



## New-build Arts and Crafts High-Tech Home



### Overview

<b>Age/Period:</b>	2017
<b>Type:</b>	Detached
<b>Years in residence:</b>	6
<b>No. Bedrooms:</b>	4
<b>Wall type:</b>	Timber framed with rendered and Bath stone outer facing
<b>Area:</b>	Lansdown

### Key Features

- 🔥 Wood burner
- 🔥 Wood pellet stove
- ☀️ Solar PV
- 🌀 Mechanical; Ventilation and Heat Recovery (MVHR)
- 🔥 Low temperature gas boiler supplied radiators and underfloor heating
- 💡 Energy efficient appliances and lighting
- 🔧 Reuse of materials onsite
- 🔧 Rainwater harvesting
- 💡 EV Charger

### Introduction

Nick and Sue purchased a 1950s home on Van Diemen's Lane in 2015. As an experienced developer, Nick had a history of renovating and modernizing homes. However, he faced challenges in adapting this particular house to their long-term needs. In 2017, they decided to apply for planning permission to demolish the existing home and build a new one in the Arts and Crafts style.

The home has been designed to make best use of a long narrow site, providing generous accommodation and maximising views over the Charlcombe valley and Solsbury Hill.

Nick and Sue chose the Arts and Crafts style for their new home to provide a sense of connection to the past and a distinct identity, setting it apart from more generic modern designs. This theme is reflected both in the exterior and interior, with subtle nods to the Arts and Crafts style throughout. Upon arrival, you'll notice that the windows resemble traditional Crittall units, but they are actually carefully designed high-performance modern windows crafted to mimic the Arts and Crafts aesthetic. Hints of the Arts and Crafts style can be found throughout the home, in both architectural fixtures and furniture choices.

The front garden exhibits the work of Nick and Sue's son Will, a landscape architect, including seating made from wheelbarrows!

During this property's development Nick attempted to recycle as many materials as possible and is a mind of information on where materials can cost-effectively be sourced!

## Features

### Insulation

The house is constructed with a timber frame and finished with either render or Bath Stone facing. Timber-framed homes generally have a lower embodied carbon footprint compared to masonry (concrete) homes, reducing the greenhouse gas emissions associated with construction.

### Ventilation

The property features Mechanical Ventilation with Heat Recovery (MVHR). This system allows you to maintain good indoor air quality without needing to open windows. Stale air is removed from the rooms and its heat is transferred to fresh air brought in from outside. This process is typically 80% or more efficient, compared to opening windows, which results in a complete loss of energy from the ventilated air.

Because of the size of the property, 3 MVHR units have been installed.

### Energy efficient boiler, under-floor heating

Nick decided to install a gas boiler after a poor experience installing a heat pump with a previous development 10 years before. Lower temperature radiators and underfloor heating were however installed which provide a more comfortable ambient heat compared with high temperature radiators and have the added benefit that they are potentially compatible with a heat pump if one is installed in the future.

The plant room on the 2<sup>nd</sup> floor has been carefully designed with 2 hot water cylinders. Most of the year with just Nick and Sue in occupation only one of the cylinders is in use, reducing hot water heating needs and standing losses. The second cylinder can automatically be added to the system when additional hot water is needed for guests.

Aerated taps are used throughout the property to reduce water consumption. There is also a tap in the kitchen which provided instantaneous boiling water, improving convenience.

### Wood burner and wood pellet stove

The home features a wood-burning stove in the main living room/dining area, providing low-carbon heat and a cozy atmosphere. Additionally, a wood pellet stove in the entrance hall offers the convenience of remote control, allowing you to turn it on or off and adjust its heat output as needed.

### Solar PV

The property has 6 solar PV panels on the roof, enough to offset the home's usage during the day.

### Rainwater recycling

Rainwater from the roofs is collected in a 6,700-litre underground tank in the garden. This water is then used for irrigation in the stylish gardens and is also pumped back up to the plant room for use in the home's toilets and washing machine, significantly reducing the need for mains water.

### Luxone automated control

The home is highly automated with kilometres of control cables. Almost everything in the home can be turned on and off using the Luxone mobile app.

### Other measures

- The property has a diesel generator to provide resilience in the event of an electricity grid failure
- The home has a central vacuum system, with ductwork through the home reducing the need to collect and dispose of dust bags

### Recommended installers