

Building homes with SIPs or timber frame

For single homes and small developments. What to decide, in what order, and where projects usually go wrong.



SIPs and timber frame are both proven ways to build warm, airtight, low energy homes faster than traditional masonry, whether that is one home or a small scheme of several. Neither is better in every case. The right choice depends on the design, the site and the priorities, and the decisions around the frame matter as much as the frame itself.

What they are

SIPs (structural insulated panels) are a layer of rigid insulation bonded between two structural boards. Large panels arrive ready to fit, so walls and roof go up quickly and the shell is very airtight.

Timber frame uses engineered timber studs made into wall and floor panels in a factory. Insulation is fitted in the factory (closed panel) or on site (open panel). It is flexible, widely understood by trades and suits most designs.

Side by side

	SIPs	Timber frame
Speed on site	Very fast, large panels	Fast, especially closed panel
Airtightness	Excellent as standard	Very good with careful detailing
Wall thickness	Slim walls for high performance	Thicker for the same performance
Rooms in the roof	Excellent, open roof spaces	Good, with trusses or cassettes
Design changes	Fix openings early	More forgiving

Decide in this order

- 1 The brief and planning drawings.** Layouts, openings and the look that has approval. On a scheme, repeat house types and panel sizes where you can.
- 2 The performance target.** Building Regulations minimum, ready for the Future Homes Standard, or further towards Passivhaus principles.
- 3 The ground.** A site investigation tells you what foundations you need. Foundations and frame must be designed together.
- 4 Whole-building engineering.** Steel, glulam and LVL beams, loads and wind bracing, worked out for each whole home, not panel by panel.
- 5 The system and manufacturer.** Only now compare SIPs and timber frame quotes like for like.
- 6 Windows and doors.** Sizes fixed before manufacture.
- 7 Services routes.** Ventilation ducts, pipes and cables planned into the structure.
- 8 Site logistics.** Crane positions, access, deliveries and storage for every plot.

Where projects usually go wrong

- **Buying the kit before the engineering.** Quotes look comparable but scopes differ. Steels, beams and foundation details get added once the engineering catches up.
- **Nobody owns the interfaces.** Frame to foundation, frame to roof, windows to frame. These junctions are where heat and air escape and where disputes start.
- **Changing openings after manufacture.** A late window change can mean remaking panels and losing your slot.
- **Airtightness left until the end.** Tapes and membranes need to be right as the shell goes up, then tested.
- **Ventilation designed too late.** An airtight home needs planned ventilation, usually MVHR, with duct routes built in.
- **No plan for the crane.** Access, ground bearing and lifting zones need checking before delivery day.



Questions to ask any supplier

- What exactly is included, and what is excluded?
- Who designs the foundations and the steels?
- What U-values and airtightness will the finished homes achieve?
- Who is responsible for the roof, windows and airtight junctions?
- What certification does the system hold?

HOW WE DO IT

Independent across both systems

We build with SIPs and timber frame from leading manufacturers, so we can recommend what suits the design, site and budget, for a single home or a small development. Our Superstructure Options Review compares the systems at no charge as part of pre-construction. Send your planning drawings and we will give you an estimate within 5 working days.

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