

## Guildhall Place, Wyverstone, IP14 4SJ

**Simon Bennett and Jill Wilshaw –**

Simon says:

We bought this derelict Suffolk barn and adjacent timber-framed structure in 2006 with the intention of renovation and conversion into our home.

After a difficult, protracted planning process we started work in May 2009 and completed the conversion in June 2010. The project was filmed by Channel 4 and featured in an episode of Grand Designs first screened in October 2010. Both the barn and adjacent Tudor public building were completely stripped to their timber frames.

As well as high insulation standards we incorporated an air-source heat pump serving under-floor heating, solar thermal panels and a mechanical ventilation/heat recovery system (MVHR).



### Sustainable Features

- High insulation standards
- Daikin air-source heat pump
- Under-floor heating system (ground floor)
- Solar thermal panels
- Villavent Mechanical Ventilation Heat Recovery (MVHR) system

#### Overview

**Age, Type:** Public Building 1500, Barn C16<sup>th</sup>

**Walls, Floor area:** oak and elm timber frames, 300m<sup>2</sup>

**Project timescale:** 2.5 years for planning, 12 months for construction

**Cost of measures:** Total renovation/conversion costs circa £500K, eco systems circa £25K

**Energy usage – 3 adults**

**About 45 kWh/m<sup>2</sup>.yr** for CH and hot water.

#### Key features

- Tudor public building is listed Grade II in its own right.
- Barn is curtilage listed Grade II.
- Stripped to original timber frames.
- Extensive insulation – celotex, lamb's wool, wood fibre board.
- 16kW Daikin air-source heat pump.
- Solar thermal panels.
- 300 litre thermal store.
- Villavent MVHR.
- Lighting: low energy bulbs.
- Dual flush toilets.
- Clothes drying: under cover and outdoors.
- Reclaimed materials used in renovation where possible, but MSDC planning constraints limited these.



Both buildings are original oak and elm timber frames. The Tudor public building is probably unique in the country and was deemed to be of “national importance” by the archaeologist.

During the conversion/restoration both buildings were stripped to their timber frames (although some wattle and daub panels were retained in the small public building under the planning consent). Daub panels showing apotropaic markings have been left exposed. The timber frames were repaired using green oak. Brick plinths were rebuilt and all sole plates were replaced in green oak. A queen post roof structure on the Tudor public building was recreated.

An air source heat pump was installed to provide hot water and central heating (wet under-floor system). Hot water needs in summer are met by the solar thermal panels.

A Villavent MVHR system was installed to extract warm, moist air from the kitchen and bathrooms, from where it is passed to a heat exchanger in the loft. Fresh warmed air is then distributed to living areas and bedrooms.

The southern aspect of the house is utilised for solar gain, and the main lounge is kept cooler in the summer by means of a covered patio.

Multi-fuel stoves have been installed in the lounge (in the main Barn) and the dining room (the Tudor public building) for back-up purposes. These mostly burn wood.

If you have any specific questions about this case study, these can be directed to the building owner via the website:

[www.greensuffolk.org/sgbn](http://www.greensuffolk.org/sgbn)

### **Professional Services**

**Architects:** Design - Keith Day Architects, Shelfanger ([www.kfd-architects.co.uk](http://www.kfd-architects.co.uk)).  
Supervision - Whitworth Co-Partnership, Bury St Edmunds ([www.wcp-architects.com](http://www.wcp-architects.com)).

**Builder:** Keith Moyle Construction, Bressingham.

**Eco-systems:** Les French, Ecowarm, Haughley, Suffolk (no longer trading).

### **Products**

**Flat roof (link building), underfloor and wall insulation in Barn:** Celotex ([www.celotex.co.uk](http://www.celotex.co.uk)).

**Windows:** purpose-made hardwood double glazed by Weybread Woodcraft, Fressingfield.

**Roof lights:** Velux ([www.velux.co.uk](http://www.velux.co.uk)).

**Heat Pump:** 16kW Daikin air-source unit.

**MVHR system:** Villavent.