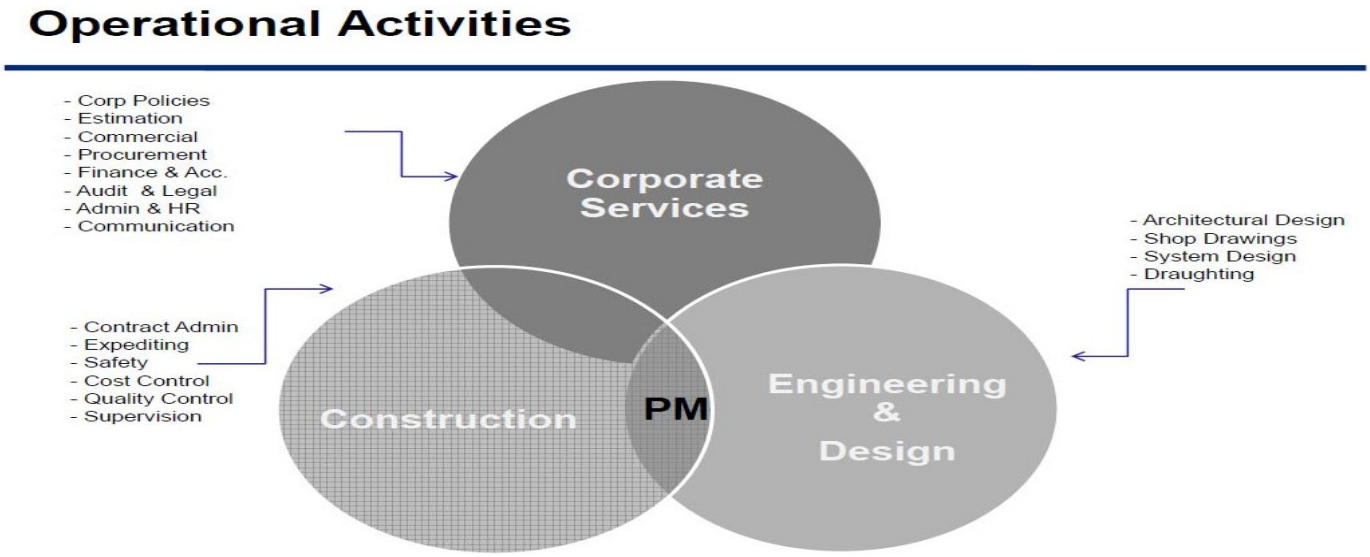
- Installation of AC Package unit
- Chiller unit
- Duct work
- Gas pipes
- Ducted split units
- Decorative split units






BUSINESS OPERATION



Project Management

Design	Engineering	Procurement	Construction	Commissioning	*Operations & Maintenance
▪ Design and planning of projects/plants ▪ Detailed design of process, mechanical and electrical components ▪ Civil guide, layout and general arrangement drawings	▪ Determination of all key components by -Technical specifications -Interface definition and management -Supplier evaluation - Documentation	▪ Mainly third party manufacturing ▪ Manufacturing inspection ▪ Long-term relationships with key ▪ Own process and product knowledge	▪ Lead engineering functions construction ▪ Erection of electromechanical ▪ Control of key plant construction milestones ▪ Knowledge of local markets and reliable construction partners ▪ Other construction activities such as civil works all in house	▪Process knowledge and complex system interaction control ▪ Detailed knowledge of plant and key technologies used ▪ Start-up and test runs	▪ Spare parts stock and service management ▪ Short reaction time in case of plant malfunction ▪ Maintenance schedules ▪ Plant optimization ▪ Operation *Applies in IWP projects ONLY Varies from one contract to the other

ESTIMATING & SUBCONTRACTING

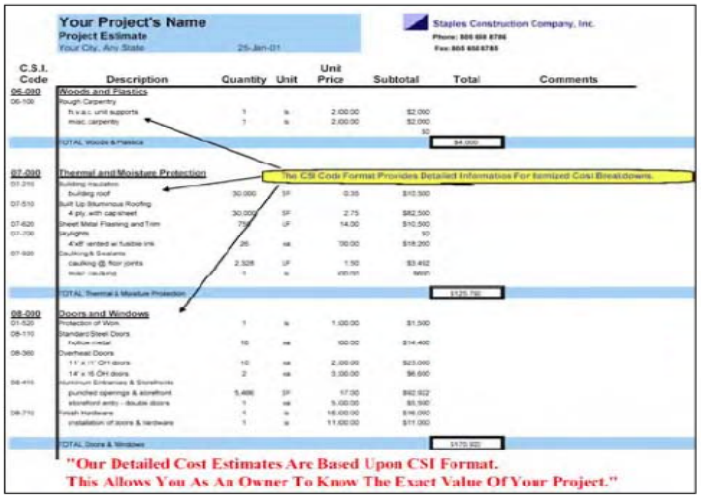
Estimating & Subcontracting

A fundamental part of our success is based upon our extensive database of qualified subcontractors. This is key to our ability to deliver quality workmanship, on-time and on-budget. Our prequalification process for new subcontractors includes a review of their staffing, financials and previous work experience. We believe that the quality of our work is directly related to the quality of the trade subcontractors involved, and we demand superior performance.

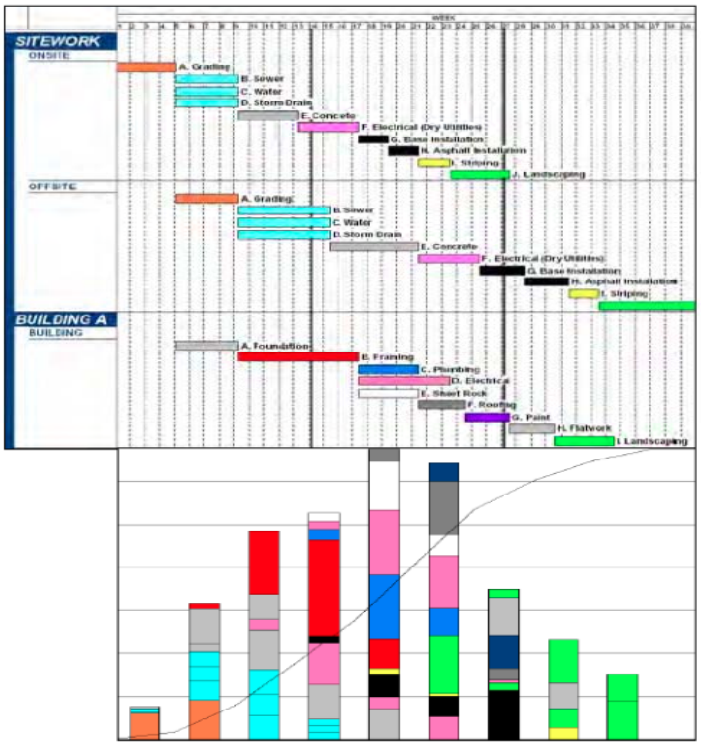
We solicit multiple subcontract quotes for each of the disciplines involved in a project; not only to assure competitive pricing, but also to safeguard against potential non-responsiveness by a subcontractor. Invoices are processed promptly and subcontractors are paid immediately upon receipt of monies from owner, while retention policies ensure compliance with owner's expectations and subcontractor's contractual obligations.

We ensure there is a clear understanding of the scope of work, safety expectations and time constraints prior to the commencement of work. We require comprehensive submittals and documentation of materials to ensure conformance to project specifications. Continual oversight and documented status meetings ensure compliance with project objectives. Upon completion, we perform a thorough punch-list, sign off and owner acceptance process. We approach each project, regardless of size, in the same proven manner. We believe that quality management is our responsibility to the owners.

Sample Estimate



Sample Schedule and Cash Flow

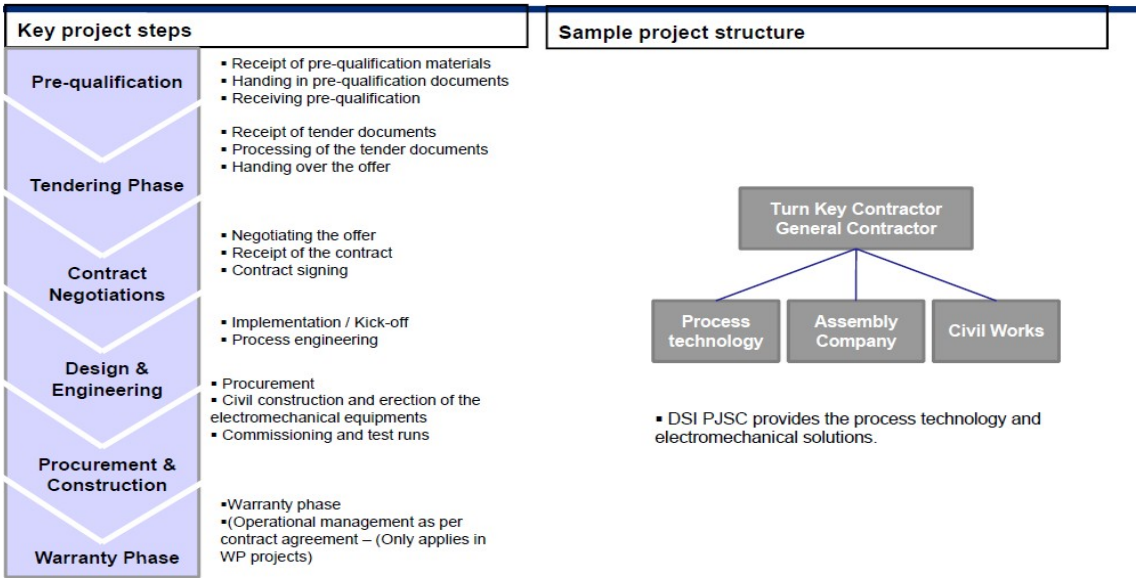


PROJECT MANAGEMENT

Project Team:

- Experienced management teams provide detailed attention throughout the project, from design review to project completion.
- Qualified superintendents, trained in document, project and data control processes, are assigned to project types in which they have specific experience and expertise.
- Proven estimating skills and systems manage costs and contracts with cross-training for all levels of employees.

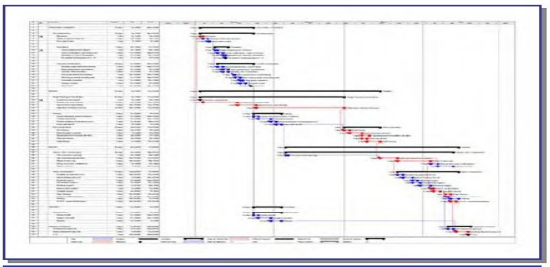
Project Key Steps:



Project Critical Path & Data Management:

Critical Path Schedules

- Consistent utilization of critical path schedules to plan, manage and control projects.
- Tracking of long lead time items, permitting, critical path tasks and adjustments for unforeseen weather conditions.
- Durations include start and end dates, key milestones, work scope and deliverables for all phases of the project.



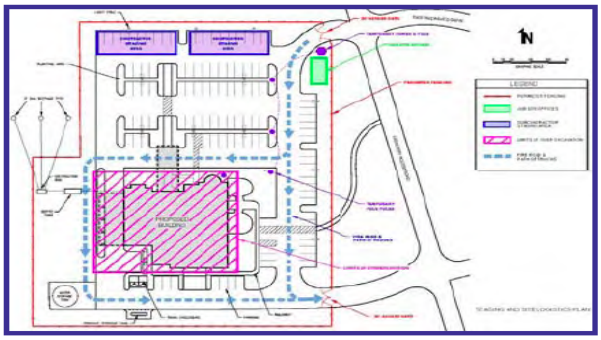
Data Management Software

- Extensive use of Expedition software: a multi-user, multi-project, client/server database. Implemented for each project, controlling documents and information.
- Organization of daily reports, meeting minutes, submittals, RFIs, cost reporting, insurance and project team contact information.
- Historical data used to resolve issues; questions answered by cross reference and document linking for quick referral.

PROJECT CONTROL

Project Control:

- Closely manage projects with early warning systems to catch potential problems.
- Disciplined accounting system enforcing subcontractor requirements including lien releases and insurance.
- Project specific logistics planning for coordination meetings, inventory management and site utilization for construction sequence, staging areas, site offices and security options.

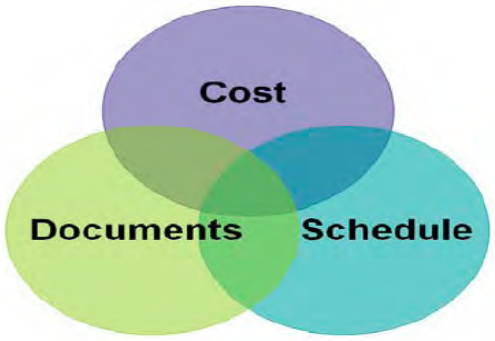


Project Coordination

- Planning, communication, documentation and experience are required to maximize work flow, project execution and materials delivery.
- Utilization of third party safety consultants offer neutrality of oversight, ensure subcontractor compliance and provide written compliance reports.
- Client and workforce safety is a top priority and requires precise logistical site control and adherence to regulatory safety requirements.

Quality Control:

- Clarify the objectives and develop a scope of work with quantified, realistic budgets and schedules.
- Proper document control, submittal review, project closeouts, as-builts, start up and commissioning.
- Pre-qualification and selection of trades assuring that quality craftsmanship and materials comply with technical specifications.



PROJECT MATRIX

Service Matrix

Quality Project Management requires detailed and methodical internal practices and policies throughout each phase of the project.

Legend

Planning Phase				
Pre-Construction Phase				
Construction Phase				
Post-Construction Phase				

Management

	✓	✓	✓	✓
Program Management	•	•	•	•
Project Management	•	•	•	•
Construction Management		•	•	•
Owner's Representation	•	•	•	•
Project Team Facilitation	•	•	•	•
Project Stakeholder Liaison	•	•	•	•
Strategic Planning	•	•		
Project Development	•	•		
Agency Interaction	•	•	•	•
Contract Negotiation	•	•	•	•
Prequalification of Designers/Contractors	•	•	•	
Feasability Review	•	•		
Materials Recommendations	•	•	•	
Project Delivery Methods	•	•	•	
Procurement Strategies	•	•	•	•
Construction Methods		•	•	

Coordination

	✓	✓	✓	✓
Scope Development & Review	•	•	•	
Design Standards / Criteria	•	•		
Designer Proposal Review	•	•		
Pre-Design Meetings	•	•		
Design Coordination Meetings	•	•	•	
Design Reviews	•	•	•	
Technical / Specification Writing	•	•		
Specifications Review	•	•	•	
Construction Documents Review		•	•	
Site Utilization Plan	•	•		
Utility Agency Coordination	•	•	•	•
Pre-Bid Meetings	•	•		
Subcontractor Bidding	•	•		
Contractor Bid Review	•	•	•	
Contract Review	•	•	•	•
Safety Program		•	•	•
Pre-Construction Meetings		•	•	
Submittal Review		•	•	
Construction Coordination Meetings			•	•
Construction Progress Meetings			•	
Quality Assurance		•	•	
Field Notices			•	
Payment Requisitions Review		•	•	•
Change Order Review		•	•	•
Certificate Of Occupancy			•	•
Punch List			•	•
Close-Out			•	•
Testing, Implementation & Start-Up			•	•
Furnishings & Equipment	•	•	•	•

Controls

	✓	✓	✓	✓
Budget Establishment	•	•		
Budget Contingency & Escalation	•	•	•	
Cash Flow Analysis	•	•	•	
Budget Controls	•	•	•	•
Conceptual Estimates	•	•		
Check Estimates	•	•		
Change Order Estimates		•	•	•
Cost Review	•	•	•	•
Value Engineering	•	•	•	
Project Schedule	•	•	•	•
Schedule Interfaces / Constraints	•	•	•	
Long Lead Items	•	•	•	
Schedule Review	•	•	•	
Phasing/Logistics Plan	•	•		
Milestones		•	•	
Change Order Validation		•	•	•
Performance Measurement		•	•	•
Cost & Schedule Analysis	•	•	•	•
Progress Reporting	•	•	•	
Issues Management		•	•	•
Claims Avoidance		•	•	•
Claims Resolution	•	•	•	•

Administration

	✓	✓	✓	✓
Contract Administration	•	•	•	•
Meeting Minutes	•	•	•	•
Submittals Log		•	•	•
Requests For Information Log		•	•	•
Change Orders Log and Administration		•	•	•
Payment Requisitions	•	•	•	•
Lien Releases		•	•	•
Drawing Log	•	•	•	•
Correspondence	•	•	•	•
Labor Compliance		•	•	•
Insurance	•	•	•	•
Close-Out Documentation				•

PROJECT QUALITY PLAN

1.0 Purpose & Scope

The purpose of this quality plan is to define specific key requirements related to quality performance and Ensures a thorough understanding of such by all project parties concerned.
Through **PQP** awareness and implementation the performance of the engineering, procurement construction And support functions may effectively and efficiently achieve their objectives and provide the Client with a Project that fulfills their quality requirements and expectations.
The **PQP** is supplemental to **TWREDAT MEP** Quality Management System (**QMS**) and provides the mechanism to link specific requirements of the Client / project to those of **TWREDAT MEP** quality system.
In summary the **PQP** details the activities and responsibilities related to:

- *Mobilization*
- *Engineering*
- *Procurement and Material Management*
- *Planning*
- *Execution*
- *Coordination for Major Subcontractors and Specialists*
- *Quality Control*
- *Contracts Administration*
- *Document Control*
- *Warehousing*
- *Quality Assurance*
- *Site Administration*

And ensuring that these related activities are planned, implemented and controlled and their progress and effectiveness is monitored.
The above summarized and referenced key activities are further expanded upon within the following **PQP** *Section 2.0.*

2.0 Key Activities and Output

Necessary project planning and controls shall be established as part of the developed **TWREDAT MEP** Quality Management System and as appropriate the quality plan refers to this documentation under the key activity headings within this section.

2.1 Mobilization

Mobilization is defined as the period starting from contract award and continuing until all Construction Support facilities and infrastructure is complete. Key activities and controls to be established are:

- *Programs - design /procurement / construction.*
- *Plant and equipment approved budget*
- *Organization and staff resources*
- *Document control system*
- *Procurement tracking system*
- *Project Quality Plan (including method statement scheduling)*
- *Project Safety Plan*
- *Setting up of site offices, accommodation, temporary works.*
- *Initiation of early temporary or permanent work materials procurement*

2.2 Engineering (H. O.)

Review of contract drawings, specifications obtain / provide clarifications, coordinate among all related disciplines and produce shop drawings within performance parameters. Key activities and controls to be established are listed below:

- *Shop Drawings*
- *Production program*
- *Organization of engineering personnel*
- *Identification, notification and implementation of changes*
- *Drawing submittal*

2.3 Procurement and Material Management (H. O.)

To prepare technical packages comparisons for permanent materials and to secure competent and reliable sources for procurement. Key activities and controls to be established are:

- *Procurement program*
- *Preparation of material submittal for Client approval in accordance with the terms of contract agreement, contract scope of work, approved drawings and specifications*
- *Approved material deliveries to the project warehouse*
- *Procurement tracking report on suppliers*

(Procurement & Material Delivery Processes PMD-DP-01 and PMD-DP-02 refer)

2.4 Planning

To develop planning schedules, monitor, accommodate changes and report progress. Key activities and controls to be established are:

- *Mobilization program covering all aspects of mobilization, design, procurement and early construction activities*
- *Detailed construction program*
- *Program review*
- *Work package program for subcontractors*
- *Program Monitoring and control*

(Planning Process PLN-DP-02 refers)

2.5 Execution

Execute the construction program within the set performance parameters defined by approved shop Drawings, approved material submittals and approved quality controls. Key activities and controls to be established are:

- *Short term programs to direct and control the works*
- *Weekly productivity reporting /Planned vs. Actual Progress*
- *Weekly procurement reporting*
- *Formal pre-qualification of subcontractors and suppliers*
- *Weekly design progress reporting*
- *Method statement schedule and update as necessary*
- *Inspection and test planning (Process Control Sheets)*
- *Monthly quality performance reporting*
- *Monthly safety performance reporting*
- *Monthly update of the contract program*

(Operations Process OPS-DP-03refers)

2.6 Coordination of Major Subcontractors and Specialists

Coordination of technical matters, material procurement deliveries to site and site progress. Key activities and controls to be established are:

- *Monitor material and drawing submittals and timely processing of such with client for approval.*
- *Coordination with internal / external parties to ensure potential problems are high lighted and reported.*
- *Monitor and report on progress and performance at scheduled weekly progress meetings*

(Operations Process OPS-DP-04 refers)

2.7 Quality Control

To carry out the **QC** activities required for achieving compliance with defined plans and specifications through the organization of respective works on site and monitoring quality activities. Key activities and controls to be established are:

- *Coordination of the review of subcontractors /supplier quality related documentation and **QA / QC** esources*
- *Preparation and monitoring of defined process control documentation , inspection and test planning and associated work execution*
- *Establishing coordinated inspections and tests and associated records*
- *Recording of observations /non-conformance and corrective /preventive actions*

(Quality Management Process QM-DP-02 refers)

2.8 Contract Administration

Monitor, administer and protect the Company's contractual and financial relationship with client, consultant, Subcontractors and suppliers. Key activities and controls to be established are:

- *Settlement of the final account and final cost.*
- *Monthly Interim Application for payment.*
- *Identification, recording and notification of changes which maybe identified through any of the following: Variations arising during the preparation of shop drawings.*
  - *> Changes in the scope suppliers /subcontractors /specialist work.*
  - *> Request for clarification.*
  - *> Meetings with the client.*
  - *> Corrective actions identifying errors or omissions in the contract documents.*
  - *> Formal notification from the employer.*
- *Comprehensive file of each subcontractor / supplier / specialist shall be maintained including signed copies of the subcontract / supplier / specialist, progress and approved payment vouchers.*

(Commercial Process COM-DP-01, 02, 03 and COM-DP-04 refers)

2.9 Document Control

TWREDAT MEP Research & Development Department and associated processes and procedures will as appropriate be utilized to develop and implement the following controls:

- Receiving Documents and Workflow Tracking
- Generating Documents
- Document Security, Retrieval and Disposal
- Generating Internal Document
- Information Technology Help Desk

(ITD Dept Processes/procedures- refer to Appendices)

2.10 Warehousing

Receive, store, protect and distribute materials as required by construction. Key activities and controls to be established are:

- Ensure permanent materials are acceptable prior to release for site use
- Status recording and reporting of materials arrival and notification to concerned construction team
- Upon delivery of material at site the following initial verification will be carried out:
  - > *Inspection of delivery documentation against the Purchase Order*
  - > *Checked for quantities under, over and obvious damage*
  - > *Notification to site QC for inspection*
  - > *Computer data entry in store receiving system*
- The issuance of material shall be made on request and warehouse records and computer data base updated accordingly
  - > *Stores receiving voucher (SRV)/Material Receiving Report (MRR)*
  - > *Site request to stores*
  - > *Store Issue Voucher (SIV)*
  - > *Materials /services acceptance*
  - > *Weekly permanent materials report*
  - > *Reconciliation of as-built quantities and material wastage*

(Warehouse Process WHS-DP-01 refers)

2.11 Quality Assurance

To carry out the quality assurance activities required for achieving compliance with defined plans, manuals, Processes, procedures, and method statements. Key activities and controls to be established are:

- Provision and maintenance of a documented **QMS**
- Internal audits of documented **QMS**
- Provision of in-house training on the **QMS** to project personnel
- Performance reporting for Management Review

(Quality Management Process QAM-DP-01 refers)

2.12 Site Administration

To provide a wide variety of administrative services to the project, including the maintenance of personnel files, handling and storage of consumable materials related to administrative services. Key activities and controls to be established are:

- Transfer of employees between projects
- Personnel evaluations in liaison with HO Human Resources Department

(Operations Process OPS-DP-05 refer

3.0 Project Realization

3.1 Introduction

When the process of achieving results is planned, designed and managed effectively, the quality of the end result becomes predictable. To achieve this project goal, assigned key project team members shall plan and develop processes and associated supporting documentation that will encompass a systems management approach. The organization shall implement defined methodologies and monitor their effectiveness and efficiency in order to provide control of the quality of project activities undertaken as summarized in Section 2.0 of this document.

3.2 Shop Drawings Production

A project management coordination role shall be established by the Engineering Department and key responsibilities, authorities and interfaces (including those with the Client, Sub-contractors and/or Suppliers) shall be clearly defined.

Verification reviews shall be in accordance with the standard construction and civil engineering criteria.

The production of shop drawings to complete the work shall be made under the direct control of the Company Engineering function at Head Office.

3.3 Purchasing Control

TWREDAT MEP aims to establish sound supplier and subcontractor relations in order to develop a mutually Beneficial relationship that improves the ability of all parties to create value to a project.

Assessment and recording of new and existing suppliers / subcontractor's capabilities and performance shall Be implemented by the Company Supply Chain (**SCD**) Department at Head Office in liaison with project Management. Effective controls shall be implemented to ensure that the interfaces between suppliers /Subcontractors, project management and the Client are clearly defined whilst delivering products or services To the project that meet with the specification requirements.

3.4 Construction

These activities relate to a wide cross section of resources, including a wide base of personnel, skills, plant and equipment. The Company shall ensure by careful planning the provision of proper project controls during work execution, and satisfactory resourcing for the projects. Such controls will be defined within the following quality system documents:

- *Project Quality Plan (**PQP**)*
- *Department manuals /programs*
- *Processes*
- *Procedures /method statements*
- *Records (forms / formats)*

For specific elements of production that are difficult or impossible to immediately validate, (e.g. concreting, Painting, welding, etc.) work procedures and/or method statements shall be established for approval prior to The commencement of the work process to ensure that the correct result can be achieved.

3.5 Identification and traceability

Appropriate methods shall be established by both **TWREDAT MEP** (HO) and on site for identifying and recording the identification, and traceability status of materials, products, services throughout all stages of the project as defined in the respective processes for Procurement and Quality Management.

3.6 Preservation

Throughout construction operations, appropriate methods of identification, handling, packaging, storage and protection shall be employed to ensure that all goods, materials, product and site provisions are properly protected from damage, deterioration and loss.
This is also important with regards to property belonging to the Client, which may include intellectual property (e.g. designs, drawings) and project site itself.

3.7 Monitoring and measurement devices

TWREDAT MEP will determine the extent of monitoring and measurements to be carried out on a project-to project basis. Suitable measurement and monitoring devices shall then be selected and used to provide evidence of product conformity.
Systems will be established to evaluate the validity of measurements taken should the relevant measurement

by the said equipment be out of calibration.
Effective controls shall be established for Company laboratory and survey equipment, determine as requiring periodic calibration, where consistent verification measurements on product conformity are essential.
Similarly, subcontractors monitoring and measurement devices shall be identified, reviewed and confirmation of their calibration status made.
*(The documented procedure established to define the **QMS** controls to be implemented is **QAM-DPR-014 - Equipment Calibration)***

3.8 Measurement, Analysis and Improvement

This element of project control shall be planned in order to provide a clear organization-wide approach to continual improvement of the project performance of key project activities (i.e. Key performance Indicators) and shall be regarded as permanent Company objective.
Elements of control shall focus on four (4) areas of the Company activities:

*1) Product conformity - by monitoring and measuring the product (**QC**)*

*2) Quality management system conformity - by internal and intrinsic audit (**QA**)*

3) Continual improvement of the effectiveness of the quality management system by:

*a) Internal audit (**QA**)*

b) Monitoring and measurement of the processes (KPI 's)

4) Evaluation of appointed Suppliers and Subcontractors.

The documented Company procedures established to define the controls needed in relation to the above are as follows:

- ***QAM-DPR-001 Internal audits***
- ***QAM-DPR-002 External audits and assessments***
- ***QAM-DPR-003 Improvement and suggestions***
- ***QAM-DPR-004 Inspections and tests plans***
- ***QAM-DPR-005 Permanent material verification***
- ***QAM-DPR-006 Inspection and verification of construction and installation works***
- ***QAM-DPR-008 Non conformance reporting***
- ***QAM-DPR-013 Management review***
- ***QAM-DPR-015 Evaluation and monitoring of subcontractors***

The analysis of data in relation to the results from the above elements of control shall be collected and Reviewed in order for management to evaluate where best to deploy appropriate improvement action plans and resources.

3.9 Corrective action

TWREDAT MEP has developed and established a procedure that details and records the corrective actions taken to eliminate the cause of non-conformities in order to prevent their recurrence. Corrective action implemented will be appropriate to the impact of the problem encountered.

3.10 Preventive action

TWREDAT MEP has developed and established a procedure that details and records the preventive actions taken to eliminate the cause of potential non-conformity in order to prevent their occurrence.

Preventive action implemented will be appropriate to the impact of the potential problem encountered. *(The documented procedure established to define the controls in 3.9 & 3.10 are referenced in QAM-DPR-009-Corrective /preventive action request).*

4.0 Project Management Responsibilities

The goals set by **TWREDAT MEP** executive management relevant to the success of the Project shall be effectively communicated throughout the organization and such responsibilities, authorities etc shall be defined and performance monitored on an ongoing basis.

Appropriate communication channels shall be established within the project organization including interfaces with external parties.

A summary of the responsibilities for key project functions is given in within this Section, in line with those specific project responsibilities defined with the relevant **TWREDAT MEP** manuals, processes, procedures, method statements etc to be implemented on the project.

4.1 Project Management Chief Engineer

- Comprehensive review of all contract documents, and the further development of project planning in line with Company and contractual requirements.
- Provide necessary leadership and resources to Construction for the effective and efficient execution of all project works.
- Ensure engineering controls are effectively established for planning, production and approval of drawings in line with approved project schedules.
- Establish material management controls for the approval, purchase and delivery of permanent materials.
- Review, approval and presentation of progress reporting to the Client.

- Oversee the establishment and reporting on the implementation of Safety and Quality Management programs.
- Promote continuous performance improvement for all project functions to enhance Client satisfaction.
- Detailed performance reporting to the Director (HO), on time, cost, quality and safety related issues.

Ensure that during the leave period of an employee, his responsibilities are properly handed over to a designated person and project staff are aware of this procedure.

4.2 Engineering

Project Coordinator (H. O.)

- Familiarization and awareness of project design drawings and specifications requirements
- Production of the project civil shop drawings through assigned drafting personnel
- Coordinate with other disciplines in the Project Engineering function to ensure compatibility of project works
- Maintain continuous coordination with construction team to ensure understanding of project's design and specification details.
- Participate in meetings with other Project disciplines, subcontractors etc and as required resolve engineering queries or issues raised.
- Collaborate in producing project progress reporting, forecasts, and as required special engineering reports.
- Coordinate / liaise with other engineering trades especially the Specialist subcontractors (MEP, Cladding, Architectural firm, etc) to resolve issues on interfaces during the Design and Construction stages.
- Perform other essential project engineering / associated duties agreed and assigned by project management.

Structural Engineer (H. O.)

- Review project structural drawings and specifications.
- Develop the structural shop drawings in accordance with the specifications, designs, and in coordination with all other specializations (i.e architectural, civil, electrical and mechanical).
- Review structure design for modification or change as and when required.
- Collaborate in preparing project studies, reports, forecasts and special engineering reports as and when requested.
- Perform other essential project structural engineering / associated duties agreed and assigned by management.

Drafting Personnel (HO & Site)

- Suitably qualified and experienced assigned personnel shall as applicable prepare CAD shop drawings for set architectural / mechanical / electrical / structural work assignments.
- Produce drawings in varying degrees of detail utilizing CAD files and maintaining uniform and professional standard of presentation utilizing approved software.
- Incorporate input given by the Architects / Engineers into the relevant drawings.
- Perform back-up procedures as per defined Company instruction.
- Record and prepare as built drawings from various project sources
- Perform all duties (related to the nature of the job) assigned by his immediate supervisor.

4.3 Supply Chain Management

Senior Executive (H. O.)

- Perform detailed reviews of pre/ post tender project documentation/ quotations, budget details, drawings, bills of quantities and pre-tender quotations.
- Examine contract documents to identify material and subcontract requirements for the project.
- Review project construction schedules prepared by Planning Department in relation to Material deliverables.
- Formalize listings of potential suppliers for the different material items and subcontracted scope of works in close coordination with HO SCD.
- Review received quotations to verify they are in accordance with project specifications, shop drawings, bill of quantities and delivery schedule meets with the project construction schedule.
- Contact suppliers/ subcontractors for clarifications concerning materials for the site.
- Prepare a comparison sheet to summarize the contents of received quotations.
- Maintain the Project Material Specification Record (data base)
- Prepare submittals to the client for approval of material, subcontractors, suppliers in close coordination with HO SCD
- Provide assistance in the follow-up of material delivery to site and coordinate with the Construction Department on issues related to the Material requirements.

4.4 MEP (Mechanical Electrical and Plumbing)

MEP Coordinator

- Follow up the progress of;

- Construction of works & compliance with construction schedule.
- Drawings submittals & Approval thru weekly drawings status report.
- Materials submittals & Approval thru weekly materials status report.

- Review & Study the Technical submittals & Shop drawings received from MEP sub contractor, any comments to be sent immediately to the sub contractor prior to forward the same to consultant for approval.
- Review the received daily works report from sub contractor and to compare the contents with Executed works at site.

- Review the Staff & Equipments daily report received from the sub contractor in order to check whether it is match with submitted organization chart and to be sure from available tools & equipments are enough to execute the works.
- To avoid any delay to MEP sub contractor works which will give reason to the sub contractor to claim for delay, should cover officially any delay to **TWREDAT MEP** works caused by sub contractor & report it to the project manager..
- Follow up the QC & inspection of executed works & received materials to site and be sure it is comply with approved technical submittal and contract specification, Also interconnection between Client / Consultant & Sub Contractor

4.5 Planning

Site Planning Engineer

- Study contract documents and obtain complete information necessary to develop detailed construction programs.
- Prepare detailed programs / coding structure to the level of details agreed with the Chief Engineer.
- Monitor at agreed intervals actual site progress of the works and update the master program logic to reflect any variance, **V.O** issues, changes in sequence/ method, etc.
- Participate in the preparation of the necessary programs as required (Weekly, Short term / periodic etc)
- Prepare various reporting and statistics as requested by the Chief Engineer.
- Ensure traceability of planning records/ programs, progress reporting is maintained and complete backed filing and indexing.
- Perform all duties (related to the nature of the job) assigned by the Chief Engineer.

4.6 Execution

Project Incharge

- Study contract documentation / specifications and obtain complete information to as necessary assist in the development of detailed construction programs and method statements.
- Examine contract documents to identify material, subcontract and supplier requirements for the project execution /specification compliance.
- Participate in meetings with other Project disciplines, subcontractors etc and as required provide input into the resolving queries /issues raised.
- Collate as-built information necessary for issue for the preparation of as-built record drawings
- Review and evaluate work methodology and sequencing and liaise with the Project Manager /Planner regarding suggested work improvements
- Prepare detailed safety planning with the assigned Safety Officer and implement, monitor and manage the overall safety program during execution.

- Coordinate with assigned subcontractors work packages ensuring **TWREDAT** / Client contract requirements are met (i.e. on quality, safety, program and budget).
- Hold daily internal construction coordination meetings and attend scheduled progress meetings, reporting on work performance, coordination issues, time, quality, safety, cost issues against defined /approved programs.
- Organize project work execution utilizing suitably skilled /trained personnel to carry out specific tasks in accordance with approved procedures and specification requirements, including Site Survey works.
- Ensure that Supervisory personnel are provided with the latest revisions of approved project documentation and familiar with documented process control requirements and Request For Inspection system, associated reporting
- Maintain close communication with the Materials Engineer/ Warehouse regarding material submittals /approvals, **ETA** on site and stores receipt and clearance.

Site Engineers

- Supervise crews of laborers in their performance of assigned work.
- Review drawings and clearly communicate technical issues to the various trades.
- Apply schedules, procedures and related work rules that meet productivity, quality and safety requirements.
- Report to Project Incharge on any problems related to the absence of manpower, materials or equipment that relate to time, cost, quality, safety etc
- Assist the Project Incharge in the preparation of construction methods, schedules and manning charts.
- Perform general functions inherent to all supervisory jobs on site operations.

4.7 Quality Control

Manager (R&D)

- Primarily responsible for the development and implementation of project quality planning throughout all project operations.
- Oversee project inspection and test planning, development and implementation.
- Scheduling and execution of project quality system assessments and audits.
- Liaison with the Clients representative on quality related topics.
- Establish QA/QC records control and retrieval system.
- Implement quality control procedures and related activities in compliance with defined requirements.
- Overall monitoring of site construction activities and QC personnel reporting on inspection and test requirements.
- Site monitoring and surveillance of subcontractors/ suppliers against detailed schedules for compliance with defined standards and specifications.

- As applicable conduct off site inspections for project associated work carried out at subcontractors /suppliers, verification of associated submittals and preparation for client submittal.
- Evaluation of the Observation / Non Conformance reporting systems and as applicable associated corrective / preventive action implementation.

Laboratory Technician

- Closely coordinate with independent laboratory to ensure all sampling and testing requirements are carried out according to the Project Specification requirements.
- Ensure system of obtaining random samples of material from suppliers and site are properly implemented.
- Apply and execute the suitable analytical test methods on different material samples obtained / tabulation of results and present reports.
- Prepare and carry scheduled tests and advise appropriate parties accordingly
- Ensure that all laboratory testing and analysis executed are in accordance with established quality and safety standards and procedures.
- Revise the stock records of laboratory chemicals and equipment; raise purchase requisitions to the superior for approval.
- Perform routine maintenance on equipment and as applicable periodic calibration of laboratory instruments and devices. Ensure that all laboratory equipment is properly operated, maintained and stored.

4.8 Contracts Administration Quantity

Surveyor

- Valuation of change orders, assessment of Subcontractors / Suppliers variation orders and claims.
- Maintain all records / correspondence pertaining to change orders, loss of expenses and delays.
- Assist Contract Administrator in preparation of reports on change orders / claims for Senior Management.
- Participate in negotiation with Client / Engineer / Subcontractor for settlement of final accounts and variation orders.
- Ensure that all executed works and materials on site are correctly valued in monthly payment applications.
- Liaise with Consultant / Supervising Engineer for timely certification of payment.
- Certify Subcontractors / Suppliers interim payments and make adjustment to the amount due to be paid by add / omit default costs arising from breaches and recover **TWREDAT MEP** costs as defined in subcontract agreement.
- Prepare statement of account of subcontractors / suppliers.
- Quantities take off for Procurement of permanent material.
- Submit to accounts department on monthly basis the forecast of revenue and expenditure.

4.9 Safety

Safety Engineer

- Contribute to the development and implementation of the Project Safety Plan, rules, regulations and safety training programs.
- Ensure Safety Induction to all operatives/visitors in the project is carried out prior to their deployment on site.
- Develop and maintain Safety Toolbox meetings and ensure topics undertaken are consistent with the current situations on site.
- Ensure that all safety measures are fully implemented with regards to storage and usage of materials and equipment at the various work areas.
- Consistently check the proper implementation of Safe System of work in all stages of the project execution.
- Investigate and report on incidents accidents on site.
- Maintain records of safety audits, incidents/accidents, trend analysis, and make reports and recommendations.
- Accompany Client's safety inspectors on their periodic safety inspections of the site.
- Provide guidance to maintain site cleanliness and tidiness standards in close coordination with the site administrator.
- Monitor on-site equipment usage (mobile, heavy plant etc.) and ensure its safe and proper handling.

ABBREVIATIONS:

PQP = Project Quality Plan
QMS= Quality Management System
V.O. = Variation Order
ETA = Estimated Time of Arrival

SIV = Store Issue Voucher

Quality policy statement

TWREDAT MEP firmly believes that our systemic procedures and business processes, professionally followed and well accomplished by our enthusiastic staff, clearly indicates our care and continuance in providing high levels of our quality works, customer service and customer satisfaction.

TWREDAT MEP strives to consistently providing quality engineering with the most reliable and efficient maintenance services, subject to total compliance on all its requirements, and where possible exceeds the expectations of our customers.

TWREDAT MEP focuses on training and development of its personnel through their flexibility and adaptability to service the overwhelmingly transforming business environment, by innovative working techniques and continuously improve the efficacy of our design and building management systems. We will ensure that all our staff having good knowledge and understanding of our quality objectives, working towards meeting the system requirements, and committed to developing processes and promoting new ideas. To address and achieve an ongoing progress in quality service and customer satisfaction.

TWREDAT MEP will maintain, review and revise its quality objectives and targets annually.

TWREDAT MEP will conduct quality audits and reviews on all operational activities at least once a year, and will allocate human, financial and other resources appropriately in order to achieve targeted results. Concurrently,

Environmental Management policy statement

TWREDAT MEP aims at preserving the environment for our future and provides its support to free the planet from CFCs.
We will identify and better manage our environmental risks and opportunities.

TWREDAT MEP closely observes and works with employees, clients, suppliers and other related organizations to upgrade
our enduring operational strategies and working procedures to best practice standards.

TWREDAT MEP prime target operationally is to eliminate our negative environmental impact by wherever possible minimizing the wastage, and prevent the usage of environmentally unfriendly products, while endeavoring to maximize our positive environmental impact and better living conditions. We will keep up and maintain the environment around us clean and safe, and regularly monitor, raise alarm and respond to any hazardous environmental situation observed.

TWREDAT MEP ensures that its activities will always comply with the Government's Environment Policy, follow and maintain them in all our administrative, operational, logistics and site areas of our projects.

TWREDAT MEP affirms that all managerial and supervisory staff are accountable for environmental performance in their area of responsibility

Health and Safety policy statement

TWREDAT MEP firmly believes in the significance of health and safe working practices of our employees, as it forms thefundamental part of the effectiveness and efficiency of our management. Furthermore, as an organization and the employer, we do acknowledge our commitment, so far as is reasonably practicable, in ensuring for the health and safety of our employees, public health and not to endanger our environment.

TWREDAT MEP recognizes that in our duties and responsibilities to our employees, the foremost requirement is providing
and maintaining hygienic conditions, healthy environment and safe work practices. In addition,
TWREDAT MEP also comprehends the relationship between efficiency and safety in terms of cost control, losses, ill health and the lost time injuries due to accidents and near misses. Every managerial and supervisory staff shall apply the organizations safety policy and all legislative provisions in their areas of control and execute all reasonably practicable measures to provide a healthy and safe working environment. We also consider that every employee in our organization has an individual responsibility ensuring strict adherence to company's and all legislative safety requirements and it is their obligation working with the management in maintaining good standards of Health & Safety. Furthermore **TWREDAT MEP** will conduct induction program and provide training and instruction to enable employees to carry out their duties in a safe and efficient manner, and as well make all necessary devices and protective equipment issued and supervise its use as required and will involve staff on all discussions to improve Health & Safety.
TWREDAT MEP will ensure effective consultation and co-operation with persons of other organization where both party's
works involved on the same area, where either party's operations may affect either organization’s employees. To ensure effective implementation of this policy, **TWREDAT MEP** will make adequate financial, human and other resources available, with a review of the policy annually and the Management systems every six months carrying out
audits to ensure compliance with the Policy.

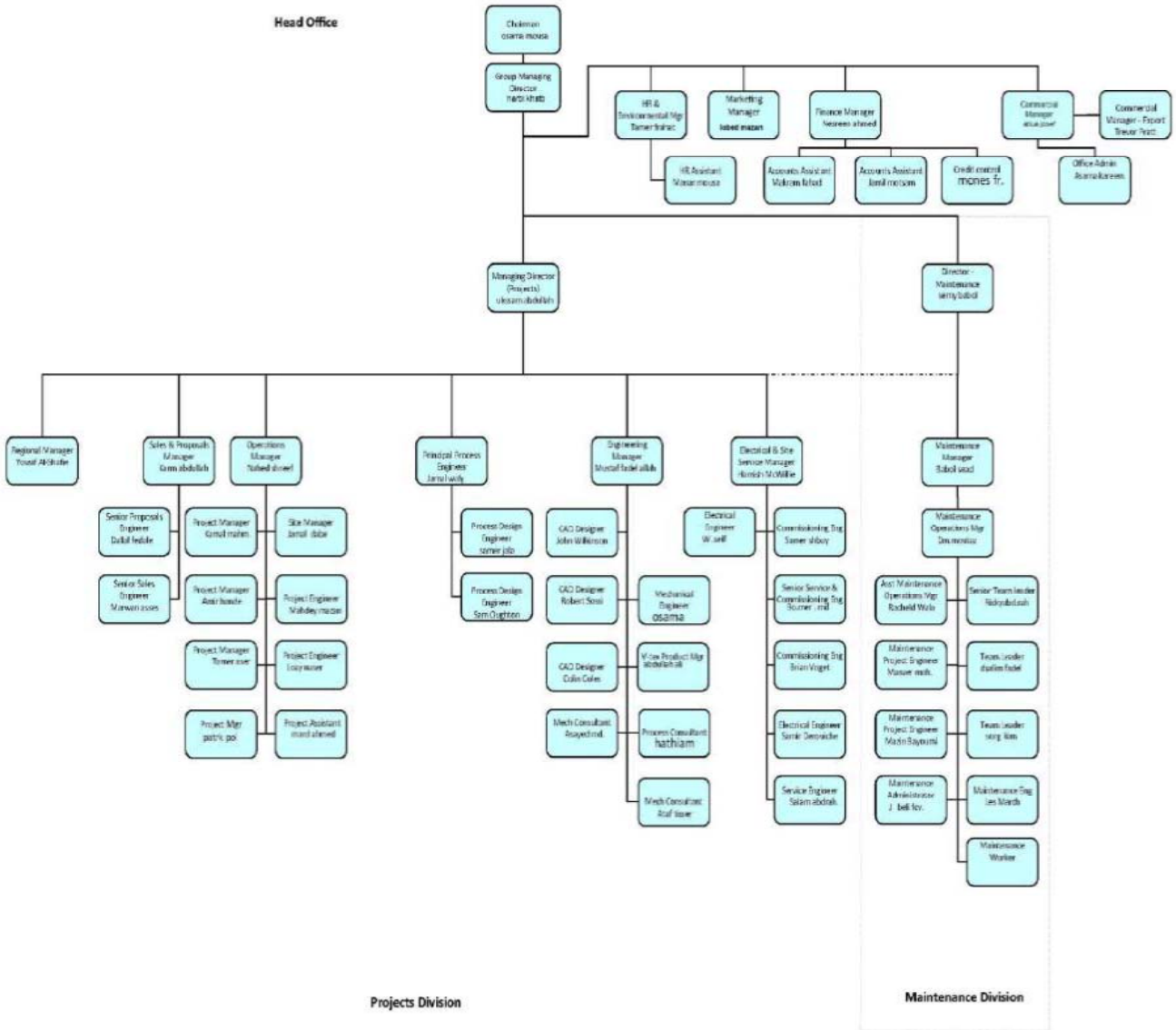
Our statement of general policy is:

- to provide adequate control of the health and safety risks arising from our work activities;
- to consult with our employees on matters affecting their health and safety;
- to provide and maintain safe plant and equipment;
- to ensure safe handling and use of substances;
- to provide information, instruction and supervision for employees;
- to ensure all employees are competent to do their tasks, and to give them adequate training;
- to prevent accidents and cases of work-related ill health;
- to maintain safe and healthy working conditions; and
- to review and revise this policy as necessary at regular intervals.

All employees have to:

- co-operate with supervisors and managers on health and safety matters;
- not interfere with anything provided to safeguard their health and safety;
- take reasonable care of their own health and safety; and
- report all health and safety concerns to an appropriate person

ORGANIZATION CHARTS



EXPERIENCE & REFERENCES

❖ *PROJECTS:*

- **Obeikan Main Pumping Station**
- **Coil A/C Project in KFMMC (Dammam)**
- **Saudi Paper Manufacturing Co, PM-3 Wastewater Treatment Plant Modification**
- **MEP Salah al-sharef tower,** AL-DAMMAM AREA, Building 8 floor
- **MEP Al Masaood Store& Showroom,** RIYADH AREA **10,000 M2**
- **NAFA COMPANY**. **NAJRAN AREA**
- **Chillier Water Project (KFMMC)**
- **Ministry of Water and Electricity -Al Omran Municipal Wastewater Treatment Plant**
- **Duba Pumping station**
- **Ministry of Health 350 Hem dialysis Units**
- **Jeddah Air Base Wastewater Treatment Plant**
- **Shas Company for Water Services Industrial City Plant**