



Silk Meadows, Taunton, Somerset

Principle Contractor: Crest Nicholson South West Region

Client: Crest Nicholson

Project: 11 homes forming the first phase of the 67-home Silk Meadows development of two, three and four bedroom private homes in Silk Mills Lane and 2 additional homes that will form the final phase of the scheme

Build method: Rå Build, thin joint cavity wall with an aircrete inner leaf and brickwork external masonry outer skin; beam and block suspended ground floor; timber intermediate floor(s) suspended on retrofitted joist hangers; the dwellings sit beneath a concrete tiled roof supported on timber trusses.

Location: Silk Meadows, Silk Mills Lane, Staplegrove, Taunton, Somerset TA2 5AA

Type of contract: Design and Build

Aircrete thin joint contractor: Cropper & Naum

Build time: Construction of the first three homes was completed in precisely 12 weeks. This was followed by a one week fit-out so that the development was ready to be launched 13 weeks after construction commenced.

Executive summary:

Crest Nicholson needed a fast build method to erect the three show homes and the first phase of the Silk Meadows development quickly and efficiently. H+H's Rå Build method of thin joint aircrete construction provided the housebuilder with the ideal solution.

To help speed construction still further, retro-fit joist hangers were used to support the timber joists for the intermediate floors, this method eliminates block cutting at joist level, further increasing build speed and helping to improve airtightness performance. This, in turn, enables the contractor to order the staircases in advance of the floor's construction, rather than having to wait until the floor has been installed before taking measurements.

The Rå Build method enabled Crest Nicholson to complete construction of the show homes, which included a three-storey house in just 12 weeks.



Project description:

The first phase of the project was for 11 homes that were set along the newly constructed street that runs through this Crest Nicholson development of two, three and four bedroom houses. Speed was of the essence because this phase of the 67 home-scheme included the three show homes that were to be used to market the Silk Meadows development, one of which was a two-storey dwelling. The thin joint system enabled the build to progress from slab to finished house in just 12 weeks.

This was the fourth site on which Crest Nicholson has used the Rå Build method to ensure a fast build programme for its show homes. To familiarise the operatives with the Rå Build method prior to work starting on site, H+H provided half a day's training for the brickwork contractor Cropper and Naum.

To help speed the construction process further retro-fit joist hangers were used to support the timber intermediate floors. The joist hangers fit into slots cut into the thin joint masonry; a spinning laser is used to ensure slots are at the correct height and are level. Because the storey heights can be set independently of joints on the cavity wall's inner leaf, the solution allows

the staircase to be ordered in advance of construction commencing rather than having to wait until the floor has been constructed to finalise its dimensions. Retrofitting the joist hangers also helps keep the building airtight because the slots do not penetrate the aircrete blockwork.

The Rå Build method will also be used for the final two homes on the development. The foundations for these are complete and currently form the development's customer car park. At the end of the scheme the Rå Build method will be used to complete the final two homes quickly and with minimum disruption to the development's new residents.

"It saved weeks and weeks on programme compared to a traditional masonry build. The thin joint system enabled us to go from slab to finished house in 12 weeks for the three show homes,"

Tony Daniels, Crest Nicholson's site manager says of the Rå Build method.

Reason for choosing H+H aircrete products:

Rå Build is a labour inclusive package making use of aircrete blockwork and Thin Joint Celfix mortar. It enables the inner shell of a building to be built and made weatherproof first, allowing first fix to start at the same time as the outer skin. Full story heights can be built in a day and there are none of the lead times associated with timber frame solutions. This fast build time enabled Crest Nicholson to get the show homes open early in the development's construction.

Product used / aircrete specification:

Rå Build, thin joint cavity wall with an aircrete inner leaf and brickwork external masonry outer skin; beam and block suspended ground floor; timber intermediate floor(s) suspended on joist hangers; the dwellings sit beneath a concrete tiled roof supported on timber trusses. The development was built to 2006 Building Regulations.

Foundations:

Strip foundation supporting 300mm Celcon Foundation Blocks in Standard Grade (3.6N/mm² compressive strength) and High Strength Grade (7.6N/mm² compressive strength).

Ground floor:

Beam and block suspended over a 300mm void.

External and internal separating walls:

External Cavity wall constructed with an inner leaf of 610mm x 270mm x 100mm wide Jumbo Bloks. Both Standard Grade (3.6N/mm²) and High Strength Grade (7.6N/mm²) Jumbo Bloks were used depending on the compressive load.

The wall has a 100mm cavity filled with blown expanded polystyrene bead insulation. The external wall is constructed of either brick or 100mm rendered dense aggregate block.

The separating wall used two skins of 100mm Standard Grade Jumbo Bloks with a 75mm tied cavity, this enabled one block type to be used for both external and internal separating walls and achieved Robust details E-WM -10.

A parge coat of cement mortar was applied to the separating walls before finishing with plasterboard. External walls were finished internally with plasterboard stuck on dabs and given a plaster skim finish.

Internal partition walls

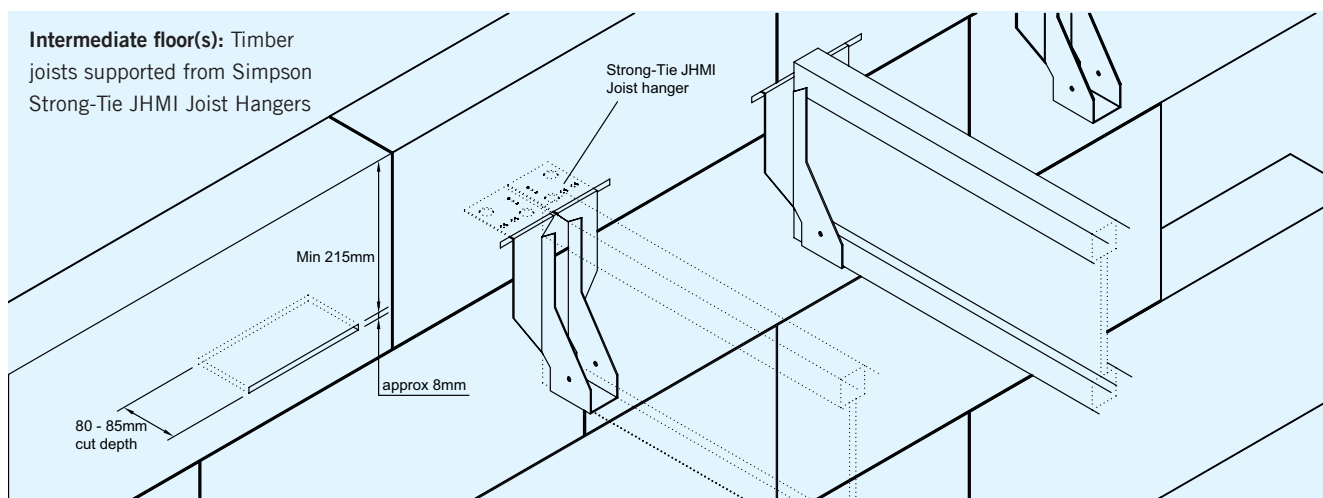
Plasterboard on timber studwork

Intermediate floor(s):

Timber joists supported from Simpson Strong-Tie JHMI Joist Hangers fitted into horizontal slots cut into the Thin Joint blockwork – for further information on this system please contact H+H. This method eliminates block cutting at joist level and helps improve airtightness performance.

Roof

Concrete tiles roof supported on timber trusses.



“Crest Nicholson needed a fast build method to erect three show houses quickly on this prestigious development. Large format blocks combined with fast setting thin joint mortar allowed a fast build, taking the external skin off the critical path also allowed internal trades to start sooner compared to traditional build”
John Churchett,
National Development Manager, MMC.

Product/system benefits:

- Speed of build, R&A build enables a fast watertight masonry shell allowing internal trades to start sooner and the external leaf taken off the critical path
- Easily met or exceeded Part L and Part E of the Building Regulations
- Simplified the construction process
- H+H aircrete uses up to 80% recycled material
- All external walls – cavity or solid wall construction achieves A+ under the BRE Green Guide

Other benefits included:

- The components for Thin-Joint blockwork are all available off the shelf
- Blockwork is highly adaptable and flexible at openings.
- Thin-Joint technology gives an airtight construction
- Celfix mortar can be stored within the footprint of the building and small quantities mixed as required



H+H aircrete applications:

- Internal and external leaf in cavity walls
- Solid walls
- Separating / party walls
- Flanking walls
- Partitions
- Multi-storey
- Foundations

The Rå Build method enables the structure of a building to be built faster and to a better quality, allowing follow-on trades to start work sooner in a weatherproof environment, whilst retaining the flexibility of on-site construction. It is fully adopted as the preferred method of wall construction throughout most of northern Europe.

Aircrete is an excellent all round commercial and industrial building material. Used in partition and external walls (both solid and cavity), fire walls and as infill to steel and concrete framed buildings it provides durability, fire resistance and superb thermal and acoustic insulation.

The speed of build and waste reduction that can be achieved using the Rå Build method with the H+H Thin- Joint System helps in meeting the stringent requirements of build schedules.

Added to this H+H aircrete has exceptional sustainability credentials: not only does it provide excellent thermal and acoustic insulation and contributes to air-tightness but, being manufactured from up to 80% recycled materials, it is sustainable both in manufacture and in use. Couple this with H+H UK's rigorous approach to pursuing the highest environmental standards throughout the whole of its business and it's easy to see why this innovative and award winning system is now firmly established within the UK.

Contact details

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Further reading

Designing with Aircrete
Building with Aircrete
The Excellence of Aircrete - the all round commercial and industrial building product Fact sheet 9 Solid wall construction Building with aircrete

For further information about the subjects covered or the H+H products used in this case study, please visit our website www.hhcelcon.co.uk