

# Carolyn House Case Study



SATK32  
Heat Interface Unit



Dynamical  
Thermostatic Radiator Valve

# Altecnic Ensures Energy Efficient District Heating System for New London Apartments

A new apartment block that has been converted from offices will benefit from an energy efficient district heating system thanks to 183 Heat Interface Units (HIUs) and more than 800 dynamic thermostatic radiator valves (TRVs) from Altecnic.

M&E contractors G&H Group worked closely with Altecnic to develop the specification for Carolyn House following its change of use from offices to an apartment block. The specification and correct installation of the central heating system will save future residents money and also ensure that every apartment has a reliable source of hot water and heating, even at times of peak demand.

Says David Davis, Group Director for G&H "District heating systems such as this are becoming more common and we were keen to work closely with a manufacturer who not only supplies product but also provides technical advice and training so that we could provide an efficient and reliable solution."

Achieving maximum efficiency from such a system relies on the HIU in each apartment returning a very low temperature back onto the network. This keeps primary flow rates low, reduces heat lost from the system, ensures the greatest benefit from any included renewable energy sources and allows condensing boilers to work at their optimum efficiency.

The low heating demand in modern apartments means that only a very small flow rate of hot water is required on the space heating circuit. This low flow rate makes it difficult to balance the radiators, so there is a danger of a high space heating return temperature being passed back onto the network. This reduces the efficiency of the whole network.

Working closely with Altecnic, G&H maximised the difference in temperature between the flow and return temperatures (Delta T) on each apartment's space heating circuits.

*Continued...*



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- G&H Group



Contact us for more information:

sales@altecnic.co.uk

Tel: +44 (0)1785 218 200

Fax: +44 (0)1785 218 201

Web: www.altecnic.co.uk

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First using the Dynamical TRVs from Altecnic, it is possible to pre-set the maximum allowable flow rate for each radiator on the Dynamical valve before installation. Once installed, the valve finely controls the flow rate of water through each radiator regardless of changes in pressure on the space heating circuit. This ensures that the required flow is never exceeded, the maximum heat output from the radiator is maximised and the subsequent return temperature to the HIU is kept low.



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Second the SATK32103 HIUs are equipped with Return Temperature Limitation (RTL). This allows a maximum return temperature back onto the network to be set. Once enabled and set, the HIU will control its output into the apartment to ensure that the pre-set primary return temperature is met. Not only does this mean that each apartment is efficiently heated for minimum cost to each resident, but it ensures that the overall network is efficient and protected from failure due to small Delta T's and high primary flow rates.

The lower return temperature also means that the heat network size can be reduced and a lot less energy is lost into the building fabric. Well designed heat networks, pre-settable dynamic radiator valves and RTL within HIU's will result in more efficient networks and greatly reduce the potential for overly warm corridors during the warmer months.



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Continues Davis, "I know that other contractors have had problems with district heating systems in the past due to the nature of commissioning such systems. We wanted to partner with a supplier that could work with us to develop the specification and provide product and training to ensure that the scheme is successfully commissioned. Every resident in this apartment block will get heating and hot water on demand even at times of peak usage, such as on a Monday morning before people go to work.

"Altecnic's HIUs and TRVs and their level of technical advice and assistance have been invaluable in this very successful project."

*Images:  
Carolyn House  
visualisations*



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