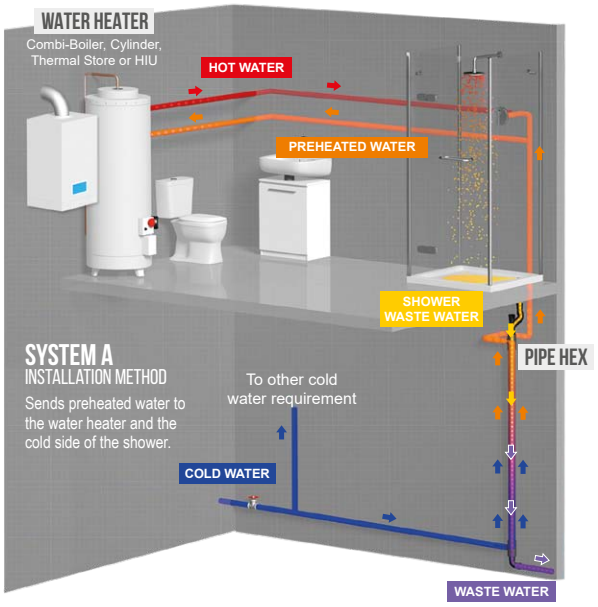
ENERGY STATEMENT OVERVIEW (FOR USE BY SPECIFIERS)
WASTE WATER HEAT RECOVERY SYSTEMS (WWHRS) FOR SHOWERS

Typically, an instantaneous waste water heat recovery system (WWHRS) works by extracting heat from the outgoing drain water that the shower or (shower over) bath sends down the drain, as waste. It is a primary energy demand reduction technology that is both SAP and SBEM listed, and recognised as a 'Renewable Technology' by EU Directive 2018/2001, Article 2 (2). WWHRS is widely recognised as one of the most cost-effective SAP-listed energy efficiency technologies available.

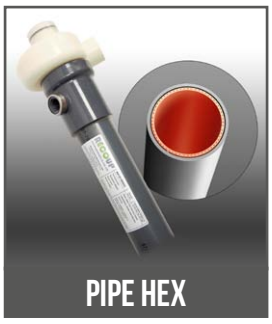


WWHRS recycles shower waste, heat energy and uses it to pre-heat the incoming mains water, raising the temperature of the incoming cold water main (CWM) and therefore reducing the energy required from the boiler to produce DHW. The pre-heated water from the WWHRS, can also be used to feed the cold-side of the shower mixer, which then further reduces the amount of generated DHW required to achieve a comfortable shower temperature at the mixer. Three SAP-listed installation methods are listed are recognised by BRE (System A, B & C) and these dictate how the pre-heat feed is used and configured. Systems A, B & C, apply to all WWHRS product types, and should be specified in the following way for clarity:

WWHRS 1 = Manufacturer Name, WWHRS product Type installed as System A, B, C (delete as appropriate) connected to (name) shower.
WWHRS 2 = Manufacturer Name, WWHRS product Type installed as System B (*) connected to (name) shower.
*Note: Only the primary WWHRS in any single dwelling can installed as System A or C. Secondary WWHRS MUST install as System B

Currently, the most efficient WWHRS devices, typically take the form of a long vertical copper pipe heat exchanger. Waste water falls as a thin-film, through the inside of the heat exchanger, running counter-flow to incoming mains water which circulates around the outside to ensure maximum heat exchange. Vertical WWHRS devices typically have a heat recovery efficiency of 55-65% and can ultimately reduce showering costs / energy consumption by up to 55%.

For bungalows or apartments, a number of horizontal WWHRS systems are available that are either integrated into shower trays or wet-room drain channels, or can be installed directly below a bath or shower tray (on the same floor, rather than the floor below).


PIPE HEX


EASYFIT+


DRAIN+ COMPACT

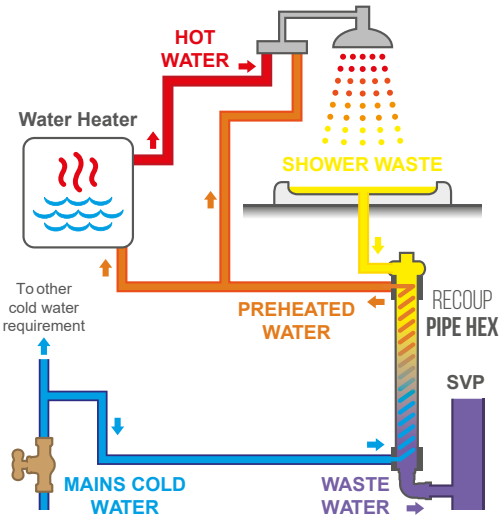

DRAIN+ DUO


PIPE HEX BE

WWHRS is a simple fit-and-forget technology with no electrical components, no pumps or controllers, and so it requires very little maintenance. It also does not impact end-user shower experience and is normally hidden from view. Vertical WWHRS systems such as the Recoup Pipe+ HE are required to install on the floor below the shower(s) they attach to, and as such as an ideal solution for new build houses or commercial projects with service risers.

WWHRS can be connected to any DHW heat source (Combi-boiler, DHW cylinder, HIU or instantaneous electric boiler, but MUST be used with thermostatic mixer showers only. WWHRS are not currently compatible with instantaneous electric showers.

INSTALLATION METHODS



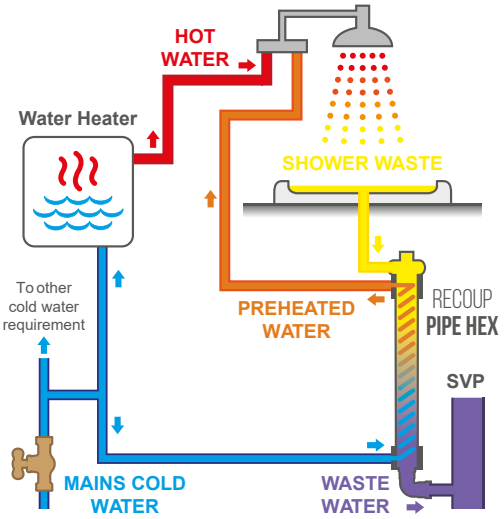
SYSTEM A

Preheated water supplied to shower mixer (cold inlet) and the water heater

This installation method provides the highest WWHRS efficiency.

Only one WWHRS unit can supply preheated water to the water heater as System A. All secondary WWHRS units should be connected as System B.

To maximise SAP impact, install WWHRS as System A on the primary shower, or in a room with a shower only. If design and layout allow, it may be possible to connect two showers to one WWHRS unit. Connected as System A, the total flow rate of both showers should be <16 l/min.



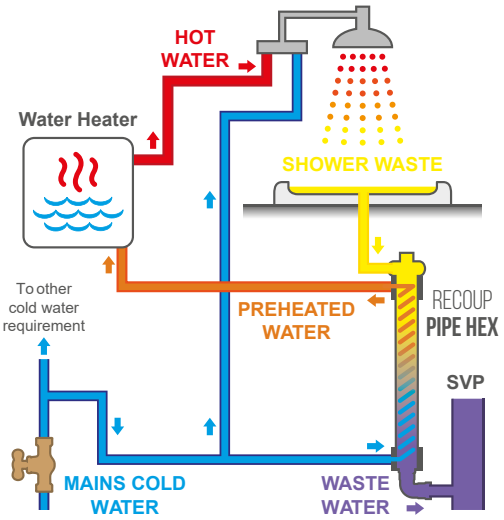
SYSTEM B

Preheated water supplied to shower mixer (cold inlet) on the shower only

The WWHRS efficiency of this installation method is not as high as System A or C but is the simplest and often the most cost-effective method to install or retrofit.

As preheated water is supplied to the cold side of the shower TMV only, there is no additional connection to the water heater. System B should be used for any secondary showers in a dwelling or where multiple showers are fed from centralised plant.

If design and layout allow, it may be possible to connect two showers to one WWHRS unit. Connected as System B, the total flow rate of both showers should be <24 l/min (@60°C DHW temp).



SYSTEM C

Preheated water supplied to water heater only

Greater WWHRS efficiencies are produced than System B but lower than System A. Only one WWHRS unit can feed preheated water to the water heater as System C.

This installation method can offer a more cost-effective installation option where two stacked showers are attached to a single WWHRS (eg. In a town house with 1st & 2nd floor showers). Connected as System C, the total flow rate of both showers should be <24 l/min (@60°C DHW temp).

Combi-Boiler, Cylinder (Any heat source inc. Boiler, Heat Pump, Direct Electric, Solar Thermal), Heat Interface Unit (HIU) or Thermal Store.

- For more detail watch our **installation method animation** here.

PRODUCT SPECIFICATION

Follow the link behind each specification below to a web browser text file or download them from **specify.recoupwwhrs.co.uk**

RECOUP **PIPE HEX**

Recoup WWHRS | Pipe HEX | System A; System B; System C (delete as appropriate) | Add shower install location

VERTICAL WASTE WATER HEAT RECOVERY FOR SHOWERS (WWHRS)

- Standard: WRAS Approved.
- Performance: The Government's Standard Assessment Procedure for Energy Rating of Dwellings, 2012 (SAP 2012)
- Manufacturer: Recoup WWHRS
- Product reference: Pipe HEX
- Installation method / Model Qualifier: System A; System B; System C (delete as per system(s) specified)
- Minimum Heat Recovery Efficiency (SAP 2012): System A= 63.6%; System B= 49.9%; System C= 54.0% (delete as appropriate)
- Minimum Utilisation Factor (SAP 2012, System A): 0.972
- Heat Exchanger material: Copper (Double-walled, EN1717 compliant), *100% recyclable material at end of life*
- Casing / Finish: PVC outer casing, *100% recyclable material at end of life*
- Length: 2100mm
- Accessories: 1no Double Check Valve; 2no Isolator valves.
- Installation: According to manufactures instruction; to comply with Legionella Control Risk Assessment Guidance; and BS EN 1717:2000

RECOUP **PIPE HEX RD**

Recoup WWHRS | Pipe HEX Rd | System A; System B; System C (delete as appropriate) | Add shower install location

VERTICAL WASTE WATER HEAT RECOVERY FOR SHOWERS (WWHRS)

- Standard: WRAS Approved.
- Performance: The Government's Standard Assessment Procedure for Energy Rating of Dwellings, 2012 (SAP 2012)
- Manufacturer: Recoup WWHRS
- Product reference: Pipe HEX Rd
- Installation method / Model Qualifier: System A; System B; System C (delete as per system(s) specified)
- Minimum Heat Recovery Efficiency (SAP 2012): System A= 57.3%; System B= 45.3%; System C= 49.6% (delete as appropriate)
- Minimum Utilisation Factor (SAP 2012, System A): 0.973
- Heat Exchanger material: Copper (Double-walled, EN1717 compliant), *100% recyclable material at end of life*
- Casing / Finish: PVC outer casing. *100% recyclable material at end of life*
- Length: 1700mm
- Accessories: 1no Double Check Valve; 2no Isolator valves.
- Installation: According to manufactures instruction; to comply with Legionella Control Risk Assessment Guidance; and BS EN 1717:2000

RECOUP **PIPE HEX BE**

Recoup WWHRS | Pipe HEX Be | System A; System B; System C (delete as appropriate) | Add shower install location

VERTICAL WASTE WATER HEAT RECOVERY FOR SHOWERS (WWHRS)

- Standard: WRAS Approved.
- Manufacturer: Recoup WWHRS
- Product reference: Pipe HEX Be
- Installation method / Model Qualifier: System A; System B; System C (delete as per system(s) specified)
- Minimum Heat Recovery Efficiency: System A ≤ 63.6%; System B ≤ 49.9%; System C ≤ 54.0% (delete as appropriate)
- Heat Exchanger material: Copper (Double-walled, EN1717 compliant), *100% recyclable material at end of life*
- Casing / Finish: PVC outer casing, *100% recyclable material at end of life*
- Length: Between 1065mm and 2100 mm
- Accessories: 1no Double Check Valve; 2no Isolator valves.
- Installation: According to manufactures instruction; to comply with Legionella Control Risk Assessment Guidance; and BS EN 1717:2000

RECOUP **EASYFIT+**

Recoup WWHRS | Easyfit+ | System A; System B; System C (delete as appropriate) | Add shower install location

HORIZONTAL WASTE WATER HEAT RECOVERY FOR SHOWERS (WWHRS)

- Standard: WRAS Approved.
- Performance: The Government's Standard Assessment Procedure for Energy Rating of Dwellings (SAP 2012)
- Manufacturer: Recoup WWHRS
- Product reference: Easyfit+
- Installation method / Model Qualifier: System A; System B; System C (delete as per system(s) specified)
- Minimum Heat Recovery Efficiency (SAP 2012): System A= 43.6%; System B= 35.2%; System C= 39.2% (delete as appropriate)
- Minimum Utilisation Factor (SAP 2012, System A): 0.972
- Heat Exchanger material: Copper (Double-walled, EN1717 compliant), *100% recyclable material at end of life*
- Casing / Finish: 100% Recycled ABS outer casing
- Length: 1100mm
- Accessories: 1no Double Check Valve; 2no Isolator valves.
- Installation: According to manufactures instruction; to comply with Legionella Control Risk Assessment Guidance; and BS EN 1717:2000

PRODUCT SPECIFICATION CONTINUED

RECOUP **DRAIN+ COMPACT**

Recoup WWHRS | Drain+ Compact | System A; System B; System C (delete as appropriate) | Add shower install location

HORIZONTAL WASTE WATER HEAT RECOVERY FOR SHOWERS (WWHRS)

- Standard: WRAS Approved.
- Performance: The Government's Standard Assessment Procedure for Energy Rating of Dwellings (SAP 2012)
- Manufacturer: Recoup WWHRS
- Product reference: Drain+ Compact
- Installation method / Model Qualifier: System A; System B; System C (delete as per system(s) specified)
- Minimum Heat Recovery Efficiency (SAP 2012): System A= 37.0%; System B= 30.4%; System C= 33.8% (delete as appropriate)
- Minimum Utilisation Factor (SAP 2012, System A): 0.978
- Heat Exchanger material: Copper (Double-walled, EN1717 compliant) *100% recyclable material at end of life*
- Casing / Finish: Stainless steel
- Size: 860x188x114mm
- Accessories: 1no Double Check Valve; 2no Isolator valves.
- Installation: According to manufactures instruction; to comply with Legionella Control Risk Assessment Guidance; and BS EN 1717:2000

RECOUP **DRAIN+ DUO**

Recoup WWHRS | Drain+ Duo | System A; System B; System C (delete as appropriate) | Add shower install location

HORIZONTAL WASTE WATER HEAT RECOVERY FOR SHOWERS (WWHRS)

- Standard: WRAS Approved.
- Performance: The Government's Standard Assessment Procedure for Energy Rating of Dwellings (SAP 2012)
- Manufacturer: Recoup WWHRS
- Product reference: Drain+ Duo
- Installation method / Model Qualifier: System A; System B; System C (delete as per system(s) specified)
- Minimum Heat Recovery Efficiency (SAP 2012): System A= 40.4%; System B= 32.9%; System C= 36.6% (delete as appropriate)
- Minimum Utilisation Factor (SAP 2012, System A): 0.974
- Heat Exchanger material: Copper (Double-walled, EN1717 compliant) *100% recyclable material at end of life*
- Casing / Finish: Stainless steel
- Size: 866x240x165mm
- Accessories: 1no Double Check Valve; 2no Isolator valves.
- Installation: According to manufactures instruction; to comply with Legionella Control Risk Assessment Guidance; and BS EN 1717:2000

RECOUP **DRAIN+ DUO HE**

Recoup WWHRS | Drain+ Duo HE | System A; System B; System C (delete as appropriate) | Add shower install location

HORIZONTAL WASTE WATER HEAT RECOVERY FOR SHOWERS (WWHRS)

- Standard: WRAS Approved.
- Performance: The Government's Standard Assessment Procedure for Energy Rating of Dwellings (SAP 2012)
- Manufacturer: Recoup WWHRS
- Product reference: Drain+ Duo HE
- Installation method / Model Qualifier: System A; System B; System C (delete as per system(s) specified)
- Minimum Heat Recovery Efficiency (SAP 2012): System A= 56.7%; System B= 44.9%; System C= 49.2% (delete as appropriate)
- Minimum Utilisation Factor (SAP 2012, System A): 0.966
- Heat Exchanger material: Copper (Double-walled, EN1717 compliant) *100% recyclable material at end of life*
- Casing / Finish: Stainless steel
- Size: 866x240x205mm
- Accessories: 1no Double Check Valve; 2no Isolator valves.
- Installation: According to manufactures instruction; to comply with Legionella Control Risk Assessment Guidance; and BS EN 1717:2000

RECOUP **LEGACY PRODUCTS**

Recoup Retrofit+ discontinued 2017** replace with Recoup Easyfit+
Recoup Drain+ (900) discontinued 2020** replace with either Recoup Drain+ Compact; Recoup Drain+ Duo; Recoup Drain+ Duo HE
RecoupTray+ DSS-S2 discontinued 2021** replace with either Recoup Drain+ Compact; Recoup Drain+ Duo; Recoup Drain+ Duo HE
Recoup Pipe+ HE discontinued 2021** replace with Recoup Pipe HEX

**dimensions and SAP calculations should be checked and confirmed before changing specification.

Follow the link behind each specification to a web browser text file or download them from **specify.recoupwwhrs.co.uk**