

# H+H Case Study

## Bermondsey Spa Phase 2, South East London

Page 1 of 4

CI/SfB

Ff4



## Bermondsey Spa Phase 2 Bermondsey, South East London

**Client:** Hyde Housing Association

**Project:** Part of the Bermondsey Spa regeneration of a run-down area of East London which will ultimately provide 1,500 new homes, 6.5 acres of re-landscaped open space and a range of amenities including GP and dental surgeries, a pharmacy, shops, bars, restaurants, youth facilities and a play area.

**Value:** £18m (Site D); £150m (total project).

**Location:** Old Jamaica Road, Bermondsey

**Type of contract:** Design & Build

**Executive summary:** Using H+H UK's Thin Joint System for internal partition and separating walls instead of the drylined studwork and gypsum block originally specified, cut the programme time by an estimated two months on this large-scale project.

H+H was able to provide technical and design advice on meeting the acoustic and thermal performance requirements in this mixed-use, multiple-occupancy building.

Using Jumbo Blok with the Thin Joint System a sound reduction in excess of that required by Part E of the Building Regulations was achieved which contributed to the Code for Sustainable Homes rating for the building.

**Architect:** Levitt Bernstein, 1 Kingsland Passage, London E8 2BB

**Contractor:** Rok plc, Crown House Business Centre, Crown House Home Gardens, Dartford, Kent, DA1 1DZ

**Bricklaying subcontractor:** Hart Construction, Grange Farm, Grange Road, Tiptree, Essex CO5 0QQ (H+H UK Recommended Contractor)

**Project description:** Site E West comprises a medium rise, high-density, mixed-use development extending to nine stories at its highest point. The development will provide 114 homes. A medical centre, communal facilities, a bike store and other amenities will be provided at ground floor level. 62 of the homes will be housing for sale, 40 shared ownership and 12 keyworker units.

**Product used / aircrete specification:**

Jumbo Blok (610 x 270, 100mm thick) with the Thin Joint System.

- **Internal partition walls** - solid aircrete blockwork using Jumbo Blok (610x270x100mm) and the Thin Joint System with 12.5mm plasterboard on dot and dabs fixed each side.
- **Internal separating walls** - Cavity construction using Jumbo Blok (610x270x100mm) and the H+H Thin Joint System with a 75mm clear cavity (no insulation or wall ties), parge rendered and plasterboard. Walls isolated from the slab using Icopal Bridgestop acoustic isolation membrane.

**Build time (entire project):** 5½ months. Some 17,000 square metres of aircrete was laid during this period.

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| CI/SfB | Ff4 |
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**H+H UK Recommended contractor comment:**

“It’s a very user-friendly system that operatives find easy to adopt and work with, and has the added benefit of easily meeting CDM requirements for manual handling.

An aspect that we find clients are consistently impressed by is just how clean the system is. Because the Celfix mortar used for the Thin Joint system can be mixed in buckets to the amount required, there is no need to move large amounts of mortar around the site. This means no mortar spillages, less waste and less disruption.

It also offers a greater degree of flexibility to accommodate design changes, such as the re-positioning of sockets and services

during and after the build process.”

Craig Hart,  
Managing Director,  
Hart Construction



**Reason for choosing H+H aircrete products:**

The original specification for separating walls was for gypsum block and drylined studwork for internal partition walls. There were several major advantages from using aircrete:

- Using H+H aircrete meant that all the partition walls could be built while the shell of the building was still being constructed, without waiting for it to be weathertight. This resulted in a considerable saving on the programme.
- Aircrete was used for both partition and separating walls. This produced efficiencies from having only one material onsite and one team to do all the work, avoiding the conflict of trades which can slow a project down.
- H+H aircrete blocks were also significantly cheaper than the gypsum blocks originally specified.

**Acoustics:** Being a multi-occupancy building, sound insulation was an important factor. However, masonry cavity separating walls are not normally recommended on a continuous concrete floor, as the cavity is bridged and this can potentially allow flanking sound. H+H UK partnered with Icopal Monarfloor Acoustics, the world’s largest manufacturer of building membranes, to develop a system that would provide the necessary acoustic performance. The results clearly proved aircrete’s worth in this respect, producing a level of acoustic insulation in excess of that required by Part E of the Building Regulations and contributing to the Code for Sustainable Homes rating for the building.

- **Partition walls** - using Jumbo Blok a sound reduction of 40dB was achieved.
- **Separating walls** - Jumbo Blok with the Thin Joint System and Bridgestop acoustic membrane, from H+H partner Icopal. The isolation membrane was used at the continuous floor slab, the head and where the wall meets a concrete pillar.

After H+H conducted its own pre-completion tests, subsequent independent tests carried out for the developer Rok confirmed that the acoustic insulation of the aircrete specification easily exceeding the performance requirements of building regulations.

“This is an exciting breakthrough for aircrete construction, confirming its potential for high-density housing where acoustic insulation is a priority.”

Doug Harris,  
H+H Research & Development Manager

This is a clear pointer to the effectiveness of aircrete as an acoustic insulator and is further evidence to disprove the commonly held belief that only a heavy material gives good acoustic performance. One of the reasons for aircrete’s effectiveness is its unique cellular structure - thousands of individual cell walls which each interrupt and diminish the passage of sound. This structure also makes aircrete an excellent thermal insulator, as well as promoting the benefits of air tightness and resistance to water ingress.

**Customer support:** H+H UK staged a demonstration of the Thin Joint System on site at Bermondsey for the client, employers agent, architect and main contractor. This showed how the blockwork would tie in with the floor, ceiling and structural columns. H+H UK, with partner Icopal, also provided the main contractor with design advice on how to achieve the required acoustic performance. In all, H+H staff attended three meetings with the contractor to advise on the aircrete wall constructions required to meet or exceed the acoustic regulations of the Building Regulations.

**Contractor comment:**

“The H+H Thin Joint System has a lot to recommend it. The main benefit was being able to build the internal walls without waiting for the envelope to be made weathertight. This is a large project, so we made programme savings of six or seven weeks.

Using aircrete meant we were able to use one type of block for all the internal walls, which simplified the construction process and made it more efficient.

Another important factor was the Celfix quick-setting mortar. This arrived in bags with the blocks. We weren’t dependent on a stream of trucks delivering mortar to the site, which can often be interrupted by breakdowns or delays due to heavy traffic here in central London, quite apart from the environmental cost. And Celfix was so much easier to get up to the ninth floor of the building. The bags went up by the crane or hoist, water was piped up and the team mixed the quantity they required when they needed it.

Overall it was much more efficient because the recommended sub-contractor both supplied and installed the necessary materials.

I would certainly want to use it again and I would not want to go back to

a traditional, stud wall system.

Peter Craigie, Senior Project Manager  
Rok plc



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Page 3 of 4

CI/SfB

Ff4



### 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 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 public 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 H+H Thin Joint System helps in meeting the stringent requirements of commercial 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 airtightness but, being manufactured largely from 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.

### Product/system benefits:

- Cut programme time by allowing construction of internal walls before weathertight envelope was complete.
- Easily met or exceeded part E of the Building Regulations
- Simplified the construction process
- Blocklaying sub-contractor was in complete control of his work; not dependent on others such as delivery of mortar

### Other benefits included:

- The components for Thin Joint block work were all available off the shelf, whereas the design and build period for a light gauge steel frame is very long and involved.
- Blockwork was highly adaptable and flexible at openings, particularly if other design elements were not as they should be.
- Thin Joint technology provided an airtight construction.
- Celfix mortar could be stored within the footprint of the building and small quantities mixed as required, a major advantage on a tight, urban site. There was no need for a large silo or a regular stream of deliveries to site.

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| CI/SfB | Ff4 |
|--------|-----|

The unique manufacturing process of H+H UK aircrete produces a micro cellular structure that sets the material apart from other types of masonry and offers the following characteristics:

- Strong – Supports up to 4 storeys without a structural frame
- Excellent thermal insulation – significantly contributes to satisfying Part L of the Building Regulations
- Thermal Mass – Provides an even temperature range in winter or summer
- Airtightness – Can be used to achieve excellent airtightness on site
- Excellent sound insulation – Useable in flats & apartments as well as housing, aircrete comfortably satisfies Part E of the Building Regulations by Pre-Completion Testing or Robust Detail methods of compliance
- Fireproof – Fire resistant (100mm walls, up to 4 hours, 2 hours if load-bearing) Class 0 surface spread of flame, Non-combustible to Class A1 (the highest class)
- Lightweight – Easily meets CDM requirements for manual handling
- Sustainability & The Environment – H+H has achieved the Carbon Trust Standard after taking action on climate change and reducing its carbon footprint



Bed-joint reinforcement

### Contact details

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### Further reading

H+H Thin Joint brochure  
H+H Jumbo Blok Brochure  
H+H Multi Plate Brochure  
Building a sustainable future  
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 UK products used in this case study, please visit our website  
[www.hhcelcon.co.uk](http://www.hhcelcon.co.uk)