

# 2025 MEDS DESIGN SERVICES

PRE-QUALIFICATION  
DOCUMENTS  
FOR MEP & STRUCTURAL  
WORKS - REV.01

**MEDS**

DESIGN & ENGINEERING CONSULTANCY

للاستشارات و التصاميم الهندسية



# ABOUT MEDS

Welcome to MEDS, where a team of seasoned professionals brings decades of specialized expertise in infrastructure, MEP (Mechanical, Electrical, and Plumbing) and Structural design across the Middle East and Africa. Our rich industry experience provides us with a profound understanding of the intricate challenges in modern construction.

At MEDS, we offer a wide range of services, empowering our clients to navigate the entire spectrum of the Structural and MEP industry with ease. From engineering design, stress analysis, and computational fluid dynamics (CFD) to BIM (Building Information Modeling) and shop drawings, our customized solutions are designed to satisfy the unique needs of each project.

We proudly serve a variety of sectors, including commercial, residential, healthcare, hospitality, outdoor cooling, and industrial. Our end-to-end solutions guide projects from concept to completion, ensuring efficiency, sustainability, and the highest quality standards. With our commitment to excellence and innovation, MEDS is your trusted partner in overcoming the complexities of today's building environment with confidence and expertise.



WE ARE  
YOUR BEST  
PARTNER

By choosing MEDS, you're not only getting decades of proven experience but also a partner dedicated to pioneering sustainable and high-quality solutions.

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# VISION & MISSION

At MEDS, we lead the way in developing contemporary infrastructure with our specialized expertise in Mechanical, Electrical, and Plumbing (MEP) and Structural design.



## VISION

*Our goal is to become a leading global consultancy in MEP and structural design, at the forefront of developing innovative and sustainable engineering solutions. We aim to shape resilient and energy-efficient infrastructures that enhance the quality of life in the communities we serve.*



## MISSION

*Our mission is to deliver exceptional MEP & Structural design services by leveraging cutting-edge technology and our team's expertise to provide sustainable, efficient, and cost-effective solutions. We are committed to advancing the built environment through collaboration, integrity, and a focus on client satisfaction and environmental stewardship.*





# Our Services

## ENGINEERING & DESIGN SERVICES

We provide customized MEP and structural engineering and drafting solutions tailored to meet the specific needs and timelines of each project. With decades of experience, we have supported many prestigious companies in the region with their design and drafting requirements, establishing ourselves as a leading authority in this highly competitive market. Our expertise encompasses a wide range of advanced software, including AutoCAD, REVIT, SolidWorks, Inventor, CAESAR II, STAAD Pro, Bluebeam, ROBOT, ETABS, SAFE, STAAD, PCACOL, COMPUFIX, PROFIS, MATHCAD, Microsoft Office, and 3D Max. These tools enable us to deliver the most precise design and drafting solutions to our clients.

Our team consists of qualified design experts, engineers, draftsmen, and 3-D modelers. Our technical expertise and efficient design processes make us an invaluable partner to our clients, allowing them to concentrate on their core business activities while we handle their engineering and drafting needs.

ENGINEERING & DESIGN SERVICES

BIM MEP MODELING

MEP DRAFTING & SHOP DRAWING SERVICES

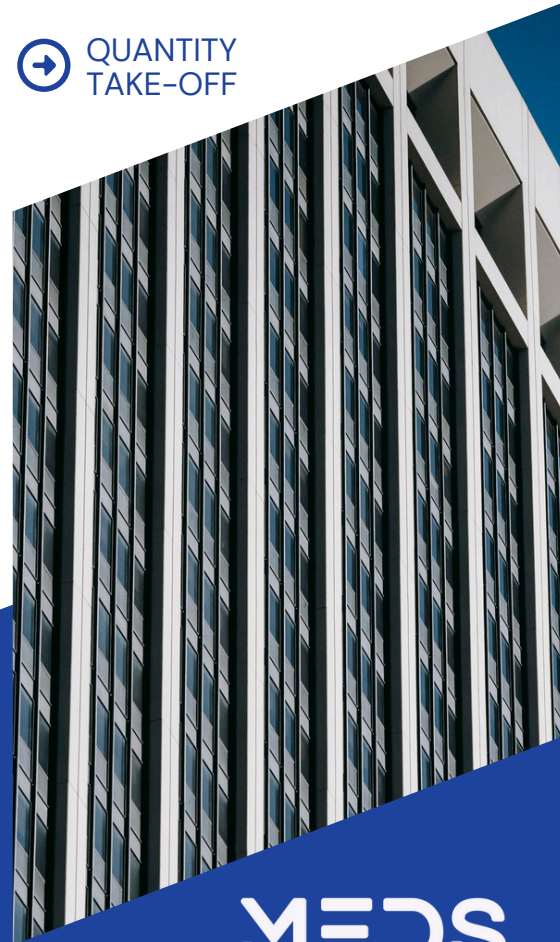
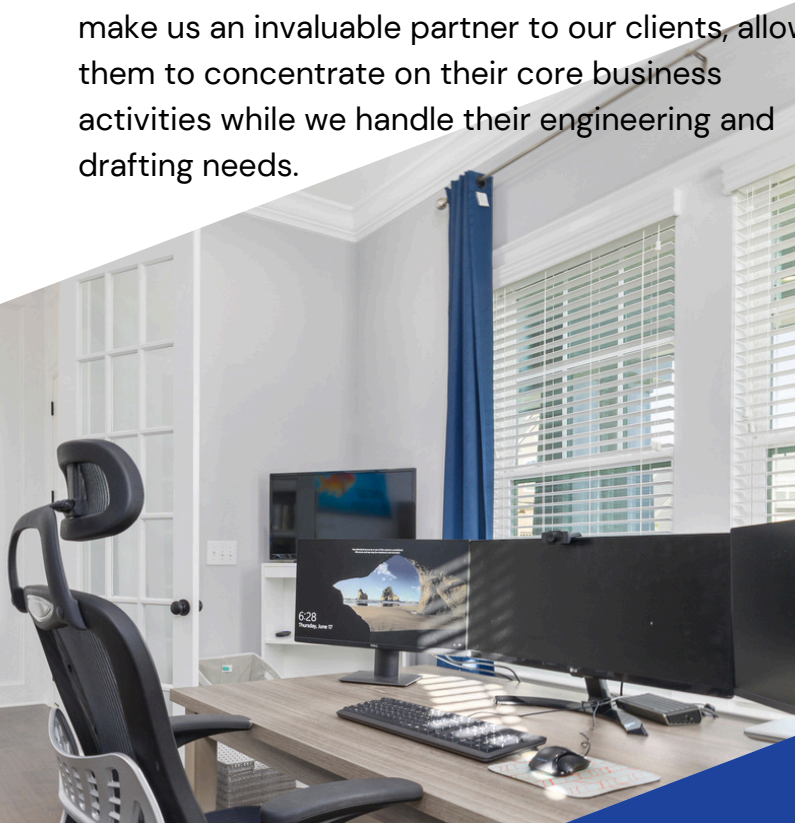
MEP VALUE ENGINEERING

CFD ANALYSIS

PIPE STRESS & SUPPORT ANALYSIS

Outdoor Cooling Design

QUANTITY TAKE-OFF

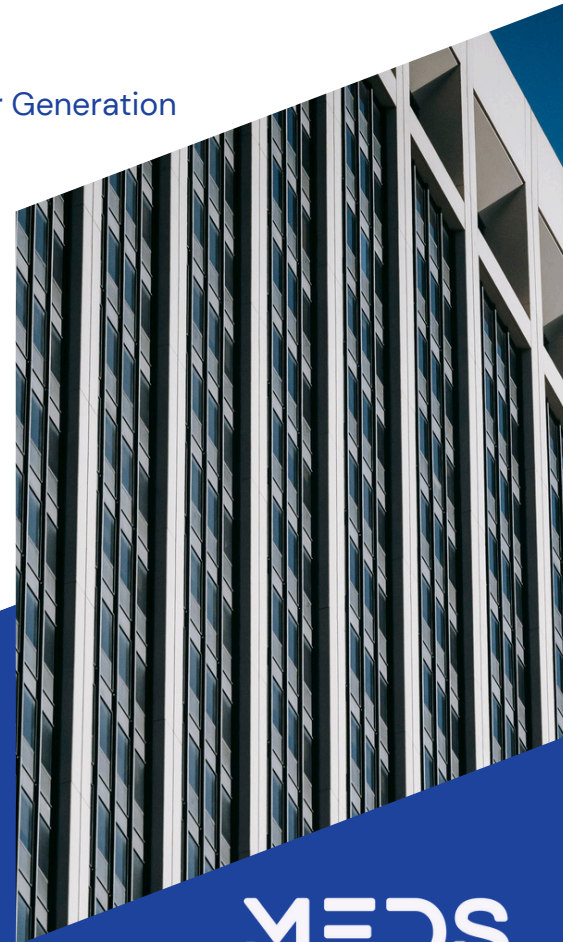




# Our Services

## ➔ MEP systems design

- ➔ HVAC System
- ➔ Outdoor Cooling
- ➔ Smoke Management System
- ➔ Water Supply System
- ➔ Drainage System
- ➔ Fire Fighting System
- ➔ Gas System
- ➔ Building Management System
- ➔ Steam System
- ➔ Drainage Vaccum System
- ➔ Infrastructure System
- ➔ Solid Waste System
- ➔ 11 KV Single Line
- ➔ LV Single Line
- ➔ Lighting & Lighting Control
- ➔ Earthing & Lightning
- ➔ Small Power
- ➔ Structural Cable System
- ➔ Fire Detection & Alarm
- ➔ Audial & Background System
- ➔ CCTV
- ➔ Power Generation





# Our Services

## ➔ Structural Engineering

- ➔ Reinforced concrete
- ➔ Prestressed concrete
- ➔ Precast concrete
- ➔ Steel structures
- ➔ Composite structures
- ➔ Aluminum structures
- ➔ Engineering Value
- ➔ Form-finding structures
- ➔ Homogenous cladding panels (glass, alico bond...)
- ➔ Repair, Rehabilitation & Structural Enhancement Consultancy
- ➔ Timber structures





## BIM MEP MODELING

MEDS uses full suite of AUTODESK for BIM Modeling to improve model accuracy in the office and minimize rework and reduce waste in the fabrication shop and during construction. We use MEP detailing and fabrication software such as CADmep, CAMduct and ESTmep to develop accurate fabrication drawings to facilitate offsite fabrication. We also use Navisworks – the 3-D model review software to identify clashes among various services to reduce time and wastage during the construction phase. AutoCAD Software is used for developing 2D and 3D drawings. Using BIM 360 Design, our engineers and designers are able to boost productivity, improve collaboration, and condense months-long project phases into days.



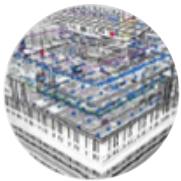
**3D Visualization**

- Create building models using Autodesk Revit for Architects, Consulting engineers, Structural Engineers and Contractors
- Using 2D layout plans and elevations to create entire architectural and structural building models.



**Revit Families**

- Huge database of Autodesk Revit Objects including that from manufacturers
- Creating new BIM objects based on 2D plans & elevations from Architects, Consultants & Engineers
- Maintain models throughout the duration of the projects – from design through handover



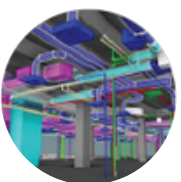
**Detailing, Shop drawing & Fabrication layout**

- Shop drawings for MEP services as per international standards and Clients' requirements
- Detailed fabrication drawings for onsite/offsite fabrication of MEP services (ducts, pipes, containment etc.)
- Installation detailing for MEP services



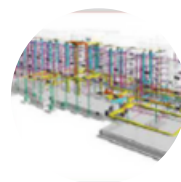
**BIM Facilities Management**

- LOO 500 – As-Built model Improved space management Cost efficiency
- End-to-end as-built documentation for renovation and maintenance
- COBie Integration – Setting up and Structuring COBie database
- Setting up the models for COBie compliance.



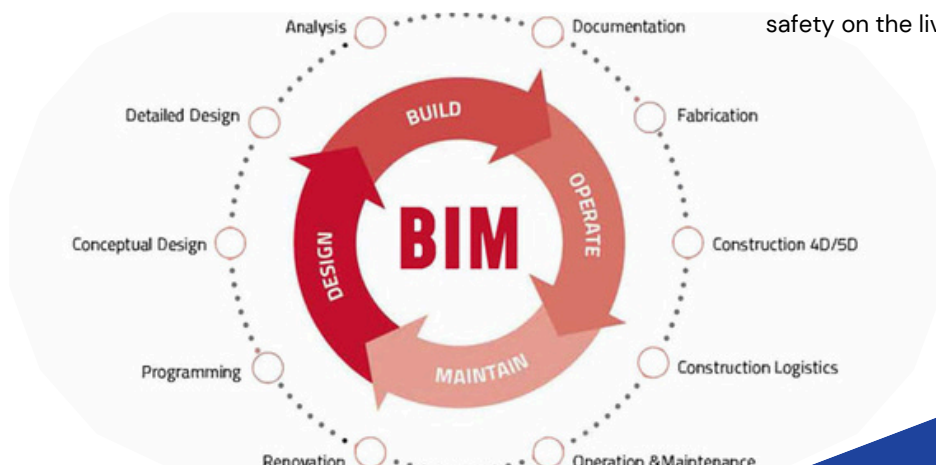
**BIM Clash Coordination Services**

- The entire building is constructed virtually
- All elements with their precise geometry and properties
- Realistic construction sequences are recreated
- Clashes are detected and resolved before the actual construction starts



**Pre-Construction Site Logistics**

- Create a robust and well thought out logistics management strategy to optimize construction site efficiency and safety, thus decreasing waste.
- Management of materials delivery and distribution using dynamic site layout planning and BIM applications.
- Improved understanding of logistics information to ensure benefits to health & safety on the live construction site.





## MEP DRAFTING

Preparation of MEP shop drawings and getting these approved is one of the major challenges that contractors face. MEP shop drawing is one of our core areas of expertise. We have a large team of highly qualified engineers and draftsmen to help prepare shop drawings as per the client's requirements. We act as the Drawing Support Service provider for consultants, main contractors and MEP contractors. We study and prepare our drawings according to the best engineering practices and project requirements. Our teams also have good understanding of architectural, structural and civil engineering requirements. We also raise RFI's on behalf of the clients to ensure appropriate & adequate information is available for designing the services and to avoid delays during construction. We offer superior quality, time and cost-effective Computer Aided Design & Drafting (CADD) Services and shop drawings for full range of MEP services, including:

### MECHANICAL DRAFTING

- HVAC
- Fire Fighting
- Water Supply
- Drainage System
- Gas System
- Steam System
- Infrastructure
- District Cooling System

### ELECTRICAL DRAFTING

- Lighting & Emergency Lighting
- Small Power & Containment
- Fire Alarm System
- Earthing & Lightning Protection
- Security Systems
- Building Management System
- SMATV





## PIPE STRESS & SUPPORT ANALYSIS

Piping and other mechanical services are typically checked to ensure that the routing, loads, hangers and supports are properly designed so that allowable stress is not exceeded under different loads like the sustained, operating and pressure testing loads as stipulated by the ASME B31.3, BS 5950 or any other applicable codes and standards. This evaluation is usually performed with the help of specialized pipe stress analysis software such as CAESAR II V.12. We have a team of trained engineers to do these kinds of analyses.

- Design basis review
- Piping studies and routing
- Pipe Stress Analysis
- Piping material specifications
- Isometrics/Spool drawings
- Pipe support standards & analysis

## VALUE ENGINEERING

Value engineering (VE) is a systematic method to improve the "value" of goods and services by using an examination of function. Value, as defined, is the ratio of function to cost. Value can therefore be increased by either improving the function or reducing the cost. Value Engineering opportunities may arise from:

- Over designed services
- Rerouting of services
- System redesign
- Product/ System Lifecycle (PLC) considerations

We have a team of design engineers who are trained and experienced in value engineering of MEP systems.

## QUANTITY TAKE-OFF

Quantity Take-off (or Material Take-off, as it is called sometimes) is a critically important activity both at the bidding stage and execution stage of a project. This activity has a direct impact on the cost and profitability of a project. JES has a team of qualified engineers with experience in quantity take-off from both AutoCAD and PDF formats. Our engineers are trained in Bluebeam Revu software that helps in comprehensively capturing the material quantities in a fraction of the time required for the manual process. Accuracy is ensured by tracking markups. Bluebeam also provides a collaborative environment for architects, engineers, contractors and subcontractors to review documents more efficiently. In a Bluebeam session, documents can be posted for the entire team to access simultaneously in a collaborative environment. This tool allows teams to complete design reviews in days, compared to a normal series of events that may take weeks.

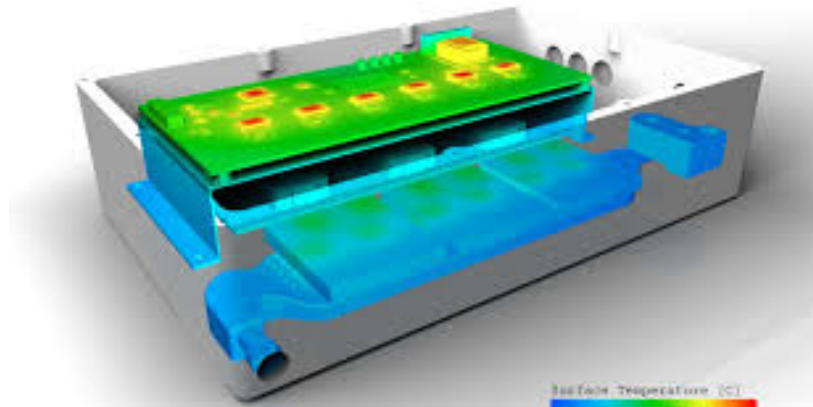
- Critical activity for accurate bid and also during project execution
- Has a direct impact on project profitability and wastage
- Quantity take-off from both AutoCAD drawings and PDF documents
- Use of latest Bluebeam Revu 20 software for accuracy and speed
- Bluebeam also provides collaborating environment for all stakeholders for quick decision making



## CFD ANALYSIS

Experts in engineering simulations related to fluid dynamics (CFD), structural analysis (FEA), computational electromagnetics, digital twin, AI & ML, AR & VR etc.

Equipped with authorized licenses of Hexagon Cradle CFD (IN381182) and Cradence Reality DC Design software (63404\_107C610B4) for CFD. Other licenses, as per project requirements, are taken on short term lease basis.



- Fluid Flow Analysis
- Heat Transfer Analysis
- Multi-phase flow analysis
- HVAC analysis
- Turbo-machinery Analysis
- Combustion Modelling
- Smoke Management System

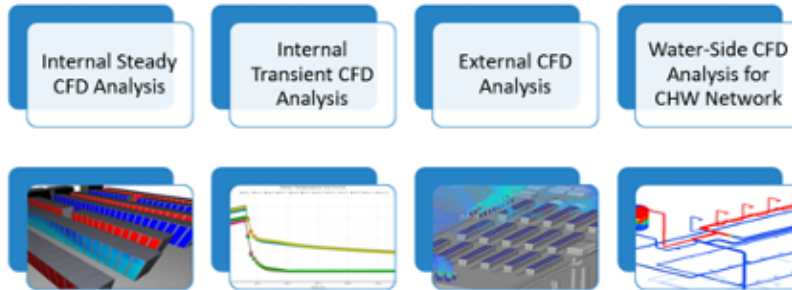
- Data Center Internal, External, Hydronics CFD
- Thermal Comfort for Indoor and outdoor
- Airflow & Ventilation in Building Complex
- Airflow & Thermal in Stadiums/Auditoriums
- Airflow in Hospital Clean-Rooms
- Pollutant Dispersion in City Scale
- Solar Radiation, Daylight & Shadow Analysis
- Lighting Illuminance Analysis
- Fire, Smoke & Visibility Simulation
- Airflow in Train Tunnel & Platform

**CFD Services  
Capability**

**Capabilities for  
HVAC  
Application**

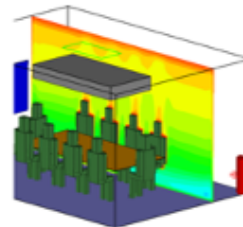
# CFD ANALYSIS

## Data Centre Simulations



## Thermal Comfort in Office Spaces

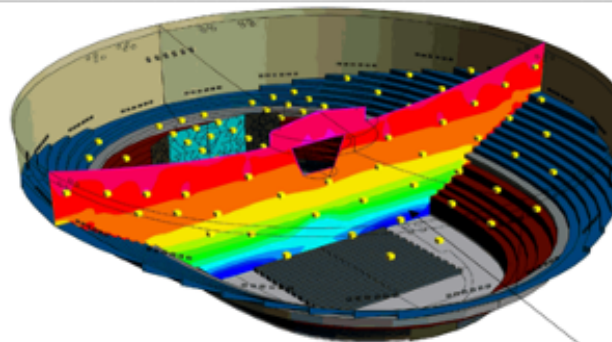
- Age of air & contaminant concentration inside room
- Predicting PMV/PPD/SET (Predicted Mean Vote / Predicted Percentage Dissatisfied) for effective temperature, air quality, ventilation efficiency, etc.
- Evaluating temperature and quantity of perspiration/sweat of a human body
- Effect of cloths wore, body metabolism, respiration, vasomotion, blood flow etc. on overall body thermal comfort



## Airflow & Ventilation in Building Complex



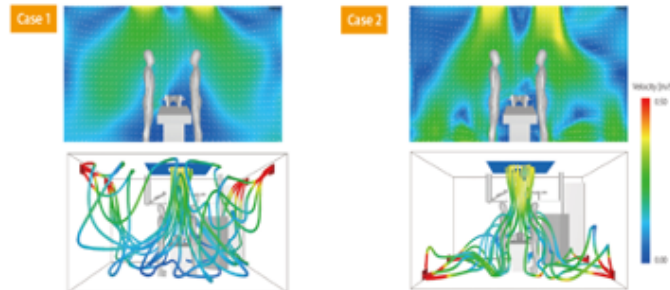
## Airflow & Thermal in Stadiums/Auditoriums



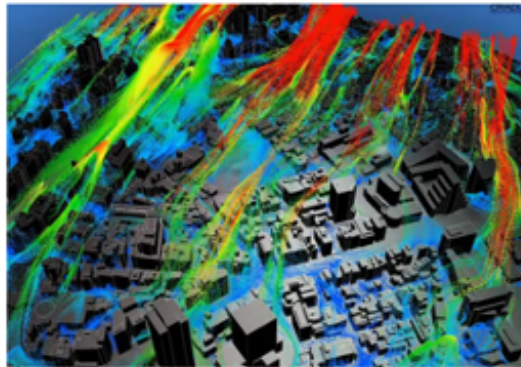


## CFD ANALYSIS

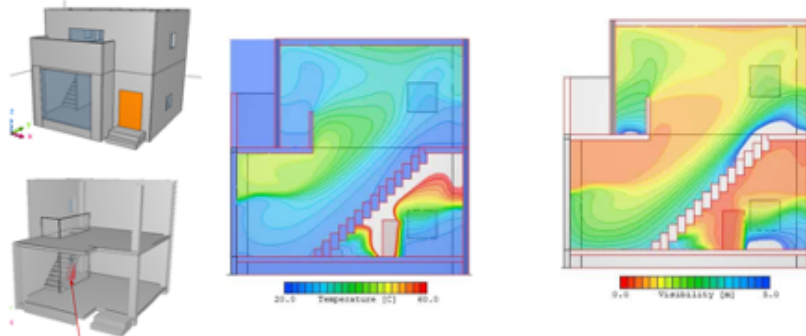
### Airflow in Hospital Clean-Rooms



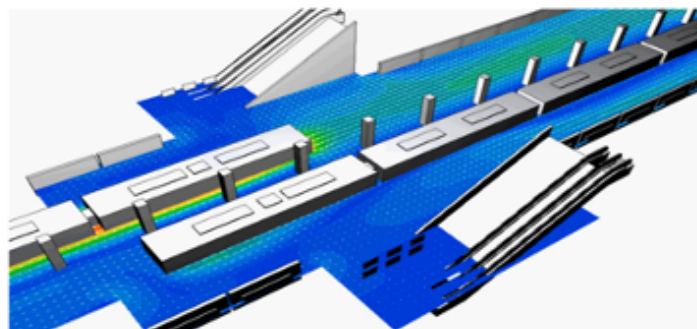
### Pollutant Dispersion in City Scale



### Fire, Smoke & Visibility Simulation

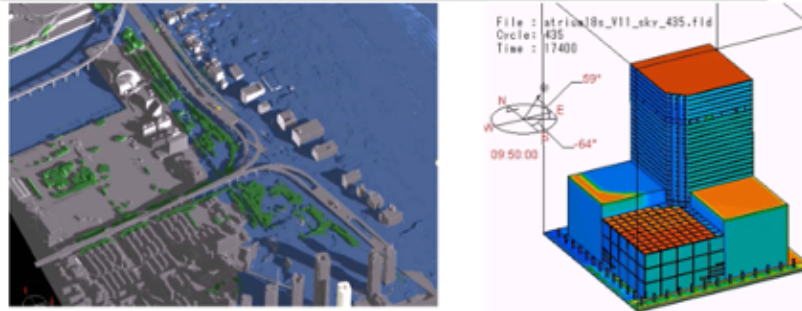


### Airflow in Train Tunnel & Platform

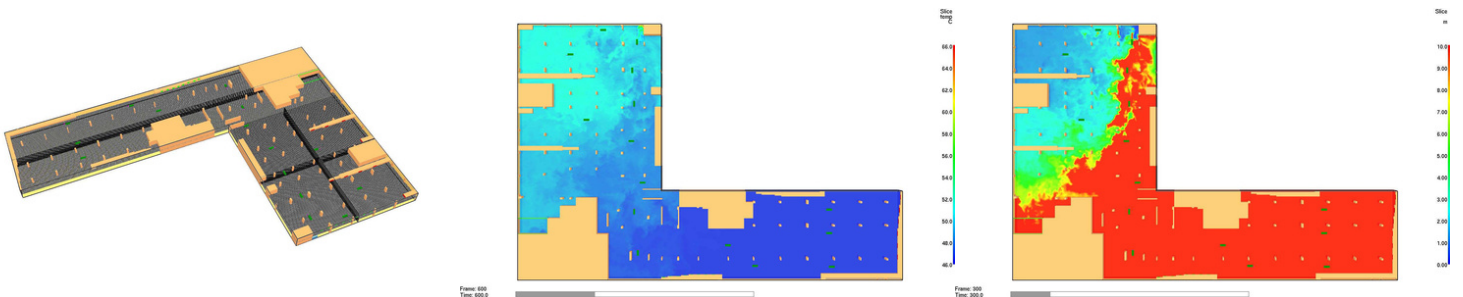
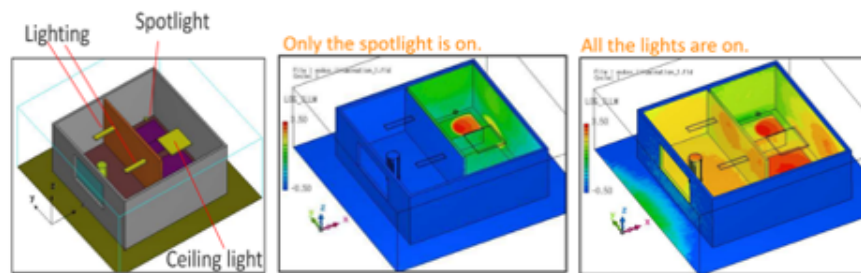


## CFD ANALYSIS

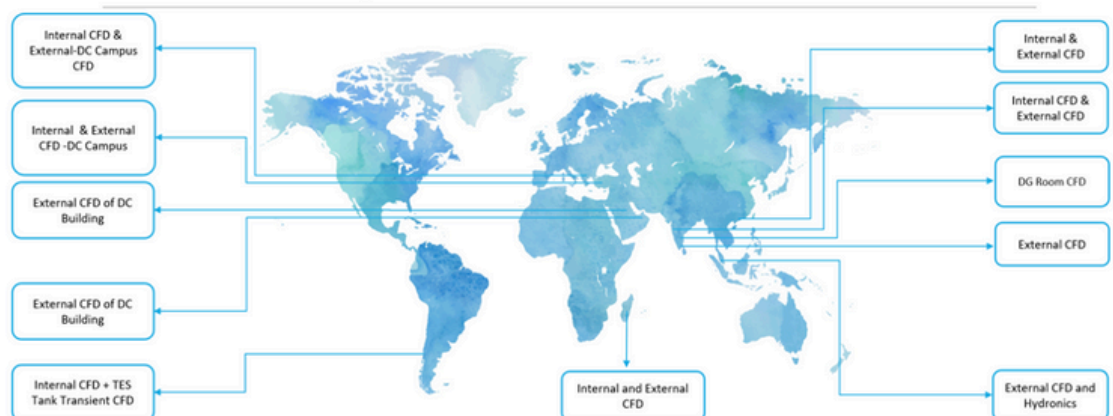
### Solar Radiation, Daylight & Shadow Analysis



### Lighting Illuminance Analysis



### Global Footprint





# SELECTION OF KEY PROJECTS

*Our team has successfully executed numerous projects across the Middle East and Africa, delivering a range of specialized engineering services. We excel in providing MEP design solutions, conducting advanced CFD analyses, and performing comprehensive ESP calculations. Our expertise ensures that every project meets the highest standards of efficiency and innovation, tailored to the unique demands of each location.*

## RIXOS HOTEL - IRAQ.



*In our Rixos project in Iraq, we executed a comprehensive CFD analysis for basement smoke management. Our team utilized advanced simulation techniques to assess and optimize the airflow and smoke control systems within the complex basement environment. The analysis ensured that the smoke management system adhered to safety regulations while maximizing efficiency and performance. This project highlights our expertise in delivering tailored, high-standard solutions to enhance safety and functionality in challenging settings.*

## FOLD COTE D'IVOIRE - ABIDJAN



For the Fold Cote d'Ivoire project in Abidjan, our team conducted a meticulous MEP (Mechanical, Electrical, and Plumbing) design review. Our experts critically evaluated the existing designs to ensure compliance with industry standards and local regulations while identifying opportunities for enhanced efficiency and integration. This comprehensive review process allowed us to provide key insights and recommendations, resulting in optimized system performance and reliability. Through our thorough MEP design review, we contributed to the project's success by ensuring a sustainable and cost-effective approach to building services.

## VGE SHOWROOM - COTE D'IVOIRE - ABIDJAN



*In Côte d'Ivoire, we successfully delivered comprehensive MEP design services for the VGE Showroom, a project that exemplifies our commitment to excellence and innovation. Our team meticulously crafted mechanical, electrical, and plumbing solutions tailored to the showroom's specific needs, ensuring optimal functionality and sustainability. Through our expertise, the VGE Showroom stands as a testament to cutting-edge design and engineering prowess in the region.*

## VARIOUS PROJECTS - KSA



In Saudi Arabia, our team specialized in delivering precise External Static Pressure (ESP) calculations across various high-profile projects. These calculations are critical for ensuring the efficiency and performance of HVAC systems, tailored to the unique environmental and structural needs of the region. Our work in KSA stands out for its accuracy and adherence to local standards, contributing to the effectiveness of climate control solutions and enhancing operational sustainability. Through these projects, we have strengthened our reputation for providing highly technical and essential engineering services.

## IMMEUBLE EUROFEU - COTE D'IVOIRE - ABIDJAN



*Located in the vibrant city of Abidjan, Côte d'Ivoire, the IMMEUBLE EUROFEU project showcases our comprehensive MEP design services tailored to meet the building's specific requirements. Our team expertly developed mechanical, electrical, and plumbing systems, ensuring seamless integration and functionality throughout the structure. With a focus on sustainability and efficiency, the IMMEUBLE EUROFEU stands as a premier example of modern engineering solutions in the region, reflecting our commitment to quality and innovation.*



## LABOR ACCOMODATION - KSA



*In Saudi Arabia, we provided comprehensive design services for a labor accommodation facility, covering architectural, structural, and MEP aspects. Our team focused on creating practical and comfortable living spaces, ensuring safety and efficiency throughout the structure. By integrating advanced design techniques, we delivered a sustainable and high-quality environment, enhancing the well-being of residents and meeting all local standards.*

## SIX PRIVATE VILLAS - OMAN



For six private villas in Oman, we provided comprehensive MEP design services. Our work focused on integrating efficient climate control, state-of-the-art electrical systems, and reliable plumbing to enhance comfort and sustainability. The result was a seamless blend of functionality and luxury, tailored to the needs of modern villa living.

## TAJ\_JEDDAH - KSA



*For the prestigious Taj Jeddah project, we delivered advanced MEP design solutions that align with the project's luxury standards. Our mechanical systems ensure effective climate control crucial for Jeddah's environment, while our electrical designs focus on energy efficiency and smart technology integration. The plumbing systems were engineered for sustainability and high performance. Each aspect of our design was crafted to elevate the guest experience, ensuring the Taj Jeddah offers unparalleled comfort and sophistication.*

## PRIVATE VILLA - OUTDOOR COOLING



*We conducted a computational fluid dynamics (CFD) analysis for outdoor cooling at a private villa. This analysis optimized airflow and cooling efficiency in outdoor spaces, considering local climate conditions and architectural features. The results informed strategic placement of cooling systems and landscape elements to maximize comfort, reduce energy consumption, and maintain aesthetic appeal, ensuring a comfortable and inviting outdoor environment for the villa's residents.*

## WEST WALK - OUTDOOR COOLING



For the West Walk project in Qatar, our company provided crucial CFD analysis to optimize outdoor cooling solutions. This involved simulating airflow and environmental conditions to enhance comfort levels in public spaces. Our recommendations improved the efficacy of cooling systems, aligning with sustainable practices and ensuring energy efficiency. While respecting client confidentiality, we proudly contributed to creating a comfortable and inviting atmosphere in line with the client's vision.

## VARIOUS PROJECTS IN QATAR - OUTSOURSING



*Our company has proudly contributed to multiple prestigious projects across Qatar by providing outsourced MEP design services. While confidentiality agreements prevent us from sharing specific images, our portfolio includes a diverse array of projects ranging from luxury residential buildings and state-of-the-art commercial complexes to innovative mixed-use developments and high-end hospitality venues.*

*Our commitment to maintaining client confidentiality is paramount, reflecting our respect and dedication to upholding the highest standards of professional integrity.*



## LEBANESE VILLAGE - ERBIL



*For the Lebanese Village project in Erbil, our team delivered comprehensive MEP (Mechanical, Electrical, Plumbing) design services. We focused on energy-efficient HVAC systems, reliable electrical infrastructure with smart technologies, and sustainable plumbing solutions. Our work ensured the project met local regulations while maintaining the cultural and architectural essence of a traditional Lebanese village.*

## AL-SHAMAA PROJECT SAIDA



For the Saida Autostrad Al-Shamaa project, we delivered comprehensive MEP design services. Our focus was on efficient HVAC systems, robust electrical infrastructure, and sustainable plumbing solutions. The design ensured optimal functionality, energy efficiency, and compliance with local regulations, supporting the project's operational needs effectively.

## AL AHLAM COMPLEX - SAIDA



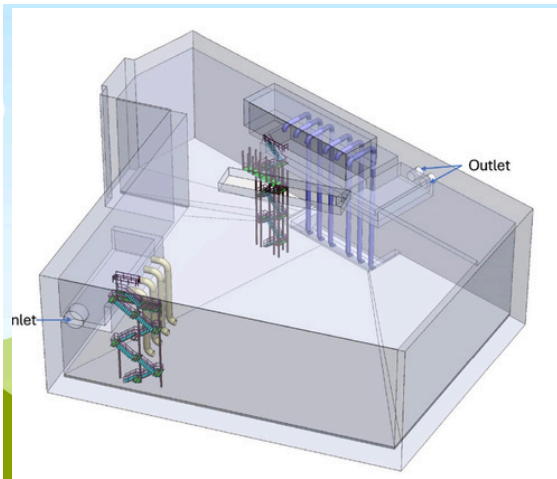
*For the Al Ahlam Complex in Saida, we delivered comprehensive MEP design services. Our focus was on efficient HVAC systems, robust electrical infrastructure, and sustainable plumbing solutions. The design ensured optimal functionality, energy efficiency, and compliance with local regulations, supporting the project's operational needs effectively.*

## MR. FAHAD ABDULLAH ALTHANI PALACE-QATAR



*Redesigned the cooling system to achieve 18°C indoor temperature instead of the original 21–22°C design. Scope included recalculating cooling loads using HAP, updating HVAC drawings, and integrating a treated FAHU to ensure humidity control and prevent condensation.*

## STAIRCASE IN A RAIN WATER HARVESTING-QATAR



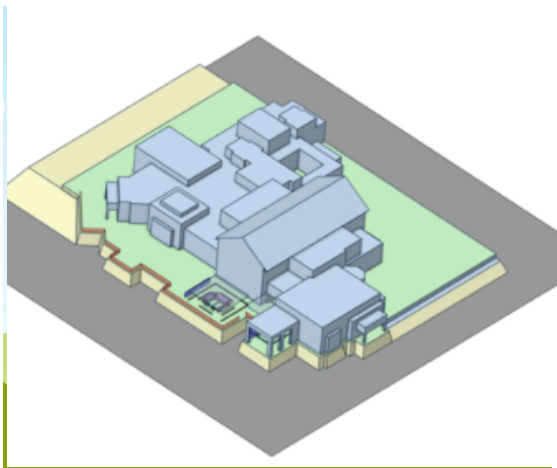
CFD Analysis of Forces Acting on a Staircase in a Rainwater Harvesting Reservoir.

The reports outline the flow and free surface study of the reservoir at steady state conditions. The report documents the computational simulation of the flow conditions as per the drawing.

The objectives are as follows:

1. To determine the Force acting on the staircase close to outlet at steady state conditions
2. To analyse the effect of flow on staircase at steady state conditions.

## VVIP VILLA-QATAR



*We conducted a computational fluid dynamics (CFD) analysis for outdoor cooling at a private villa. This analysis optimized airflow and cooling efficiency in outdoor spaces, considering local climate conditions and architectural features. The results informed strategic placement of cooling systems and landscape elements to maximize comfort, reduce energy consumption, and maintain aesthetic appeal, ensuring a comfortable and inviting outdoor environment for the villa's residents.*



## DOHA OASIS - QATAR



*For the prestigious Doha Oasis project, our team delivered comprehensive structural design solutions, ensuring both aesthetic and functional excellence. We provided end-to-end services that encompassed innovative design techniques, state-of-the-art technology integration, and sustainable practices tailored to the project's unique requirements. Our commitment to precision and quality assured the structural integrity and success of this landmark development, positioning it as a standout feature in Doha's architectural landscape.*

## HAMAD INTERNATIONAL AIRPORT



At Doha Hamad International Airport, we provided specialized structural engineering services for various key buildings within the airport complex. Our team focused on implementing robust and innovative design solutions that ensure safety, efficiency, and longevity. By leveraging advanced engineering practices and sustainable methodologies, we contributed to the development of infrastructure that meets the rigorous demands of international airport operations.

## AL THUMAMA STADIUM



*At Al Thumama Stadium, we delivered specialized steel structural design services that played a pivotal role in the construction of this iconic sports venue. Our expertise in steel engineering ensured the creation of a robust and durable framework, supporting the stadium's dynamic architectural vision and functional needs. By utilizing cutting-edge design tools and adhering to international standards, we contributed to establishing a world-class facility that reflects innovation and strength.*



# Contact Us



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