CASE STUDY

Feltham Drive – 1 Bed New Build Micro-Home



This case study can be found online here

- Low-cost improvements
- 'Big' insulation works
- Glazing
- Lighting systems & electrical appliances
- Renewables: heat
- Renewables: electric
- Water management
- Sustainable building materials
- Lifestyle change

This one-bed timber frame micro-home bungalow was a self-build project, completed in 2025. A family member has now been living in it for one year. Katy has a background in architecture and designed the bungalow to comply with strict new Building Regulations so it's very energy efficient. She already had lots of hands-on building experience and did lots of the work herself.

You can also find an extremely detailed blog exploring their journey through the build here

https://fromeame.wordpress.com/

Energy Efficiency Measures

Insulation: Timber frrame Walls have 175mm PIR insulation (U-value 0.16 W/m²·°C) and floors have 225mm PIR (U 0.14 W/m²·°C). Internal wall between bedroom and bathroom has soundproofing.

Glazing: High-performance triple-glazed windows and doors throughout.

Heating: 4kW air-to-water heat pump (Daikin EDLA04) heats the space.

Ventilation: Openable windows and simple humidity-controlled continuous extraction.

Smart controls: Hive (Heating) and Solax (PV) systems.

Solar PV: 2.82kW with a Solax inverter. Battery storage is not yet installed but has been allowed for in the future.

Water conservation: Low-flow taps and an outside water butt.

Sustainable materials: Heat-treated Scandinavian redwood timber cladding (with a 30-year warranty) used where allowed (away from the boundary).

Lifestyle/behaviour changes: The home is a purpose-designed micro-home for efficient living, with an e-bike supporting low-carbon travel.

Annual Energy Consumption: 1,190 kWh in the first year.