MEP Solutions

MEP Solutions are a market leading manufacturer and supplier in modular mechanical and electrical services engineering and specialists in integrated prefabricated solutions to the construction and building services industries.

We deliver best practice by continually implementing proven technologies and innovations throughout all aspects of our service.

About us

MEP Solutions are an innovator in the building services industry through the design and manufacture of insulated and pressure tested prefabricated multi-service modules including, and not limited to; pipework, ductwork, medical gases and all electrical services.

The modular prefabrication concept employed by MEP has been applied to significant building projects including hospitals, schools, colleges, hotels, office developments and residential buildings.

MEP Solutions offers a complete build solution and technical support from conception through to completion offering a flexible and practical approach for our clients.

Our manufacturing facility applies the latest prefabrication design and innovation expertise in the production of the highest quality mechanical and electrical modules for both new build and refurbishment projects.

Our engineering function provides expert technical and tendering support to our clients with full 2D and 3D drawing co-ordination support. We operate the latest industry design AutoCAD software which works in synergy with the patented bespoke modularisation software developed in-house by MEP.

Our unique modularisation software offers a complete and efficient solution to space evaluation with a higher degree of design accuracy, cost certainty and quality control.

Background

The Construction Task Force was established by the Deputy Prime Minister in 1996 against a background of deep concern that the construction industry in the UK is underachieving, both in terms of meeting its own needs and those of its clients.

The resulting document, The Egan Report: Rethinking Construction, encourages the industry, its clients and the government to adopt its principles to mutual benefit.

These principles invite a culture change that improves the project process through:

- Product development
- Partnering the supply chain
- Project implementation
- Production of components

The results are a reduction in capital costs, construction time, defects and enhanced, predictability, productivity, turnover and profit as well as reducing the crucial health and safety factors.

Concept

MEP Solutions designs and manufactures a range of mechanical and electrical modules which support heating flow and return, chilled water flow and return, condensate drain and electrical containment along with a range of domestic services for the building services and related industries.

The modules are engineered from fully co-ordinated drawings by our team of engineers and produced and tested under factory controlled conditions using the latest systems and materials.

The modules are then delivered to the construction site using purpose built transport stillages which significantly reduces logistics and traditional on-site build time.

The process is facilitated through the in-house AutoModule™ software. This software is not available on the market and is used to calculate all manufacturing, pricing, resource and procurement data.

AutoModule™ analyses client’s drawings and produces calculations of all materials, costs and installation times offering improved accuracy in the modularisation zone, enabling significant long-term cost and time savings.
The bespoke nature of the MEP off-site solution transfers well across a diverse range of industries and has been proven to bring key benefits to projects sourced by both private and public end clients.

MEEP Solutions has gained significant experience in the education, healthcare, research, commercial, retail, hotels and residential sectors and continues to prove the value of prefabrication across the board.

**Education**

MEEP is a leading provider of prefabricated M&E building services to the UK education sector, with experience across primary, secondary and further education projects including Procure21 and BSF.

The government is channelling substantial investment into the education sector – to building, modernising and refurbishing – and as public-private partnerships are attracting new funds and commitment, this sector has proved to be a key growth sector for MEEP in the past two years.

Prefabricated services are an ideal solution to projects that require to fit around the academic timetable or cause minimum disruption during term time. Best value schools are also better achieved through a process that offers sustainable and cost effective solutions.

**Commercial**

MEEP’s commercial sector experience includes new build, refurbishment and fit-out projects and is mainly centred on office developments and hotels. This is an area of significant activity for MEEP Solutions and specialist expertise has been proven in the supply of Riser modules, a typical requirement for commercial sector projects. 3D modules featuring fan coil units and trace heating are also typical of commercial buildings.

**Retail**

Sustainable construction concerns in retail sector construction, including whole-life and sustainability performance considerations, present the MEEP concept as an ideal choice when considering building services specifications.

From individual outlets to department stores, MEEP delivers best value and sustainable solutions for retail projects which are typically constructed to challenging budgets and schedules.

**Healthcare and Research**

The healthcare and research sectors are fundamental markets for MEEP with key experience particularly in PFI/PPP projects including hospitals, treatment centres, mental health facilities and laboratories.

Healthcare sites, particularly hospitals, are typically congested and restricted. This, along with the need for quality and cost effective healthcare facilities within short timescales is driving the increasing adoption of modularisation across the healthcare sector.

The M&E services required by the healthcare and research sectors are acutely suited to the concept of modularisation. MEEP has proven expertise in this field through the supply of 2D and particularly 3D systems accommodating specialised design requirements, medical gases and sprinkler systems for example.

**Supply Chain Partnering**

With increased industry pressures to maximise supply chain efficiencies, MEEP encourages partnering through procurement and operates framework agreements with its key suppliers.

Supply chain integration is achieved successfully at MEEP Solutions through a systematic partnership and improvement approach, the sharing of technical expertise, product innovations and business strategies, and also through the constant review of performance in our quest for continuous improvement.

We strive for:

- Effective supplier relationships
- Shared knowledge
- Continuous improvement
- Closer logistics and cost management

It is the view of the company that best practice and product excellence can only be achieved through effective supply chain partnering and our approach will always be to work with partners who share the same goals and vision.

**Environment**

MEEP commits to promoting the conservation and sustainable use of materials and energy to minimise the environmental impact of its operations.

We assure compliance with all relevant environmental legislation, regulations and standards, and we recognise our responsibility to act within a framework for reviewing environmental objectives and targets within the company.

We commit to the sharing of information with employees, suppliers and contractors, and in our aim to continue as a sustainable business, we strive for continual improvement through practices that recognise the environmental implications of our activities.
The MEP quality assurance policy, accredited to ISO 9001:2008, promises to meet the changing needs of our customers by providing products and services to the highest possible standards to meet and exceed the customer’s expectations.

To this end, we commit to continually review the quality system and our goals in accordance with the ISO 9001 accreditation requirements and be committed to delivering the highest levels of quality throughout the company and its processes.

We also commit to provide training to all of our personnel, to ensure they are fully conversant with the quality policy and have the necessary skills, competence, product knowledge and education to achieve our quality objectives.

MEP is currently working towards ISO 14001 accreditation, for environmental management standards conformity. MEP is dedicated to managing the environmental issues of the company through a comprehensive framework of measurement, evaluation and auditing. The ISO 14001 accreditation, provides a proven commitment that the company is actively fulfilling its environmental and social responsibilities.

MEP commits to implementing the best practices available for health and safety standards that will enable the company to achieve compliance with all relevant and current legislation and regulations within the EU and United Kingdom.

We commit to conducting our business in a way which ensures the protection of our employees, customers, suppliers, contractors and other stakeholders.

At MEP we implement a health and safety management system that is documented, enforced and audited against as part of our continuous improvement program.

As a minimum we will conduct our operations to fully comply with all statutory regulations concerning health, safety and welfare and this will be achieved by effective management and planning with the aim of continual improvement.

We consult with all management and employees to communicate health and safety responsibilities and we commit to monitoring our performance in statistical analysis and risk assessment.

Traditional Method Versus an Off-Site Solution

What are the issues?
- Clash of services
- Clash of trades
- Cost and time control
- Surprise costs
- Labour risk
- Skills shortage
- Productivity
- Quality
- Safety
- Waste management
- Tight project timescales

How can an off-site solution overcome these difficulties?
- A co-ordinated and pre-engineered solution
- More accurate cost and delivery
- Programme benefits
- Improvements in quality
- Improvements in health and safety
- Improved predictability = LESS RISK
- Improved project performance
- Greater program certainty

We believe that the off-site manufacture of building services modules represents the lowest risk method of the delivery and installation of services to the construction site.

Benefits of Prefabricated Modules

Factory based working improves:
- Planning
- Accuracy in production
- Quality control
- Waste
- Safety management
- Product quality
- On-site logistics
- Factory based warehousing enables absorption and release of programme delays providing further flexibility

Factory based working reduces:
- On-site storage of materials, therefore risk of damage and theft
- The level of on-site waste
- Risk
- “Think about the cost of rectifying defects or making changes on-site - compared to the controlled factory application”

Sustainability:
- Improved performance
- Reduces on-site material waste
- Reduces impact of site activity through reduced deliveries and working on site (noise, vehicle movements)

Supply chain:
- Encouraged and improved supply chain integration
team work and collaboration
- Integrated teams
- Partnering through procurement
- In agreement with our supply chain we offer extended guarantees which are accredited to each individual project

Health & Safety:
- Fewer people required on-site means reduced installation labour and fewer deliveries
- Welfare facilities & protective clothing requirements are reduced
- Material handling requirements are reduced
- Reduced numbers = reduced risk

Skills shortage:
- The concept reacts to the current and future skills shortage in the industry and enables the employment of semi-skilled and multi-skilled labour
- More effective factory controlled working conditions off-site
- Controlled safer environment
- Significant savings in on-site labour

Delivery and installation:
- Reduces number of deliveries on-site enhancing logistics
- Just-in-time delivery
- Reduces on-site storage
- Quicker installation
- More efficient installation
- Reduction in on-site plant hire and or equipment costs

Cost savings:
- Achieved through savings in installation, inspection time, waste, labour costs and safety costs

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The AutoModule™ Software developed in house by MEP Solutions is based on the industry standard AutoCAD platform. It is driven by a database that carries physical and commercial properties of manufacturer’s parts. The software facilitates prefabrication through:

M&E Drawings
Any combination of M&E services can be laid out in a fraction of the time compared to traditional methods.

Routines within the software enable the user to:
- Automatically dimension services to the nearest millimeter for installation
- Produce building work layouts
- Allow for a range of industry standard valves, expansion bellows and electrical accessories

MEP operates the software through Cad-Duct for full 3D configuration and working with the NavisWorks design review software we present a full review of the design through a ‘virtual model’ which brings added control to the offering through reduced risk and improved quality.

We work with our clients throughout the process as we maintain a flexible and customer focused approach.

Estimating
The database driven software enables us to cost and price the modules much faster than traditional methods. And, as the modules are priced using a pre agreed schedule of rates, the process gives our clients enhanced cost certainty from the early stages of the project.

Manufacturing Drawings
The software automatically generates fully detailed manufacturing drawings and Bills of Material for the modules. The speed and accuracy to which these drawings are produced reduces the long lead times traditionally associated with off-site fabrication and enables more rapid incorporation of client variations.

Material Requirements Planning (MRP)
The manufacturing data generated by the software is compatible with our MRP procurement systems enabling MEP Solutions to function on a lean manufacturing basis, thus minimising our stock value, achieving Just-in-time deliveries to the clients demands and maximising our material efficiency.

Labour Times
The manufacturing data produced enables manufacturing time to be calculated more accurately and with enhanced planning control. Operatives use a keycard system to log all manufacturing operations enabling realtime monitoring of our productivity and efficiency.

Software Development
As the industry evolves and prefabrication becomes favourable, we are developing the AutoModule software to enable fuller integration with more complex projects and thus widening our scope and offering to the client.
MEP recognises the importance of flexibility, to promote this we offer a complete range of modular services to provide for a complete solution for all projects across all market sectors. We provide for any service distribution requirement, from small or medium volume, to that of large complex prefabricated modules, which includes service risers and bespoke switchgear, distribution boards, consumer units, pan assembly units etc.

Our modules enable our clients to strategically consider modularisation across all projects, market sectors, and geographical areas.

**2D Modules**
A range of horizontal mechanical and electrical modules incorporating insulated multi service pipework, tray, trunking, basket and busbars, for schools, office block and commercial building applications.

**3D Modules**
A range of horizontal mechanical and electrical modules incorporating insulated service pipework, tray, basket, busbars and pipework for medical gases and ductwork. Used in typical hospital and large scale projects.

**Risers**
A range of vertical 3D modules incorporating a range of M&E services and electrical distribution panels.

**HVAC**
Heating, ventilation and cooling solutions.

**Electrical**
A comprehensive range of low voltage equipment for electrical containment, supply and distribution is available through the MEP Solutions product offering. Bespoke switchgear, distribution boards, consumer units and pan assembly units are designed according to the specific application requirements.

A-Belco Electrical Engineering, a division of the A-Belco Group, is a specialist manufacturer of low voltage electrical switchgear equipment.

### Manufacturing Capability

The MEP Solutions manufacturing facility is capable of producing up to 108mm pressure pipework at a production rate of 30 modules per day. MEP operates a just-in-time production method but can also accommodate pre-building and storage when required.

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Factory:</th>
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<tbody>
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<td></td>
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### Storage Handling Facilities:

- **Facilities Factory:** 10,155m²
- **Uncovered Storage:** 14,000m²
- **Covered Storage:** 10,000m²
- **Handling:** Up to 5 tonnes

We are able to maximise the efficiency of our transportation through the use of purpose built and load tested stillages.

We are able to safely deliver over 2km of finished services per load.

This equates to:

- 32 6m 2D modules, or
- 64 3m 2D modules, or
- 4 3D modules per delivery