

ECO-HOME SELF-BUILD



CASE STUDY

Replacing Gas with High-Performance Multi-Storey Heating

PROJECT AT A GLANCE:

- Five-bedroom, four-bathroom detached single-family house
- 340sqm
- Self-build, energy efficient project
- Underfloor Heating & Cooling
- Manifold Plumbing
- Goal to eliminate gas dependence & exceed standard building regulations



“We really appreciated the experience and professionalism of the Multipipe team. It was great to work with David and Fran throughout, and we felt they were with us from start to finish.”

Stephen and Bronwyn
The Homeowners

OBJECTIVE



PROJECT OVERVIEW: FROM LEAKY CHALET TO ECO-HOME

Located in Billericay, Essex, self-builders Stephen and Bronwyn undertook the demolition of an energy-hungry, gas-fuelled, "leaky," 100-year-old chalet bungalow. In its place, they constructed a five-bedroom, four-bathroom, single-family detached house spanning 340 square metres.

The build featured a comprehensive eco-friendly design strategy incorporating high levels of insulation, an Air Source Heat Pump (ASHP), a Mechanical Ventilation and Heat Recovery (MVHR) system, photovoltaic panels (PVs), triple glazing, and low U-values for the building fabric. The core objective was to install a high-quality heating system that surpasses standard building regulations, significantly reduces heating bills, and eliminates gas dependence.

THE CHALLENGE: INTEGRATING RENEWABLE HEATING IN A LARGE ECO-BUILD

Transitioning from a legacy gas setup to a zero-gas, high-efficiency renewable architecture requires precise coordination between the building fabric (high airtightness and insulation) and low-temperature emitter design across three floors, ensuring thermal comfort without overloading energy consumption.



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SOLUTION



Stephen and Bronwyn partnered with Multipipe after discovering their supportive approach and installer training:

"Friendly, helpful and supportive to self-builders. They also run an excellent course on how to install underfloor heating." — Stephen and Bronwyn

Ground Floor: Underfloor heating (UFH) was chosen as the best, most efficient solution for large open-plan living areas, offering superior thermal comfort. The ground floor system was also used to cool the house using the heat pump in reverse.

First & Second Floors: Individually controlled radiators served via manifold systems provided by Multipipe.

"The products were demonstrated and explained during the underfloor heating course. They are all well-established and high-quality products." — Stephen and Bronwyn

Training Foundation: Hands-on product familiarity gained through Multipipe's UFH installation course.

System Coordination: Comprehensive after-care including troubleshooting and cross-system alignment with third-party tech (such as ASHP/MVHR integration).

On-Site Attention: Dedicated support throughout the build lifecycle.

KEY BENEFITS



Incredible Thermal Performance: The finished house achieves outstanding energy efficiency and indoor comfort.

Rigorous Attention to Detail: Supported by dedicated site visits during construction.

Expert Multi-System Coordination: Seamless integration with complementary renewable building technologies.