



## HANDOUT 8

### Timber Frame Construction

Modern timber frame structures are precision-engineered, strong and durable. The build method relies on a factory manufactured timber frame as a means of structural support - carrying the loads imposed by the floors and roofs, before transmitting them to the foundations, which can be built at a lower cost due to the buildings being lightweight.

The construction of timber frame structures utilises factory manufactured wall, floor and roof panels. The systems used are classified as either open-panel, insulated or closed-panel. These panels can include the wall insulation pre-fitted and the pre-fitting of doors, windows and service zones for onsite installation of M&E works.

Timber frame currently accounts for around a quarter of all new homes being built in the UK. This build method is utilised by every sector of the construction industry including social housing providers, due to timber frame's superb environment credentials, as well as being quick and easy to construct.



#### Open-Panel

Timber frame open panel systems, are structurally engineered panels that form the inside load-bearing leaf of the external wall, comprising studs, rails, sheathing on one face and a breather membrane.

The open panel system is made from treated softwood timber framing, over which a structural sheet material of either Ply or OSB board is fixed. Depending on the system, U-values ranging from 0.26 down to 0.15 W/m<sup>2</sup>K, can be achieved.

#### Closed-Panel

Are made from studs, rails and insulation, with sheathings and/or linings on the faces of the panel. A vapour barrier is also provided on the warm side of the insulation and a breather membrane on the outer face of the panel.

If desired, closed panels may also include fitted windows and internal service zone battens, for ease of installation and construction. U-values from 0.25 right down to 0.10 W/m<sup>2</sup>K can be achieved. These solutions have been designed to deliver excellent thermal and airtightness performance and are ideal as the basis of a modern energy efficient home.

## The Benefits of Timber Frame Construction

#### Summary of benefits for the builder and developer

- Speed of construction
- Not weather dependant
- Reduces outer cladding from the critical path
- Reduced structure drying out time
- Reduced material handling and distribution
- Design flexibility
- Potential for reduce build costs
- Improved site productivity
- Reduced waste
- Improved quality = reduced call-backs
- Reduced programme length

#### Summary of benefits for the customer or homeowner

- Lifestyle approach
- Environmentally friendly
- Dimensionally accurate
- Low running costs
- Comfortable home
- Improved quality