ADVECO
HOT WATER SPECIALISTS

PACKAGED PLANT ROOMS

COMPLETE WATER HEATING SYSTEMS FOR COMMERCIAL PROJECTS



Packaged Plant Rooms From ADVECO

- Maximise usable space
- Accelerate project timescales
- Substantially reduce on-site labour
- Improve quality of installation
- Introduce sustainability





Defy Limitations

Whether limited by available plant room space or project delivery timeframes, securing new, high-efficiency and cost-effective to operate hot water, heating and low carbon systems is not always straightforward.

When a project faces these kinds of limitations one answer is to make use of an external Packaged Plant Room. Relocating essential building services to increase the availability of valuable internal areas.

With the incorporation of very high efficiency, low carbon and renewable technologies, the Adveco Packaged Plant Room is a practical and cost-effective external system for heating and hot water applications.

At Adveco, we have unbeatable experience designing and supplying these fully bespoke commercial systems for all kinds of new build and refurbishment projects.

Offsite Construction

Offsite construction, or pre-fabrication, is a tried and tested way of bringing mechanical and electrical systems to a live construction site, countering the challenges of complexity, limited space, limited time and the need to work around other contractors.

Adveco will size, design, and manufacture to order bespoke Packaged Plant Room enclosure suitable for placement beside or on top of buildings with a flat roof space. 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.

By manufacturing hot water, heating and low carbon systems away from the job in our purpose-built facility, Adveco's offsite construction makes things on site much easier.



- Lower cost of construction and whole life cost of built assets
- Faster delivery for new build and refurbished assets
- Lower greenhouse gas emissions in the built environment


AINSCOUGH
SKYJACK
SJ6832 RT

The Advantages of Adveco Packaged Plant Rooms

Working with Adveco ensures the best results from an offsite construction approach to your project

The proper co-ordination of equipment and controls is the most difficult aspect of modern application design. Adveco combines that understanding with a wide product offering and experience in full system design to provide a single source of supply for the delivery of complete heating and hot water systems tailored precisely to fit the specific needs of a project.



We carry out all work in our controlled, purpose made environment. Should there be any forced downtime on site due to external factors, the assembly work at Adveco will continue as planned. With no distractions from other typical construction site activities or issues we can ensure your plant room work is more rapidly progressed.

Our factory environment ensures improved manufacture with optimal conditions provided for quality control, unlike the general conditions found on a typical construction site.



By locating all production work offsite, the plant room element of a project can efficiently progress at the same time as other groundworks or site installations. Without the need to fit extended plumbing and electrical installation in with other activities on site the overall project delivery schedule can be reduced.

The plant room arrives with all appliances, controls and ancillaries pre-fitted and connected – using stainless steel (heating) or copper (DHW) crimp pipework – as standard.

With an Adveco Packaged Plant Room ready to be placed immediately upon delivery we can drastically reduce on-site labour demands and support rapid progression of project timescales.



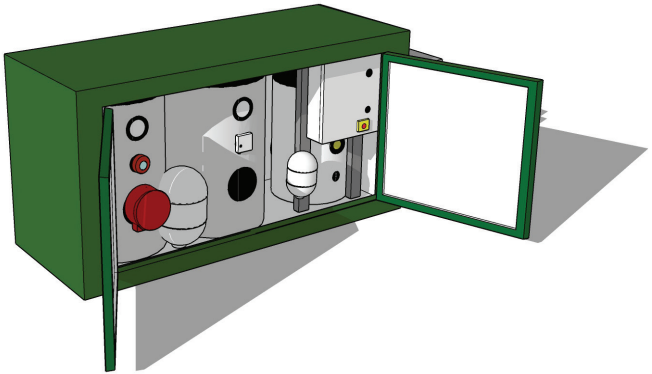
A Smarter Approach

Adopting offsite pre-fabrication as part of your project is highly advantageous. To achieve the best results, you will need to finalise facets of decision-making relating to hot water, heating or cogeneration of power early on in the project to allow for increased lead-in times.

Once production commences it becomes more difficult to accommodate changes to a bespoke pre-fabricated system. This is why Adveco's expert design engineers will work closely from the start with your project team to accurately size and design a system that meets the exact needs of the project on day of delivery.

Design support includes the option to request a 3D BIM model of major component locations with supporting 2D pipework schematics. Or, full 3D modelling including all pipework, to give a full visualisation of a project before manufacturing commences.





Fit For Purpose

Bespoke design and build

Comprehensive CAD and BIM modelling services available on request

Reinforced GRP enclosures with a steel base and checkerplate floor

All appliances and ancillaries are pre-fitted and connected

Stainless steel (heating) or copper (DHW) crimp pipework as standard

Branded valves and ancillaries available on request

Optional appliance and pipework insulation

All certification supplied, plus framed valve charts and schematics

Adveco offers final commissioning services

Manufacturer's warranty servicing for commissioned appliances

Bespoke Design and Manufacture

Adveco Packaged Plant Rooms come with a range of features as standard with optional alternatives. Domestic hot water (DHW) and heating systems can be provisioned with a series of recommended default choices or specified to the particular needs of a project or application. Adveco's design engineers will guide you through this process to ensure all options are correctly accounted for before construction begins on your Packaged Plant Room.

Each Packaged Plant Room comes as a GRP enclosure on a steel base that can be specified to the optimal size for your project. The enclosure comes in a choice of colours with the floor receiving two coats of non-slip paint. The base is also finished in bitumastic paint to create an underseal and resist corrosion.

The door size and location can be specified along with stays and locking mechanisms. The door is additionally weather protected with guttering and the enclosure's thermal and acoustic insulation can be specified to requirements.

Ventilation is fully louvred and a floor service outlet also allows for drainage.

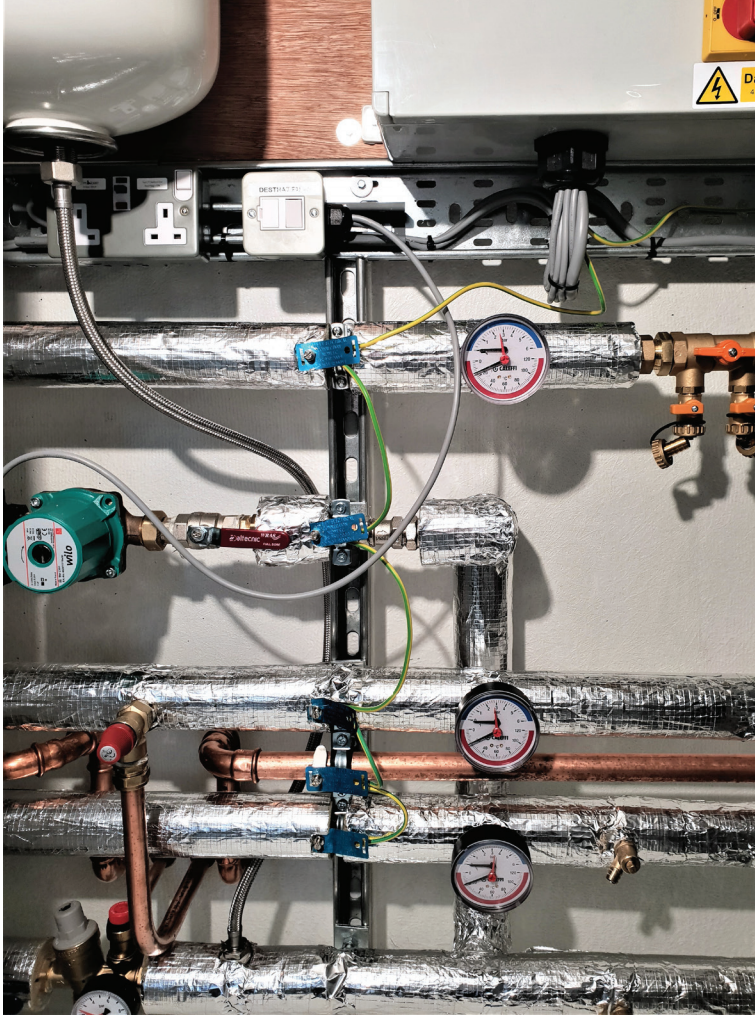
All pipework is provided and jointed with a press-fit system. This work can be upgraded to screwed and welded joints for LTHW and gas pipework, whilst DHW pipework can be soldered/brazed. All LTHW pipework is supplied in 304 grade stainless steel with the option to specify copper or screwed steel. Copper is also used as standard for all gas and DHW pipework. There is an option to specify stainless steel for DHW pipework.

Drainage is polypropylene pipework with the option of ABS and solvent welding. There is also the option to incorporate pipe identification branding. Valves and fittings are provided from merchant own brands to reduce costs, or name brands such as Hattersley or Crane can be specified.

Pipework insulation and valve jackets are provided as an optional extra, this includes foil-backed mineral wool, Isogenopak or Alu-clad cladding.

Each enclosure is provisioned with power, with a 5-way IP65 metal consumer unit with RCD protection and earth bonding to mechanical service pipework and 13A surface mounted double socket. Lighting includes corrosion resistant IP65 fittings (with at least one emergency fitting) with switch, metal back box and covering plate. Additional electrics can be specified including an upgrade to a 110V power supply and tube heaters with frost protection thermostat.

A full range of controls options are available including the mounting of free-issue H&V control panel (excluding wiring), with quantity, size and service clearance all specifiable. Up to 10 free-issue control specific pockets or sensors in agreed locations, one free-issue differential pressure system per pump for monitoring and solenoid emergency gas shut-off valve (excluding gas proving system) all come installed as standard. Additional specification allows for wiring, containment and local isolation of all low voltage components and BMS control and monitoring. Fire detection and alarm systems can be installed after delivery.



Domestic Hot Water & Heating Systems

Specifying the DHW System

With a range of water heaters, Adveco can provide a complete list of default appliances to create a bespoke DHW system. We can meet requirements of a pre-heat system in terms of volume, quantity, energy source and specific primary pipework components. We can assess building height and plant room location to specify minimum working pressure and supply a booster pump for systems should the mains not meet the projects requirements. If multiple tanks are needed Adveco can supply an unvented kit for each tank.

Additional options include: destratification pump; secondary return and secondary return pump; scale control devices; combined control and overheat for thermostatic mid-tank; as well as flue configurations - including a default room-sealed, vertical termination.

Adveco also supplies electric immersion heaters and control to provide a system with low cost redundancy should gas supply temporarily fail.

Specifying the Heating System

From the MD range of high-efficiency floor-standing condensing gas boilers to direct electric systems, Adveco can support the specification of a variety of appliances and features to create bespoke heating systems. Packaged Plant Rooms with heating systems can also incorporate: a system buffer vessel; pressurisation unit; dirt & air separator; dosing pot; expansion vessel; heating circuit pump; as well as flow control valves; commissioning stations and heat metering all of which Adveco can help specify and supply.

Each Adveco Packaged Plant Room enclosure includes: a standard low loss header; 'Y' strainer system filtration per pump set; automatic air relief valve per circuit; and pressure monitoring with three gauges and binder points, one set before filter, one after filter, one after pump. Two temperature gauges per heating circuit - one on flow, one on return – are also included for temperature monitoring and boiler cascade control is provisioned via pre-installed bus link control cable as part of the heating system.

Finishing & Commissioning

The finished Packaged Plant Room is pneumatically tested at the factory and certification supplied. Additional framed information on delivery includes a valve chart, gas line diagram, as-built schematic and the installation of Traffolyte valve labels.

Adveco provides plant commissioning onsite from our specialist engineers in a single visit.

Other system commissioning can be specified as well as the option to cut and temporarily seal pending flue installations, or supply and install the flue terminal using safe working access provided by the installation contractor.



Sustainability Made Easy - PPR0007/ PPR0008

Packaged e-Hot Water Systems For Low Carbon Commercial DHW

Adveco's Packaged E-Hot Water Systems standardise the plant room offering with a system built around the award-winning FUSION hybrid water heating concept. This applies it to deliver the most compact, reliable and low-carbon electric hot water offsite constructed system (OSCS).

The PPR0007 is an electric water heating system consisting of a 24kW Ardent electric boiler and a 210 litre stainless steel ATSi cylinder with 9 kW backup electric immersion.

The PPR0008 is an enhanced system that combines a 10 kW ADVS-W ASHP to provide the system preheat, accounting for up to 70% of the DHW load for enhanced carbon savings. The system features a 12 kW Ardent P12 electric boiler and a pair of ATSI cylinders for 420 litres of storage. Additional backup for assured operation is supplied from a 9kW immersion.

The PPR0007 retains the options for upgrading with an ASHP at a later date, offering a versatile response to evolving sustainability programmes, which demand future-proof functionality.

With stainless steel construction and operating in an indirect loop, both systems are resistant to corrosive soft water and generate almost zero limescale in hard water areas for improved system longevity and reduced maintenance demands.

Adveco's Packaged Electric Hot Water Systems are ideal for a wide range of commercial properties 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 and refurbishment, where space is at a premium.is at a premium.



PPR0007

PPR0008



E-32 Packaged Hot Water System

Packaged e-Hot Water System For Low Carbon Commercial DHW

A complete, highly-efficient, low carbon response, the prefabricated, all-electric water heating system brings together Adveco's FPi32-9 Air Source Heat Pump (ASHP), an Adveco 200L GLC indirect preheat tank, and Adveco 200L GLE direct electric water heater to provide reliable high-temperature water in a convenient, packaged system housed in a compact GRP housing.

The Packaged e-Hot Water System leverages all the advantages of off-site construction to provide a standardised, resilient, environmentally friendly, low carbon, hot water system that helps reduce both a building's energy consumption and operational costs across its lifetime.

Adveco's Packaged E-Hot Water System makes particular use of the FPi32-9 ASHP to provide the system preheat from 10°C to 50°C, supplying 70% of the DHW load.

By offsetting 70% of the energy requirement the Packaged e-Hot Water System can demonstrate a 47% reduction in energy demands and CO^2 emissions for the same output of 500,000 litres of hot water each year when compared with a similar direct electric-only system.

A completely new specification that lowers the heat intensity, without detrimental effect to the demands for hot water, means the Packaged e-Hot Water System is also more resistant to scale, reducing maintenance demands.

The GLE also has an additional 6kW immersion heater to provide backup in case of failure of the lead heat source for sites where hot water is business critical. The Adveco designed control system monitors the heat sources, and in the case of failure, it can automatically activate the backup system.

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



Reduce operational costs by offsetting up to 70% of the energy required by equivalent sized systems

Simple way to introduce s ustainability onto premises and dramatically reduce CO^2 emissions

HVR AWARDS
FINALIST
2020

Unique low heat intensity specification reduces the threat of scale formation

Built-in backup for system resilience, ensuring consistency of service



Customer Projects

Berkshire School

Requiring a complete central heating and domestic hot water system using condensing boilers, a Berkshire school selected a full rooftop plantroom from Adveco.

Housed in a single 7m x 4m GRP enclosure, the plant room was designed and built to order and features a full cascade of condensing boilers. Incorporated system equipment also included a low loss header and pipework, 2000 litre carbon steel buffer vessel, expansion tank, electrical control panel and interface protection relay, as well as all pumps, controls, meters and pipework.





National Franchise Restaurant

Adveco has constructed more than 60 compact 1.67m high plantrooms designed for low capacity domestic hot water systems. This provides the restaurant franchise with a compact, lightweight and accessible enclosure ideal for addition to both new and refurbished buildings where interior plant space is restricted or non-existent.

Initially comprising an A.O. Smith Innovo water heater, indirect calorifier, immersion heater with connecting pipework, controls and other ancillaries. The restaurant has now adopted the Adveco Packaged E-Hot Water System making full use of the FPi32-9 ASHP to provide the system preheat.

The reduced energy demand means operational savings can be added to the capital savings secured during the design, supply, and installation phases.





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EXPERTLY ENGINEERED FOR YOU



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