MITSUBISHI ELECTRIC

Case Study

A leap into the future with large scale R32 air conditioning

R32

A former tram station in Bristol has become the first building in the UK to benefit from large scale R32 air conditioning.

The Art Deco building in Gloucester Road was originally a main station for electric trams, and is now occupied by one of the largest environmental business network in the UK - Future Economy Network

The Future Leap Hub
Bristol

Renamed, the **Future Leap Hub**, the refurbished ground floor now brings together likeminded companies and acts as a showcase for sustainable businesses.

It offers a carbon neutral, co-working space, meeting rooms and an event space for hire, in which weekly, sustainability themed events are hosted.

FUTURE LEAP

The F-Gas Regulations are affecting all air conditioning systems and the next step in the Phase Down of refrigerants with high global warming potential (GWP), which takes place in January.

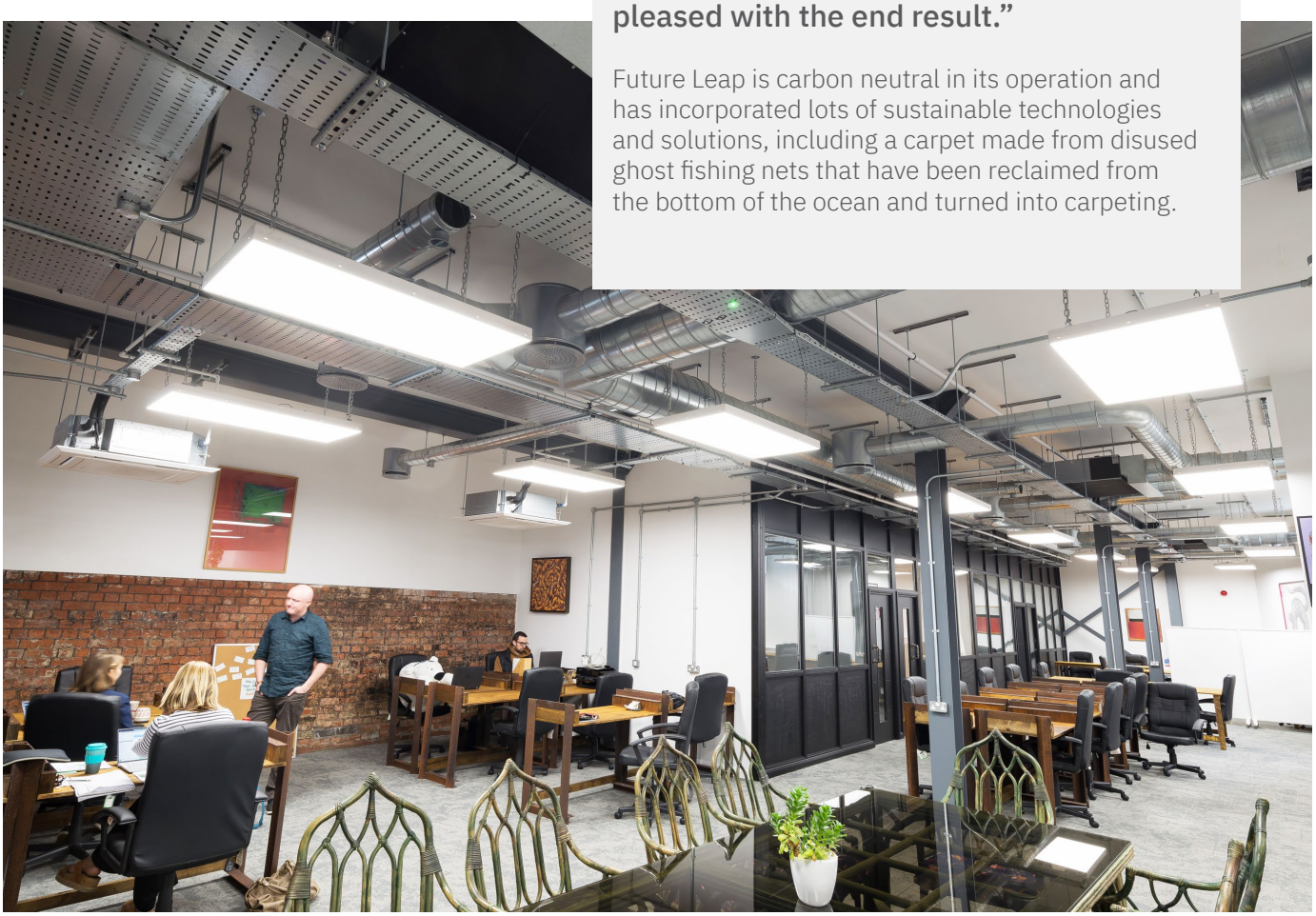
The air conditioning industry has been transitioning to R32, which has a significantly lower GWP than previous R410A systems but this has not been possible for larger VRF (Variable Refrigerant Flow) systems until the launch of the City Multi R32 VRF at the end of 2019.

"We looked across the market at a whole host of technologies for our heating and cooling and when Mitsubishi Electric's R32 system was recommended to us by Envira-Mech Services, we quickly realised it was absolutely the right product for us,"

said Alan Bailey, Director of the Future Economy Group and Future Leap Ltd.

"So far, we've been really, really, really pleased with the end result."

Future Leap is carbon neutral in its operation and has incorporated lots of sustainable technologies and solutions, including a carpet made from disused ghost fishing nets that have been reclaimed from the bottom of the ocean and turned into carpeting.



"When I first started talking to Alan about his requirements it was obvious that he wanted a system that would help promote energy efficiency and future proof the building,"

explained Terry Macleod,
Managing Director of Envira-Mech Services Ltd.

"We're a Diamond Quality Partner with Mitsubishi Electric and when we heard about R32 VRF at their conference last year, we just knew it would be right for Future Leap.

"Alan was already aware of F-Gas and was open to anything, so the idea of highly efficient air conditioning that could simultaneously heat and cool and run off 100% renewable energy really appealed to him," he added.

Envira-Mech Services is based in Clevedon, North Somerset and predominantly covers the south of England, whilst providing national coverage for specific clients. Offering a full design and installation facility for customers, Terry and his team are able to provide a complete turnkey service.

For Future Leap, the team also installed Lossnay mechanical ventilation with heat recovery (MVHR). These deliver highly efficient ventilation to the building as they can recover up to 80% of the energy from outgoing stale air to use on the incoming fresh air.

Envira-Mech Services had a very tight timescale on the project, as the complete refurbishment programme was only three months, so Terry and his team had just five weeks to complete the installation and commissioning. Not only did they have to work around the other trades refurbishing the building at the same time, there was not a lot of room for the services, so they also had to ensure the highest quality of installation for all ducting and pipework as these are all on display.

"I have to say I can't speak highly enough about Envira-Mech Services, they were really, really good on site," added Alan Bailey, "they were very conscious of the other trades who were working on site at the same time, and were very happy to fit in when the scheduling went a little bit out of sync."

The Future Leap Hub
Bristol

When Future Leap took over the building, it was a former Maplin electrical goods store, and Envira-Mech Services had to first of all strip out the existing air conditioning before they could install the R32 City Multi and the Lossnay MVHR.

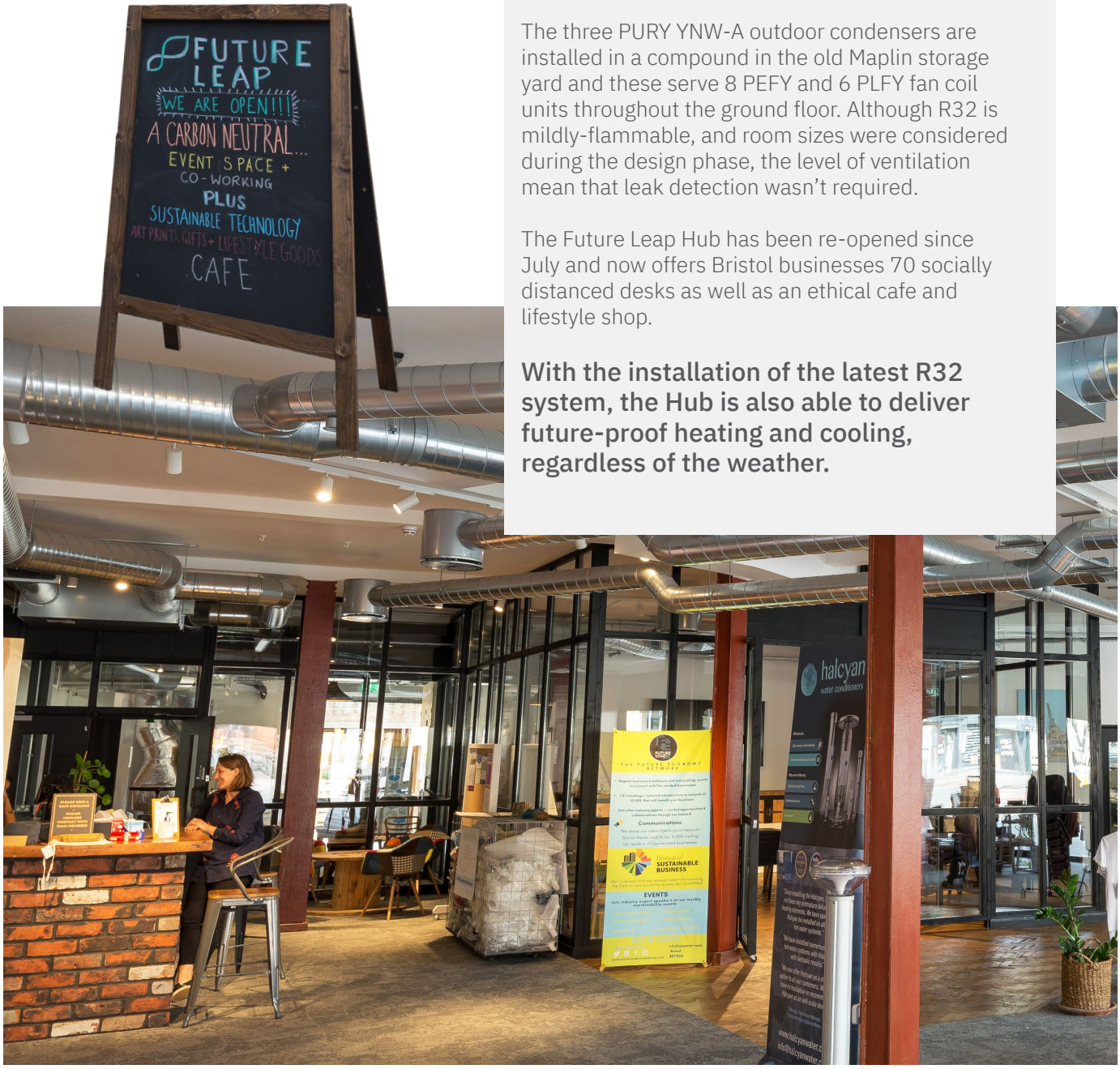
"Terry and his team are experts in air conditioning, ventilation and M&E services, so they were the ideal choice for Future Leap," explained Steve Reece, Branch Manager for Mitsubishi Electric's Bristol office.

"With this being the first R32 VRF installation in the UK, we worked closely with them to ensure that Future Leap got a system which will deliver perfect, controllable comfort with energy efficiency at its heart."

The three PURY YNW-A outdoor condensers are installed in a compound in the old Maplin storage yard and these serve 8 PEFY and 6 PLFY fan coil units throughout the ground floor. Although R32 is mildly-flammable, and room sizes were considered during the design phase, the level of ventilation mean that leak detection wasn't required.

The Future Leap Hub has been re-opened since July and now offers Bristol businesses 70 socially distanced desks as well as an ethical cafe and lifestyle shop.

With the installation of the latest R32 system, the Hub is also able to deliver future-proof heating and cooling, regardless of the weather.



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R32

Installation Summary

CITY MULTI Lossnay

City Multi Outdoor Units:

x1 PURY-M250YNW-A Simultaneous Heating and Cooling with Heat Recovery Outdoor Unit
x1 PURY-M200YNW-A Simultaneous Heating and Cooling with Heat Recovery Outdoor Unit
x1 PURY-M300YNW-A Simultaneous Heating and Cooling with Heat Recovery Outdoor Unit

City Multi Indoor Units:

x2 CMB-M106V-J1 BC Controllers
x1 CMB-M104V-J1 BC Controller

x7 PEFY-M80VMA-A Ceiling Concealed Ducted Indoor Units
x1 PEFY-M63VMA-A Ceiling Concealed Ducted Indoor Unit
x6 PLFY-M32VEM-E 4-Way Blow Ceiling Cassette Indoor Unit

Lossnay :

x3 LGH100RVX-E Commercial Lossnay Units

Controls:

x10 PAR-40MAA Local Controllers

MITSUBISHI ELECTRIC
Changes for the Better

Telephone: **01707 282880**
email: **air.conditioning@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
Mitsubishi Electric Living Environmental Systems UK
BLOG thehub.mitsubishielectric.co.uk

UNITED KINGDOM Mitsubishi Electric Europe Living Environment Systems Division, Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, England. Telephone: 01707 282880 Fax: 01707 278881
IRELAND Mitsubishi Electric Europe, Westgate Business Park, Ballymount, Dublin 24, Ireland. Telephone: (01) 419 8800 Fax: (01) 419 8890 International code: (003531)

Note: The fuse rating is for guidance only. 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), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), 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).

Effective as of September 2020

Green Gateway greengateway.mitsubishielectric.co.uk