

Case Study

WASTEWATER HEAT RECOVERY (WWHR)

Case identifier

STANDARD HOTEL

Country

UNITED KINGDOM (UK)

Building category

NON-RESIDENTIAL

Building subcategory

HOTELS AND RESTAURANTS

Type of Intervention in which the WWHRS was installed

DEEP RENOVATION (E.G., RENOVATING MANY BUILDING ELEMENTS)

Occupancy and Hot Water Use

TYPICAL HOTEL USE



WWHRS Application Description

- **Installation type**

Centralised. Several drains connected to each WWHRS.

- **Type of product**

Passive vertical. Pipe-in-pipe.

- **Brand and model of installed WWHRS**

Recoup Pipe + HE.

- **Hot water-using bathing appliances connected**

A WWHRS unit is shared with 2 individual showers via back-to-back bathroom units.

- **Scheme connection type**

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- **Installation Process**

The Recoup Pipe+ HE is installed on the floor below the shower connected to it. Shower waste water is connected to the top from the two showers feeding it, and the bottom is connected to the buildings sewer water. Cold mains water is connected the bottom of the pipe using standard pipe and fittings. When in use the preheated water is connected to the top of the unit and then to the cold side of the showers connected to it.

- **Maintenance Actions**

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WWHRS Performance Data

- **Have there been measurements of the operational performance of WWHRS?**

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- **Operational efficiency of the heat exchange**

67% rated efficiency

- **Payback period of the installation**

The payback period is affected by a number of parameters, flow rate, number of daily uses, length of shower. The estimated payback time is between 3 and 8 years.

- **Lifetime**

Between 30 to 60 years.

Facilities Information

- **Sewage drainage**

Black water from toilets is not mixed with grey water from showers, bathtubs and sinks.

- **Domestic hot water system configuration**

Centralised gas fuelled system providing heating and hot water for all rooms.

- **Hot Water-using Bathing Appliances in the building**

266 room hotel with multiple catering and service facilities.