April 2013
CI/SfB Ff4

Parker Meadows Care Home
Fareham, Hampshire

Principle Contractor: The Highwood Group

Client: Gracewell Healthcare

Project: Parker Meadows Care Home,

Project value: £4.2 million

Build method: Thin Joint aircrete construction

Location: Redlands Lane, Fareham, Hampshire

Type of contract: Design and build

Architect: PDP Architecture

Aircrete contractor: Champion Brickwork

Build time: Total build time from start on site was just 60 weeks

Executive summary: Highwood Group used H+H's Thin Joint system of large format aircrete blocks and quick-drying Celfix Mortar to meet a tight construction programme for the construction of a 3-storey, 80 bedroom specialist care home and six assisted living bungalows.

Project description:

The three storey building in Redlands Lane, Fareham, is built in an arc around landscaped gardens on the site of a former dairy. The project also includes six assisted living bungalows, also set out in an arc.

Thin Joint construction was used to ensure construction of this 80 bedroom care home could be completed within a 60-week construction programme.

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"We'd moved away from timber frame and we were looking for new ideas that would give us surety of programme and felt sure that thin joint would do just that"
Steven Matthews, Site Manager for Highwood Group

Thin Joint blocks were used to construct the load-bearing inner skin of the external walls. The Thin Joint enabled the hollowcore, precast concrete floor planks that form the building's intermediate floors to be installed directly onto the Thin Joint inner walls ahead of construction of the building's external brick skin; a technique not possible using traditional blockwork construction. "There was a benefit to using Thin Joint: it did go up relatively quickly but the biggest bonus in terms of programme was taking the external brickwork off the project's critical path," Matthews says.

An additional advantage of the Thin Joint system was that the Celfix mortar is supplied pre-mixed in bags. "Using Celfix mortar was a plus because it is mixed adjacent to where the blocks are being laid, so you do not have the logistical challenge of continually moving mortar around the site," says Matthews. "The system also enabled us to construct the blockwork walls to full floor height in the same day".

Following its experience of Thin Joint on this scheme, Highwood has subsequently used Thin Joint on three further projects including another care home project at Rowner Road, Gosport, Hampshire, which was constructed in a similar manner with hollowcore concrete inner floors mounted on 140mm wide, High Strength Thin Joint blocks.

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Build time

Total build time for the development from start on site was 60 weeks.

Reason for choosing H+H aircrete products

The speed of construction resulting from the use of Thin Joint block and the ease of use of Celfix Mortar.

Product used / aircrete specification

Thin Joint aircrete construction using Jumbo Bloks and Celfix Mortar. Various different sized blocks were used depending on the structural loads.

Foundations

A mixture of piled and strip foundations depending on ground conditions

Ground and first floor

Beam and block ground floor construction.

Internal floors

Hollowcore precast concrete planks located directly onto the Thin Joint inner skin of the external walls.

"Using Thin Joint enabled us to take construction of the external brickwork outer skin off the critical path, which was a bonus in terms of construction programme"

Steven Matthews, project manager for Highwood Group

External cavity walls

The load-bearing inner leaf was constructed primarily from 610 mm long, 210 mm high, 140mm wide, Jumbo Plus blocks. However, other strengths and sizes were used depending on the application and loading. The scheme featured a partly filled external cavity with 50mm PIR insulation board clad predominately in a brick outer skin but with some feature areas of rendered blockwork. Thin Joint Celfix Mortar was used throughout.

Internal partition walls

Internal walls were constructed predominately using Jumbo Blok 610mm long, 270mm high, 100mm wide.
Thin Joint blocks dry-lined with gypsum plasterboard attached on dabs.

Roof

Flat roof construction using timber joists supported from the Thin Joint inner leaf.

Acoustics

Care Homes are not subject to acoustic rules. However the project's six assisted living bungalows, which also have a Thin Joint blockwork inner skin did meet the requirements of the regulations.

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Product/system benefits:

- Providing a fast watertight masonry shell enabled internal trades to start sooner compared to traditional build
- Easily met or exceeded Part L and Part E of the Building Regulations
- Simplified the construction process
- H+H aircrete products use up to 80% recycled material
- Achieves A+ rating in the BRE Green guide

Other benefits included:

- The components for Thin-Joint block-work are all available off the shelf
- Blockwork is highly adaptable, easily allowing for any last minute design changes
- Aicrete achieves an air permeability of 0.12m³/hr/m²
- Celfix mortar can be stored within the footprint of the building and small quantities mixed as required
- Has excellent fire resistance with a Class 0 rating for surface spread of flame.

"Thin Joint was ideal for this large, three-storey project because it enabled the care home to be built quickly and efficiently to meet a tight construction programme"

Amos Rodrigues, development manager at H+H

H+H Case Study

Parker Meadows Care Home

H+H aircrete applications

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

The system enables a fast, weathertight masonry shell, allowing follow-on trades to start work sooner in a weatherproof environment, whilst retaining the flexibility of on-site construction. Recognised as a Modern Method of Construction and has been 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.

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. We also have BES 6001:2008 accreditation for responsible resourcing of materials in addition we have an A+ rating under in the BRE green guide on both cavity and solid external walls.

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.

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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**