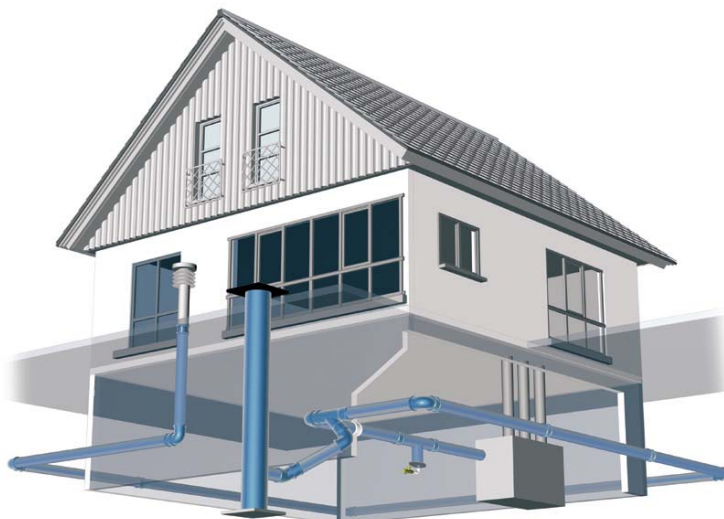
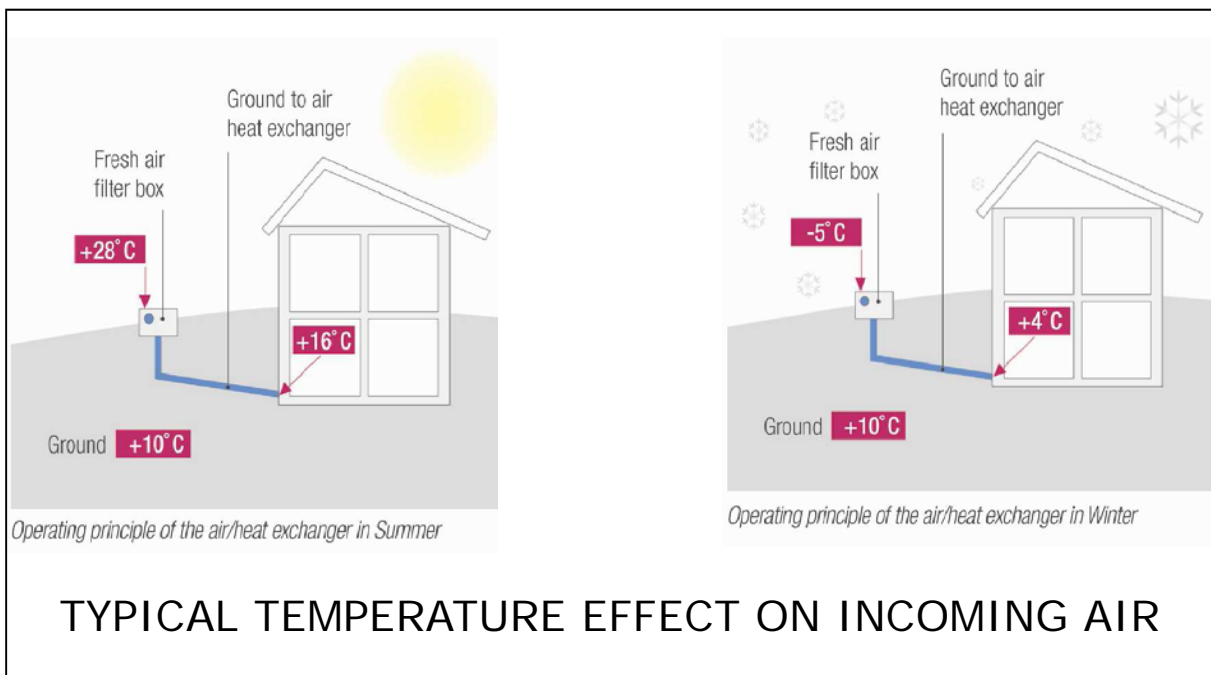
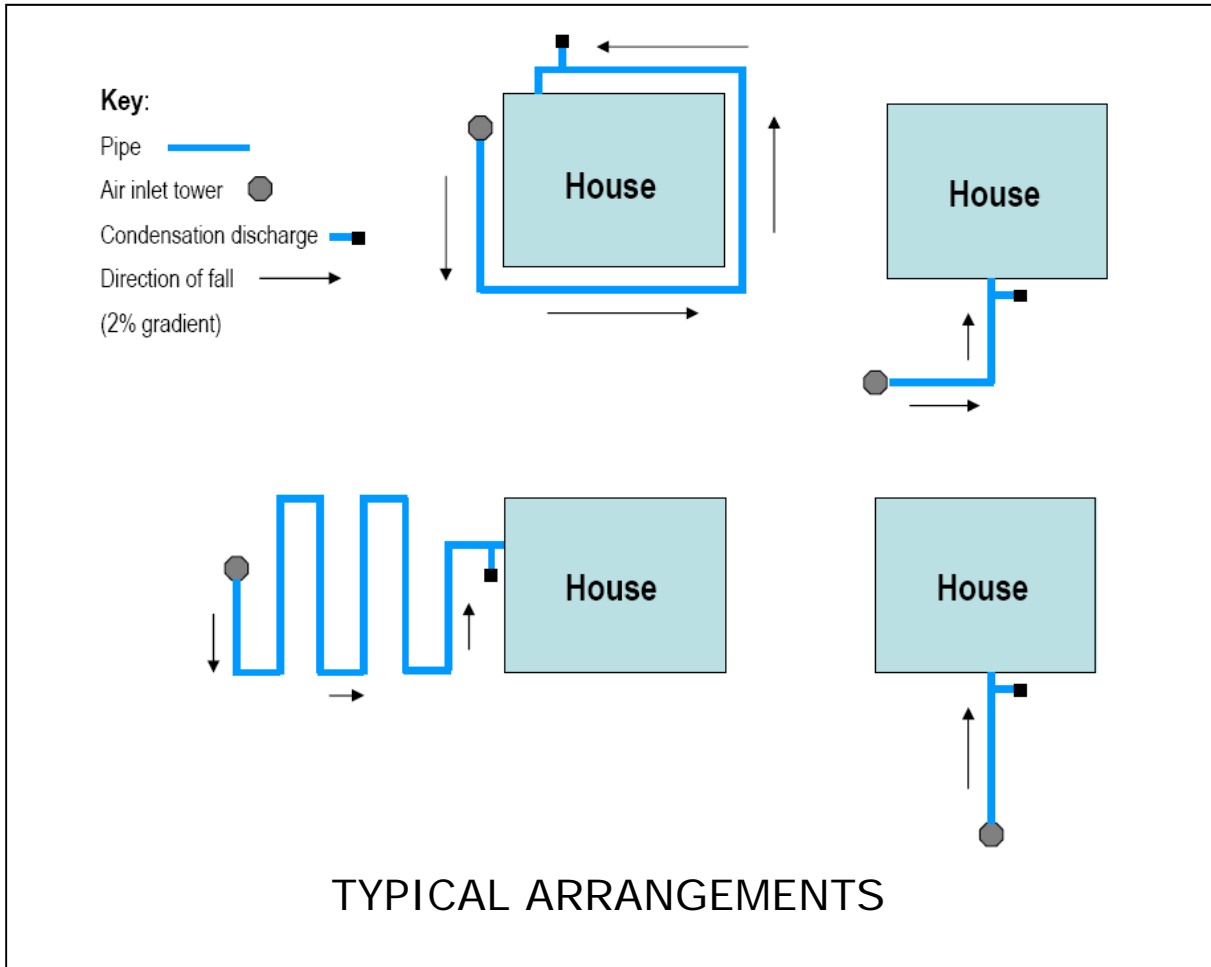


GROUND TO AIR HEAT EXCHANGER TO COMPLEMENT HEAT RECOVERY SYSTEMS

TYPICAL ARRANGEMENTS AND PACKAGES



GROUND TO AIR HEAT EXCHANGER TO COMPLEMENT HEAT RECOVERY SYSTEMS



GROUND TO AIR HEAT EXCHANGER TO COMPLEMENT HEAT RECOVERY SYSTEMS

Package 1

42m of DN 200 pipe for air flow rates < 293 m³h (80 l/sec)

Package contents:

| Article No. | Description | Quantity |
|-------------|---|----------|
| 170961-002 | Awadukt Thermo pipe DN 200 6m | 7 |
| 247651-056 | Awadukt Thermo DN 200 elbow 90° | 6 |
| 247751-056 | Awadukt Thermo DN 200/200 45° branch | 1 |
| 247851-056 | Awadukt Thermo double-fit sleeve joint DN 200 | 3 |
| 227785-003 | Condensation collection chamber DN 315/200 | 1 |
| 175584-001 | Manhole cover for condensation chamber | 1 |
| 172290-050 | Wall inlet DN 200 | 1 |
| 176510-002 | Lubricant 150g | 1 |
| 170188-002 | Air inlet tower DN 200 | 1 |
| 170198-001 | G4 filter set for DN 200 air inlet | 1 |
| TATBU | Motorised T piece damper | 1 |
| | Condensate Pump | 1 |

Estimated Energy Savings for Package 1:

Assumptions:

Average England & Wales weather data

Standard soil type

Installation depth 1.5m

| Air flow rate (m ³ /h) | Heating saving (kWh/a) | Min. outlet temperature (°C) | Cooling saving (kWh/a) | Max. outlet temperature (°C) | Coefficient of Performance (COP) |
|-----------------------------------|------------------------|------------------------------|------------------------|------------------------------|----------------------------------|
| 150 | 568.7 | 2.7 | 270.7 | 18.6 | 167 |
| 200 | 668.9 | 1.1 | 318.3 | 20.0 | 87 |
| 250 | 746.9 | -0.3 | 355.4 | 21.1 | 51 |
| 293 | 801.4 | -1.2 | 381.4 | 21.9 | 35 |

Additional pipe and fittings can be ordered separately for any project specific requirements.

GROUND TO AIR HEAT EXCHANGER TO COMPLEMENT HEAT RECOVERY SYSTEMS

Package 2

60m of DN 200 pipe for air flow rates < 293 m³h (80 l/sec)

Package contents:

| Article No. | Description | Quantity |
|-------------|---|----------|
| 170961-002 | Awadukt Thermo pipe DN 200 6m | 10 |
| 247651-056 | Awadukt Thermo DN 200 elbow 90° | 6 |
| 247751-056 | Awadukt Thermo DN 200/200 45° branch | 1 |
| 247851-056 | Awadukt Thermo double-fit sleeve joint DN 200 | 3 |
| 227785-003 | Condensation collection chamber DN 315/200 | 1 |
| 175584-001 | Manhole cover for condensation chamber | 1 |
| 172290-050 | Wall inlet DN 200 | 1 |
| 176510-002 | Lubricant 150g | 1 |
| 170188-002 | Air inlet tower DN 200 | 1 |
| 170198-001 | G4 filter set for DN 200 air inlet | 1 |
| TATBU | Motorised T piece damper | 1 |
| | Condensate Pump | 1 |

Estimated Energy Savings for Package 2:

Assumptions:

Average England & Wales weather data

Standard soil type

Installation depth 1.5m

| Air flow rate (m ³ /h) | Heating saving (kWh/a) | Min. outlet temperature (°C) | Cooling saving (kWh/a) | Max. outlet temperature (°C) | Coefficient of Performance (COP) |
|-----------------------------------|------------------------|------------------------------|------------------------|------------------------------|----------------------------------|
| 150 | 670.0 | 5.2 | 319.3 | 16.4 | 148 |
| 200 | 811.5 | 3.7 | 386.6 | 17.7 | 79 |
| 250 | 926.0 | 2.4 | 441.1 | 18.8 | 48 |
| 293 | 1008.1 | 1.4 | 480.1 | 19.6 | 33 |

Additional pipe and fittings can be ordered separately for any project specific requirements.

GROUND TO AIR HEAT EXCHANGER TO COMPLEMENT HEAT RECOVERY SYSTEMS

Package 3

42m of DN 250 pipe for air flow rates < 457 m³h (127 l/sec)

Package contents:

| Article No. | Description | Quantity |
|-------------|---|----------|
| 170971-001 | Awadukt Thermo pipe DN 250 6m | 7 |
| 247691-002 | Awadukt Thermo DN 250 elbow 90° | 5 |
| 247651-056 | Awadukt Thermo DN 200 elbow 90° | 1 |
| 246457-004 | Awadukt Thermo DN 250/200 45° branch | 1 |
| 247861-002 | Awadukt Thermo double-fit sleeve joint DN 250 | 3 |
| 227785-003 | Condensation collection chamber DN 315/200 | 1 |
| 175584-001 | Manhole cover for condensation chamber | 1 |
| 172330-003 | Wall inlet DN 250 | 1 |
| 176510-002 | Lubricant 150g | 1 |
| 170408-002 | Air inlet tower DN 250 | 1 |
| 170448-001 | G4 filter set for DN 250 air inlet | 1 |
| TATBU | Motorised T piece damper | 1 |
| | Condensate Pump | 1 |

Estimated Energy Savings for Package 3:

Assumptions:

Average England & Wales weather data

Standard soil type

Installation depth 1.5m

| Air flow rate (m ³ /h) | Heating saving (kWh/a) | Min. outlet temperature (°C) | Cooling saving (kWh/a) | Max. outlet temperature (°C) | Coefficient of Performance (COP) |
|-----------------------------------|------------------------|------------------------------|------------------------|------------------------------|----------------------------------|
| 300 | 809.0 | -1.4 | 384.7 | 22.0 | 92 |
| 350 | 863.1 | -2.2 | 410.5 | 22.7 | 63 |
| 400 | 908.7 | -3.0 | 432.2 | 23.3 | 45 |
| 457 | 952.7 | -3.7 | 453.2 | 23.9 | 33 |

Additional pipe and fittings can be ordered separately for any project specific requirements.

GROUND TO AIR HEAT EXCHANGER TO COMPLEMENT HEAT RECOVERY SYSTEMS

Package 4

60m of DN 250 pipe for air flow rates < 457 m³h (127 l/sec)

Package contents:

| Article No. | Description | Quantity |
|-------------|---|----------|
| 170971-001 | Awadukt Thermo pipe DN 250 6m | 10 |
| 247691-002 | Awadukt Thermo DN 250 elbow 90° | 5 |
| 247651-056 | Awadukt Thermo DN 200 elbow 90° | 1 |
| 246457-004 | Awadukt Thermo DN 250/200 45° branch | 1 |
| 247861-002 | Awadukt Thermo double-fit sleeve joint DN 250 | 3 |
| 227785-003 | Condensation collection chamber DN 315/200 | 1 |
| 175584-001 | Manhole cover for condensation chamber | 1 |
| 172330-003 | Wall inlet DN 250 | 1 |
| 176510-002 | Lubricant 150g | 1 |
| 170408-002 | Air inlet tower DN 250 | 1 |
| 170448-001 | G4 filter set for DN 250 air inlet | 1 |
| TATBU | Motorised T piece damper | 1 |
| | Condensate Pump | 1 |

Estimated Energy Savings for Package 4:

Assumptions:

Average England & Wales weather data

Standard soil type

Installation depth 1.5m

| Air flow rate (m ³ /h) | Heating saving (kWh/a) | Min. outlet temperature (°C) | Cooling saving (kWh/a) | Max. outlet temperature (°C) | Coefficient of Performance (COP) |
|-----------------------------------|------------------------|------------------------------|------------------------|------------------------------|----------------------------------|
| 300 | 1019.6 | 1.3 | 485.3 | 19.8 | 89 |
| 350 | 1101.5 | 0.3 | 524.3 | 20.6 | 62 |
| 400 | 1171.7 | -0.5 | 557.7 | 21.3 | 45 |
| 457 | 1240.3 | -1.3 | 590.4 | 21.9 | 33 |

Additional pipe and fittings can be ordered separately for any project specific requirements.

GROUND TO AIR HEAT EXCHANGER TO COMPLEMENT HEAT RECOVERY SYSTEMS

PACKAGE PRICES (Sept 2009)

| | |
|-----------|-------|
| PACKAGE 1 | £3060 |
| PACKAGE 2 | £3514 |
| PACKAGE 3 | £4029 |
| PACKAGE 4 | £4775 |

PRICE INCLUDES SHIPPING BUT EXCLUDES VAT