

Sustainable HVAC solutions for **Warehouses & Distribution Centres**



Energy efficient HVAC solutions
designed to work effectively
in large spaces with complex
and varied heating and
cooling requirements.



A complex and varied challenge

Warehouses are now a major part of the UK economy and many sectors and jobs depend on their effective operation. But no two warehouses are the same and they can also be multi-functional with different sized spaces, different temperature requirements and different operating needs.

Finding heating, ventilation and cooling (HVAC) solutions that suit each individual building, and each individual zone within a building, can therefore be harder than you think.

And as a warehouse owner, developer or operator, you are the one responsible for keeping running costs to a minimum, making sure your warehouse complies with legislation and that it is staying productive and operational all year round. You therefore need a HVAC manufacturer that can help you every step of the way.

Whatever your warehouse requirements, you need absolute surety your building is able to:

- **Protect whatever stock is held there**
- **Keep temperatures stable, especially for perishable goods**
- **Keep energy bills to a minimum**
- **Allow for a smooth operation**
- **Comply with legislation**
- **Keep staff comfortable and productive**

The temperature requirements

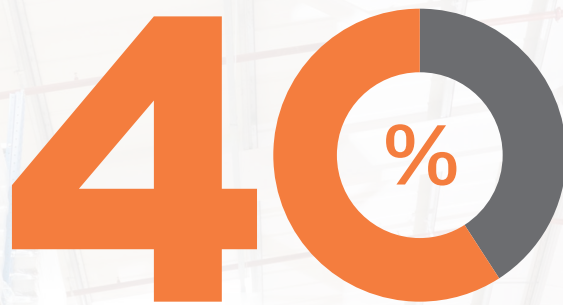
If the weather was constant, then warehouses would not be so difficult to heat and cool, but here in the UK, it can blow hot and cold in a single day. So you need a system that not only deals with the weather, but can also tackle the challenges of accurate temperature control in these larger buildings, which include:

- **Large open spaces**
- **Narrow corridors between tall racking**
- **Exact temperatures needed where perishable items are stored**
- **Tall ceilings and roofing material that can be part of the problem**
- **Large external doors frequently opening and closing as goods come and go**
- **Improving indoor air quality with energy efficient ventilation**

The energy driver affecting buildings

Buildings in the UK currently account for over 40% of the nation's energy consumption and carbon emissions, so in order to to achieve our ambitious carbon reduction targets, 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 UK's buildings currently account for over 40% of our energy consumption and carbon emissions








Productivity

Accurate temperature control helps ensure that all the items are kept in good shape while they are held in a warehouse, but in addition it is also an important consideration for your employees, as poor temperature control can really start to affect productivity and safety.

If the people working in your building are too hot or too cold, it may affect not only staff morale, performance and retention, it could even be breaking health and safety codes of practice which demand reasonable working temperatures..

-  **Hot, uncomfortable warehouses, with the sun beating down on the roof and walls can make it unbearably hot inside. This can also be dangerous, causing fatigue and loss of focus in staff who are likely to be operating machinery.**
-  **And when your large, generally under-insulated building gets really cold in the winter months, then anyone working around the constantly opening doors is going to really feel the cold.**
-  **Even when we don't face the extremes of summer and winter, poor ventilation and airflow can lead to stuffy spaces and hot or cold spots throughout the building.**

Yet studies show that a happy workforce is a much more productive workforce, so keeping your employees warm, cool and comfortable is not only the right thing to do, it can also help the overall bottom line.

The need to demonstrate sustainability

Rising energy costs are not the only consideration these days as more global corporations are demanding evidence of sustainability in the business operations supporting them.

That puts pressure on corporations and they are now examining all aspects of their operation and supply chain - and this includes the warehousing and logistics.

At the same time, we have seen a 'greening' of the electricity grid and production of primary energy, which is leading to an increase in the use of **renewable technologies and electrically powered equipment such as heat pumps and air conditioning.**



Carbon-intensive gas and oil are now officially on their way out as methods of heating larger spaces and there is a whole range of cost-effective electrical systems that can deliver the performance and comfort levels required.





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Why Mitsubishi Electric and how we can help

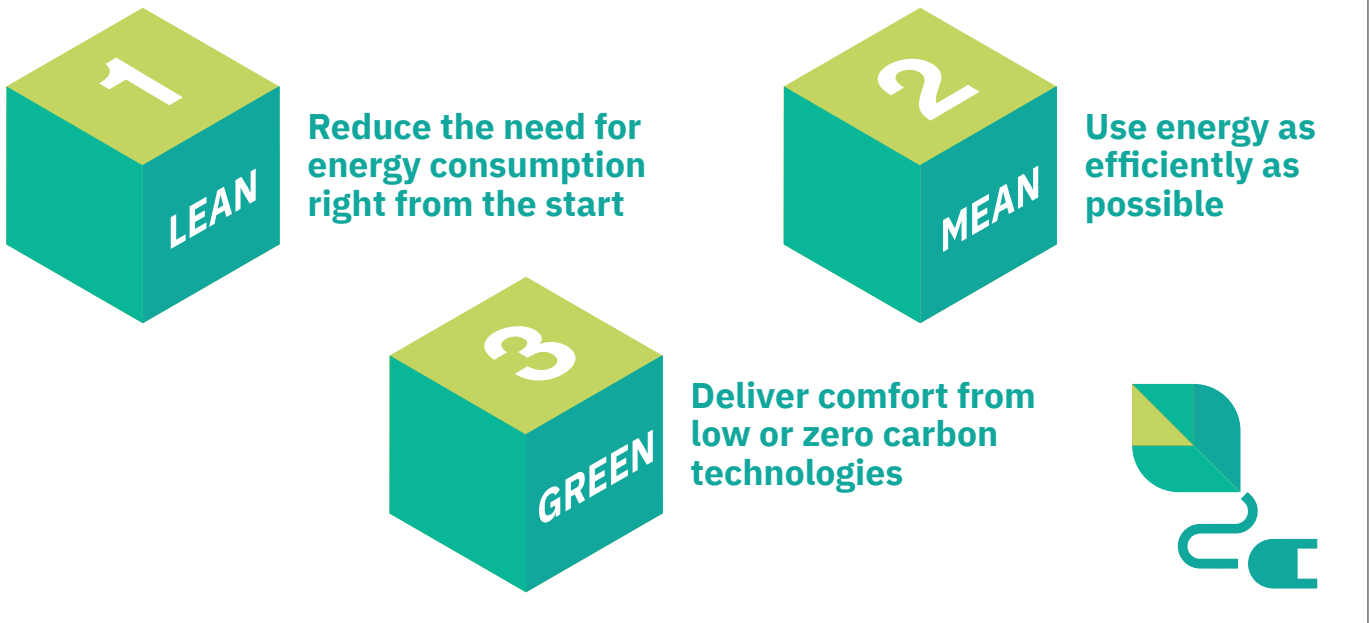
Working towards a better use of energy in buildings

Mitsubishi Electric is a market leader in providing solutions to cool, heat, ventilate and control buildings of all sorts of shapes, sizes and ages, from new-build to retro-fit.

A strong commitment to the environment remains a long-term Corporate goal under our global framework for realising a sustainable planet - **Environmental Vision 2050**.

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:



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 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.





Sustainable HVAC solutions for Warehouses & Distribution Centres

Temperature requirements in warehousing and distribution can vary significantly depending on the type and use of the building and can range from providing straightforward frost protection or human comfort levels, to exact temperature and even humidity control for product specific storage such as food, drugs and chemicals.

Office and staff areas will also have differing needs to the rest of the building, whilst mezzanines and racking systems provide different challenges for traditional heating and cooling systems. In addition to this, heat gains from lighting and machinery, or heat loss from opening doors will also affect the performance and efficiency of your system.

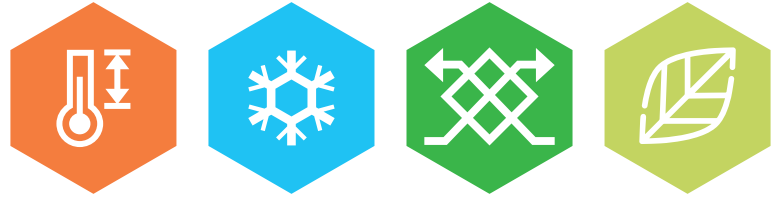
Tried and tested

Our energy efficient HVAC solutions are designed to work effectively and efficiently in both large and small spaces with complex and varied heating and cooling requirements. Whatever your requirement, we have a solution that delivers optimum comfort, reduced energy costs and minimal environmental impact.

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 highly efficient heat recovery solutions that utilise the latest refrigerants to future-proof new builds and bring refurbishments right up to date with legislation.

Our solutions can meet all needs from a chilled temperature control environment of 3°C, through to a year-round, operational warehouse facility needing to deliver staff comfort, around the clock.





A range of flexible HVAC solutions



Air conditioning

As UK market leaders, we pride ourselves in providing high performance and competitive air conditioning systems with low running costs. Our innovative solutions use modern refrigerants with lower global warming potential right across the entire range, and we also offer a unique Hybrid VRF system which removes the need for any leak detection.

By utilising heat pump technology, our air conditioning not only provides cooling, but also heating and often sanitary hot water which can remove the need for additional systems elsewhere in the building and is far more efficient and less carbon intensive than traditional water heating systems.



Cooling

Our advanced range of traditional and inverter-driven chillers deliver controlled, cost-effective cooling to any building, making them the ideal solution for comfort and process cooling applications.



Ventilation

Our range of ventilation products covering mechanical ventilation with heat recovery units (MVHR), air handling units (AHU's) and AHU control interfaces - have all been designed to deliver a fresh air supply to a building whilst simultaneously extracting stale air in the most energy efficient manner possible through utilising heat recovery technology.



Renewable heating

Our commercial heat pump range is specifically designed for large applications, the Ecodan range of air source and ground/water source heat pump monobloc systems can operate singularly, or form part of a multiple unit system.



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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.



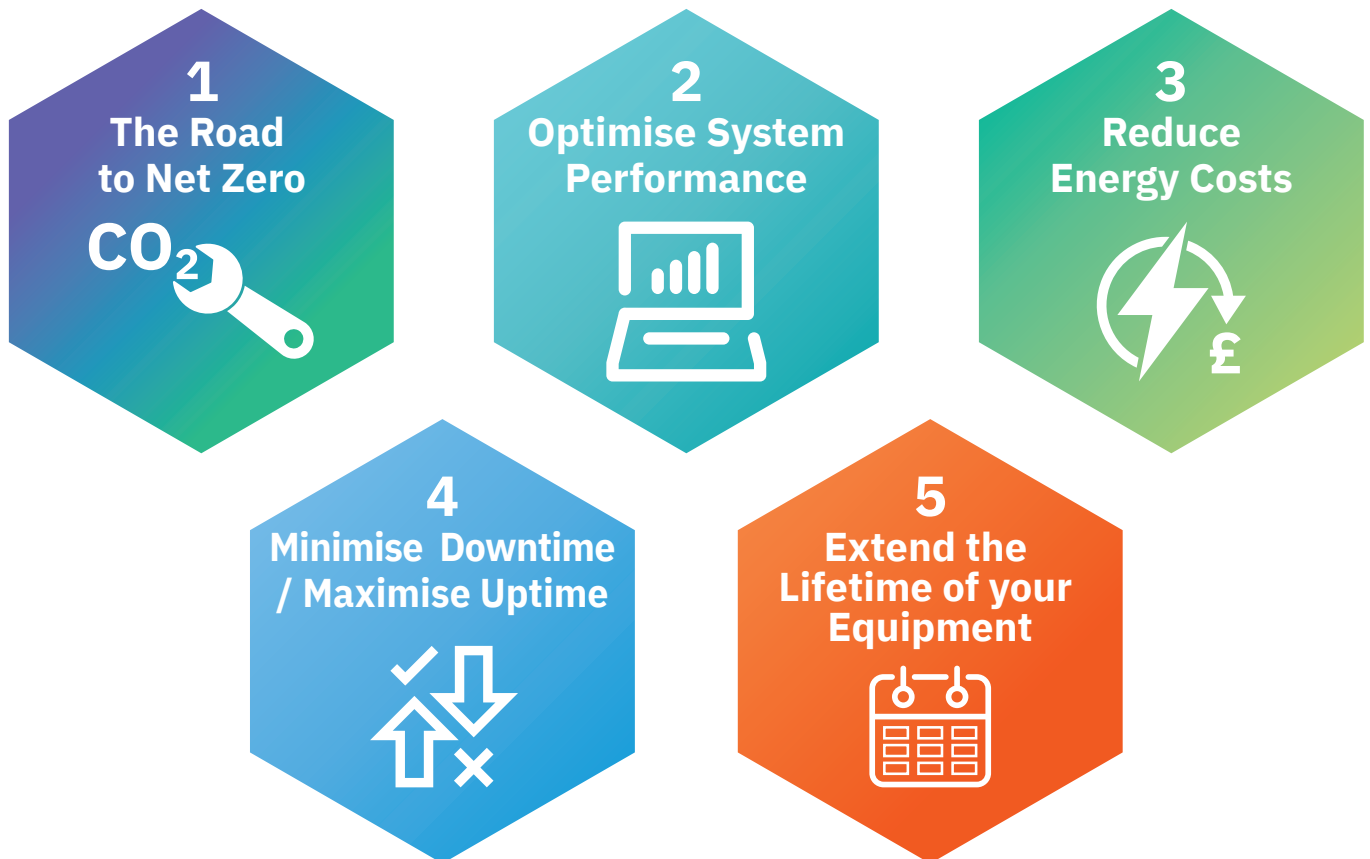
MELSERVE

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 HVAC solutions for industrial spaces - large or small

All are supported by our world-leading reputation for quality, sustainability and customer service.

- **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
- **Extended warranty** - different warranty packages are available depending on the chosen HVAC solution



Talk to us, we know we can help

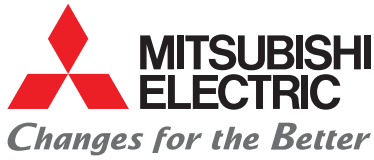
Whether you are a warehouse owner, developer or operator, we have a comprehensive range of solutions to match your needs.

Whether you need heat recovery ventilation that will deliver energy efficient fresh air into your finished buildings, or need a heating and cooling solution, we can help.

In fact, whatever your cooling, heating or ventilation need, 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**





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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