





## ECOTECH'S ORGANICS HOUSE

The ORGANICS House by ecoTECH, a Swedish affordable housing provider, represents a low maintenance and well designed housing system that aims to make sustainable homes accessible to more people. The design of the ORGANICS House has achieved level 4 of the Code for Sustainable Homes.

- Construction system - closed panel timber frame with mineral wool insulation; U value of 0.18 for a 240mm wall thickness.
- Central pod system with service riser forms the bathroom and kitchen units, and a roof construction using the Corus Hi-Point mono-pitch modular roof system.
- Viessmann compact service unit – combines a 1.5kW air source heat pump, with a ventilation system and a 250 litre hot water tank as one system.
- Efficient water use – includes grey water recycling system, low water usage appliances and flow control devices.
- Wireless technology – combines Cisco home entertainment system and Linksys home networking and wireless solutions.
- LABC system type approval and latent defect insurance cover intention by Building Life Plan warranty.

The ORGANICS House on the Innovation Park is laid out to show the flexibility of the ecoTECH housing system, with a self-contained apartment on the ground floor and a house layout on the first and second floors. This is just one configuration of a system that ranges from studio apartments to five-bedroom houses, and allows for the construction of sustainable homes that can be both mass produced and designed to suit individuals' needs and the location.

The closed panels used for the external walls of the ORGANICS House were supplied to the site, complete with breather membranes, insulation, plasterboard, doors and windows all pre-installed. Factory-built floor cassettes with ceiling boards were pre-installed throughout the house. Back-to-back pods containing kitchens, bathrooms, internal stairs and the cloakroom were put into position. The house was constructed as a shell with a single mains service core.

The ORGANICS House took just 14 days to build, from the very first panel arriving on site, to putting in the final fixtures and fittings.

**Day one:** the ground-floor pod with back-to-back kitchen and bathroom was put in place, followed by the external walls and the first floor cassettes.

**Day two:** the first-floor walls, stairs and bathroom pod, and the second floor were put in place.

**Day three:** the second-floor walls and final pod were lifted into place along with the ceiling cassettes, ready for the installation of the roof.

**Day four:** the modular roof was installed in just four hours.

A time-lapse film showing the full construction of the house is on display in the ground floor apartment of the ORGANICS House.



- Water system incorporating grey water recycling with low flow devices.
- Intelligent floor and ceiling cassettes incorporating pre installed plug and play wiring/lighting and wet and dry heating/ventilation solutions.
- Pre-installed security, entertainment and home working solutions.
- Energy efficiency 50 per cent better than required by building regulations.
- Secure by design triple glazed windows and doors.
- Pod containing disabled accessible toilet/wet room combined with heat/ventilation wet or dry system and washer/dryer.
- Service riser panel that enables all services to be linked together through any build design and height.
- The housing system allows for homes built to bespoke designs, or chosen from the 14 ORGANICS by ecoTECH pre-packaged home designs.

## Viessmann Compact Service Unit

As an integrated renewable energy system solution for the ORGANICS house, the Viessmann Vitotres 343 Compact Service Unit combines an exhaust air/water heat pump with a system for controlled domestic ventilation, and a domestic hot water (DHW) cylinder with 250 litres capacity.

The ventilation equipment supplies fresh air to the living space and extracts stale air from the kitchen and bathroom areas, via a system of ducts. The heat pump (1.5 kW output) uses heat from the extracted air (which cannot be used by the ventilation heat recovery system) to boost the temperature of the fresh air supply or to heat DHW. A solar heating system can also be connected to Vitotres 343 to boost DHW heating.

On colder days with high heat demand, an integral three-stage heater rod provides the necessary cover. In reverse operation the Vitotres 343 heat pump enables active cooling of the ventilation air in summer. In this mode, Vitotres 343 works just like a fridge.

