CASE STUD

HEAT RECOVERY HEAT PUMP **VENTILATION & HOT WATER**

CURVED MEWS STYLE SUSTAINABLE DEVELOPMENT

his is a housing association project in Ditchingham, Norfolk where Total Home Environment provided the perfect solution to an offgas problem.

The 14 homes were built by Keepmoat for Hastoe Housing Association in an attractive curved mews design. Constructed to Passivhaus standards and being completely airtight, mechanical ventilation was a must, but heat losses would have to be minimised. This is where Total Home Environment's (T.H.E) heat recovery ventilation was the perfect solution. Additionally, there was no gas in the village so a sustainable alternative to a fossil fuel heating system had to be found.

T.H.E's Genvex Combi 185 system was installed into each home to provide ventilation, heating and domestic hot water, all in one unit, simplifying the build program significantly and saving on space.

The Combi uses an efficient counter-current heat exchanger together with a super-efficient integrated mini exhaust-air heat pump to heat domestic water and air using warm air extracted from the property. Due to the buildings' excellent thermal properties, no additional heating system was needed.

The Combi also has a secondary coil to allow an additional heating source to be connected. This proved useful to Hastoe, who in three of the houses, have connected the solar thermal panels on the roof to the Combi to take advantage of free heat to the hot water. This will then benefit the tenants by keeping the electricity bills lower.

Architects of the project, Parsons & Whittley, are currently short listed for a 2012 Passivhaus Trust Award.

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OFF-GAS SOLUTION FOR DITCHINGHAM UPT-GAS SULUTION FOR UTCHINGHAM PASSIVE HOUSES WITH WITH PASSIVHAUS RECOMMENDED COMPACT SERVICE UNIT.

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THE FACTS:

Off-gas solution for

Passive Houses

BUILD TYPE: 14 x new build house / bungalows / flats NO. OF BEDROOMS: 1 to 3 **REQUIREMENTS:** superior insulation and airtightness required mechanical ventilation and gas alternative for heating and hot water **APPLIANCE:** Combi 185 with Optima 310 Design controller. **LOCATED:** Airing cupboard AVE. FLOOR AREA: 55-99m²/ 590 -1.065saft **VOLUME FOR VENTILATION: 129-227m³**

TERMINALS: extract x 2, supply x 2-5

We do more with air

HEAT RECOVERY HEAT PUMP VENTILATION & HOT WATER

OBVIOUSLY THE MORE HEAT WE CAN RECOVER, THE LESS WE NEED TO GENERATE...

Nothing can deliver fresh filtered air and remove moisture together with pollutants like a whole house ventilation system.

Typically 80-95% of the heat of the extracted air is recovered, increasing comfort levels and undeniably reducing heating bills.



TECHNICAL DATA-APPLIANCE IN CASE STUDY

DESCRIPTION	COMBI 185
MAX CAPACITY (at 125Pa):	350 m³/h
MOTOR:	EC motor with electronics
FAN SPEED:	3,320 RPM
POWER INPUT:	71 W (max)
DIMENSION (mm) w x d x h:	600 x 664 x 2,014
DUCT CONNECTION:	Ø160 mm
FILTERS:	F7 supply, G4 extract
WEIGHT:	395/210kg
WATER CAPACITY:	185 L

The Combi offers about 380L of hot water per day allowing ventilation with simultaneous heating in living areas of up to 292m².

CONTROL PANEL - OPTIMA 310 DESIGN

From the designers of Bang & Olufsen, the user-friendly controller has an LCD screen giving total control of temperature and fan speed, using a ten-stage timer.

The appliance monitors all temperatures and an information screen displays all of the current operating temperatures.



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