



COMPANY PROFILE

MASTER DUCT AIR
CONDITIONING
EQUIPMENT
INDUSTRY LLC



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COMPANY PROFILE

Master Duct Air Conditioning Equipment Industry LLC. Innovating HVAC Solutions for a Sustainable Future.



About Us

Master Duct Air Conditioning Equipment Industry LLC is a leading manufacturer of premium HVAC ducting systems and components, delivering world-class solutions across the Middle East. Based in Umm Al Quwain, our state-of-the-art facility is equipped with advanced CNC production machinery, enabling us to fabricate high-performance ductwork and air distribution products with precision, speed, and consistency. We are committed to excellence, adhering strictly to international standards including SMACNA, ASHRAE, and DW 144. Sustainability is at the core of our operations—we integrate energy-efficient processes, adopt eco-friendly manufacturing practices, and implement responsible recycling programs.

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COMPANY PROFILE



Our Vision

To lead the HVAC manufacturing industry through innovation, uncompromising quality, and eco-conscious engineering solutions.



Our Mission

To deliver precision-engineered HVAC products with unmatched reliability, timely delivery, and superior customer service, while continually advancing sustainable manufacturing practices.



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COMPANY PROFILE

❖ Our Core Products & Services

- 1. Ductwork Fabrication
- We specialize in the manufacturing of all major HVAC ducting systems:
- GI Rectangular Ducts
- GI Round / Spiral Ducts
- Pre-Insulated (PIR/PUR) Ducts
- Mild Steel (MS) Ducts
- Volume Control Dampers (VCDs)
- Duct Accessories & Fittings

2. Sheet Metal Fabrication

Custom-designed sheet metal components tailored for:

- HVAC systems
- Industrial applications
- Commercial fabrication requirements

3. Project Management Services

We provide end-to-end project support, including:

- Complete project planning & coordination
- Site assessment and installation guidance
- Quality control, testing, and compliance checks
- On-time delivery and technical support



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COMPANY PROFILE

Infrastructure & Technology

- Modern production facility in Umm Al Quwain
- CNC-driven fabrication for high accuracy
- Dedicated QA/QC team ensuring compliance
- Skilled workforce with deep industry experience

Strong logistics system for timely dispatch.

Sustainability Commitment

We take pride in integrating environmentally responsible practices by:

- Using energy-efficient machinery
- Maintaining recycling programs for metal and insulation waste

Reducing carbon footprint through optimized production workflows

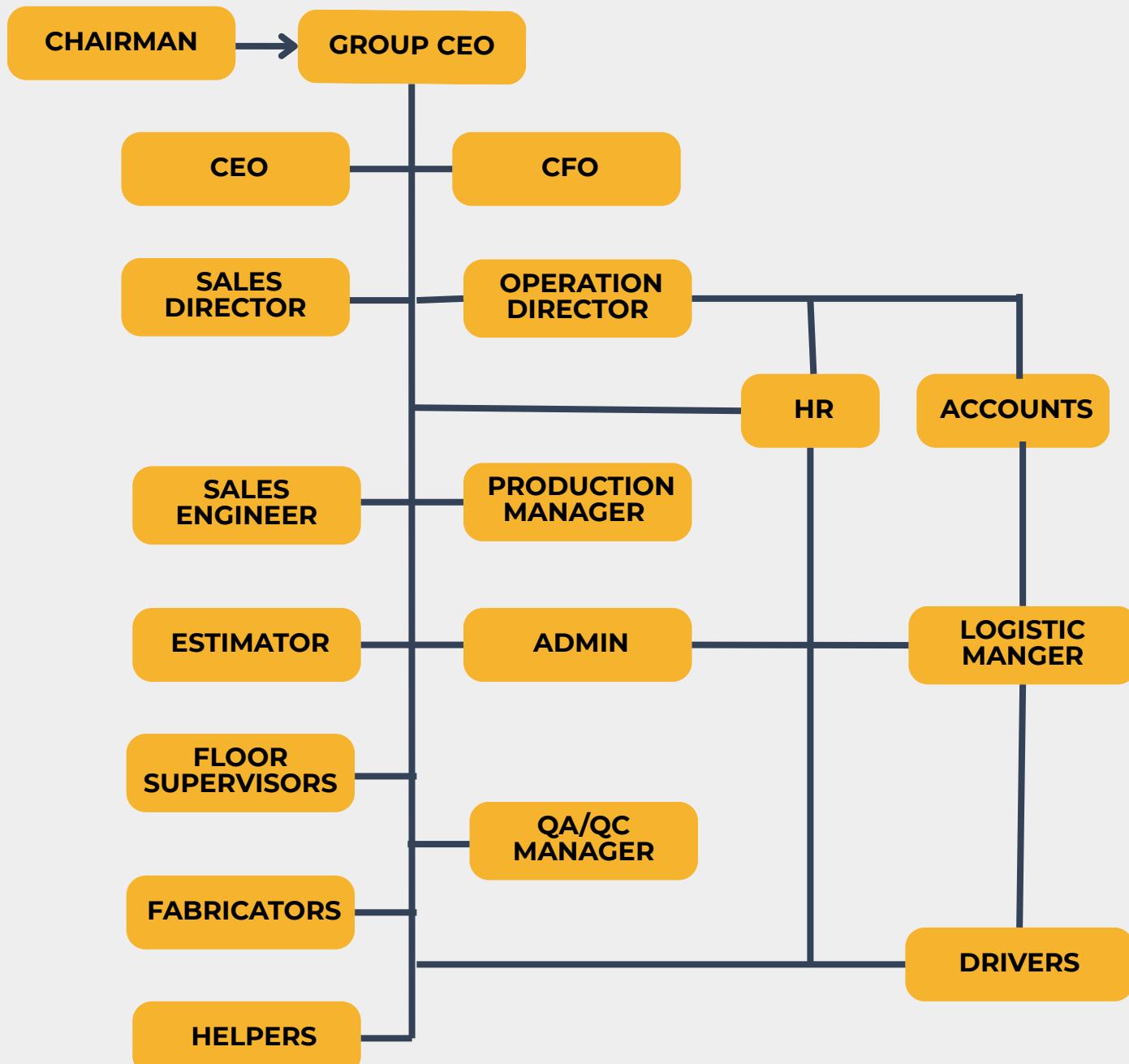
Our Strengths

- Compliance with global HVAC standards (SMACNA, ASHRAE, DW 144)
- High-capacity CNC fabrication line
- Superior quality and precision
- Timely delivery across UAE and GCC
- Customer-centric approach
- Complete HVAC ducting solutions under one roof.



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ORGANIZATION CHART

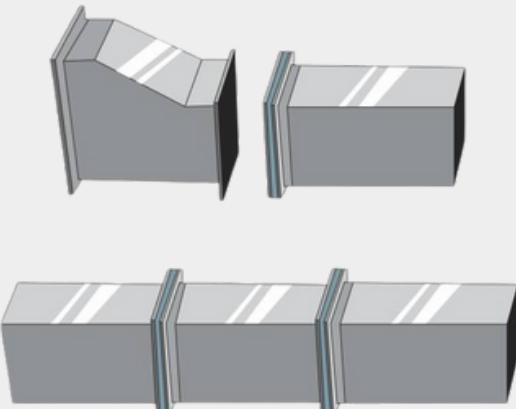


PRODUCT PORTFOLIO

Our advanced manufacturing facility delivers a comprehensive range of high-quality HVAC ducting solutions engineered for performance, durability, and compliance with global standards.

1. RECTANGULAR DUCTS

FABRICATED USING PRECISION CNC MACHINERY, OUR RECTANGULAR DUCTS ENSURE OPTIMAL AIRFLOW, LOW LEAKAGE, AND LONG-TERM DURABILITY FOR COMMERCIAL AND INDUSTRIAL HVAC APPLICATIONS.



2. ROUND DUCTS

DESIGNED FOR EFFICIENT AIR DISTRIBUTION, OUR ROUND DUCTS OFFER SUPERIOR STRENGTH, MINIMAL PRESSURE LOSS, AND EASY INSTALLATION ACROSS DIVERSE VENTILATION SYSTEMS.



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PRODUCT PORTFOLIO

3. PHENOLIC INSULATED (PI) DUCTS

LIGHTWEIGHT, ENERGY-EFFICIENT, AND FIRE-RESISTANT, OUR PHENOLIC INSULATED DUCTS PROVIDE EXCELLENT THERMAL PERFORMANCE AND COMPLIANCE WITH INTERNATIONAL SAFETY NORMS.



4. MS DUCTS (MILD STEEL)

ROBUST AND CORROSION-RESISTANT, MS DUCTS ARE IDEAL FOR HIGH-PRESSURE HVAC SYSTEMS AND SPECIALIZED INDUSTRIAL ENVIRONMENTS.



5. RINGS & ACCESSORIES

WE MANUFACTURE A WIDE RANGE OF DUCTING ACCESSORIES SUCH AS RINGS, FLANGES, CLAMPS, HANGERS, AND SUPPORT SYSTEMS TO ENSURE COMPLETE INSTALLATION COMPATIBILITY.



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MANUFACTURING PROCESS

Our production process is designed with precision, automation, and strict quality control at every stage to ensure superior product consistency.

1. MATERIAL PROCUREMENT

We source high-grade GI, MS, and PI sheets only from certified suppliers. All incoming materials are verified with mill test certificates to ensure compliance with required mechanical and chemical standards.

2. FABRICATION

Our fabrication line is equipped with advanced technologies such as:

- CNC plasma cutting
- Automated sheet forming
- Seam locking and welding systems

This guarantees dimensional accuracy, uniformity, and long-lasting structural integrity.

3. QUALITY CHECKS

We follow rigorous inspection protocols aligned with SMACNA, ASHRAE, and industry-specific standards.

- Dimensional accuracy checks
- Weld quality and joint integrity
- Surface finish verification
- Compliance audits

4. DELIVERY & LOGISTICS

Finished products are securely packed to prevent transit damage. Our logistics fleet is GPS-enabled, ensuring timely delivery and real-time tracking for clients.

5. PRODUCTION CAPACITY

Daily Output: 10,000 sq.ft of ducting •

Thickness Range: 0.5mm–1.2 mm •

Facility: 30,000 sq.ft in Umm Al Quwain

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QUALITY ASSURANCE



Quality is at the core of our operations. Every product undergoes a three-stage inspection system:

Raw Material Inspection

- Verification of mill test certificates
- Visual and physical checks of sheet quality

In-Process Quality Checks

- Dimensional tolerance maintained within ± 2 mm
- Weld quality inspection
- Fitment and alignment checks

Final Inspection

- Leakage testing
- Surface and finish quality review
- Validation of compliance with SMACNA and project specifications



METHOD STATEMENT FOR FABRICATION AND QUALITY CONTROL OF HVAC DUCTWORK

Purpose

This Method Statement outlines the standardized procedures, fabrication processes, and quality control measures followed for manufacturing Rectangular GI Ducts, MS Ducts, SS Ducts, PI Ducts, Volume Control Dampers (VCDs), and Non-Return Dampers (NRDs).

The purpose is to ensure full compliance with consultant specifications, project requirements, and recognized international standards.

Scope

This document applies to all activities carried out within our production facility, including:

- Material receiving and inspection
- Fabrication and assembly
- In-process quality checks
- Final inspection and product approval prior to dispatch



METHOD STATEMENT FOR FABRICATION AND QUALITY CONTROL OF HVAC DUCTWORK

References

Fabrication and QC procedures strictly adhere to the following:

- Consultant Specifications (Project HVAC Technical Sections)
- Approved Shop Drawings, Architectural & Mechanical Drawings
- Industry Standards:
 - SMACNA – Duct Construction Standards
 - ASHRAE – HVAC Design & Performance Standards
 - ASTM – Material and Testing Standards
 - Local Building Codes & Regulations

Responsibilities

Project Manager:

Overall responsibility for project execution, compliance, and coordination with consultants.

Production Manager / Supervisor

Supervises production operations, manpower planning, and adherence to fabrication procedures.



METHOD STATEMENT FOR FABRICATION AND QUALITY CONTROL OF HVAC DUCTWORK

QA/QC Manager & Inspectors:

Responsible for implementing QC protocols, conducting inspections, documenting results, and ensuring compliance.

Fabricators / Technicians:

Execute duct fabrication, forming, assembly, and finishing as per approved drawings and SOPs.

Material Controller:

Ensures proper receiving, verification, storage, and issuance of raw materials to the fabrication team.

Materials

GI Duct (Galvanized Iron)

- Material: Galvanized Steel Sheet (G90 zinc coating or as per specification)
- Thickness: As per SMACNA / DW144 / project requirement
- Joints: Pittsburgh Lock, Snap Lock, Standing Seam, or Welded
- Sealing: Approved sealant per required leakage class



METHOD STATEMENT FOR FABRICATION AND QUALITY CONTROL OF HVAC DUCTWORK

PI Duct (Pre-Insulated Phenolic / PIR)

- Material: Pre-Insulated Panels with Phenolic or PIR core
- Joining System: Aluminium profiles, sealants, adhesives
- Properties: Lightweight, thermally efficient, fire resistant

Fabrication Method

General Duct Fabrication Process

1. Material Receiving & Inspection

- Confirm material type, gauge, thickness, and dimensions
- Verify mill test certificates
- Inspect sheets for dents, bends, corrosion, or damage
- Store properly to prevent contamination or deformation

2. Layout & Marking

- Transfer dimensions from approved shop drawings
- Mark for cutting, bending, notching with precision



METHOD STATEMENT FOR FABRICATION AND QUALITY CONTROL OF HVAC DUCTWORK

- Straight Ducts: Produced using CNC Autoline with decoiler
- Cutting: Laser or CNC plasma cutting for clean, burr-free edges

3. Forming / Bending

- Use Pittsburgh Lock Former, Hydraulic Folding Machines
- Ensure accurate bends, angles, and uniformity

4. Joints & Seams

- Fabricate seams per SMACNA requirements
- Apply sealants where required for airtightness

5. Assembly & Sealing

- Assemble duct sections as per approved drawings
- Seal all longitudinal and transverse seams
- Install stiffeners, tie rods, and cross-breaking as required

6. Flange Fabrication & Installation

- Fabricate flanges and corners as per SMACNA / DW standards
- Fix using rivets or spot welding

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METHOD STATEMENT FOR FABRICATION AND QUALITY CONTROL OF HVAC DUCTWORK

7. Reinforcement

- Provide internal & external reinforcement per SMACNA
- Use tie rods, angle iron frames, intermediate stiffeners based on duct size and pressure class

8. Cleaning

- Clean internal and external duct surfaces
- Remove oil, debris, metal swarf, and contaminants

PI Duct Fabrication Process

1. Material Receiving

- Inspect PI / Phenolic panels for damage or delamination

2. Cutting

- Use specialized tools to ensure smooth cuts without damaging the insulation core

3. Grooving

- Groove panels to fit aluminium profiles and joints accurately

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METHOD STATEMENT FOR FABRICATION AND QUALITY CONTROL OF HVAC DUCTWORK

4. Assembly

- Use approved aluminium profiles, adhesives, and sealants
- Ensure airtight joints and structural stability

5. Reinforcement

- Add internal reinforcement as required by design
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Quality Control & Inspection

Incoming Material Inspection

- Verify mill test certificates
- Check gauge, thickness, dimensions
- Inspect for physical defects
- Document acceptance/rejection

In-Process Inspection

- Dimensional Checks: Length, width, height, angles, straightness
- Joint Integrity: Check locks, seams, weld quality
- Flange Attachment: Alignment, tightness, and gasket installation
- Sealing Checks: Proper sealant coverage and uniform application

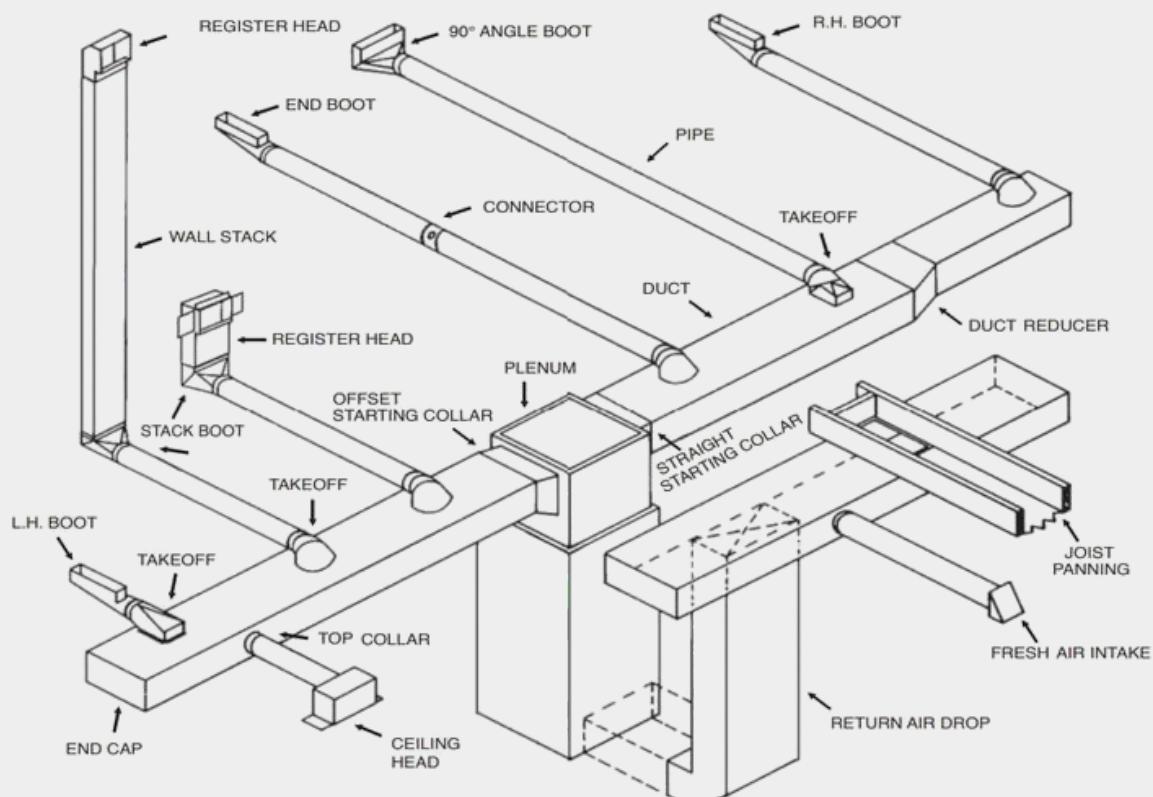


METHOD STATEMENT FOR FABRICATION AND QUALITY CONTROL OF HVAC DUCTWORK

- Reinforcement: Verify stiffener size, spacing, and installation

Final Product Inspection

- Visual Inspection: Surface finish, damage, completeness
- Dimensional Verification: Overall measurements, flange sizes, damper openings
- Labelling & Identification: Ensure proper tagging per project requirements

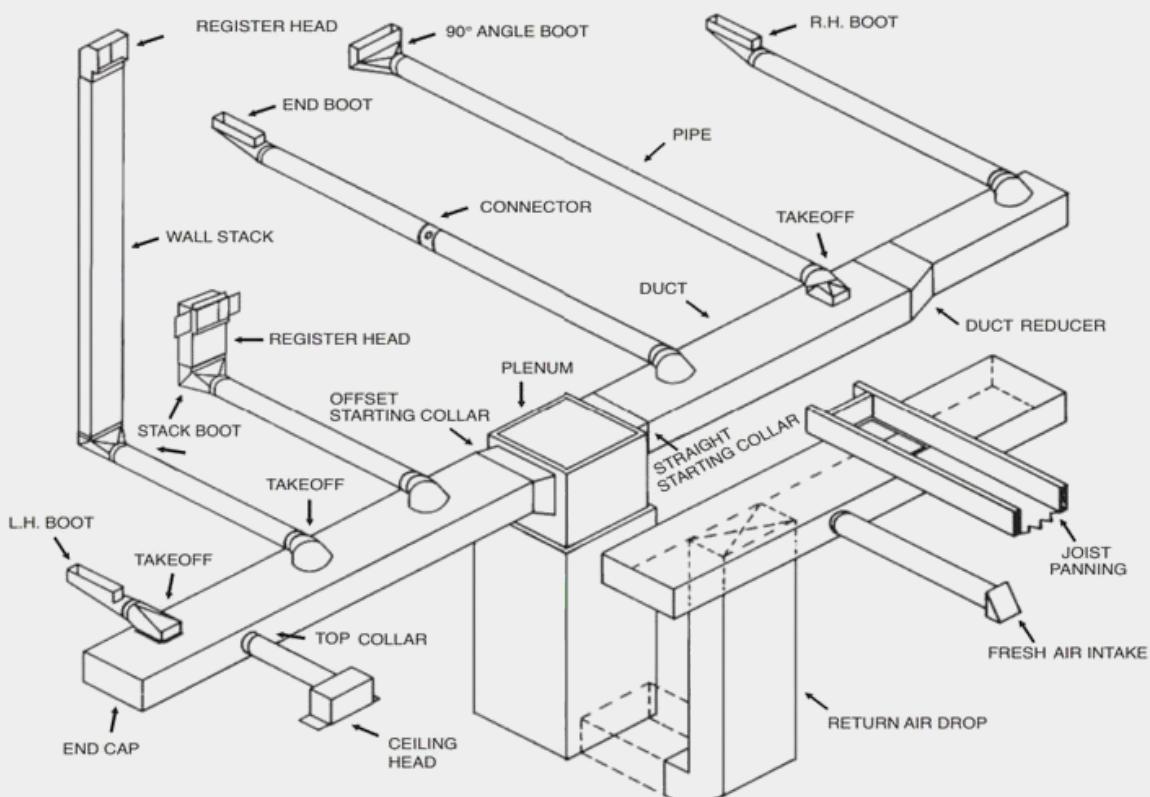


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MACHINE INVENTORY

Machine	Make / Origin	Quantity
Autoline Machine	Switzerland / China	2
CNC Laser Cutting Machine	China	1
CNC Plasma Cutting Machine	Switzerland	1
Lock Former Machine	Turkey	4
Duct Zipper Machine	Germany	1
Hydraulic Folding Machine	India	1
Roller Machine	China	2
Pneumatic Hammer	USA	2
Grooving Machine	China	1
PI Duct Cutting Machine	Italy	1
PI Hydraulic Folding Machine	China	1



PROJECT REFERENCES & APPROVALS

Project Name	Contractor	Consultant
Casa Del Mar	CKC Building Contracting	Nisreen Kayyali
Executive Clinic Renovation – American Hospital	Emkay Interiors	Proleed Engineering Consultants
Palm Villa – Palm Jumeirah	CKC Building Contracting	CKR Consultant
Executive Clinic Renovation – AHD	Tricircle Technical Services LLC	Proleed Engineering Consultants
ARI Mosque – Arabian Ranges	Bruders Building Contractors	Yaghmour Engineering Consultants
LUMA Park – JVC G+20	Al Naqeeb Contracting	Proleed Engineering Consultants
GEMS School of Research & Innovation – Sports City	Chicago Maintenance & Construction Co. LLC	National Engineering Bureau
Proposed G+P+7+Roof Residential Building	Technomech Electromechanical Works LLC	National Engineering Bureau



PROJECT REFERENCES & APPROVALS

Project Name	Contractor	Consultant
Proposed Tower A & B – G+38 Maimoon Gardens	Technomech Electromechanical Works LLC	National Engineering Bureau
Proposed G+16 Residential & Commercial Building – ARIA & SYMPHONY	MEPCO	—
Proposed G+10 Residential Tower – Wadi Al Safa	Eurogulf Techno Services	NEB
Proposed G+ Villa – Al Awir	Green Team Air & Solar Technology LLC	Al Fahidi
Proposed Villa (B+G+1), AZ-6-050 Al Zahia, Sharjah	Technoplus Technical Contracting LLC	JOUD
Success Point College	Unicorn Electromechanical Works LLC	Success Point
TEO Project	Emkay Interiors	Kart Group
Medcare Hospital	Emkay Interiors	Euro Health



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Project Name	Contractor	Consultant
Proposed Tower A & B – G+38 Maimoon Gardens	Technomech Electromechanical Works LLC	National Engineering Bureau
Proposed G+16 Residential & Commercial Building – ARIA & SYMPHONY	MEPCO	—
Proposed G+10 Residential Tower – Wadi Al Safa	Eurogulf Techno Services	NEB
Proposed G+ Villa – Al Awir	Green Team Air & Solar Technology LLC	Al Fahidi
Proposed Villa (B+G+1), AZ-6-050 Al Zahia, Sharjah	Technoplus Technical Contracting LLC	JOUD
Success Point College	Unicorn Electromechanical Works LLC	Success Point
TEO Project	Emkay Interiors	Kart Group
Medcare Hospital	Emkay Interiors	Euro Health
Hatta Hospital	Proton Mech Electromechanical LLC	—



PROJECT REFERENCES & APPROVALS

Project Name	Contractor	Consultant
Safia Hospital – Ajman	Al Fakher Electromechanical LLC	Mazaya Consulting Engineering
Dubai Court	Voltron Electromechanical	—
Design, Construction & Completion of Buildings – Al Rams Area	Proton Electromechanical Contracting LLC	National Guard Command
Proposed G+5 Building – Al Warqa	Green Team	Al Fahidi
G+1 Villa – La Mer	Bruders Building Contracting	Onyx Engineering
G+1 Villa – Umm Suqeim/Umm Sherif	Bruders Building Contracting	Enmaa Engineering Consultants
G+2 Villa – Dubai Hills	Safe Plus Technical Services	Curve Lines Engineering Consultant
G+2 Villa – Dubai Hills	Safe Plus Technical Services	Maple Engineering Consultants



PROJECT REFERENCES & APPROVALS

Project Name	Contractor	Consultant
G+2 Villa – Dubai Hills	Safe Plus Technical Services	Maple Engineering Consultants
G+1 Villa – Al Barsha	Green Team	Al Fahidi
Ibn Battuta / Ibn Betruit Café	Raagan Technical Services	Design Club Engineering
G+1 Villa – Jebel Ali	Raagan Technical Services	Light Design Engineering
Commercial & Office Building (G+2), Mirdif	Al Naqeeb Electrical & Mechanical Works LLC	Blue Point Engineering Consultant

Our company has successfully supplied and delivered HVAC ducting systems, dampers, and related fabrication works for a wide range of residential, commercial, hospitality, institutional, and healthcare projects across the UAE.

