

Parkwood Extra Care Scheme - Telford



Main contractor: McPhilips Ltd (Original contractor Chase Norton went into administration in 2008)

Clients: Wrekin Housing Trust

Project: The 53 unit flagship scheme offers accommodation with the necessary facilities to allow those with support and care requirements to live independently. The building is designed to integrate accessible dwellings, care resources and shared communal facilities in a secure environment whilst being environmentally friendly. H+H aircrete contributes to the building's high level of thermal insulation and when coupled with high efficiency boilers and rainwater recycling the scheme achieved a BREEAM 'very good' rating

Value: Total value of the block-work alone was approximately £300,000. The entire project value was worth £9 million.

Location: Parkwood Extra Care Scheme, Park Lane, Woodside, Telford, TF7 5HN.

Type of contract: JCT Design & Build Contract

Architect: Supporta Architecture

Inner shell sub-contractor: Minett Group, Minett Group is an established H+H UK recommended contractor

External insulated render subcontractor: Repex Ltd

Project description:

Rising up to 4 storeys high, the project is made up of a mix of 1 and 2 bedroom self-contained apartments for rent with extensive communal areas.

The Rå build method of construction with solid external walls, cavity separating walls, and PCC plank separating floors was the preferred approach, with an insulated external render. Approximately 110,000 H+H UK aircrete blocks were used in the build.

To facilitate areas with brick facings, some of the external elevations are of cavity construction, with 100mm cavity. 100mm full fill mineral wool was used. The entire interior is finished with plasterboard dry lining on dabs. A stand and seam aluminium clad roof completes the building.

Parkwood Extra Care Scheme - Telford

Build time (blockwork and separating floors):

Following on from the work of Chase Norton, who had built to first floor level, further construction took 14 working weeks to completion.

Product used / aircrete specification:

- External walls -Solid 215mm 7.3 and 8.7 N/mm² H+H Plus Blocks, face size 610 x 140mm
- Separating walls -Two leaves of 100mm 7.3 and 8.7N/mm² H+H Jumbo Bloks, face size 610 x 270mm
- Separating floors - 150mm Precast concrete slabs

Reason for choosing H+H aircrete products:

Contractor Chase Norton was attracted to the robust simplicity of a solid external wall. The use of external insulated render means all the masonry is inside the envelope which, together with the use of concrete separating floors creates a high thermal mass. The building will be slow to lose its heat in cold conditions, but will also remain cooler in the summer months, thus reducing the need for air conditioning.

This slowing of the heating/cooling cycle coupled with the building's performance in sound control will provide greater comfort for the occupants as well as reduced energy consumption. McPhilips won the contract to complete the job following the collapse of Chase Norton and were pleased with how it went.



External render specification:

Repex took just under 10 weeks to complete their work. The Permarock insulated render system with 100mm mineral fibre insulation board was used. Repex worked to achieve a U value of between 0.26 & 0.28 Wm²K.

Acoustics:

The entire development had to comply with Part E of the current Building Regulations covering Rooms for Residential Purposes. The minimum requirements being:
Walls; min 43dB DnT,w+Ctr
Floors; airbourne - min 45dB DnT,w+Ctr
Impact; max 62dB DnT,w+Ctr
The separating walls - cavity masonry were constructed to Robust Details E-WM-10.

Airtightness:

Thin-Jointed blockwork has an air tightness of approximately 1m³/hr/m², which assists in achieving site test results ranging from 2.88 - 4.26m³/hr/m².

“We found the H+H aircrete solid wall substrate to be very flat and it accommodated the render without any issues whatsoever. As the site was in a clean condition, we were able to complete our work quickly and on time.”

Andy Simmonds
Contracts Manager, Repex LTD

“We demonstrated with this project that the Rå Build method of construction with the Thin Joint aircrete is not just a quick fix to streamline the construction process but also contributes to the thermal mass of a building.”

Richard Afford
Surveyor, Minett Group

Parkwood Extra Care Scheme - Telford



Product/system benefits:

As an environmentally friendly product, aircrete offers many benefits in construction that add to the sustainability credentials of a project and enhance thermal and sound insulation, thermal mass and air-tightness.

The chemical reaction that forms aircrete's structure results in each block being made up of millions of non-interconnecting cells. This structure is key to many of the Product's benefits, as it reduces the passage of heat, sound and moisture through the building's envelope.

Performance is further enhanced by the use of the H+H thin joint system, which reduces the thickness of the mortar joints from 10mm to 2mm.



Thermal mass:

The higher average temperatures that are expected from climate change make summer overheating a potential problem within the lifetime of the building. One of the requirements within AD 'L' is that the designer checks for summer overheating, and thermal mass is recognised as one means of reducing this effect.

With homes built with H+H aircrete, the internal temperatures during summer months is cooler as the aircrete products absorb heat in the daytime and release this stored heat at cooler times. Summer overheating is typically a problem for light framed systems.

Buildings with higher mass also have a beneficial effect on the heating pattern in wintertime. By offering good thermal insulation, thermal inertia and airtightness properties, aircrete reduces the extremes of the internal temperature within the building, keeping it at a more consistent, comfortable level and reducing the highs and lows that would be seen in lighter structures with minimal thermal inertia.

"This was our first time with aircrete and I would be happy to use it again. The material enabled us to meet the criteria for using a modern method of construction and comply with or exceed required building regulations. We also had the confidence that comes with a familiar type of building process and well established trade practice".

Tony Hewitt
Project Manager,
Wrekin Housing Trust

Parkwood Extra Care Scheme - Telford

Other benefits included:

- Construction programmes are simplified as the inner shell can be completed before external cladding by one contractor
- Compliance with Part L and Part E of the Building Regulations
- Lead time kept to a minimum as all components for Thin-Joint block-work are available 'off the shelf'
- Block-work is design flexible and highly adaptable
- Thin-Joint block-work rated walls have an air tightness around $1\text{m}^3/\text{hr}/\text{m}^2$
- Approximately 75% less mortar is needed on site. Celfix takes up less storage area than traditional mortar

H+H aircrete applications:

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



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