

**KATECH**

MEP ENGINEERING AND SUSTAINABILITY SERVICES

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# ***KATECH PROFILE***

MEP ENGINEERING AND SUSTAINABILITY SERVICES

 <b>HVAC</b> We Happens to be amongst the leading providers of HVAC (Heating, Ventilation, & Air Conditioning) Design Services.	 <b>Plumbing</b> We deliver best Sewerage system and Water supply detail designing and drawing services you can ever need.
 <b>Firefighting</b> We Specialize In providing consultancy on fire system, include like designing, detailing or drafting.	 <b>Electrical</b> We provide accurate electrical drawings, include like designing, detailing or drafting.
	

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Plots 21/9, South Lotas, El Teseen Street, New Cairo, Egypt.

www.katechimep.com- Tel: +20 1007897797 email: [info@katechimep.com](mailto:info@katechimep.com)

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### **1-SERVICES:**

KATECH can offer a wide range of services and skills to any project, from feasibility, concept designs and modelling through to project management and client representation.

As well as Building Services design, we are experts in renewable technology and energy efficiency that runs through every project we undertake.

- Electrical, Mechanical & Plumbing Services
- Sustainable Building Services
- Low Energy Design Appraisals
- Environmental & Alternative Energy Solutions
- Business Energy Efficiency Strategies
- Voltage Power Optimization Planning & Feasibility
- MEP Project Management
- MEP Infrastructure Concepts
- Building Control & Compliance Checks Report & Documentation
- Energy Use Profiling, Audits & Certificates
- Power Factor Correction Reviews
- Production of O & M Manuals
- Project Close out documents.

### **Building Services Design. Mechanical & Electrical (M&E / MEP) Consultancy**

The bedrock of our business is designing building services. We provide detailed design of all aspects of building services. Building service design is a significant component of the construction supply chain and is critical for design decision-making, accurate documentation, performance and cost-estimating, construction planning, managing and operating the resulting building. Our team of MEP consultants and engineers are there to help every step of the way. We typically work as part of the wider project team, including architects, structural engineers, project managers and quantity surveyors.

#### **Mechanical design services overview**

- Heating, Ventilation and Air Conditioning (HVAC)
- Refrigeration
- Building automation
- Smoke extraction
- Drainage and waste
- Domestic water
- Process plant and water treatment

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### Electrical design services overview

- Distribution and earthing
- Small power and data
- Lighting design, lighting control and emergency lighting
- High Voltage (HV) systems
- Low Voltage (LV) systems
- Backup power solutions (Generators +UPS)
- Fire alarm



### **Complete MEP Design Solution**

We have a comprehensive and specialized team to cater to all your needs.

Furthermore, we provide a wide range of advisory and consultancy services in Project Management Consultancy and a range of Electrical, Plumbing, Firefighting and HVAC services / design in various areas of construction.

We are focused on delivering high quality work within time and budgeted costs, as evident in the various accolades and repeat business.

Our areas of expertise include:

- Housing
- Commercial Projects
- Offices
- Infrastructure
- Data center
- Retail
- Hospital
- Hotels and Leisure

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- Public Sector
- Industrial / Factories



### **ENGINEERING DESIGN AND MEP COORDINATION SERVICES MEP**

Services are amongst the most crucial engineering services required by the Residential & Commercial projects. Keeping this in mind, we have developed high-quality capabilities in outsourced MEP design and drafting.

We offer superior quality, cost-effective and time-bound Mechanical, Electrical and Plumbing (MEP) engineering design & support services for MEP consultants, consulting firms as well as Design-Build consultants.

Our highly skilled modelers, engineers & expert team of coordinators, develop detailed design models, using coordination guidelines, constructability analysis & clash coordination rules during pre-construction phase, thus focusing on providing valuable information to describe the proposed project.

Our service offerings:

- Model visualization
- Electrical design services
- HVAC design, drafting, and modeling
- Shop drawings
- Fire protection

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## **Fire safety engineering services**

KATECH fire safety engineering services include high level strategic advice using detailed engineering analysis, computer modelling and negotiating positive outcomes for our clients with approvals bodies. Our service includes expertise in relation to matters such as fire regulations, fire growth, fire dynamics, means of escape, smoke control, structural fire resistance, as well as in the detailed design and evaluation of fire safety products and systems, in compliance with NFPA and local fire regulation and requirements.

## **Industrial Fire Protection System Design**

Fire Suppression, Detection, Alarms & Mass Notification Systems

KATECH providing industrial fire protection systems for our customers.

We are providing high value life safety protection systems for industrial buildings, applications and special hazards.

Our goal is to help maintain the productivity of our customers by keeping all life safety systems running properly and production systems working efficiently.

Our team of engineers and designers work with you to design a unique detection or industrial fire suppression system for your needs.

We have high end controls and user interfaces to manage systems and have integrated gas or smoke detection systems into our customer's every day production equipment to shut down systems to help prevent emergency situations.

We offer fire protection system design for manufacturing facilities, food processing, steel, and automotive and power generation industries.

We also offer detection and suppression systems design for automated process, robots, dip tanks, furnaces, hazardous materials, and flammable liquid and energy storage rooms.



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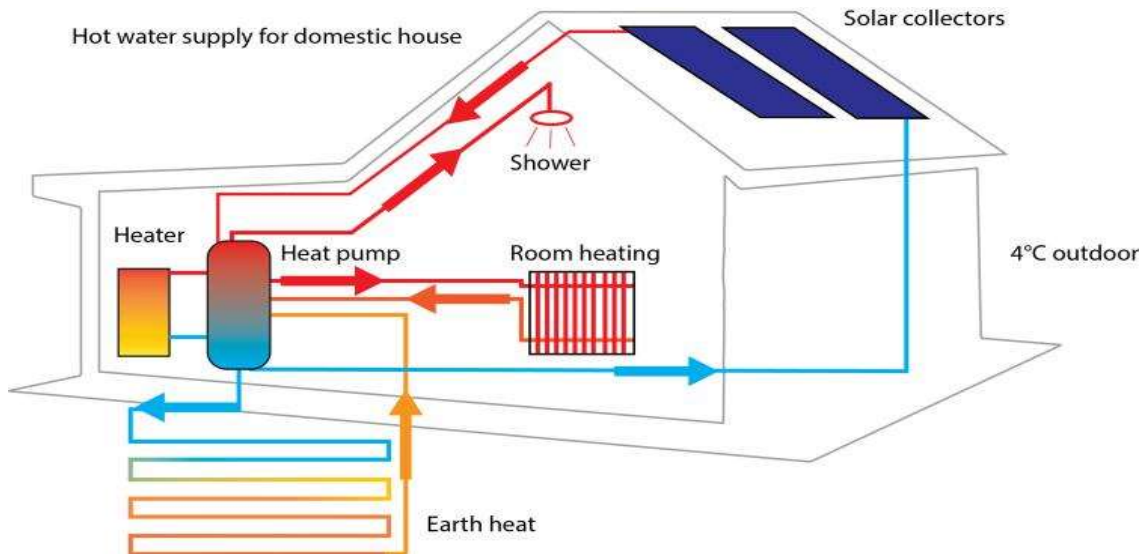
## **Analyses of Hot Water Supply for Domestic Houses:**

Feasibility study of environmental friendly domestic house heating and hot water supply. Making use of solar collectors and earth heat to achieve more self-sustainable domestic living. Motivation of using LEM: This system results in a large set of model variables and dynamic system behavior. Total system optimization is not possible when using "classical" approaches such as hand or FEM/CFD calculations. Additionally, FEM/CFD models are time consuming and not all geometry data is available.

Approach and model:

When using lumped element analysis (LEM), only global specifications of the (sub) systems, such as thermal and fluidic interfaces, have to be taken into account. Using our extensive Simulink Thermal and Fluidic Library, we can easily model thermal and hydraulic systems. This results in detailed simulations of the total thermal & fluidic management of any system. Results: Using the results of these simulations, we can define an optimal system layout or pin-point specific aspects of the system which require special attention.

Results include a fast and modular model to optimize the subsystems and overall system.



### **HVAC System Design Services**

We have the expertise of working in projects of different sizes, applications and processes. We strive to give the end user the best value for money by providing optimal design with the proper balance of capital and operating costs, required redundancies, pragmatic and futuristic solutions.

Complete Heating, Ventilation & Air Conditioning (HVAC) System design for IT commercial buildings, Retail, Hotel, and Hospital buildings etc in compliance with ASHRAE / ECBC / NBC Standards.

Preparation of BOQ, Tender specifications and detailed AutoCAD HVAC design drawings that are good for Construction.

Critical HVAC System design for Data Center (Green Data Center Design) of any size and density, Clean Room Applications etc. in compliance with ASHRAE / ECBC/NBC Standards. Preparation of BOQ, Tender specification and detailed AutoCAD HVAC design drawings that are good for Construction

- Design of Chilled water systems, DX AC systems
- Design of AC systems for data centers, server farms
- Design of Forced ventilation systems
- Design of Smoke ventilation systems
- Design of Low side air distribution systems





### **Specialist Electrical Design Consultancy**

KATECH Consultants are our specialist MEP consultancy subsidiary. Our electrical design engineers are here to provide your development with a wide range of commercially viable electrical building services tailored to your individual needs.

Our Full Range of Electrical Design Services:

- Full electrical design works
- Electrical Performance Specifications and Scope of Works
- Mains and sub-mains power distribution
- Cable containment systems
- Small power & ancillary services
- Internal & external lighting systems
- Emergency lighting systems
- Specialist lighting design and control systems
- Lightning protection systems
- Data & communications Services
- Earthing and bonding requirements
- Standby generation & UPS systems
- HV & LV power supplies & distribution systems
- Renewable technology power requirements
- Power and controls wiring associated with mechanical services systems



### **Electrical single Line Diagram Services**

The Electrical single Line Diagram that we provide you can render enormous benefits. With a single easy to use interface you can design, examine and track all electrical equipments along with smartly doing away with the tiresome, manual, and erroneous conventional model. These diagrams clearly display system changes and scrutinize by simply clicking over the computer and the best part is that they are extremely interactive to model, administer, manage and execute the electrical network.

We provide following services in the diagram:

- Short-circuit calculation
- Coordination study
- Load flow analysis
- Safety evaluation
- Other engineering examinations
- Electrical safety procedures
- Efficient maintenance

We haven't restricted ourselves to the old methods and always long to create innovative solutions for you. For this, we strive to add on new features to make the diagrams more intelligent and drive them for better speed and precision. With this endeavor to provide you the latest and best, our team ensures that you receive the best of all results.



## **IBMS AND LV SYSTEM DESIGN**

Complete Integrated Building management system design for all building applications.

This design comprising of operational sequencing, Controller units, Hard ware, selection of suitable software etc.

Preparation of BOQ, Tender specifications and detailed CAD IBMS design drawings that are good for construction.

Complete LV Systems design for all building application.

This design comprising of CCTV Network with Cameras/ Monitors/ DVRs using Optic Fiber, networks for large open areas, Access Control Systems with Biometrics, Attendance, Visitors management systems, Boom Barriers, Solar fencing Protection Systems, Public address system, background music system, Audio video system, IT and communication systems and Tenant services billing system.

Safety & Security System Design Services, We understand the safety concerns of the client and provide designs that address those needs from the perspective of privacy, safety, detection and monitoring.





### **PLUMBING DESIGN SYSTEM SERVICES**

Mechanical, electrical and plumbing (MEP) services are critical engineering services for any construction project. These are related to building design and construction and must be accurately planned to ensure that projects get completed as per specification, without obstacles. Our building information modeling (BIM) service allow architects, builders, engineers, and developers to gain better control over their projects and is set to become the standard operating procedure for construction projects around the world.

Of all the MEP trades, plumbing design is the only trade that is essential for life, providing clean drinking water and removal of wastewater from our buildings.

Our service offerings:

HW/CW domestic supply system

Sanitary-sewer drainage system

Storm water harvesting and irrigation system

Drainage waste fixture unit calculations

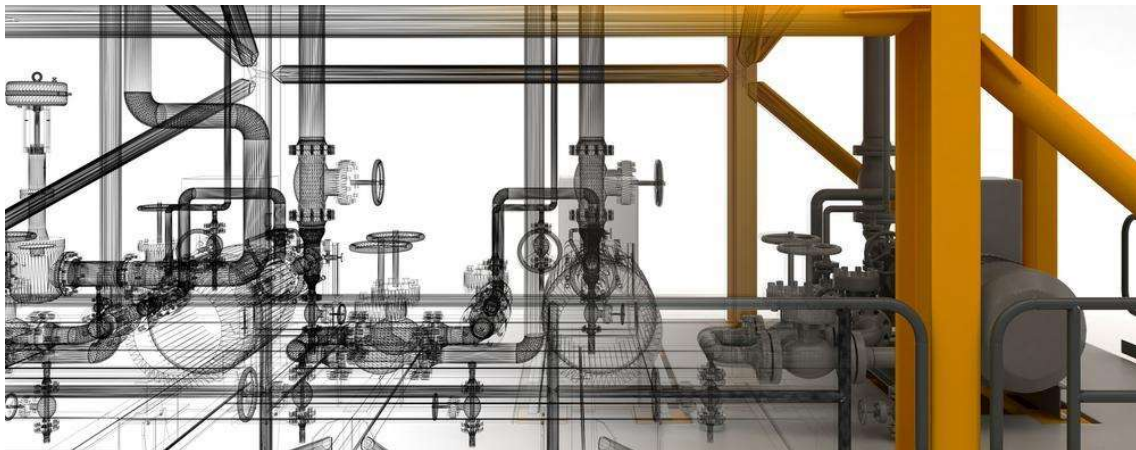
Water supply load and fixture calculations

Sizing and selection of PRV's, pumps, storage tanks, interceptors etc.

Hydronic / non-hydronic system design

Booster pump design and pressure loss calculation

Fabrication drawings for equipment and fitting accessories



## **2- Experience and Part of Previous Projects:**

- 1 Dandy mall – Carefour hyper Market - Cairo.
- 2 International eye Hospital - Cairo.
- 3 Beverly Hills – 300 Villa – Cairo.
- 4 Elite office building – Cairo.
- 5 Ashbilia Mall – Riyadh.
- 6 Riyadh Avenues – Retail area – Riyadh.
- 7 Marriott Hotel – Jeddah.
- 8 Holiday inn Hotel- Makkah
- 9 Al- maghraby Hospital – Jeddah.
- 10 Rotana Alsadyat Hotel – Abu Dhabi- 200 room + 10 villas + 5 Restaurants and amenities.
- 11 Rixos Hotel – Abu Dhabi-250 room + 17 Villas+ 18 Restaurants and amenities.
- 12 Alasima Shopping Mall – Abu Dhabi.
- 13 AIAIN Commercial center – Abu Dhabi.
- 14 Abu Dhabi Marina Walk – 12500.0 Sq.m meter Retail area (Restaurants, Shops and cinemas).
- 15 Injazat DATA Center – 600 Rack- Abu Dhabi.
- 16 International school For ADNOC CO. – Abu Dhabi.
- 17 Office building (G+40) for Aabar Co. – business bay-Dubai.
- 18 Residential high rise building (G+42) for Aabar Co. – business bay-Dubai.
- 19 Residential high rise building (G+35) for Alansary Co. – business bay-Dubai.
- 20 Burjil Mall – Double Tank Area, Abu Dhabi -Mix use building, Mall +
- 21 Duplex Villas.
- 22 Burjil Hospital - Abu Dhabi, 200 bed, 6 operation theaters and clinics. Swiss hotel in Jadaf- Dubai - 300 room + Restaurants and amenities.



- **KATECH TEAM:**

- 1 Eng. Khaled Abdo Mohamed – General manager – contact person – 30 years' experience.
- 2 Eng. Ayman Al Nahas – Head of Electric section 20 years' experience.
- 3 Eng. Asmaa Mosalm– Sr.Electric engineer- Power -15 years' experience.
- 4 Eng. Ahmed Albayomi– Head of Mechanical section 10years' experience.
- 5 Eng. Amr Mohamed– Sr.Mech engineer- FF and Plumbing -10years' experience.
- 6 Eng. Mahitab Sobhy – Jr. engineer
- 7 Eng. Hosam Mohamed – Jr. engineer



### KHALED ABDO MOHAMED

General manager ,B.Sc , PMP

Khaled has 30 years of experience as Division manager / Project manager in design and execution of all MEP works inside and outside buildings and infrastructure network. Khaled has an intensive experience in technical study of projects, execution, preparing concept Base of design , detailed design drawings and tender documents.

### TECHNICAL SKILLS

- Conceptual Design & Detail Design & Documentation
- Specifying electrical equipment including H.V. & L.V.
- Manage execution for MEP works
- Obtaining approvals from Local Authorities.
- Coordination with other activities (Mech. And Arch.)
- Testing and Commissioning

### KEY PROJECTS TO CREDIT

- INTERNATIONAL EYES HOSPITAL - CAIRO.
- BEVERLY HILLS COMPOUND – GIZA.
- LUXURY RESEDINTIAL BUILDING- ZAMALEK – CAIRO.
- OFFICE BUILDING IN SMART VILLAGE – GIZA.
- ARCHO STEEL FACTORY - EGYPT.
- DANDY MALL – Carfour Hyper Market.
- INJAZAT DATA CENTER – ABU DHABI.
- RIXOS HOTEL – ABU DHABI.
- ROTANA EL SADIYAT HOTEL – ABU DHABI.
- NATIONAL BANK OF ABU DHABI – NBAD , ADNEC AREA.
- Mafrag Hospital LTCCC , Abu Dhabi.
- BURJEEL HOSPITAL – ABU DHABI.
- Abu Dhabi Marina Walk – RETAIL AREA, SHOPS AND RESTURANTS.
- BURJELL MALL – ABU DHABI.
- New Asian school for ADNOC – Al Ruwis – Abu Dhabi – 3000 student.
- Male and Femal school for ADNOC -abu dhabi , 3000 student.
- Alekhlhas privet school in abu dhabi , 2000 student.
- West burry Office & Residential Towers- Business Bay- Dubai.
- Wahat Alzawia – District Center – BUA 300,000 sq.m residential and commercial units.
- Police School in AL Ain.
- Masjid Al Shikha salama – Alain.
- Masjid Al Shakoor – Dubai.
- Al Ansari Residential Tower, Business Bay, Dubai.
- Bin Hamoodah Residential Tower, Dubai, UAE.
- Maysan Towers C12&C13 (2B + G + 3P + 40 Floors)each, Abu Dhabi.
- Aabar Tower (3B + G+ 28 Floors), Abu Dhabi, UAE.
- Al Reem Island Zone A (1Res.B,47 floors & 1 Office B, 32 floors), Abu Dhabi.
- Al Reem Island Zone D (2 Res.B.,50 floors each& 1 Res. B., 23 floors), Abu Dhabi.
- 98 Villas (105 Villa + infrastructure network), Abu Dhabi, UAE.
- Al Shuwaihat Complex Villa (200 Villa + infrasrtucture)- abu dhabi

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