

## Case study of the Recoup Pipe+ HE WWHRs installation at David Willson Homes Tenbury View part of Barratt Developments Plc



David Wilson Homes development at Tenbury View, Tenbury Wells, Worcestershire

The Recoup Pipe+ HE waste water heat recovery system (WWHRs) from Recoup Energy Solutions Ltd is one of the primary energy saving solutions installed within David Wilson Homes (part of Barratt Development Plc) at Tenbury View, Tenbury Wells, Worcestershire. The system uses the heat from waste shower water to pre-heat incoming mains water which is then used in the shower and/or the combi-boiler or hot water cylinder. Included in over a third of the plots on the site the Pipe+ HE is a standard measure introduced by Barratt Development Plc to assist with achieving and exceeding building regulation compliance for its properties and customers across Barratt's group.

The relationship between Recoup Energy Solutions and Barratt Developments started in 2012. Barratt Developments had begun to analyse and identify energy saving measures to achieve compliance. This was initially directed to Scottish building regulations but also needed to consider the approaching changes for England's Part L regulation in 2013.

Recoup introduced the Pipe+ HE waste water heat recovery system to Barratt's Technical and Sustainability teams as a potential solution for them to consider. Technical presentations were carried out by Recoup to demonstrate what the Pipe+ HE does, how it works and achieves the high efficiencies that it can produce. Following the initial introduction Recoup reviewed all the house types and designs to advise where gains could be made by including the Pipe+ HE. Locations were identified within house type plans to position the Pipe+ HE considering all waste and water connections required into and from it. Recoup provided this summary along with a spread sheet showing how various installation methods would gain various SAP benefits vs commercial considerations. Recoup then worked with Barratt's SAP (Standard Assessment Procedure) partners, Thermal Economics to SAP model the Pipe+ HE within the properties. With this support Thermal Economics were able to quickly and easily SAP model the Pipe+ HE in each of the house types from Barratt's portfolio where the Pipe+ HE would provide end user gains.



David Wilson Homes Tenbury View

Barratt Developments completed this process for a range of other energy saving and building methods including fabric, solar and mechanical ventilation heat recovery (MVHR). Their aim was to find the best products and solutions available to achieve and exceed requirements in the simplest, most durable and cost effective way. Their analysis considered the SAP modelling calculations, cost and feasibility across all of the methods to establish the best to use for its solution.

The results of this process showed that waste water heat recovery was the most cost effective high performance solution for Barratt Development's Part L 2013 solution. Now the Recoup Pipe+ HE is a standard solution for over 50% of Barratt and David Wilson house types. This resulted in the Pipe+ HE being awarded the Barratt Development Plc's "Best New Product" of 2013.



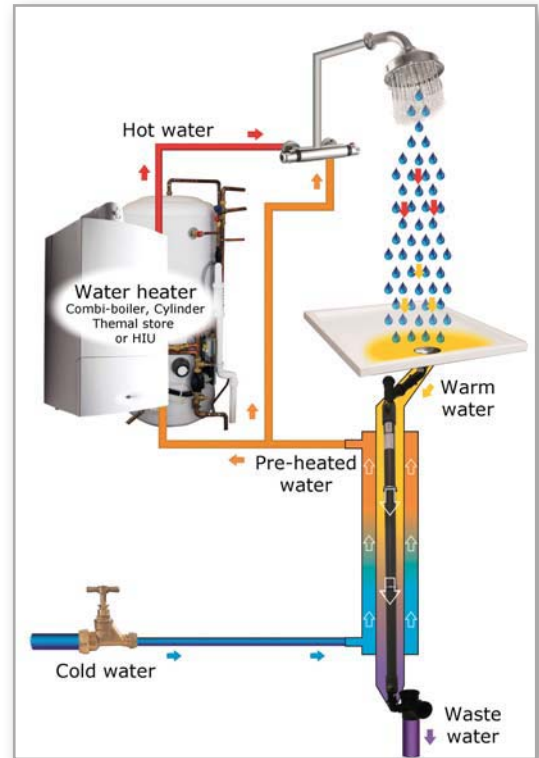
Barratt Development Plc's "Best New Product" of 2013.

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The main contributing factors to the positive results the Pipe+ HE achieved were the...

- Excellent number of SAP points gained through inclusion
- High efficiency of up to 67%
- Low costs of the unit providing excellent pound to point value
- No planned maintenance
- Easy to design in to all house types
- Straightforward and quick installation process as part of first fix
- Supply chain aligned, stocked by major national merchants

The efficiency of the Pipe+ HE is dependent upon the installation method used and the flow rate of the mains cold water through the pipe, although the latter does not effect SAP as it is already assumed within the software. Within the David Wilson homes at Tenbury as with most Barratt Development properties "Installation Method A" is used as it achieves the greatest efficiency. With "Installation Method A" pre-heated water from the Pipe+ HE is supplied to the shower in the en-suite of the main bedroom and to the hot water cylinder as well. This means that less hot water is used when the shower is running and pre-heated water is provided at the cylinder which requires less energy to heat. Keeping the flow rate at around 9 litres/min through the Pipe+ HE allows the high efficiency energy transfer of up to 67% be achieved. This then equates to over 12kWh of recovered energy.



Installation Method A

The Pipe+ HE within the properties at Tenbury View were installed by Central Plumbing and Heating Services Ltd. Their installer hadn't previously installed a waste water heat recovery system before working on the Tenbury site. He was impressed with the Pipe+ HE and what he expressed to be "An easy installation process", taking a maximum of 1.5 - 2 hours to complete. He had experienced no installation issues on any of the plots he had installed.



Connecting the Pipe+ HE to the soil pipe



Waste from shower and pre-heat connected



Insulation of pre-heat pipe run

For more information on Barratt Developments Plc ([www.barrattddevelopments.co.uk](http://www.barrattddevelopments.co.uk)), David Wilson Homes ([www.dwh.co.uk](http://www.dwh.co.uk)) or Central Plumbing and Heating Services ([www.centralhouse.co.uk](http://www.centralhouse.co.uk)) visit their websites.

For more information on Recoup Energy Solutions and the Pipe+ HE visit [www.recoupenenergysolutions.co.uk](http://www.recoupenenergysolutions.co.uk) or contact us on [info@recoupenenergysolutions.co.uk](mailto:info@recoupenenergysolutions.co.uk) or 01379 844010.

[www.recoupenenergysolutions.co.uk](http://www.recoupenenergysolutions.co.uk) [info@recoupenenergysolutions.co.uk](mailto:info@recoupenenergysolutions.co.uk)

Tel: 01379 844010

Recoup Energy Solutions Ltd, PO Box 365, Eye, IP22 9BH