

Flexible, sustainable
HVAC solutions
for **Modular
Buildings**



**Energy efficient heating,
cooling and ventilation
systems** that work beautifully
with your production line,
on your construction site,
and into the future.



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Everyone involved in the construction industry faces challenges that demand efficient and sustainable buildings. The good news is that many of the solutions needed are affordable, scalable and **available right now.**

As a nation we continue to face the ongoing challenges of significant carbon reduction targets, the need for much more affordable and 'greener' properties, and the ongoing challenge of creating meaningful and sustainable jobs.

We need to capitalise on areas that can quickly develop solutions to these pressing issues - and this is where modular construction offers so much hope.

Our nation needs to find ways to manufacture business premises and homes with in-built sustainability as standard, creating 'green' jobs that will put our economy back into growth mode.

The energy drivers affecting buildings

The buildings we live, work and play in currently account for over 40% of the nation's energy consumption and carbon emissions, so if we are to achieve our ambitious carbon reduction targets, things cannot continue as before and improving the level of efficiency in our buildings is of paramount importance.

By addressing the largest draw on energy - the way we heat, cool and ventilate our buildings - even the smallest improvement will have a significant effect in reducing total energy consumption for the nation.

The need for more buildings

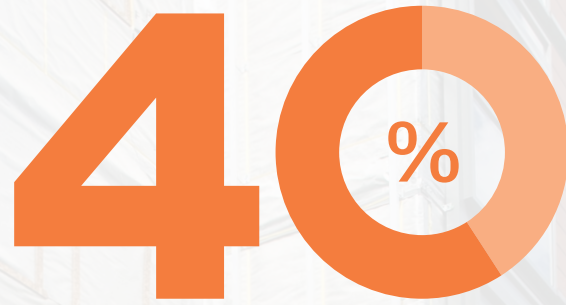
The way we use building to live work and learn has changed significantly in 2020 with changes expected to carry on into 2021 and maybe 2022. Schools will need to quickly find ways of doubling or trebling their teaching spaces and the health care sector needs to address long term deficiencies in the short term. Offices may need to look at redesign or even temporary expansion and we also have an urgent shortage of housing.

In order to make a real difference, everyone involved in the built environment has to work together to ensure that we all make better use of energy. The added advantage is that creating sustainable buildings will also help safeguard our future, preserve energy resources, and help reduce on-going running costs for everyone.

The need for compliance

With legally binding carbon reduction targets, the Government has already introduced legislation to ensure that our buildings are part of the solution, not part of the problem.

In order to comply with this stringent legislation, whether that's Permitted Development, or MEES, the WELL Building Standard or BIM and the Modular Building Framework, the rules and regulations around buildings are only getting stricter.



40%

**The UK's buildings currently
account for over 40% of our
energy consumption and
carbon emissions**

ALL Access Platforms









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The time is right for Modular




Modular buildings can address all of these concerns and offer a sustainable future for UK construction. At the same time, the manufacturers of these modular systems also need heating, cooling and ventilation systems that become a seamless part of the solution. And they need a partner that can help guide them through the legislation and deliver products that really can make a difference.

Long-term, sustainable construction

Modular manufacturing offers answers to all of these issues and points the way to a viable, long-term and sustainable future for the construction industry. It can quickly make a difference by offering:

-  **Significant time savings** - Projects can be completed up to 50% faster than traditional build
-  **Certainty on build costs** - Factory construction allows for the co-ordination of multiple trades and is not weather dependent, so costs are much more precise
-  **Complete control of quality**- Precision manufacturing guaranteed
-  **Flexibility in design** - Modular construction allows for diverse configurations
-  **Social value** - Modular construction can create new, 'greener' jobs, offering healthier, flexible working solutions
-  **Sustainable construction** - Factory production also increases the use of sustainable materials and efficient modern methods of construction - No more dependence on time consuming, on-site 'wet' trades

Modular buildings can also quickly make a difference by delivering more flexible commercial space that can match the changing demands of businesses as they find new ways to work.

-  It can help to meet the urgent demands for more affordable housing to help address the housing crisis.
-  It can help ensure that we deliver more classrooms for schools, quickly, efficiently and with the low carbon quality needed to ensure a sustainable future.
-  And it can ensure that our NHS has the space and ward accommodation needed to support healthcare

Higher quality standards

Modular buildings adhere to exactly the same building regulations and standards as traditionally constructed buildings, yet the very nature of off-site, precision manufacturing delivers a consistently excellent performance for U values, fire safety, sustainability and acoustics.

Offsite construction sees the manufacture of buildings in a covered, controlled environment with final assembly completed at site. This approach allows for much greater speed, cost certainty, precision and quality control and means that modular buildings have a carbon footprint that is up to 99% lower than equivalent traditional buildings.

According to research by Arup Research & Development, the production of a modular building requires up to 67% less energy than a traditionally constructed building.



Modular buildings offer a sustainable future for UK construction, but they also need heating, cooling and ventilation systems that become a seamless part of the solution.





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Why Mitsubishi Electric and how we can help

Working towards a better use of energy in buildings

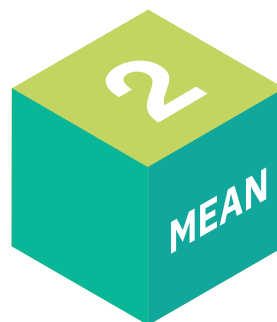
Mitsubishi Electric is a market leader in providing solutions to cool, heat, ventilate and control our buildings. A strong commitment to the environment remains a long-term Corporate goal under our global framework for realising a sustainable planet - **Environmental Vision 2021**.

In the UK, this vision translates into our **Green Gateway philosophy** which is central to the way we do business. With this initiative, we are seeking to use our position as a manufacturer of key technologies to increase awareness and improve energy use in the built environment.

We advocate a **LEAN, MEAN, GREEN** approach to the construction and refurbishment of buildings:



Reduce the need for energy consumption right from the start



Use energy as efficiently as possible



Deliver comfort from low or zero carbon technologies



By constantly challenging everyone involved to combat the issues we all face and encourage constructive dialogue throughout the industry, we aim to help everyone address their energy use and to work towards a more sustainable future.

Here in the UK, we provide advanced solutions that cool, heat, ventilate and control buildings in the most energy efficient and cost-effective ways possible. Through technical expertise, experience and an innovative product range, we can ensure that your modular building delivers the highest standards of energy efficiency, low running costs and adheres to increasingly tough legislation, right from the start.

Who we are and how we work with you

Providing assistance from design to completion

Our **Corporate Solutions team** helps to deliver cost effective solutions that answer the distinct demands of our customers' businesses. We work closely with our clients to understand their requirements and create a mutually beneficial relationship that delivers:



Bespoke solutions perfectly suited to meet the specific needs of our clients



Effective communication throughout all aspects of our business and offering



The highest level of customer service and satisfaction life of a building

At Mitsubishi Electric, our aim is to fully understand your needs so that we can offer the innovation and solution that works best for you. We actively seek collaboration and dialogue with all parties involved in planning, designing, procuring, constructing and managing buildings, as we see this as the best way to ensure needs are translated into the right solutions.

Early engagement in the design process of both new-build and retro-fit projects, allows customers to confidently **apply and control cooling, heating and ventilation** within their individual projects.





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Flexibility is in-built

As the UK's leading manufacturer of air conditioning and renewable heating, Mitsubishi Electric's equipment is already installed in thousands of buildings in the UK. We also offer unique heat recovery solutions that utilise the latest refrigerants to future-proof new builds and bring refurbishments right up to date with legislation.

Solutions for offices

The modular approach to the design of our air conditioning and ventilation systems perfectly suits off-site construction for the modular industry, helping to reduce costs and time on site. We are also pioneers in the use of innovative refrigerants and technologies that maximise efficiency and performance whilst minimising carbon emissions.

Solutions for education

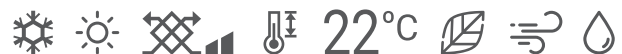
Our Lossnay heat recovery ventilation units meet the fresh air demands of classrooms and lecture theatres, while recovering up to 80% of the otherwise wasted energy from the outgoing waste air. We can also provide a full range of air conditioning for single or multi-room application, along with renewable heating for all the domestic water needs of any school.

Solutions for healthcare

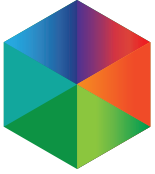
We offer full HVAC healthcare solutions from small single bedrooms or offices to a hospital ward or full hospital campus. We can provide systems which utilise our market leading Quad Plasma Filter. The MSZ-LN fan coil filter can filter out bacteria, mould and air pollution, helping to create healthy living and working spaces for all.

Solutions for student accommodation

Our ventilation and whole building solutions ensure optimum heat recovery and fresh air for buildings designed specifically for student accommodation. We have market leading renewable space heating and hot water solutions, which remove the need for gas on site while reducing costs and carbon consumption.







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Mitsubishi Electric at your service...

We offer you end-to-end lifecycle support and maintenance across our entire commercial product range including air conditioning, controls, Hybrid VRF, chillers, I.T. Cooling and commercial heating products.

From commissioning to fault-finding through regular healthchecks and preventive maintenance, we offer a menu of services you can select from to address your short and long-term needs.

We can provide full service and maintenance support for all brands of chiller systems. Including turnkey solutions; working with you from the initial stages of planning, all the way through to service and maintenance regimes.

We also offer personalised warranties, letting you decide the best options for your equipment and budget needs. Our specialist team can also strip-down and reassemble equipment, providing a useful solution for maintaining inner city sites or other locations which may be difficult to access.



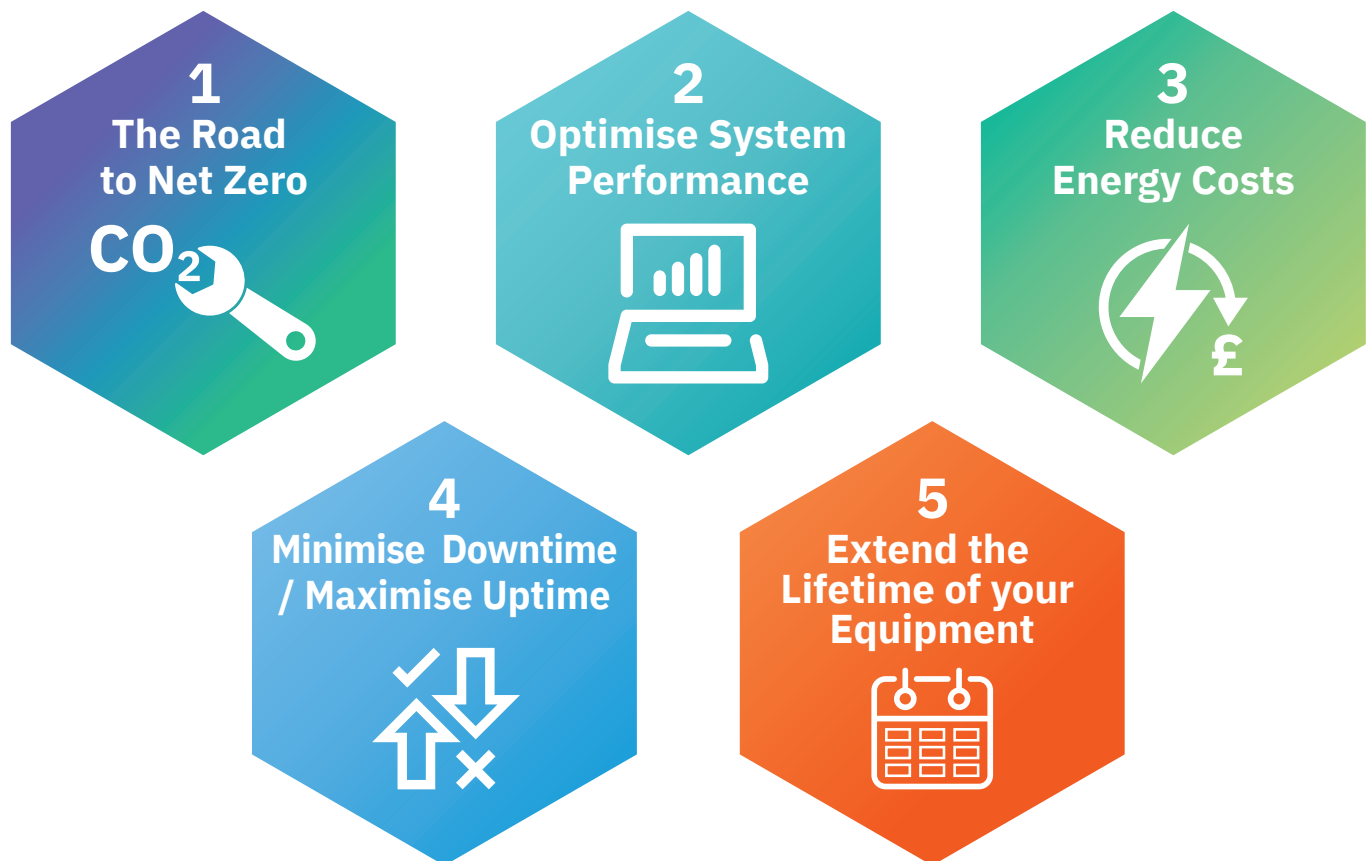
MELSERVE

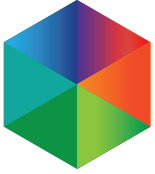
By Mitsubishi Electric

Our unique **MELCloud** solution allows you to remotely monitor and check on your equipment and receive notification of any issues, whilst providing live controls and weekly seasonal timers from a single device or location.

We have teams of **REFCOM** Elite F-Gas certified engineers based nationwide, operating from our network of service offices. We also provide a 24/7/365 technical support desk available to quickly help you solve issues. Our dedicated spares department ensures the quick identification, availability, and urgent despatch of all spare parts. We pride ourselves on our ability to source parts in the quickest possible time.

Each bespoke contract with Mitsubishi Electric is built on five core pillars of value for your operations, responsibilities, and peace of mind:





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Ideal solutions for modular construction

Mitsubishi Electric strives to achieve the highest standards of efficiency, quality and reliability in all of our products and these values are an ideal match for the improvement in construction standards that modular manufacture can offer the industry.

Products can be built into modules during initial construction in the factory, or they can be added on site in flexible phases to suit the modular construction approach. All are supported by our world-leading reputation for quality, sustainability and customer service.

The benefits to modular construction

- Our HVAC technology delivers in-built design flexibility and sustainable efficiency.
- We have years of experience on the key design and application challenges for buildings
- Simple and easy maintenance – we strive to ensure the optimum performance of your HVAC equipment
- Easy reporting and monitoring – Remote monitoring and control of heating cooling and ventilation systems



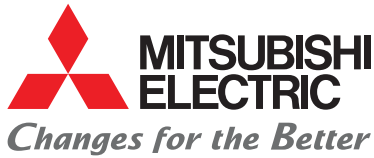
Talk to us, we know we can help

Whether you are a manufacturer of modular homes and are looking for renewable heating systems that can be built into modules on the production line, or are building a new office development and seeking an air conditioning solution that can be installed in sections to match on-site production, we have a comprehensive range of solutions to match your needs.

Whether you need heat recovery ventilation that will deliver energy efficient fresh air into your finished buildings, or need a heating and cooling solution that removes the need for leak detection equipment and complies with BS EN378, we can help. In fact, whatever your cooling, heating or ventilation needs, we have the heat pump, chiller, air handling unit, air conditioner, controller, heat recovery ventilation or I.T. cooling system to match it.

We have a diverse range of solutions which are affordable, scalable and **available right now**





Telephone: 01707 282880

email: corporatesolutions@meuk.mee.com
les.mitsubishielectric.co.uk



@meuk_les
@green_gateway



Mitsubishi Electric Living
Environmental Systems UK



Mitsubishi Electric
Cooling and Heating UK



mitsubishielectricuk_les



mitsubishielectric2



thehub.mitsubishielectric.co.uk

UNITED KINGDOM Mitsubishi Electric Europe Living Environmental Systems Division

Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, England. Telephone: 01707 282880

IRELAND Mitsubishi Electric Europe

Westgate Business Park, Ballymount, Dublin 24, Ireland. Telephone: (01) 419 8800 International code: (003531)

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Note: The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R290 (GWP:3), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R454C (GWP:148), R1234ze (GWP:7) or R1234yf (GWP:4). *These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No.626/2011 from IPCC 3rd edition, these are as follows. R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).



www.greengateway.mitsubishielectric.co.uk

Mitsubishi Electric UK's commitment
to the environment

Effective as of February 2024