BIRCHFIELD COTTAGE

Highly energy-efficient and airtight build method

Project: Birchfield

Member: Frame Technologies

Sector: Self Build

Technology: Timber Frame

The three bedroom, two storey cottage is 96m^2 (150m^2 including the garage). With rigorous planning, extensive researching and resourcefulness, and excellent relationships with suppliers, the client managed to build a high-quality contemporary home to meet their exact needs for a total build cost of just £180,000.

The client opted for a highly energy-efficient and airtight build method, which would future-proof her home and keep her bills low.

Aspirations for the house included an overhanging roof to form a porch area, and huge bi-folding doors to create a spacious open plan living space. Frame Technologies overcame the structural challenges to meet the brief, incorporating a steel wind frame to accommodate the sizable span of the opening, which could be erected along with the timber frame.

When it came to the building envelope, the client opted for timber frame to provide a high insulation value and an impressive speed of build. Using a fabric first approach resulted in a thermally efficient building envelope without relying on expensive energy-saving bolt-ons.

Frame Technologies designed and manufactured the timber frame using its TechVantage™ E system, a 140mm closed panel system, containing rigid polyurethane insulation to achieve a U-value of 0.19.

The system was erected as a fully insulated panel with PIR insulation comprising an external 9mm OSB, foil breather paper and brickwork, combined with an internal polythene vapour barrier, service battens and 15mm plasterboard

A young, first-time self-builder has proven that with diligent planning, attention to detail, hard work, and maximising existing relationships and contacts, it is possible to build your dream home on a very reasonable budget. Birchfield is an example to many lower-budget self-builders and demonstrates what amazing results can be achieved with hard work, perseverance, and a bit of strategic thinking.

The client turned to self-build timber frame supplier, Frame Technologies, which provided a high level of expertise and a quick turnaround guarantee. Early engagement with Frame Technologies helped to minimise costs further, as the experienced team provided initial support and were able to assist with design, building regulations and planning challenges, which proved to be cost-effective long term.

Utilising a precision-engineered timber structure with engineered truss rafter roof, made it 30% quicker to construct than a brick and block home of the same dimensions. Frame Technologies erected the panels and floor structure within 48 hours and the rest of the timber frame within seven days.

The client has future-proofed their home by ensuring its energy–efficiency, as well as by preparing for any future extensions/alterations. Plans are already there for an extension should she require it, with things such as

electrics and plumbing included in the original plans to allow for upgrading at a later date.