





In the past decade, we have seen a seismic shift in thinking driven by the wide acceptance of the harmful effects of global warming and a need to address its root causes, culminating in the drive to make the UK net zero by 2050. COP26 has heightened awareness for the need to reduce fossil fuel consumption, yet with most of the national infrastructure currently 'on gas' and delivering half of the UK's non-transport primary energy needs, consultants, contractors, building owners and operators will be looking at their options.

With the Government's aggressive new Net Zero Strategy, despite similar carbon intensities for heating from either gas or electric, the latest regulations as outlined in the Heat & Buildings Strategy will deem gas systems alone to be too carbon polluting in commercial-scale buildings.

Working with you for a lower carbon future



To decarbonise domestic hot water (DHW) applications there are currently two core technology options, air source heat pumps (ASHP) or solar thermal. Although both can provide low or zero-carbon heat, neither can fully replace an existing water heating system, since commercial DHW systems must operate in excess of 60°C. However, both technologies can be used as a source of preheat to reduce energy use. Both will work equally well with after heat provided by either gas or direct electric.











For buildings already on gas and that rely on large amounts of DHW - a large proportion of current commercial UK properties - solar preheat is the preferable option. Depending on the site and its energy consumption habits, solar thermal will typically provide around 30% of the hot water demand.

For new build properties, the expectation is for specification to default to a mixture of heat pumps and direct electric afterheat. This does however come currently with higher operational costs compared to equivalent gas-based systems. Commercial sites with existing gas should really look at continuing to use it.

While we must all recognise the importance of excluding fossil fuels from future commercial systems and advocate all-electric systems for new builds, it is important to understand the implicit costs and difficulties of retrofit and replacement of systems throughout the thousands of legacy commercial buildings that define the UK's urban landscape. The hybrid approach is unavoidable for commercial projects and is the most sensible, practical, and cost-effective option. Whether all-electric or using gas after heat, commercial organisations can actively drive sustainability and retain control of operational expenditure for decades to come.



Adveco's expanding portfolio of low carbon and renewable technology, high efficiency condensing gas water heaters and boilers, enables us to design, supply and support bespoke applications that work for you today. This means commercial hot water and heating systems are more cost-effective to install and operate, whilst delivering optimal efficiency that helps reduce carbon emissions. Critically, our approach will also futureproof your systems, bridging to emerging technologies that will ultimately deliver those nationwide net zero targets by 2050.

Thank you for accompanying us on this exciting journey.

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FPi32 Air Source Heat Pump Range



- Reduced operation costs
- 80% reduction in Global Warming Potential*
- Compact and easy to install
- Integrated controls for easy operation
- Low maintenance
- Very high Seasonal COP
- Quieter operation

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The Adveco FPi32 range of 6kW, 9kW & 12kW Air Source Heat Pumps (ASHP) delivers an easy to install method for commercial sites to achieve lower cost water heating or cooling.

The FPi32 range provides excellent levels of performance, especially throughout the UK's relatively mild winters. With sleek looks and quiet operation, this more compact monobloc design is capable of providing domestic hot water (DHW) at up to 55°C, or cool water to -7°C for use in fan coils.

The FPi32 range offers an above average system COP of as much as 5.23 for the 6kW and 4.94 for the 12kW variant. Seasonal COP offers a very high range from 4.71 (12kW) to 4.74 (6kW).

The cornerstone of a hybrid system

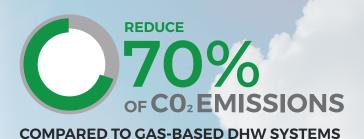
When packaged in combinati on with a gas appliance and control system, the FPi32 presents an attractive option to meet the hot water and space heating demands of a property with less adaptation.

The availability of two heat sources is extremely advantageous, giving a property the versatility of switching to the gas boiler at time of network peak. This not only reduces operational costs, but means the heat pump can be reduced in size, such as the compact FPi32-6 or FPi32-9. These hybrid systems can operate at a higher temperature grade, as well as remaining effective at very low temperatures when compared to a standalone electric ASHP system.

*Compared to R-410A FPi models

L70 Air Source Heat Pump







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A high capacity air-to-water monobloc heat pump designed to provide high temperature, hybrid, domestic hot water (DHW) and heating.

Rated 70kW for typical UK operation at 5°C, the L70 is perfect for large scale commercial applications and can operate as part of a cascade installation for projects demanding greater capacity.

Cut CO² Emissions from Hot Water & Heating

The L70 can deliver flow temperatures up to 60°C, providing 55°C preheat for hybrid applications, dramatically lowering CO² when analysed using the carbon intensity figures from the new SAP10.

Compared to gas systems, the carbon emissions are reduced by around 70% when using the L70's seasonal coefficient of performance (SCOP) of 3.47 (measured at 55°C flow temperature for the Ecodesign warm European temperature zone with a reference design temperature of 2°C).

- High capacity output up to 70 kW
- Compact design ensures efficient use of space
- Large DHW output range from 25°C to 60°C
- Cascade support for large and highly demanding applications
- Specifically designed for the UK climate, supporting ambient temperatures from -20°C to +35°C
- COP 3.65 (7°C ambient) to 2.83 (-10°C ambient) at 35°C water temperature
- Seasonal coefficient of performance (SCOP) as high as 4.08.
- SCOP of 3.39 measured at 35°C flow temperature (Ecodesign average European temperature zone with a reference design temperature of -10°C).
- Built-in automatic reverse cycle frost protection



Solar Thermal Systems



Collectors and Drainback

High-efficiency flat panel solar thermal collectors. Available in both portrait and landscape, flat, wall and frame mounted configurations. A unique, intrinsically safe drainback system is used to prevent overheating and stagnation of solar fluid for longevity and reliability.

SGS, SGE

High efficiency condensing gas-solar water heaters with inbuilt solar thermo controllers.

SGS: Output capacities from 31–121 kW SGE: Integrated solar heat exchange coil. Output capacities from 40–60 kW

From offices, to healthcare, hospitality, schools and leisure, if, as a business, you are using large amounts of hot water, then solar thermal is potentially an ideal technology, particularly if an application is for a new build project.

Additionally, solar thermal lends itself to working in conjunction with other conventional heating and renewable technologies. This is critical, as a solar thermal system alone, typically would not be able to generate a business's total energy requirements to meet the year round demands for domestic hot water (DHW). Correctly designed and sized, the solar thermal system can generate a substantial proportion of the hot water requirements, enough to reduce reliance on the gas boiler, especially during summer months. This alone can result in considerable savings in the overall energy overheads of the business.



HR001 Heat Recovery

A standalone Heat Recovery Unit providing a convenient, packaged unit to recover refrigerant system waste heat.

Connecting between the fridge and freezer condenser units and a hot water installation, the HR001 is capable of achieving temperatures as high as 50°C.

Pre-wired and installed within a grey IP rated housing It incorprates two independent heat recovery circuits, plate heat exchangers, glycol pumps, temperature differential controller, expansion vessel, pressure relief and isolation valves.

Proven, Sustainable, Cost Effective

Deployed HR001 appliances run on average six hours per circuit per day, recovering 155 kWh per week of otherwise wasted heat.

Assuming 75% gas and 25% electric split, each unit on average provides more than £400 in annual savings, and can be considerably greater, meaning payback periods can be as little as 3½ years.

The HR001 is industry recognised for its innovation, named finalist in the commercial heating categories in the 2019 HVR Awards and winning Highly Commended in the 2020 H&VNews Awards' commercial heating category.

- Dual Fridge and Freezer Heat Recovery Circuits
- Supply 230V / 1ph / 50Hz
- Capacity 3kW per circuit
- Fluid 1 Refrigerant R404A / Fluid 2 Tycofor L
- Expansion Vessel 2L
- Protection IP55
- Weight 35kg



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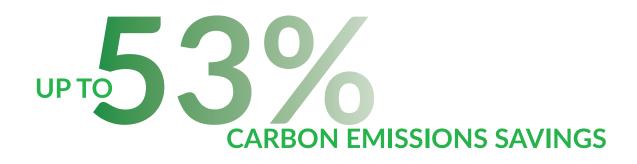


FUSION FPH-S Hybrid Hot Water Systems



- I Available with 200 500 litre capacities
- I 6-10kW ASHP preheat
- I 9-12kW direct electric immersion heating
- I 16 pre-sized variants to meet a wide range of applications
- I Dedicated control system for simple operation and maintenance checks

The Adveco FUSION range is a low carbon, all-electric packaged hybrid hot water system available in a range of presized variants with 6 or 10 kW preheat and 9 or 12 kW electric top-up. FUSION brings together an air source heat pump with a stainless steel calorifier and a dedicated control and metering system to address a host of domestic hot water (DHW) applications for commercial projects.





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FUSION harnesses Adveco's FPi32 Air Source Heat Pumps with a compact, high-pressure ATSH calorifier with electric immersion. With dedicated controls and metering FUSION provides a complete, low-carbon hot water system for a wide range of commercial end uses.

FUSION provides excellent levels of performance, including throughout the UK's cold winter months. With sleek looks and quiet operation, the compact monobloc ASHP design is specified to provide consistent working preheat at 50°C into the FUSION system, offsetting direct electric demand for a 53% saving in carbon emissions compared to an equivalent direct electric-only system.

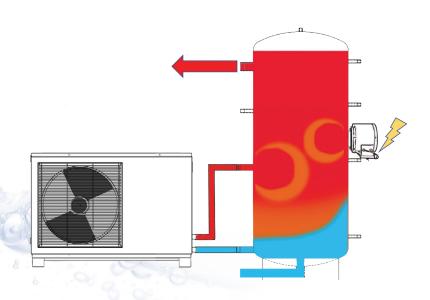
FUSION is a perfect response for building projects with small to medium basin and sink led hot water demands.

Desinged for Greater Efficiency

The design of efficient hybrid systems depends on harmoniously balancing the different elements to ensure that they do not work against each other. If the coil and immersion are situated closely together they become impossible to accurately control and system efficiency would be lost.

FUSION, through a mix of innovative design and dedicated controls ensures the ASHP preheat and immersion work seamlessly to deliver the highest operational efficiencies.

FUSION controls incorporate a set of submetering options to monitor the heat pump, immersion and water flow. This provides clear sight of energy and water usage to better manage day-to-day operations. Timer controls and remote control via BMS ensure FUSION is only operating when required, maximising energy demands.



PACKAGED HOT WATER







Bespoke Prefabricated Plant Rooms

- I Relocate essential services and maximise space
- I Protect project timescales
- I Improve quality and speed of works
- I Improve the sustainability of your building
- I Reduce a building's energy demands & cut operational costs Gain system resilience

Adveco will size, design, and manufacture to order bespoke Packaged Plant Room enclosures suitable for placement beside or on top of buildings with a flat roof space. Integrating and combining gas, electric and low carbon technologies including ASHP, into a single packaged hybrid system also provides a timely answer to meeting new sustainability targets while future-proofing the system for integration with new energy sources, such as green gas and hydrogen. When delivered to the project location, the plant room module can be easily sited, requiring just external pipework and final electrical connections to be completed.

Adveco Packaged e-32 Hot Water System



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The Adveco Packaged E-Hot Water System standardises our plant room offering with a system built around an inverter-driven Adveco FPi-9 ASHP mounted on the outside of a reinforced wall of the GRP housing, and an Adveco 200L GLC indirect preheat tank. This preheated water is transferred into an Adveco 200L GLE direct electric water heater that provides reliable high-temperature water in a convenient, packaged unit.

Adveco's Packaged E-Hot Water System makes parti cular use of the FPi-9 ASHP to provide the system preheat from 10°C to 50°C, supplying 70% of the DHW load.

Purpose specified immersions lower the heat intensity, without detrimental eff ect to the demands for hot water, meaning the Packaged E-Hot Water System is also more resistant to scale.

Adveco's Packaged E-Hot Water System is ideal for a wide range of commercial properti es with regular hot water demands such as restaurants and boutique hotels, offices, schools, and light industry.

The system is also perfect for both new builds or refurbishment where space is at a premium.

Control your CO, CO2 and NOx emissions

The ASHP based pre-heat configuration, used in the Adveco Packaged e-Hot Water System, can demonstrate a 47% reduction in CO2 emissions for the same output of 500,000 litres of hot water each year when compared with a similar direct electric-only system. Adveco's MD boiler and AD water heater ranges offer market-leading efficiency, for some of the lowest emissions for their category.



Condensing Gas Water Heaters

ACSmith Water Heaters

I BFC Cyclone

A wide range of condensing gas water heaters.

Nominal outputs from 31 - 122 kW Efficiencies up to 97% gross Water capacities from 217 – 480 litres One year parts and labour warranty (three years on tank)

I IR Innovo

A range of fully room-sealed condensing gas water heaters.

Efficiencies up to 98% gross Outputs from 11.7 to 31.3 kW Water capacities from 160 - 380 litres NOX emissions from 22 - 37 mg/kWh Two years parts and labour warranty (three years on tank)

I Twister II

A fully room-sealed stainless steel condensing gas water heaters

Efficiencies up to 93% gross Stainless steel tank; no anodes simplify maintenance Premix Low-NOx burner Plug-and-Play technology for quick and easy installation



I IR INNOVO





ITWISTER II

Electric Water Heating





UK WATER REGULATION 4



One or two element mounting flanges can be used to house up to four primary immersion heaters in addition to the back-up immersion heater, delivering electrical heating outputs of up to 84 kW with inbuilt redundancy.

I DRE Electric Water Heater

Three-phase electric water heater for commercial applications.

Fitted with 3 – 9 incoloy-sheathed elements to deliver heating capacities from 9 – 54 kW Water capacities from 200 – 300 litres.

I EES

EES is a vertical electric water heater with a capacity from 115 to 450 litres for small commercial applications. Two replaceable Incoloy-sheated elements are provided with an independent control thermostat (adjustable: 43 – 77°C).

DRE & EES boast A.O. Smith's patented PermaGlas Ultra Coat second-generation glass coating technology to prevent corrosion.



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Stainless Steel Buffers & Calorifiers



I SSB, SSI, SST

Versatile range of high quality domestic hot water tanks constructed from high-grade AISI 316L austenitic stainless steel suitable for use as hot water buffers, and single or dual core calorifiers from 200 – 2,500 litres.

- Available with 0, 1, or 2 high capacity stainless steel heat exchange coils from 18 108 kW each.
- Up to 216 kW with two coils
- Electric immersion capacities from 3 84 kW
- Direct connection flanges for use with high flow instantaneous water heaters

I Stainless Steel Buffer Direct (SSB-D)

Using a specialised flange in the lower port of the SSB, direct large bore flow and return connections can be made to a water heater.





ATSx Hot Water Tank Range

The Adveco ATSx range of stainless steel hot water tanks serve as buffer vessels and indirect hot water calorifiers suitable for use with lower capacity, high pressure commercial applications in all water conditions...

I ATSI - Stainless Steel Indirect Cylinders

A high-quality indirect water heater. Each vessel features a single internal fixed heating coil at low level for use with an indirect heat source, as well as multiple connection points and a clean-out access flange.

I ATST - Stainless Steel Twin-Coil Cylinders

Twin coil indirect water heater. Each vessel features two internal fixed heating coils, at low and high level, for use with indirect heat sources, as well as multiple connection points and a clean-out access flange

I ATSH- Stainless Steel High Capacity Cylinders

A single high-capacity coil indirect water heater for use with a high powered indirect heat source, as well as multiple

connection points and a clean-out access flange

I ATSR - Stainless Steel Renewables Cylinders

A high-quality indirect water heaterl featuring two internal fixed heating coils with an increased surface area designed for use with renewable heat sources, at low and high level, as well as multiple connection points and a clean-out access flange.

I ATSB - Stainless Steel Buffer Cyliners

A high-quality buffer vessel featuring a single highcapacity coil, multiple connection points as well as a cleanout access flange.

- Vessels rated up to 1000 litres
- 10 bar as standard
- Single coil, twin coil and plate heat exchanger options for maximising transfer of energy
- Corrosion resistant stainless steel construction



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I ATSR

I ATSB

AO Smith Indirect and Storage Tanks

I Indirect and Storage Tanks Range

IZero to two internal heating coils with capacities from 46 – 156 kW I 300 – 3000 litres for a wide range of applications

I A.O. Smith patented PermaGlas Ultra Coat second-generation glass coating technology prevents corrosion.

LIT

An indirect water heater for a wide range of applications. This water heater is fitted with 1 heat exchanger. This appliance is available in capacities varying from 300 to 2800 litres. The tank has a PermaGlas Ultra Coat second-generation glass coating to prevent corrosion.

I ITS

An indirect water heater for a wide range of applications. This water heater is fitted with two single-wall spiral heat exchangers. This appliance is available in capacities varying from 289 up to 1007 litres.

1 ST

A storage vessel is available in capacities varying from 208 up to 2820 liters which makes it very suitable to numerous applications. The ST storage vessel has PermaGlas Ultra Coat second-generation glass coating to prevent corrosion





I INDIRECT AND STORAGE TANKS - IT, ITS, ST



Packaged Plate Heat Exchangers

I PPN & PPS PACKAGED PLATE HEAT EXCHANGERS



- Designed for instantaneous or semi-storage applications
- Suitable for use with DHW systems up to 99°C
- Range from 100 600 kW
- 24 Volt controls system including a digital LED display

I PPN & PPS Packaged Plate Heat Exchangers

Constructed from gasketed stainless steel plates and supplied pre-assembled with pumps, pipework, controls and valves on a metal skid base.



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Electric Immersions

I EB Electric Immersions

A wide range of electric immersion heates for use with water heating systems, capable of serving as primary or backup heat sources.

Each EB immersion heater kit is supplied with a gasket and flange, and connect directly into the clean-out access or side port of its compatible range of tanks. All heater kits additionally contain the required thermostats and pockets for use with the heating elements as standard. All heating elements are available in multiple flange sizes or as standalone elements, allowing maximum compatibility with a large number of vessels.



MD High Capacity Floor-Standing Condensing Gas Boiler Range



Fully condensing with low flue gas temperatures

Models with heat inputs of 70, 140, 210 and 280 kW Improves energy efficiency Enables use of low-cost PP flues

Output range from 14 kW – 2.24 MW with turn down ratio as great as 20:1 Patented AISI 316Ti (titanium-stabilised stainless steel) heat exchanger Durable and corrosion resistant

11 bar working pressure

Suitable for large, high pressure applications

Class 6 Low NOX emissions

34 mg/kWh, satisfies ErP directive

Integrated flue gas non-return valve

Enables overpressure flue systems

Prevents flue gas recirculation

Intelligent system controller

Includes maintenance self-check

for BMS integration

Acid condensate neutraliser

Refillable limestone bed reduces acidity

Space saving design

Stacked heat exchanger design delivers maximum output

from minimal footprint

106% COMBUSTION EFFICIENCY











MD High Capacity Wall-Mounted Condensing





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A range of 10 high efficiency commercial wall-mounted gas condensing boiler variants with rated heat outputs of 15, 24 and 34 kW for light commercial central heating and DHW projects.

The MD15, MD24 and MD34 have two variants to accommodate either central heating only or DHW via an indirect water heater. A third variant of the MD24 and MD34 includes an integrated Plate Heat Exchanger for instantaneous DHW.

With a 60kW heat output, the MD60 is designed to meet the demands of commercial central heating. Available in two variants, it can be selected with (MD60C), or without (MD60A), an integrated system pump.

MD offers integrated run/fault signal for connecti on to a BMS system. With 0-10 V input on the MD, a BMS system incorporating interior/exterior sensors can deliver automated heating control with these boilers.

The entire MD wall-mounted range is supported by a seven-year parts and labour warranty when boilers are commissioned by Adveco.

I MD15, MD24, MD34

Ultra-low NOX emissions at 25-31 mg/kWh Uses low cost 60/100 mm diameter PP concentric flue system Natural gas or LPG

I MD60

Ultra-low NOX emissions at 27.9 mg/kWh Uses low cost 80/125 mm diameter PP concentric flue systems Natural gas or LPG

Heating Buffers and Thermal Stores



I MSS CARBON STEEL BUFFERS

- From 500 10,000 litres
- Rated for 5 bar working pressure and temperatures up to 95°C
- Customisable to suit your application



I MST THERMAL STORAGE TANK

- From 600 2,000 litres with high capacity DHW coil
- Select 0, 1, or 2 internal heat exchange coils

I MSS Carbon Steel Buffers

A range of carbon steel primary system vessels designed to fit any heating application that requires an inertia tank or energy storage vessel.

The MSS range features numerous high, mid, and low-level connections to ensure compatibility with almost any heating application with multiple return flow temperatures or multiple heat sources, such as renewables or low and high-grade heaters.

Vessels up to 5000L are available with the opti on of up to two internal heating coils for use with indirect heat sources.

I MST Thermal Storage Tank

A range of carbon steel thermal storage tanks designed to serve a combined heating and hot water application.

The MST features a stainless steel coil for potable water heating as well as up to two additional coils for use with central heating systems.

High and low-level flow and return connections at 90° to one another allow the installation of the unit in a corner, and have extra tappings in the middle as standard to be used with multiple heat sources, low and high grade heat sources, or varying return temperatures as required for the installation.

I CWT - Chilled Water Vessels

A versatile range of nine carbon steel chilled water vessels, featuring high and low level tank connecti ons that are suitable for moderate to high flow rates. All chilled water storage tanks feature three internal partitions to aid in stratification and prevention of preferential flows.

- From 500 5,000 litres
- Maximum working pressure 6 bar
- Working temperature range -10 to +60 C
- 500-1000 litre vessels
- External painting with 30mm flexible polyurthane insulation
- 1500-5000 litre vessels: 10mm closed cell elastomeric foam to prevent condensation, plus a 40mm flexible polyurethane jacket to provide thermal insulation





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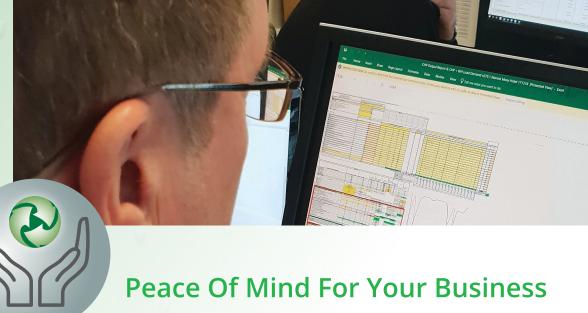
SERVICES

Application Design & System Sizing

- Bespoke applications and system design catered to the client's needs
- On-site metering and assessment services to set accurate system design requirements
- Meticulous inhouse sizing and manual checking for more accurate and effective results
- Avoid costly oversizing

 As an independently operated buinsess, the application design team will recommend optimal products or can help meet client preferences to achieve best results

• Improve efficiency to gain more from capiotal investment and reduce opertional expenditure across the life of a system



- Critical SystemsEnsure the installation is tested and meets all current legislation
- Unlock extended and labour warranties with Adveco commissioning
- Receive priority callout in the unlikely event of a breakdown within the warranty period
- Faster, single visit resolution with official parts always carried on our vehicles
- Extended product warranties will start from Adveco commissioning date and not delivery date

MANUFACTURER APPROVED COMMISSIONING





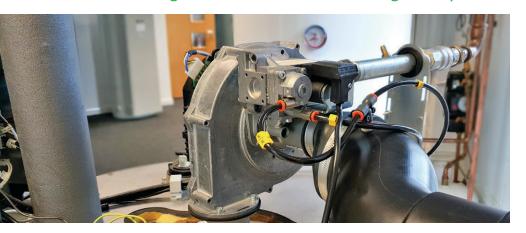
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Dedicated training facilities at Adveco's Farnborough headquarters





Accredited Training

As a provider of heating and hot water technologies, Adveco Ltd. is committed towards the continued growth of knowledge and experience of professionals in the energy and sustainability sector.

Accredited with CIBSE, we are pleased to be able to provide Continuing Professional Development (CPD) seminars for the industry and customers. A range of training courses hosted at your venue, remotely via the web or within the training facilities at Adveco's head office in Farnborough are available now. Contact us to learn more or request a session.

LEARN WITH US



Designing, supplying and servicing commercial hot water & heating systems that help best address the needs of buildings for our zero-carbon future.

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We can help you achieve NET ZERO by 2050