



COMPANY PROFILE

Engineering | Construction | Products

+92-42-35457772 contact@umer.org.pk www.umer.org.pk
34-D, 6th Avenue, NFC-ECHS, Phase-I, Lahore, Pakistan

TABLE OF CONTENT

| | |
|--|----|
| ABOUT OUR COMPANY | 1 |
| VISION & MISSION | 6 |
| QUALITY MANAGEMENT SYSTEM | 7 |
| ORGANOGRAM | 22 |
| REGISTRATION WITH GOVERNMENT ORGANIZATIONS | 23 |
| DISCIPLINES | 27 |
| SCOPE OF SERVICES | 31 |
| LIST OF PLANTS, TOOL & MACHINERY | 40 |
| FIELDS OF SPECIALIZATION | 42 |
| OUR TEAM | 62 |
| LIST OF STAFF | 77 |
| LIST OF SOFTWARE USED FOR DESIGN | 78 |
| KEY PROJECTS | 80 |

ABOUT OUR COMPANY



A BRIEF STORY ABOUT THE COMPANY

UMER Construction Solutions is a professionally owned and managed Construction and Consulting Engineering company. Lead by civil & structural engineer and managed & run by a team of experienced professionals from various specialized disciplines, the company is committed to render the state-of-art consultancy services in different fields of civil engineering and allied disciplines.

Having a business structure of sole proprietorship, the company offers the dynamics and flexibility of a most professional and compact organization, offering high-quality services, while avoiding the inertia of an over-centralized organization. M/s UCS is multi-disciplinary and carries out projects from concept to execution stage through planning, engineering and management.

BRINGING IDEAS AND INNOVATION
TO LIFE THROUGH OUR EXPERTISE





ABOUT US

UMER construction solutions, a multi-disciplinary contracting and consulting engineering company. From its inception in 2015, M/s UCS has grown from a contracting-based engineering company to offer a broad range of construction supervision and execution services. With a team of qualified and skilled professionals whose experience reflects the capability and potential of the organization with a distinction of successfully completed commercial, industrial and housing projects to the entire satisfaction of its clients.

M/s UCS feels honor to have registered with Pakistan Engineering Council as Civil Contactor with C3 Category.

M/s UCS provides consulting services, design parameters and construction control. With services offered to consulting engineers, manufacturers, developers, institutions, private and government clients across country. The company continues to grow and expand into new service areas.

The company has a staff of over 30 engineers, technologists, supervisors and support staff. We pride ourselves on the quality and the commitment of our people within the organization. Over the last five years our employees have established M/s UCS reputation, for excellence through their technical expertise and ingenuity in providing our clients with M/s UCS and cost-effective solutions that work.

UMER construction solutions is committed to build strong partnership with Clients for achieving their goals. These objectives are achieved through optimal use of available resources combined with engineering and design expertise of M/s UCS in a professional and ethical manner.

UMER Construction Solutions is a project-oriented and client-driven company, dedicated to delivering exceptional results in every project we undertake. Our commitment to quality and timely delivery is unwavering, as we consider these elements to be fundamental "value-adders" that set us apart in the industry. The company culture at UMER Construction Solutions is built on a foundation of teamwork and innovation, fostering an environment where our employees are encouraged to collaborate and think creatively. This approach not only ensures the success of our projects but also drives continuous improvement and excellence in everything we do. By prioritizing open communication and leveraging the diverse expertise of our team, we are able to tackle complex challenges and deliver solutions that exceed our clients' expectations. Our holistic approach ensures that every aspect of a project is meticulously planned and executed, resulting in high-quality outcomes that stand the test of time. We take pride in building long-term relationships with our clients, understanding their unique needs, and delivering tailored solutions that provide lasting value.

TRANSFORMING IDEAS INTO
REALITY





WHAT MAKES US DIFFERENT

CUSTOMER SERVICE

When we founded the company in 2015, we were determined to reintroduce honesty and honor into the commercial construction industry. 5 years later, these core values are more important than ever. Whether we're building a new office complex or replacing a door, we will make every effort to meet or exceed your expectations because we want to be your number one source for construction services for years to come.

QUALITY

At UCS, we believe that quality is the result of careful planning and execution. By pre-qualifying and continually evaluating the work of our subcontractors, suppliers, vendors and employees, we ensure exceptional quality of our work, products and services.

TRANSFORMING IDEAS INTO REALITY



 WHAT MAKES US DIFFERENT

TIMELINESS

Realizing time is money; we understand the importance of having our projects completed on time. By investing in state-of-the-art communication and scheduling tools, we continually monitor and track the status of our projects to ensure even the tightest deadlines are met.

COMMUNICATION

By employing the latest proven office technology, combined with M/s UCS workflow methods and state-of-the-art communication tools, M/s UCS is never out of reach. Our staff of experts can be reached 24-hours a day, 7- days a week.

TRANSFORMING IDEAS INTO REALITY



VISION & MISSION

VISION

To be one of the most well-known and sought-after General Contracting, Construction Management, and Design Build firms and our name M/s UCS be synonymous with quality construction and unparalleled service.

MISSION

- 01** To Provide quality supervision & workmanship through recruitment, training & system support.
- 02** To foster a corporate culture where our employees have a safe, respectful and rewarding work environment.
- 03** To seek business opportunities that optimize our multi-disciplinary capabilities.

QUALITY MANAGEMENT SYSTEM

UMER Construction Solutions is committed to provide quality work to our customer that meets the Job standards & material specifications, workmanship, tolerances, schedule and public services while maintaining profitability and competitiveness.

UCS seek to achieve quality by instilling the principle of "Truth Build Trust" in the efforts of all levels of staff. We ensure continual improvement through quality processes which are directed by a strong management team.

01 Committed to upholding the highest standards of quality and performance, we dedicate ourselves to delivering outstanding engineering solutions that not only meet but exceed expectations, ensuring our clients' satisfaction and trust in our expertise.

02 Ensuring client satisfaction and adhering rigorously to the benchmarks set by the industry, we consistently deliver results that align with expectations and maintain the highest standards of quality.

03 Continuously striving for improvement and adhering strictly to regulatory guidelines, we uphold our commitment to delivering services of the highest caliber.

04 Focusing in fostering innovation, prioritizing client satisfaction, and nurturing the ongoing professional growth of our team.

OUR QUALITY MANAGEMENT SYSTEM

ABSTRACT FOR SAFETY MANUAL

At UCS, we believe that the Prevention of Accident is both our moral obligation and good business. Our safety efforts are based on our belief that every working person is entitled to a safe and healthful place to work. The responsibility for the health and safety of our employees goes beyond simple complains with the federal and state regulatory requirements. We recognize that the protection of our employees, property, public and environment are essentials to the efficient and successful completion of every construction project we undertake. Safety is more than a priority at our company, here safety is a value. We recognized that accident prevention is line management responsibility. That responsibility is shared at every level of our organization, from the partners all the way through to our craft work force. We educate our managers, supervisors and employees to identify and correct unsafe conditions e and more importantly unsafe work practices.

QUALITY MANAGEMENT SYSTEM



OUR QUALITY MANAGEMENT SYSTEM

ENVIRONMENTAL POLICY STATEMENT

UMER Construction Solutions recognizes that day-to-day operations can impact directly and indirectly on the environment. We aim to protect and improve the environment through good management and by adopting best practice wherever possible. UCS will work to integrate environmental considerations into our business decisions and adopt greener alternatives wherever possible, throughout our operations. In all our activities we aspire to:

1. Prevent pollution to land, air and water. Reduce water and energy use.
2. Minimize waste and increase recycling where commercially possible.
3. Identify and manage environmental risks and hazards.
4. Promote environmentally responsible purchasing.
5. Provide suitable training to enable employees to deal with their specific area of environmental control.

OUR QUALITY MANAGEMENT SYSTEM

HEALTH & SAFETY POLICY

UMER Construction Solutions believes that Health and Safety is an integral part of the business and it must be managed in an efficient manner to allow the smooth

Prevent pollution to land, air and water. Reduce water and energy use. running of the rest of the business. It must never be compromised. We need healthy, suitably trained people, turning up to work in the correct dress with the right tools for the job, with the right paperwork in place and the right attitude. It is our responsibility to provide and maintain safe and healthy working conditions, equipment and systems of work for all our employees, and to provide such information, training and supervision as they need for this purpose. We also accept our responsibility for the health and safety of other people who may be affected by our activities.

QUALITY MANAGEMENT SYSTEM



WHAT IS A QUALITY MANAGEMENT SYSTEM?

A Quality Management System (QMS) is a structured framework designed to ensure that an organization consistently meets or exceeds customer expectations and regulatory requirements. It encompasses a set of policies, procedures, processes, and resources that are established, implemented, maintained, and continually improved to manage quality throughout the organization.

Key Elements Involves:

- Quality Policy
- Procedures and Processes
- Quality Objectives
- Resource Management
- Risk Management
- Measurement and Analysis
- Continuous Improvement



QUALITY MANAGEMENT SYSTEM



QUALITY POLICY

At Umer Construction, we are dedicated to delivering excellence in every aspect of our services, meeting and exceeding the expectations of our clients and stakeholders. We are committed to establishing and maintaining a Quality Management System (QMS) in accordance with ISO 9001 standards to ensure the highest level of quality and continual improvement.

- Provide innovative and sustainable engineering solutions that meet or surpass regulatory requirements and industry standards.
- Foster a culture of excellence, professionalism, and teamwork among our employees, empowering them to contribute to our quality objectives.
- Continuously improve our processes, technologies, and practices to enhance efficiency, effectiveness, and client satisfaction.
- Communicate openly and transparently with our clients, partners, and stakeholders to understand their needs, expectations, and feedback, and strive to exceed them.
- Ensure compliance with applicable legal and regulatory requirements, as well as the requirements of ISO 9001, through rigorous monitoring, evaluation, and corrective action.
- Invest in the development of our employees through training, education, and opportunities for growth, enabling them to deliver superior quality services.
- Monitor and measure our performance against established quality objectives

PROCEDURES AND PROCESSES

Client Engagement Process:

- a. Initial Consultation: Engage with clients to understand their project requirements, objectives, and expectations.
- b. Proposal Development: Prepare comprehensive proposals outlining scope of work, deliverables, timelines, and cost estimates.
- c. Contract Negotiation: Negotiate terms and conditions with clients, ensuring alignment with project requirements and regulatory standards.
- d. Project Kickoff: Conduct project kickoff meetings to clarify roles

Project Management Process:

- a. Project Planning: Develop detailed project plans, including work breakdown structure, resource allocation, and risk assessment.
- b. Execution: Implement project activities according to the established plan, monitoring progress and ensuring adherence to quality standards.
- c. Quality Control: Conduct regular quality inspections and reviews to verify compliance with project specifications and client requirements.
- d. Change Management: Manage changes to project scope, schedule, and budget through formal change control procedures.

Design and Engineering Process:

- a. Requirements Analysis: Analyze client requirements and specifications to define project scope, constraints, and objectives.
- b. Conceptual Design: Develop conceptual design solutions and alternatives, considering technical feasibility, cost-effectiveness.

SAFETY MANUAL

At Umer Construction Solutions (UCS), safety is a core value that underpins all our activities. Our Safety Manual outlines the procedures, responsibilities, and policies necessary to maintain a safe and healthy work environment. This manual is designed to ensure compliance with federal and state regulatory requirements, and to foster a culture of safety throughout our organization.

1. Management Support and Direction

Implementing safety procedures starts from the top of our hierarchy. Our project managers are well-educated in safety measures and rigorously enforce them on-site. Management actively supports safety initiatives and ensures that safety protocols are integrated into all project phases.

2. Safety Responsibilities and Accountability

A dedicated safety supervisor is assigned at each site to oversee all safety measures. This includes monitoring work practices, ensuring proper use of equipment, and maintaining safety standards. The safety supervisor also coordinates with site security to restrict access to hazardous areas.

3. Safe Behavior and Development

The safety supervisor educates laborers and contractors on safe procedures and identifies hard hat areas, hard shoe areas, and no-go zones. Regular safety briefings are conducted to reinforce safe practices and compliance.

4. Job Site Audits

Informal safety audits are carried out by higher management at least twice a month. These audits ensure that safety measures are being followed and identify areas for improvement.

5. Incident Investigation and Reporting

In the event of an incident, a thorough investigation is conducted by the safety officer. A detailed report is prepared for higher management, outlining the incident's causes and recommending measures to prevent future occurrences.

6. First Aid Help

First aid kits are available at all sites, and selected staff members are trained in basic first aid procedures. All site personnel are informed about the location of first aid kits and emergency contact details.

7. Site Security

Site security is maintained 24 hours a day to prevent unauthorized access and protect workers and equipment. This also helps limit the risk of injury to trespassers.

8. Mobile Equipment Safety

All equipment is operated by trained personnel and regularly inspected by an equipment specialist. Equipment checks include ensuring all components are secure, lubricants are adequate, and any potential hazards are addressed before use.

9. Material Safety

Materials are stored safely in designated areas, especially those prone to fire or explosion. Proper stacking and storage practices are followed to prevent accidents and ensure easy access.

10. Fire Safety

- Adequate water reservoirs are maintained on-site for firefighting purposes.
- Fire extinguishers are readily available.
- Materials susceptible to fire are stored in safe locations.

11. Safe Work Practices

a. Works with Cement

All workers handling cement must wear:

- Special gloves
- Boots
- Helmets
- Goggles

b. Works at Height

Workers performing tasks at height must:

- Wear safety belts and helmets.
- Ensure scaffolding is secure and platforms are properly clamped.
- Maintain platforms free of grease and rust.
- Use barriers at abdomen level to prevent falls.

c. Electric Works

Electricians must:

- Wear special gloves and rubber boots.
- Use appropriate plugs and secure temporary wiring in steel conduits.
- Ensure switchboards and panels are securely placed and cables are free of damage.
- Keep electrical components away from flammables.

d. Hot Works

- Ensure firefighting arrangements are available.
- Confirm work areas are free of volatile vapors.

e. Works during Rain

- Secure electrical cables safely.
- Workers at height must wear safety shoes, helmets, and belts.
- Prohibit standing near under-construction areas.
- Place warning signs near collapsible areas.

12. Housekeeping

- Regular disposal of waste materials to assigned areas.
- Proper stacking of materials in use.
- Daily site cleaning after work.
- Identification tags for hazardous materials.
- Keeping walkways clear of obstacles.

Environmental Management Plan

Objective: Ensure construction activities do not adversely impact the surrounding environment, maintaining cleanliness in air and water quality.

Scope: Monitoring includes:

- Water Quality
- Air Quality
- Noise Levels

Controlling Measures:

- Turfing for soil erosion control.
- Silt traps for siltation control.
- Regular site clean-up to maintain air and water quality.

Other Measures:

- Prevent oil spills.
- Avoid unnecessary removal of trees/vegetation.
- Prohibit open burning.

Material Management:

- Proper stacking and storage.
- Ensure materials do not block access or cause pollution.

Monitoring Method:

- Project Manager ensures compliance with local HSE requirements.
- Daily site monitoring by the officer in-charge, reported at regular project meetings.

By adhering to this Safety Manual, UCS commits to maintaining the highest standards of safety and health for all employees, stakeholders, and the surrounding community. Safety is not just a priority; it is the way we conduct our work. Our ultimate goal remains zero accidents and a safe working environment for all.

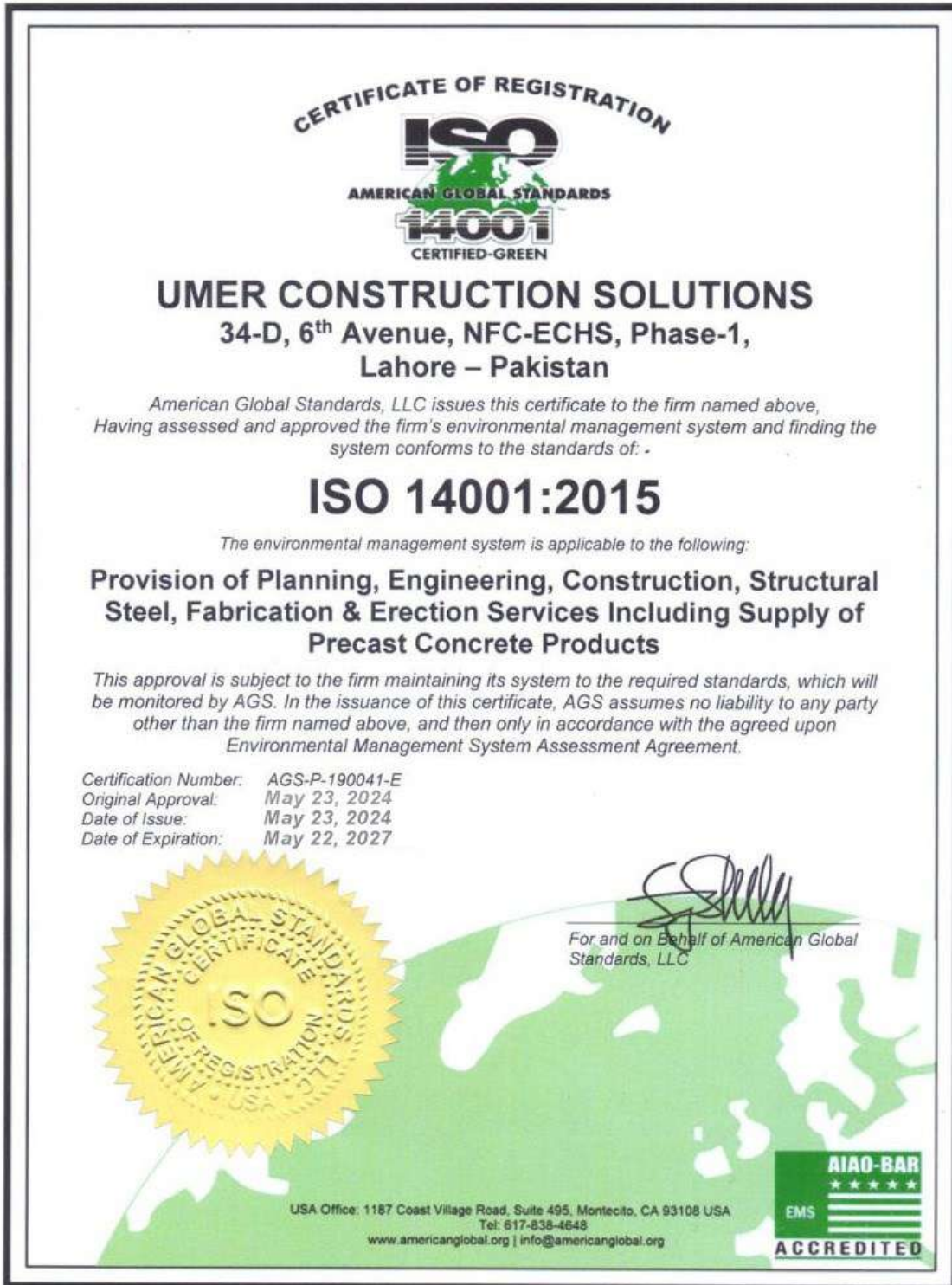
ISO CERTIFICATION



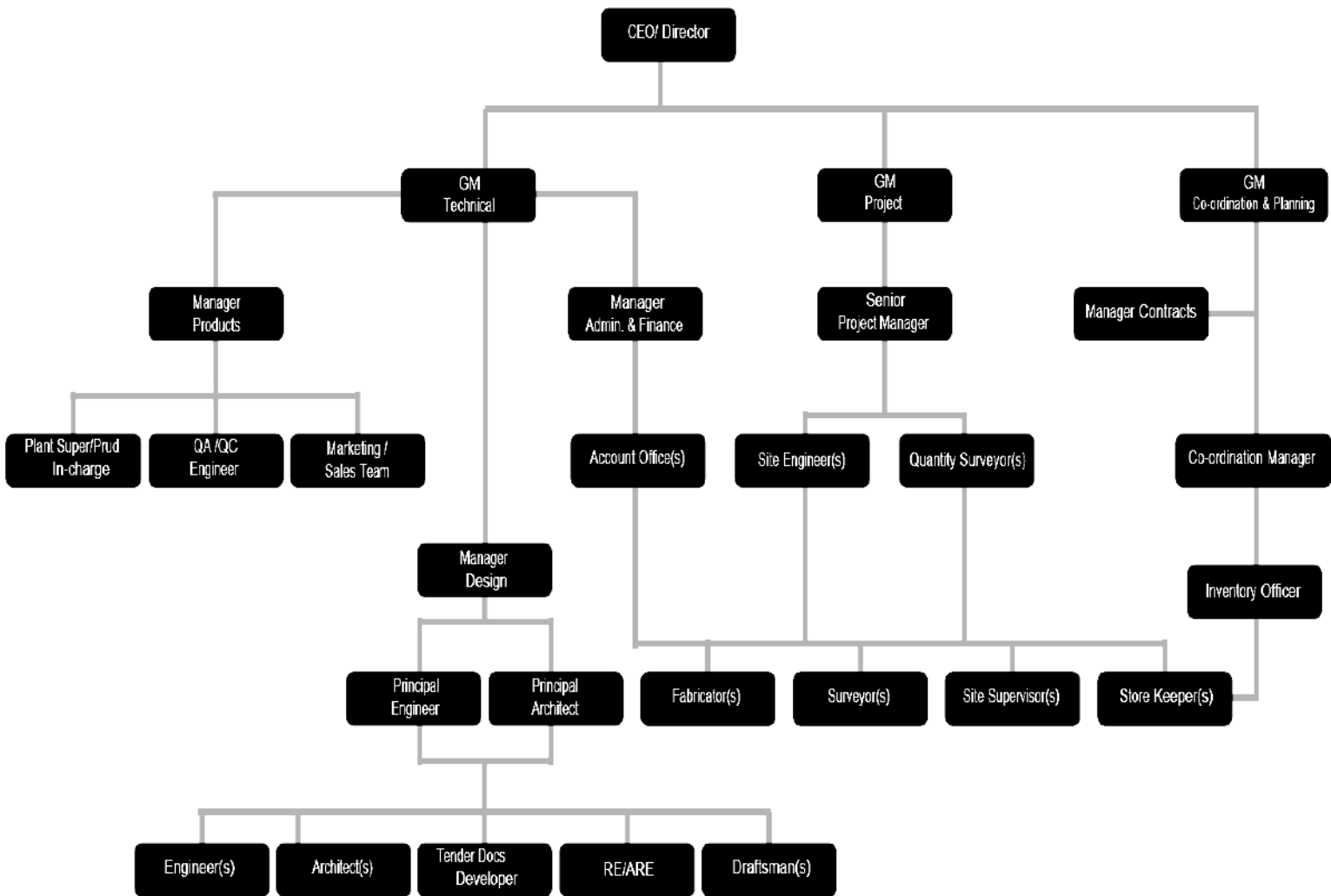
ISO CERTIFICATION



ISO CERTIFICATION



ORGANOGRAM



REGISTRATION WITH GOVERNMENT ORGANIZATIONS

Pakistan Engineering Council (PEC) –

Category: C3/E, License No. 6142

Punjab Revenue Authority (PRA)

PNTN 7149642-6

Service Category: Technical Scientific & Engineering Consultants Including Technical Inspection and Certification Services

Federal Board of Revenue (FBR)

Registration No. 3310469231743

Reference No. 7149642-6

PAKISTAN ENGINEERING COUNCIL (PEC)



Scan QR code to view details.



Serial No. **571101**
PEC-II

PAKISTAN ENGINEERING COUNCIL
Licence No: 6142 Category: C3/E Validity: 30 June, 2024
LICENCE OF PAKISTANI CONSTRUCTOR/OPERATOR
(Under the bye-laws of Pakistan Engineering Council 1987)

This is to certify that M/s UMER CONSTRUCTION SOLUTION (Licensee), with its registered office at 34-B 4TH AVENUE NF-ECHS, PHASE-1 NEAR WAPDA TOWN LAHORE have been licensed under Construction and Operation of Engineering Works Bye-laws 1987, until the validity date to construct/operate engineering works, the construction/capital cost of which does not exceed Rs. 500 (FIVE HUNDRED) million provided the licensee fulfils all the qualification requirements prescribed by Client or Employer for a particular engineering work; and subject to the licensee continuing to fulfill all the requirements of the bye-laws.

Field of Specialization BC01 - BC02 - CE01 - CE04 (Irrigation Only) - CE08 - CE09 - CE10 - (SEVEN ONLY) (Specialization Code Nos. for detail see overleaf)

Date of Issue: Dec 20, 2023
(Lahore)





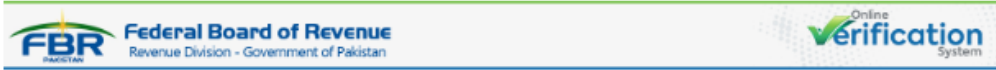
Registrar
Pakistan Engineering Council,
Islamabad.

Note:

- If a firm does not get renewal of its license within a year after expiry of its license, the firm may be renewed after payment of outstanding fee if same defaulting period plus surcharge at the rate of 2% of defaulting fee amount, or as prescribed from time to time.
- The employer must ensure employment of engineers whose names are mentioned on backside of the license. The Consulting Engineer (the Engineer incharge in case the consultant is not appointed) shall monitor the number of engineers employed by the Constructor/Operator and inform the Council accordingly.
- Owner(s) of the firm shall be held responsible, if any information, document or paper submitted by him/ them is found incorrect or forged.

Initial Date of Registration in PEC: Apr 27, 2022

FEDERAL BOARD OF REVENUE (FBR)



Taxpayer Profile Inquiry

Printed On: 2/23/2024 9:49:22 AM

Registration No 3310469231743
Reference No 7149642-6
Registered for Sales Tax Yes. w.e.f. 07-MAR-20
Name MUHAMMAD ADNAN MUSHTAQ
Category Pakistani Male
PP/REG/INC No. 3310469231743
Email adn****s2@***il.com
Cell 00923**844**08
Address 34-D, 6TH AVENUE, NFC-ECHS, PHAE-1, NEAR WAPDA TOWN, LAHORE, Lahore Iqbal Town
Registered On 21-DEC-2015
Tax Office RTO LAHORE
Registration Status Income Tax: Active , Sales Tax: OPERATIVE

| Sr. | Business/ Branch Name | Business/ Branch Address | Principal Activity |
|-----|-----------------------------|--|--|
| 1 | UMER CONSTRUCTION SOLUTIONS | 34-D, 6TH AVENUE, NFC-ECHS, PHAE-1, NEAR WAPDA TOWN, LAHORE, Lahore Iqbal Town | 433000- Construction/Building completion and finishing/Building completion and finishing |
| 2 | UMER CONSTRUCTION SOLUTIONS | 34-D, 6TH AVENUE, NFC-ECHS, PHAE-1, NEAR WAPDA TOWN, LAHORE, Lahore Iqbal Town | 433000- Construction/Building completion and finishing/Building completion and finishing |

PUNJAB REVENUE BOARD (PRB)



Date : 23-02-2024

Time : 09:39:38

PNTN 7149642-6 **Category** BUSINESS INDIVIDUAL

Name MUHAMMAD ADNAN MUSHTAQ

Business Name

| Sl. | Business Name |
|-----|-----------------------------|
| 1. | UMER CONSTRUCTION SOLUTIONS |

CNIC/Reg No. 33**469*31****

Address

Block/Sector/Road --- **City** ---

Service Category 9824.0000 - CONSTRUCTION SERVICES / CONSTRUCTION SERVICES ,9824.0000

Date of Registration with PRA 1/10/2024 2:27:21 PM

Operational Status at PRA Active

Print

Back



OUR ENGINEERING EXCELLENCE,
SHAPING TOMORROW'S WORLD.

DISCIPLINES

Umer Construction Solution, having experts in almost all civil engineering disciplines:

- Complete Design Solution
- Construction Management.
- Construction Supervision.
- Project Execution
- Inspection & Testing
- Concrete Technology
- Building Science
- Concrete Products.

COMPLETE DESIGN SOLUTION

At Umer Construction Solutions (UCS), we offer comprehensive design solutions that cater to all facets of construction projects. Our expertise spans across architectural design, structural engineering, and MEP (Mechanical, Electrical, and Plumbing) services. Our design team collaborates closely with clients to ensure that each project not only meets but exceeds their expectations in functionality, aesthetics, and sustainability. We leverage the latest design software and industry best practices to deliver innovative and cost-effective design solutions tailored to your specific needs.

CONSTRUCTION MANAGEMENT

UCS provides top-tier construction management services aimed at delivering projects on time and within budget. Our experienced construction managers oversee every aspect of the project, from pre-construction planning through to final completion. We coordinate with all stakeholders, including subcontractors and suppliers, to ensure seamless project execution. Our proactive approach to risk management, resource allocation, and quality control guarantees that every project meets the highest standards of excellence.

CONSTRUCTION SUPERVISION

Our construction supervision services are designed to ensure that every project adheres to the specified plans, quality standards, and regulatory requirements. Our site supervisors are highly skilled professionals who monitor daily activities, enforce safety protocols, and inspect workmanship to ensure compliance with project specifications. By maintaining a strong presence on-site, we can quickly address any issues that arise, keeping the project on track and minimizing delays.

PROJECT EXECUTION

At UCS, we pride ourselves on our ability to execute projects efficiently and effectively. Our project execution process is meticulously planned and managed to ensure that all project milestones are achieved within the agreed timelines. We deploy skilled labor, advanced equipment, and proven construction methodologies to bring your vision to life. From groundbreaking to final handover, we are committed to delivering high-quality results that meet your expectations.

INSPECTION & TESTING

Ensuring the integrity and durability of our construction projects is paramount at UCS. Our inspection and testing services include thorough quality control measures and rigorous testing of materials and workmanship. We utilize advanced testing techniques and equipment to verify that all components meet the required standards and specifications. Our commitment to excellence ensures that every project we undertake is safe, reliable, and built to last.

CONCRETE TECHNOLOGY

UCS is at the forefront of concrete technology, utilizing advanced techniques and materials to enhance the performance and durability of our concrete structures. Our expertise includes the formulation and application of high-strength concrete, lightweight concrete, and specialized mixes for specific project requirements. We continuously research and implement the latest advancements in concrete technology to ensure our projects achieve superior quality and longevity.

BUILDING SCIENCE

Our approach to building science integrates the principles of physics, chemistry, and engineering to optimize the performance of building systems and materials. At UCS, we focus on creating structures that are energy-efficient, sustainable, and resilient. Our building science services include thermal performance analysis, moisture control strategies, and the implementation of green building practices. By applying a scientific approach to construction, we enhance the comfort, health, and safety of building occupants while minimizing environmental impact.

CONCRETE PRODUCTS

UCS offers a wide range of high-quality concrete products tailored to meet diverse construction needs. Our product lineup includes interlocking pavers, kerb stones, pre-stressed/pre-cast slabs, bricks, blocks, and barriers. Each product is manufactured to the highest standards, ensuring excellent performance and durability. Our concrete products are designed to be aesthetically pleasing, cost-effective, and maintenance-free, making them an ideal choice for both residential and commercial applications. Whether you need materials for roads, pavements, walls, or custom projects, UCS has the right solution to meet your requirements.



OUR ENGINEERING EXCELLENCE,
SHAPING TOMORROW'S WORLD.

SCOPE OF SERVICES

Umer Construction Solution, having experts in almost all civil engineering scopes of work:

1. Engineering

- Architecture and Planning
- Project Management
- Structural Engineering
- Electrical Engineering
- Public Health Engineering
- Laboratory and Filed Testing



2. Construction

- Industrial
- Hospitality, Medicare, Education & Workplaces

-
- Housing & Residencia
 - Rehabilitation, Retrofitting & Upgradation
 - Hydraulic Structures
 - Spiritual
 - Thoroughfare

3. Products

- Interlocking Pavers
- Kerb Stones
- Pre-Stressed/Pre-Cast RC Girder Slab System
- Pre-Cast Boundary Wall with Pre-Stressed Girders
- Bricks and Blocks
- Pre-Cast Barriers
- General Items



ORGANIZE, LEAD, SUCCEED

ENGINEERING

ARCHITECTURE AND PLANNING

- Health Care Buildings.
- Educational Buildings.
- High-rise Buildings.
- Industrial Buildings.
- Low-Cost Housing.
- Residential Communities

PROJECT MANAGEMENT

- Construction Contract.
- Full Time/Resident & Top Supervision.
- Project Identification.
- Technical and Financial Feasibility Studies.
- Budgetary Planning.
- Development of Concept Plans.
- Design Development.
- Development of Technical Specifications.
- Preparation of Bidding Documents.

- Preparation of Bill of Quantities.
- Preparation of Estimates of Most Probable Cost.
- Bidding Stage Services.
- Contract Administration.
- Preparation of Project Completion Report

STRUCTURAL ENGINEERING

- Steel and Concrete Structures.
- Industrial facilities and Process Buildings.
- Pipe Racks.
- Table Top & Elevated Structures.
- Warehouse (with or without Shell structural system)
- Prilling Towers & Silos
- Underground Services for Plants
- Equipment Foundations.
- Pile Foundations.

- Tank Foundations.
- Compressor and Turbine Foundations (including dynamic analysis).
- Elevated and Underground Tanks.
- High Rise & Residential Buildings.
- Bill Boards & Sign Boards
- Steel structures and Transmission towers
- Rehabilitation & Structurally Strengthen of Structures
- Investigation & Structurally Strengthen of
- Building(s) after Natural or other hazards, like fire, earthquake, wind etc.
- Strengthen of Existing Structurally failed Building(s)
- Rehabilitation & Strengthen of Old and Historic Buildings
- Special Geometric Design



PLAN FOR PROSPERITY

ENGINEERING

- Large Span Shells
- Domes, Skylights, Minarets, Chimneys etc.
- Steel Towers and Masts
- Electrical (Commercial & Industrial) design
- Solar System design.
- HT/LT switchgear quality inspection.
- Quality assurance of electrical & solar installation work.
- Electrical Safety inspection and power quality concerns.
- System maintenance planning.
- Engineering staff training for electrical design and development work.
- Cost reduction in utilities in process machines
- Solar System design.
- HT/LT switchgear quality inspection.
- Quality assurance of electrical & solar installation work.
- Electrical Safety inspection and power quality concerns.
- System maintenance planning.
- Engineering staff training for electrical design and development work.
- Cost reduction in utilities in process machines

ELECTRICAL ENGINEERING

- Electrical (Commercial & Industrial) design

PUBLIC HEALTH ENGINEERING

- Water Supply System (Commercial & Industrial) Design.
- Sewerage System (Commercial & Industrial) Design.
- Storm Water Design.
- Drainage System Design.

- Design of Industrial Effluent

LABORATORY AND FILED TESTING

- Technical Audit.
- Construction Monitoring & Quality Control.
- Ferro-Scanning, Schmidt Rebound Hammer, Core Extraction and Testing, Pull Out Test.
- Ultrasonic Pulse Velocity, Corrosion Analysis.
- Cement, Concrete, Soil, Asphalt & Chemical Testing.
- Soil Exploration & Investigation.
- Fire Investigation.



SUSTAINABLE WATER SOLUTIONS

CONSTRUCTION

INDUSTRIAL

- Multilevel Industrial Structures (RC & Structural Steel).
- Large Span Shell.
- Steel Towers.
- Industrial Facilities & Process Buildings.
- Minarets, Domes, Skylights, Chimneys & Special Geometric Designs.
- Rehabilitation & structurally strengthened of industrial structures for future loading & other parameters.
- Table top & elevated structures.
- Tank Foundations.
- Equipment Foundation (like Compressor, Turbine, Cooling Tower, Heat Exchanger etc.)
- Pile Foundation for equipment.
- Drainage system for Industrial waste with underground services for plant.
- Effluent Treatment Plant for sewerage disposal.
- Pipe Racks
- Warehouse, Prefabricated steel & concrete structures.
- Elevated and Underground Tanks.
- External Development including roads, storm water drainage, car parking etc Health Care Buildings.
- Educational Buildings.
- Filling Stations with allied facilities like underground tanks, structural steel roof system, parking and fueling area, washing area, tuck shop, prayer area etc.
- Bill Boards & Sign Boards.
- Public Health system including water & gas supply, sewerage system and
- Treatment Plant for sewerage disposal.
- Hospital waste treatment and disposal.
- Electrical & Electronics systems like CCTV, nursing call, intercom, illuminations, main supply, earthing system etc.
- Car Parking facilities.
- Roof Top Towers.
- Renovation activates like Stainless Steel, Aluminum, Glass, Paint, Tile & Granite Work etc.

HOSPITALITY, MEDICARE, EDUCATION & WORKPLACES

- Multistoried & large span structural buildings with ancillary facilities like elevators, special designed stair case, garbed bin etc.
- Marriage Halls & event complexes with all allied & ancillary facilities.



INHERENT DESIGN PRECISION

CONSTRUCTION

- Cavity Walls, Roof insulation and centrally temperature control system

HOUSING & RESIDENCIA

- Society development including main gate, roads, street lights, water supply and sewerage system.
- Community Club, Fitness Gym, Commercial Area, Health Dispensary etc.
- Low Cost, Standard and Luxurious Housing.
- Farmhouse, Traditional house and multi-level apartments.
- Bachelor officer quarters (BoQs) and Married officer quarters (MoQs).

REHABILITATION, RETROFITTING & UPGRADATION

- Rehabilitation & Structurally Strengthen the old & historically buildings.

- Structurally strengthen of buildings after natural or other hazards like fire, earthquake, wind etc.
- Retrofitting & strengthen the existing structurally failed building.
- Rehabilitation & Structurally Strengthen the existing for vertical extension of building & structural system for revised/enhanced loading.

HYDRAULIC

- Regulator structures like Cross Regulator and Head Regulator.
- Single and Multi-span Brides (VR Bridge, DR Bridge and AR Bridge) with deep and Shallow foundations.
- Single and Multi-span canal culvert.
- Cattle Crossing and Cattle Bath.

- Cross Drainage Structures like Aqueduct, Superpassge, Syphon etc.
- Super-passage, Syphon, Multi-level depressed culvert.
- Retaining wall with and without cut- off. Canal falls, Canal Escapes & Canal Outlets.

SPIRITUAL

- Majid construction following the Ancient & Classical period architecture, Indo-Islamic architecture, British Colonial architecture, Mughal architecture & post-Independence architecture including Multilevel & Large.
- Span dooms.
- Masjid Minaret of conical (tapering), square, cylindrical, or polygonal (faceted) shapes.



SUSTAINABLE WATER SOLUTIONS

CONSTRUCTION

- Church construction following the British Colonial architecture & post-Independence architecture.
- Special geometric design.

THOROUGHFARE

- Flexible Pavement Road type for with road section including all zones of sub grade, sub base, water bound macadam, asphalt base course & asphalt wearing course/carpeting.
- Rigid Pavement Road type with road section including all zones of sub grade, sub base, water bound macadam, Reinforced concrete layer with isolation & expansion joints.
- Road shoulder with paver top, drainage system & curb stones etc.

- Road side illumination lights.
- Toll Plaza with ancillary facilities like staff accommodation, hydraulic boom barrier,
- Proper drainage system for storm & domestic water.
- Road sign boards (overhead, roof mounted & self-standing).
- Road surface marking using Cat eyes, Epoxy Paint, Stones etc.



ORGANIZE, LEAD, SUCCEED

PRODUCTS

INTERLOCKING PAVERS

- Pavers types like City Pavers, High Lock Pavers, Uni-Lock Pavers.
- 50mm, 60mm & 80mm paver thickness.
- Colour of paver like Grey, Red, Black, and Yellow.
- Customary and Premium strength quality.
- Benefits of Interlocking Pavers.
- High Load Bearing.
- Aesthetic driven.
- Cost Effective.
- Maintenance Free
- Re-usable
- Anti-Skidding
- Interlocking Feature
- Long Lasting

KERB STONES

- 350 & 450mm in height.
- Grey, Red colour.
- Standard quality strength.
- Customary and Premium strength quality.
- Benefits of Kerb Stones.
- High Load Bearing.
- Aesthetic driven.
- Cost Effective.
- Maintenance Free
- Re-usable
- Anti-Skidding
- Interlocking Feature
- Long Lasting

PRE-STRESSED/PRE-CAST RC GIRDER SLAB SYSTEM

- Complete range of Pre-Stressed/Pre-Cast RC Girder as per load chart.

- 1'-6" and 1'-0" wide Pre-Cast RC Slab of all available lengths.
- Benefits of Pre-Stressed/Pre-Cast RC Girder Slab System.
- Amazing Cost Saving.
- Opted for both Roof & Floor system with industrial & residential live load.
- Optimum Quality.
- Fast Erection.
- Guaranteed Final Price.
- Reusability.
- Suitable for Smaller & Medium size spans.
- Particularly suitable for controlled poultry sheds.

PRE-CAST BOUNDARY WALL WITH PRE-STRESSED GIRDERS

- Pre-Cast Boundary Wall comprises of H girders, 12” and 4” planks, cap etc.
- Horizontal/Vertical boundary Wall Girders of 4”x9”, 4”x10” and 5”x12” in size.
- Benefits of Pre Cast Boundary Wall with Pre-Stressed Girders.
- Excellent Concrete Quality.
- Unique Visual Appearance.
- Low Maintenance Cost.
- Overall Saving in Time, Labor, Shuttering & Material.
- Dissipate kinetic energy with mass of reinforced concrete.
- Require little or no maintenance.

BRICKS AND BLOCKS

- Concrete Bricks.
- Concrete Blocks.
- Benefits of Bricks and Blocks.
- High Insulation Value.

- Load Bearing.
- Dampness Free.
- Long life.
- Easy To Install.
- Economical.
- Durable.
- Aesthetically Appealing.
- Maintenance Free.
- Fire Resistance

GENERAL ITEMS

- Prism Floor Tiles.
- Roof Khaprail.
- Garden Bench.
- Flower Pots.
- Benefits of General Items.
- Aesthetically Appealing
- Easy to transport/relocate
- Unique Visual Appearance.
- Readily available.
- Durable & maintenance free.

APPLICATIONS

- Commercial Applications.

- Shopping Malls.
- Parking Lots & Parks.
- Loading Docks.
- Streets.
- Airport Pavements.
- Industrial Storage Areas
- Median Strips.
- Community Centers.
- Residential Applications.
- Shopping Malls.
- Parking Lots & Parks
- Loading Docks.
- Streets.
- Airport Pavements.
- Industrial Storage Areas
- Median Strips.
- Community Centers.

LIST OF PLANTS, TOOL & MACHINERY

| | |
|--|-------------|
| Form Work | |
| Steel Shuttering Plates | 50,000 Sft |
| Scaffolding pipes | 105,000 Rft |
| Scaffolding splices | 3,000 Nos |
| Steel form work for shell type roofing (30'X60') | 10 Sets |
| Column set 24" × 24" | 12 Nos |
| Column set 18" × 18" | 12 Nos |
| Column set 15" × 15" | 14 Nos |
| Column set 12" × 12" | 18 Nos. |
| Column set 30" × 30" | 20 Nos. |
| Compaction Equipment | |
| Vibratory Hammer Compactor | 08 Nos |
| Roller Compactor (small) | 01 Nos |
| Plate Compactor | 10 Nos |
| Concrete mixer machines | |
| Mobile mixer machine (1 bags) | 05 Nos |
| Mobile mixer machine (1/2 bag) | 10 Nos |
| Concrete Vibrators | |
| Gasoline Vibrator | 10 Nos |
| Electric Vibrator | 12 Nos |
| Blower | 02 Nos |

| | |
|--|---------|
| Machinery & Plants | |
| Generator | 12 Nos |
| Cylinder/Cube Compressive Strength Testing Machine | 02 Nos |
| Water Pumps 1-3 HP | 20 Nos |
| Grinder | 04 Nos |
| Engines | 08 Nos |
| Welding Plant | 10 Nos |
| Lift Machines | 08 Nos |
| Surveying Instruments | |
| Total Station | 01 Nos. |
| Theodolite | 01 Nos. |
| Dummy Levels | 01 Nos |
| Transport | |
| Water Boozer Car 1600CC | 02 Nos |
| Mazda T3500 | 01 Nos |
| Tractor Massey Ferguson 260 Turbo | 01 Nos |
| FAW Carrier | 02 Nos |
| Suzuki Pickup | 02 Nos |
| Taller 30 Feet Long | 01 Nos |
| Trolly with Hydraulic Jack | 02 Nos |



OUR ENGINEERING EXCELLENCE,
SHAPING TOMORROW'S WORLD.

FIELDS OF SPECIALIZATION

Umer Construction Solution, having experts in almost all civil engineering disciplines, specializes in the fields of:

- Project Management
- Infrastructure & Urban Planning
- Public Health Engineering
- Architecture and Planning.
- Structural Engineering
- Irrigation & Hydraulic
- Engineering MEP Engineering
- Road and Highway Engineering
- Value & Forensic Engineering
- Technical Audit, Laboratory & Filed Testing





ORGANIZE, LEAD, SUCCEED

PROJECT MANAGEMENT

PROJECT INITIATION

- Define project objectives, scope, and deliverables.
- Conduct Feasibility Studies (Technical, Financial, Environmental, Social etc.).
- Site assessments.
- Establish project team and roles.

PLANNING PHASE

- Develop a comprehensive project plan, including schedules, and resource allocation with Budgetary Planning.
- Identify risks and develop mitigation strategies.
- Obtain necessary permits and approvals.
- Define quality standards and procedures

DESIGN AND ENGINEERING

- Develop detailed engineering designs and specifications of all respective fields.
- Coordinate with planners, architects, engineers, and other stakeholders.
- Ensure compliance with governing building codes and regulations.
- Incorporate sustainability, environmental and social considerations.

CONSTRUCTION PHASE

- Supervise construction activities and progress.
- Monitor adherence to schedule, budget, and quality standards.

- Ensure compliance with governing building codes and regulations.
- Incorporate sustainability, environmental and social considerations.

QUALITY CONTROL AND ASSURANCE

- Implement quality control measures and inspections. Conduct testing and evaluations.
- Address deficiencies and non-conformities promptly.



PLAN, EXECUTE, DELIVER

PROJECT MANAGEMENT

PROJECT MONITORING AND CONTROL

- Track project performance against baseline metrics.
- Monitor budget expenditures and resource utilization.
- Adjust plans and strategies as needed.
- Communicate progress and issues to stakeholders.

RISK MANAGEMENT

- Continuously assess and manage project risks.
- Implement risk mitigation strategies.
- Monitor external factors that could impact the project.
- Maintain contingency plans.

STAKEHOLDER MANAGEMENT

- Maintain regular communication with stakeholders.
- Provide updates on project status and milestones.
- Address concerns and resolve conflicts.
- Ensure transparency and accountability.

CLOSEOUT PHASE

- Conduct final inspections and audits.
- Obtain project acceptance and sign-off.
- Complete documentation and record-keeping.
- Conduct lessons learned and post-project evaluation.





PLAN FOR PROSPERITY

INFRASTRUCTURE & URBAN PLANNING

URBAN PLANNING

- Comprehensive analysis of demographics, land use, transportation, and infrastructure.
- Long-term vision development with stakeholder engagement.
- Formulation of land use plans and zoning regulations.
- Continuous review and updates to adapt to changing needs.

TRANSPORTATION PLANNING

- Design and management of road networks, public transit, and pedestrian / bicycle infrastructure.
- Traffic studies and modeling for optimized

flow and congestion reduction.

- Promotion of alternative modes to reduce reliance on automobiles.
- Integration with land use planning for sustainable development

INFRASTRUCTURE DEVELOPMENT

- Planning, design, and construction of water, wastewater, stormwater, and utilities.
- Infrastructure resilience for natural disasters and climate change.
- Adoption of innovative and sustainable technologies.
- Coordination with development projects for maximum benefits.

HOUSING AND COMMUNITY DEVELOPMENT

- Affordable housing development and mixed-income neighborhoods. Equitable access to housing and amenities.
- Community development initiatives and social services provision.
- Policies to prevent displacement and foster inclusive growth.



FOSTERING COMMUNITY'S GROWTH

INFRASTRUCTURE & URBAN PLANNING

ENVIRONMENTAL PLANNING

- Protection & preservation of natural resources.
- Mitigation of environmental impacts through green infrastructure & sustainable design.
- Integration of sustainability and resilience principles.
- Promotion of environmental justice and equitable distribution of benefits.
- Promotion of transparency and accountability.

incentives. Promotion of tourism and cultural amenities.

GOVERNANCE AND POLICY

- Establishment of clear policies and regulations.
- Collaboration among government agencies, stakeholders, and private sector.
- Monitoring and evaluation of planning initiatives.

ECONOMIC DEVELOPMENT

- Investments in infrastructure and workforce development. Support for entrepreneurship and small businesses.
- Attraction of private investment through partnerships and





INNOVATE STRUCTURAL DESIGN

STRUCTURAL ENGINEERING

DESIGN AND ANALYSIS

- Conduct structural analysis to assess loads and forces on buildings and infrastructure. Design structural elements like beams, columns, and foundations to withstand loads.
- Utilize computer-aided design (CAD) and structural analysis software for modeling.

MATERIALS SELECTION

- Choose appropriate materials (e.g., concrete, steel) based on structural requirements and environmental factors.
- Consider material properties such as strength, durability, and corrosion resistance.
- Incorporate sustainable materials when feasible.

CONSTRUCTION OVERSIGHT

Collaborate with architects and contractors to integrate structural design with construction plans.

- Monitor construction activities to ensure compliance with design specifications and building codes.
- Implement quality control measures to maintain structural integrity.

RETROFITTING & REHABILITATION

- Collaborate with architects and contractors to integrate structural design with construction plans.
- Monitor construction activities to ensure compliance with design specifications and building codes.

- Implement quality control measures to maintain structural integrity.

SEISMIC ENGINEERING

- Design structures to resist earthquake forces. Incorporate seismic isolation and damping systems for mitigating seismic effects.
- Develop retrofitting strategies for existing structures in seismic-prone areas.

BRIDGE ENGINEERING

- Design and analyze bridge structures for various applications.
- Consider factors like traffic loads, environmental conditions, and design aesthetics



BLUEPRINTS OF TOMORROW

STRUCTURAL ENGINEERING

- Conduct inspections and maintenance to ensure bridge safety and functionality.

FORENSIC ENGINEERING

- Investigate structural failures and accidents to determine causes.
- Analyze structural damage and performance deficiencies. Provide recommendations for remedials

CODE COMPLIANCE AND REGULATIONS

- Stay updated on building codes, standards, and regulations.
- Ensure designs comply with legal requirements and industry standards.

- Collaborate with regulatory authorities for approvals and permits.

TYPE & CHARACTERISTICS OF STRUCTURES

- Steel and Concrete Structures. Industrial facilities and Process Buildings.
- Pipe Racks.
- Table Top & Elevated Structures.
- Warehouse (with or without Shell structural system) Prilling Towers & Silos Underground Services for Plants
- Equipment Foundations. Pile Foundations.
- Tank Foundations. Compressor and Turbine
- Foundations (including dynamic analysis).

- Elevated and Underground Tanks.
- High Rise & Residential Buildings.
- Bill Boards & Sign Boards
- Steel structures and Transmission towers
- Rehabilitation & Structurally Strengthen of Structures
- Investigation & Structurally Strengthen of Building(s) after Natural or other hazards, like fire, earthquake, wind etc.
- Strengthen of Existing Structurally failed Building(s)
- Rehabilitation & Strengthen of Old and Historic Buildings
- Domes, Skylights, Minarets, Chimneys etc.
- Steel Towers and Masts



SUSTAINABLE WATER SOLUTIONS

IRRIGATION & HYDRAULIC ENGINEERING

DESIGN AND PLANNING

- Develop irrigation systems for efficient water distribution to crops.
- Design channels, pipelines, and pumping stations to transport water.
- Plan drainage systems to manage excess water and prevent waterlogging.

HYDRAULIC STRUCTURES

- Design and construct dams, reservoirs, and weirs to regulate water flow.
- Build barrages and diversion structures to control river flow. Construct spillways and floodgates for flood control and management.

WATER MANAGEMENT

- Optimize water usage through efficient irrigation techniques like drip and sprinkler systems.
- Implement water conservation measures to reduce waste and improve sustainability.
- Monitor water quality and ensure compliance with regulations.

HYDROLOGY AND HYDRAULICS

- Analyze rainfall patterns and runoff to determine water availability.
- Calculate flow rates and hydraulic gradients for designing water conveyance systems.

- Model river behavior and sediment transport for erosion control.
- Hydraulic Design of Main Canal & Distribution System including Head & Cross Regulators, Super-Passage/Syphon, Falls, Multi-Level depressed Culvert, Single & Multi Span Bridge/ Culvert.

SOIL-WATER INTERACTION

- Study soil properties and infiltration rates to assess water absorption.
- Design drainage systems to prevent soil erosion and salinization.
- Implement soil conservation practices to maintain soil fertility



PRECISION IRRIGATION DESIGN

IRRIGATION & HYDRAULIC ENGINEERING

ENVIRONMENTAL IMPACT ASSESSMENT

- Evaluate the environmental impact of irrigation projects on ecosystems and biodiversity.
- Mitigate adverse effects through habitat restoration and conservation measures.
- Incorporate sustainable practices to minimize environmental degradation.

REMOTE SENSING & GIS

- Use satellite imagery and geographic information systems (GIS) for mapping and monitoring water resources.
- Analyze land use and land cover changes to assess their impact on water availability.
- Utilize remote sensing data for crop monitoring and drought prediction.

WATER POLICY AND MANAGEMENT

- Develop water management policies and regulations to ensure equitable distribution and sustainable use of water resources.
- Facilitate stakeholder engagement and community participation in water governance.
- Implement water pricing mechanisms and incentives to promote water conservation and efficiency.

- Collaborate with academia, industry, and government agencies to address emerging challenges in water engineering.

RESEARCH AND INNOVATION

- Conduct research on advanced irrigation technologies and hydraulic engineering solutions.
- Innovate new approaches for water resource management and flood control.



INTEGRATED SYSTEMS EXPERTISE

MEP ENGINEERING

MECHANICAL ENGINEERING

- Design heating, ventilation, and air conditioning (HVAC) systems for buildings.
- Size and select HVAC equipment such as chillers, boilers, and air handling units. Design ductwork and piping layouts for efficient air and water distribution.
- Optimize energy efficiency and indoor air quality through HVAC system design.

- Ensure compliance with electrical codes and safety standards.
- Electrical (Commercial & Industrial) design
- HT/LT switchgear quality inspection.
- System maintenance planning.
- Engineering staff training for electrical design and development work.
- Cost reduction in utilities in process machines.

prevent backups and flooding.

- Incorporate water conservation measures such as low-flow fixtures and rainwater harvesting.
- Water Supply System (Commercial & Industrial) Design.
- Sewerage System (Commercial & Industrial) Design.
- Storm Water Design. Drainage System Design. Industrial Effluent Design.

ELECTRICAL ENGINEERING

- Design electrical systems for power distribution, lighting, and fire alarm systems.
- Specify electrical equipment such as transformers, switchgear, and distribution panels.
- Design lighting layouts for optimal illumination and energy efficiency.

PLUMBING ENGINEERING

- Design plumbing systems for water supply, drainage, and sewage disposal.
- Size and select plumbing fixtures, piping, and pumps.
- Design sanitary and storm water drainage systems to

FIRE PROTECTION ENGINEERING

- Design fire suppression systems including sprinklers, standpipes, and fire pumps.
- Specify fire detection and alarm systems for early warning of fire incidents.



BUILDING SYSTEMS MASTER

MEP ENGINEERING

FIRE PROTECTION ENGINEERING

- Design smoke control systems to manage smoke movement in case of fire.
- Ensure compliance with fire codes and regulations for life safety.

BUILDING AUTOMATION SYSTEMS (BAS)

- Design and integrate building automation systems for centralized control of MEP systems.
- Specify sensors, actuators, and controllers for monitoring and regulating building conditions. Implement energy management strategies for optimizing MEP system performance.
- Provide remote monitoring and diagnostics capabilities for proactive maintenance.

ENERGY MODELING AND ANALYSIS

- Perform energy modeling to evaluate the energy performance of MEP systems. Analyze energy consumption and identify opportunities for energy savings.
- Recommend energy-efficient technologies and design strategies.
- Provide life cycle cost analysis to assess the economic viability of energy-saving measures.

COMMISSIONING AND TESTING

- MEP System Commissioning: Ensure Installation & Functionality. HVAC Testing & Balancing Verify the performance of electrical and plumbing systems against design specifications.
- Document & Report Compliance Findings.

Sustainability and Green Building:

- Sustainable MEP for Green Certification.
- MEP Systems: Energy-Efficient, Water-Wise, Healthy Indoors Specify Solar PV & Geothermal Systems.
- Collaborate with architects and other design professionals to achieve sustainability goals



ROAD ENGINEERING EXCELLENCE

ROAD AND HIGHWAY ENGINEERING

ROADWAY DESIGN

- Design alignment, profile, and cross-sectional elements of roads.
- Determine lane configurations, road width, and shoulder types.
- Implement standards for curvature, grade, and sight distance to ensure driver safety.

TRAFFIC ENGINEERING

- Analyze traffic flow and capacity to optimize roadway efficiency.
- Design traffic control devices such as signals, signs, and markings.
- Implement intelligent transportation systems (ITS) for enhanced traffic management.

PAVEMENT ENGINEERING

- Design pavement structures including asphalt, concrete, and composite systems.
- Perform soil testing and materials selection for subgrade and base layers. Implement pavement management systems for maintenance and rehabilitation planning.

SAFETY ANALYSIS

- Conduct road safety audits and collision analysis.
- Design roadway features to enhance safety, including barriers, lighting, and pedestrian facilities.
- Implement road safety improvement programs based on accident data.

ENVIRONMENTAL CONSIDERATIONS

- Assess environmental impacts of highway projects through environmental impact statements.
- Design drainage systems for storm-water management and erosion control.
- Implement green construction practices to minimize environmental footprint.

CONSTRUCTION MANAGEMENT

- Highway Construction: Design Compliance Oversight
- Construction Coordination: Contractors, Engineers, Stakeholders.
- Construction Monitoring



INHERENT DESIGN PRECISION

ROAD AND HIGHWAY ENGINEERING

REGULATORY COMPLIANCE

- Ensure highway designs comply with national and local standards and regulations.
- Obtain necessary permits and approvals from governmental agencies.
- Stay updated on changes in laws and standards affecting highway engineering.

INNOVATIVE TECHNOLOGIES

- Incorporate advanced materials and technologies such as high-performance concrete or recycled materials.
- Utilize geospatial and modeling technologies for design and management.

MAINTENANCE & REHABILITATION

- Design maintenance strategies for extending the life of highway infrastructure.
- Evaluate existing road conditions and prioritize rehabilitation efforts.
- Implement maintenance operations such as resurfacing, sealing, patching.





OPTIMISED SOLUTIONS

VALUE & FORENSIC ENGINEERING

VALUE ENGINEERING

Value Engineering is primarily applied during the planning stages of a project but can be implemented during any phase to improve profitability, efficiency, and effectiveness

OBJECTIVE OPTIMIZATION

- Aim to maximize the function of a product or project at the lowest cost.
- Focus on the value ratio of function to cost.

FUNCTION ANALYSIS

- Identify and analyze the functions of an item or process essential for performance.
- Prioritize these functions to enhance overall system efficiency.

COST REDUCTION

- Evaluate all aspects of a project to identify potential cost savings without compromising quality or performance.
- Implement strategies to reduce unnecessary expenditures.

MULTIDISCIPLINARY TEAMWORK

- Utilize a team from diverse disciplines to bring different perspectives and expertise.
- Encourage creative problem-solving and innovation through collaborative brainstorming.

LIFECYCLE ANALYSIS

- Consider the entire lifecycle cost of a project or product, from conception to disposal.
- Optimize long-term investments focusing on sustainability and operational costs.

ALTERNATIVE SOLUTIONS

- Generate multiple alternatives for achieving the desired functions.
- Compare and assess these alternatives based on cost effectiveness and reliability.



ENGINEERING INVESTIGATION EXPERTISE

VALUE & FORENSIC ENGINEERING

IMPLEMENTATION STRATEGIES

- Develop actionable plans to integrate the most cost-effective solutions.
- Ensure smooth execution with minimal disruption to ongoing operations.

PERFORMANCE MONITORING

- Track the performance of implemented solutions against expected outcomes.
- Use feedback to refine and optimize processes continually

FORENSIC ENGINEERING

- Forensic engineering is crucial in understanding why

engineering failures occur and in preventing future incidents by providing

- critical insights and recommendations derived from thorough investigations

INCIDENT INVESTIGATION

- Investigate failures in structures, materials, products, or systems that have caused accidents or do not function as intended.
- Examine the sequence of events that led to the failure.

ROOT CAUSE ANALYSIS

- Determine the underlying reasons for the failure through detailed analysis.
- Utilize scientific and engineering principles to

uncover the causes of failures.

EVIDENCE COLLECTION

- Collect and preserve physical evidence from the site of the incident.
- Use photographs, samples, and other data gathering techniques to document findings.

TECHNICAL ASSESSMENT

- Perform tests and simulations to analyze hypotheses about the failure.
- Use advanced tools and technologies for precise measurements and reconstruction.



COMPREHENSIVE TESTING SOLUTIONS

TECHNICAL AUDIT, LABORATORY & FILED TESTING

TECHNICAL AUDIT

Technical audits serve as a systematic review process to assess the technical aspects of operations, identify areas for improvement, and ensure compliance with standards and regulations

alignment with actual practices.

- Propose strategies to enhance operational efficiency, reliability, and safety.

PERFORMANCE EVALUATION

- Analyze the performance of equipment, systems, or processes against established benchmarks or performance indicators.

COMPLIANCE REVIEW

- Assess adherence to industry standards, regulations, and internal policies.
- Verify that processes and procedures comply with legal requirements and best practices.

RISK ASSESSMENT

- Identify potential risks related to equipment failure, safety hazards, or operational deficiencies.
- Evaluate the likelihood and impact of identified risks on business operations.

DOCUMENTATION EXAMINATION

- Review technical documentation, including design specifications, operational manuals, and maintenance records.
- Ensure documentation accuracy, completeness, and

RECOMMENDATIONS AND IMPROVEMENT

- Provide recommendations for corrective actions or identify areas of inefficiency, underperformance, or non-compliance.



INTEGRATED TESTING SOLUTIONS

TECHNICAL AUDIT, LABORATORY & FILED TESTING

AUDIT REPORTING

- Compile findings, conclusions, and recommendations into a comprehensive audit report.
- Present audit results to management or stakeholders for review and decision-making.

decision- making and ensure product integrity.

MATERIAL ANALYSIS

- Assess the composition, structure, and properties of materials.
- Determine material suitability for specific applications or industries.

ENVIRONMENTAL TESTING

- Analyze the impact of environmental factors on materials or products.
- Test for resistance to temperature, humidity, corrosion, and other environmental stressors.

FOLLOW-UP AND MONITORING

- Monitor the implementation of audit recommendations and corrective actions.
- Conduct follow-up audits to assess the effectiveness of implemented measures and ensure sustained compliance.

QUALITY CONTROL

- Verify the quality and consistency of results.
- Ensure products meet specified standards and requirements.

LABORATORY TESTING

Laboratory testing plays a crucial role in product development, quality assurance, and compliance across various industries, providing essential data and insights to support

PERFORMANCE TESTING

- Evaluate the performance characteristics of products or components.
- Test durability, reliability, and functionality under controlled conditions.



THOROUGH ASSESSMENT SERVICES

TECHNICAL AUDIT, LABORATORY & FILED TESTING

CHEMICAL ANALYSIS

- Identify and quantify chemical components in materials or products.
- Assess chemical properties, purity, and compatibility.

MECHANICAL TESTING

- Measure mechanical properties such as strength, hardness, and elasticity.
- Conduct tension, compression, bending, or impact tests to assess mechanical performance.

PROTOTYPE VALIDATION

- Test prototypes to validate design concepts and performance predictions.
- Identify design flaws or areas for improvement.

RESEARCH AND DEVELOPMENT SUPPORT

- Provide data and insights to support research and development efforts.
- Assist in product design, optimization, and innovation.

REGULATORY COMPLIANCE

- Ensure compliance with regulatory requirements and industry standards.
- Perform tests to meet certification or accreditation criteria.

FIELD TESTING

Field testing provides valuable insights into the real-world performance and usability of products, systems, and equipment, helping to validate design assumptions, identify potential issues, and optimize performance for end-users.

REAL-WORLD PERFORMANCE EVALUATION

- Assess how products, systems, or equipment perform under actual operating conditions.
- Measure performance metrics in real-world environments.



ROBUST TESTING FRAMEWORKS

TECHNICAL AUDIT, LABORATORY & FILED TESTING

SITE-SPECIFIC ANALYSIS

- Conduct tests directly at the location where the equipment or system will be used.
- Evaluate the influence of environmental factors, such as weather, terrain, and temperature, on performance

FUNCTIONAL CHECKS

- Ensure Equipment Integration with Infrastructure and industry standards infield operations.
- Conduct tests to validate adherence to safety, environmental, and performance regulations

- Confirm that equipment or systems operate as intended and meet performance expectations.
- Test functionality, calibration, and safety features in real- world scenarios.

USER EXPERIENCE FEEDBACK

- Gather feedback from end-users on usability, functionality, and satisfaction with the product or system. Incorporate user insights to identify areas for improvement and enhance user experience.

MAINTENANCE ASSESSMENT

- Evaluate the need for maintenance or repairs based on field performance observations.
- Spot potential issues to prevent downtime or operational disruptions. Detailed reports summarizing field test results, conclusions

INSTALLATION VERIFICATION

- Verify alignment with design specifications and performance requirements

REGULATORY COMPLIANCE VERIFICATION

- Ensure compliance with regulatory requirements.