Evinox

Apartment and Communal Heating Solutions
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Due to the increasing requirements for more energy efficient buildings and changes to the “Code for Sustainable Homes Legislation”, more energy efficient solutions for providing heating and hot water for apartments are being constantly developed.

When designing heating systems for new developments or to upgrade existing buildings, there are various options to consider. Factors such as - available plant space in each dwelling, siting of flues for safe discharge, the aesthetics of the building and of course regulations all have a part to play in the design process.

Apartment Choices
Evinox have many different design solutions for providing heating to apartments, which have already proved very successful in the UK and across Europe. These solutions can be configured to meet the requirements of various types of development, ranging from small flats, communal housing developments, large luxury apartments and sheltered accommodation.

Satellite heating
The Evinox ModuSat satellite heating system links to centralised heating plant and provides apartments and communal housing schemes with independent fast-recovery hot water and high efficiency heating. Each individual apartment contains a ModuSat unit, which has either a hot water tank or high capacity heat exchanger, removing the need for a conventional gas boiler or electric heater.

The benefit of this system is that there is no requirement for a flue in each dwelling or need for an expensive high rise gas installation. The end user is provided with independent control of hot water and heating temperatures, with the facility to be metered and charged just for the energy consumed within each residence. The system also enables the incorporation of various renewable heat sources, all of which can be provided as part of the Evinox solution.

Cascade flue system
Where preferred, a second option is to employ high efficiency gas fired condensing boilers in each dwelling, with a cascade flue system connected to a central flue riser within the building.

Evinox condensing system and combination boilers offer the ability to modulate to outputs as low as 2kW up to either 17kW or 25kW, and are well suited to provide heating and hot water for apartment buildings. The unique vertical cascade flue system enables the connection of 11 boilers over 11 storey’s on a common 110mm flue riser with the boilers remaining room sealed.

This can provide an excellent solution for applications where gas is required throughout the building, and ensures that the aesthetics of the building are not compromised.
A complete package

To ensure that the heating and hot water system operates at optimum efficiency Evinox offers a tailor-made solution for each application. This can include independent temperature control to each room and inbuilt weather compensation, which works with an external air sensor to increase the energy efficiency of the heating system. The controls can also provide direct management of the underfloor heating, without the need for any additional pumps, blending valves or mixing valves.

Energy Metering

Evinox provide various metering solutions for apartments, ranging from read only meters to a complete remote surveillance and billing solution. In addition to this we can integrate smart energy technology to provide end users with complete control of heating and ventilation within the home, enabling a reduction in the amount of energy used and the cost of bills.

Evinox understands that every project is unique, and therefore our aim is to give advice and guidance to ensure that the most suitable solution is provided, making sure that the requirements of the designer, installation contractor, end user, and the building operator are met, providing a trouble-free design, installation and operation.
The Evinox ModuSat satellite heating system has been designed to provide apartments and communal housing developments with independent fast recovery hot water and high efficiency heating. With a large range of models available, the system suits a variety of applications, from single occupancy apartments to groups of family homes.

Consisting of a fast recovery hot water tank or high capacity heat exchanger, with either a hydraulic header or plate heat exchanger, pump and mixing valve set for the heating the ModuSat offers a total heating solution. This includes a meter for billing of energy usage and cold water consumption for each apartment or house, and where required it also offers a facility for both heating and cooling. The ModuSat system still provides the end user the same autonomy as if they had their own boiler and tank.

The ModuSat draws energy from the main heating primary circuit delivered from a centralised plant. This is in line with latest legislation encouraging centralised plant rather than the use of individual heating and hot water systems.

The in-built energy meter provides a total package, which can be the use of simple read-only meters, or a complete remote billing solution using M-BUS communication to provide the end user with an itemised energy bill.

With no requirement for a flue, gas supply or ventilation the ModuSat is quick and easy to install and has minimal maintenance requirements.

For smaller projects where space may be limited or where there is a low draw-off of hot water required, the ModuSat with high capacity plate heat exchanger is the ideal solution. This model uses a plate heat exchanger rather than incorporating a hot water tank for the fast supply of hot water.

**Benefits**

- Completely independent heating and hot water for each residence
- Simple to install due to compact dimensions, low weight and factory assembled pipe work and internal wiring
- Integrates easily with renewable energy sources
- Reduced installation costs
- No flue requirement
- Central plant dramatically reduces kW loading for building compared to individual boilers
- Option of fast recovery hot water tank or high-capacity plate heat exchanger
- Read only meters or complete remote surveillance and billing solution
- Easy access for servicing
- Minimal maintenance requirements
- No additional room ventilation required
- Remote monitoring, alarms and diagnostics
- Can be controlled by homeowner sending SMS (text) message

ModuSat Satellite Heating System

ModuSat floor standing unit with hot water storage tank.
Integrating renewable energy

We are all conscious of the effect that man is having on the planet and of the spiraling cost of energy. Over a third of all UK carbon emissions are generated in the home so any renewable energy use or potential energy savings can have a big impact on our contribution to global warming.

The Evinox ModuSat satellite heating system can be integrated with renewable technology very effectively. The main plant can include a combination of renewable energy sources such as solar, ground source heat pumps, air source heat pumps or CHP, with top up boiler plant, to further improve energy savings.

ModuSat central plant

The use of a central boiler plant is by far more energy efficient than employing multiple boilers in each individual dwelling no matter how efficient they are. Not only is the carbon footprint reduced but it also makes energy use easier to monitor with individual metering for each end user.

When installing the ModuSat storage model, the centralised plant space can be greatly reduced due to the diversity that can be applied because of the increased thermal storage facilities being utilised in each apartment.

Evinox can provide central plant to include -

- Gas, LPG or oil fired boilers
- Wood chip or pellet boilers
- Combined heat and power
- Ground source heat pumps
- Air source heat pumps
- Solar thermal

Importantly we provide a total system solution, which includes the centralised plant, with all elements of the system chosen to create a totally integrated system that operates at optimum performance and efficiency. The client therefore has just one place to go for product support.

ModuSat Controls, Energy Metering, Monitoring, and Billing

Heating controls can range from simple programmable room thermostats with metering options to a fully integrated control system that incorporates weather compensation and smart energy technology.

Evinox provides various metering solutions for the ModuSat communal heating system. Listed below are our standard packages; however these can be tailored to meet each client’s specific requirements.

- Read only meters
- M-BUS metering
- M-BUS ModuSat metering and full remote surveillance system
- ModuSat pay as you go metering
- Wireless metering
- Complete billing service including revenue management
The vertical cascade flue system from Evinox prevents multiple flue penetrations through roofs or walls by allowing up to 11 boilers on 11 levels to share a common 110mm flue riser, making it ideal for modern buildings with glass facades.

The Evinox range of wall hung, condensing system and combination boilers are designed for use with our unique cascade flue system for apartment installations. An inbuilt non return valve on the boiler fan, allows for direct connection to the cascade system.

The boiler range includes models with varying outputs to suit applications ranging from small studio flats to large apartments, with the smallest model providing a variable boiler output from 2kW to 17kW. All models in the range benefit from in-built weather compensation as standard and are supplied with an external sensor.

With The Gas Safe Register & Building Control reinforcing the rules of Appendix 1 of the Gas Safety Legislation, which states that flue joints should be available to inspect, our cascade flue installation in apartments is the only flue system that requires one single inspection point in each apartment. This is due to the single flue joint on the branch connection of each dwelling.

Utilising a riser shaft with an internal measurement of 200mm x 200mm, the flue system uses less valuable space in the building than 11 individual flues, with no plumbing problems through the façade.
Cascade CVL system
For special applications where connection of two boilers to the flue riser on one level is required we can supply the Cascade CVL system. The Cascade CVL is a large concentric flue system, which varies in size depending on the height of building and number of boilers connected. Each system will be sized depending on project requirements. Please contact our technical team on 01372 722277 for assistance.

High efficiency boiler
Our dual burner modulation provides high temperature full power to the hot water and full modulation at variable output to the heating as a result of the inbuilt microprocessor. The boilers also feature optimised start as well as the ability for direct connection to UFH circuits without the need for mixing or blending valves. Renewable technology, such as solar, can also be integrated into the heating system by installing a twin coil tank in each apartment.

Fewer flue components
The Cascade flue system saves valuable time and money when installing due to the requirement for fewer flue components than a standard horizontal system. This system only requires the equivalent length of the height of each apartment level, which is generally around 3 meters, compared to a horizontal run that can be between 5 and 8 meters.

At Evinox our technical team provides contractors with on-site assistance for the first installation of the cascade flue, which is relatively simple to install. We also provide the flue design drawings for each project and our commissioning engineers set up each boiler on the flue system once completed.

Benefits
• Independent boiler within each apartment
• Unique cascade flue system removes the need for single flue within each apartment
• Space saving combination boiler does not require additional storage tank
• Can be integrated with renewable technology by incorporating a twin coil tank within each apartment
• Cascade flue system has one inspection point within each apartment

Controls
Heating controls can range from a simple programmable room thermostat to a fully integrated control system that incorporates weather compensation and smart home technology.
The Evinox AcuMen Control System can be incorporated into the heating and ventilation of apartments and communal buildings. Providing a clear graphic display, the system allows you to see at a glance the temperature of the heating and hot water and through its inbuilt intelligence manages the boilers and other items of plant to deliver a comfortable environment whilst minimising carbon emissions.

Sensors within the building and information from the internet give the control centre data inputs such as the temperature, humidity, energy consumption and even the weather outlook. The system then interprets this information and communicates with the controls devices within the home.

**Benefits**
- Environmentally-friendly smart buildings
- Convenient remote control of building features through any web enabled device
- Efficient management of energy sources
- Easy to implement with an attractive design
- Simple integration of renewable energy
- Low cost installation
- Home security function
- Integrated control of heating and cooling

**Sheltered Accommodation**
For those responsible for managing communities of sheltered housing, Evinox can provide a specially designed system to ensure the comfort and safety of the occupants. This system features -

**Benefits**
- Monitoring of heating and hot water systems to ensure no risk of hypothermia and scalding
- Alarms in case of falls
- A range of pressure and occupancy sensors to guard against injury through falls
- Door access and security systems
- Communal entertainment networks
Our dedication to providing the highest quality of service sets us apart from other companies; from conception to completion our aim is to deliver a complete package, including design and onsite installer training through to developer handover and remote monitoring and billing services.

**Design**
- Site surveys
- System sizing advice and guidance
- Liaise with your own design team
- Liaise with other trades, UFH, installers
- Provide full system schematic drawings

**Training**
- Full onsite training
- Site attendance throughout any project
- Full training centre in Epsom
- Warranty validation inspection of equipment

**After Sales Service**
- Provision of customer service pack
- Developer handover and demonstration
- Service and maintenance packages direct from Evinox
- Energy monitoring, metering and billing service

**Benefits**
- All heating and hot water equipment from one source – one point of contact
- Compatibility of products – interfacing renewable technologies where required
- Extended warranty
- High Performance Products enable excellent building energy ratings and improve SAP ratings
- Low running costs for home owner
- High performance products specifically selected for Apartment developments
- Lowest Carbon Emissions - Less environmental impact

For more information on our complete offer for Apartment developments, or if you have a specific project you require assistance with then please contact us on 01372 722277 to arrange for one of our Technical Sales Specialists to visit.
Mount Anvil and Evinox leading the way with low energy development at Atlanta Boulevard

Mount Anvil installed 98 Evinox Modusat satellite heating units, together with 110m² of solar panels in Atlanta Boulevard in Romford. The main boiler plant consists of only 400kW of energy, which is all that is required to run the 98 apartments due to the unique design of the Modusat with fast recovery hot water tank. The huge reduction in boiler power has provided a low carbon footprint for this project, with 4 Evinox 10-100 condensing boilers providing the bulk of the heating load.

The 110m² of solar collectors serve two 1750 litre solar thermal stores. The unique design of the Modusat allows for the solar thermal energy to be stored within each apartment, this in turn reduces the size of the main thermal stores in the plant room.

Evinox provided the complete heating solution for Atlanta Boulevard, including solar panels, thermal stores and boiler room package.

Following the completion of Atlanta Boulevard, “One Housing” bought the building and now employs Evinox to provide the planned preventative maintenance and service contract for the heating system. This includes energy billing and remote surveillance of the energy and water consumption for all apartments.
Vertical Cascade Flue in Vogue

Located in the heart of London’s fashionable ‘garment district’ is the Vogue E1, which is a stunning Higgins Homes development close to Aldgate East. Comprising of 58 one and two bedroom apartments & two bedroom duplex-penthouses, the development is located in Whitechapel, to the east of London, an area which is a vibrant mix of urban & ethnic culture that is characterised by the fashion and bric-a-brac trade of Spitalfields Market and Brick Lane.

Evinox supplied the heating system, which includes low output condensing boilers and their unique vertical cascade flue system.

The vertical cascade flue system enables up to 11 boilers on 11 levels to share a common 110mm flue riser, thus preventing multiple flue penetrations through the roof or façade.

The clients’ decision to choose the cascade system was driven by their desire to maintain the façade of this sleek iconic building, and with modern apartments increasingly using internal service risers the cascade system provides the perfect solution.

The inbuilt microprocessor within the boiler enables adjustment of fan speeds to suit flue conditions and provide a balanced boiler and flue system.

This guarantees optimum performance and efficiency, enables full boiler power output to be achieved, and ensures that the life expectancy of the boiler fan is not shortened because it has been overworked. The exceptionally low noise levels of the boilers ensure that cascade flue systems do not transfer any noise and are compliant with Part E Building Regulations.
Typical System Schematics
ModuSat Apartment System
NOTE

INSPECTION HATCH MUST HAVE A 400 X 150mm OPENING TO ENABLE BRANCH SEALS AND FLEXI LOWER CONNECTION TO BE INSPECTED. THIS MUST BE COVERED WITH A DOOR THAT COMPLIES WITH FIRE REGULATION. THIS OPENING MUST COMPLY WITH APPENDIX 1 FLUE REGULATIONS.

Typical System Schematics

Cascade Flue System
Typical System Schematics

Solar System
Typical System Schematics

CHP System