



Oyster Reach Whitstable, Kent

Principle Contractor: Masonry Frame Systems, Middlefield Lodge.

Client: Wye Manage Ltd, Olantigh Rd, Wye, Kent.

Project: A custom build development of five apartments constructed to Passivhaus principles.

Location: Whitstable, Kent

Type of contract: Design and Build

Architect: Two architects worked on the development. Lee Evans Partnership, St Johns Lane, Canterbury, Kent and local architects Giarti, Thanet Way, Whitstable, Kent.

Aircrete value: The total cost for the aircrete work was circa £150k.

Aircrete contractor: Masonry Frame Systems, Middlefield Lodge.

Build time: The total build time was circa 12 months. Due to the UK's severe wet winter, much of the surrounding area was affected by heavy rainfall resulting in construction work being set back slightly.

Executive summary:

A prestigious development of five luxury apartments constructed to Passivhaus principles using the H+H Thin-Joint System.

Masonry Frame Systems specified H+H Jumbo Bloks primarily because it is what was needed to meet the demands of this Passivhaus construction. H+H Jumbo Bloks offer an advanced thermal performance which adheres to Passivhaus standards.

The Thin-Joint system was chosen in particular for its speed of construction, which allowed follow-on trades to start work sooner in a weatherproof environment, whilst retaining the flexibility of on-site construction.

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Executive summary (continued)

Oyster Reach has achieved A's in both its Energy Performance Certificate and Environmental Impact Assessment for each of the five apartments, as well as an airtightness level of 0.93 m³/h.m² and a U-value of 0.15W/m²K.

Client Wye Manage Ltd, the sister company of Masonry Frame Systems Ltd, wanted the development to take full advantage of the sea views and positioned 75% of the windows in the development facing north. For this reason, the development cannot be Passivhaus registered, but the decision was made to continue to build to Passivhaus principles as planning permission was granted on the basis that the properties achieved Level 4 of the Code for Sustainable Homes.

Build method:

Solid wall aircrete block construction built using the H+H Thin-Joint System. H+H Jumbo Bloks and Celcon Foundation Blocks were used throughout with Celfix mortar and traditional sand/ cement for the base course.

Project value:

The build cost came in at approximately £1.1m, with the budget on target and only a small number of extravagances outside of the planned expenditure.

One extravagance in particular was the very latest in renewable technologies, a hybrid solar PV/T system – mounted on each principle roof slope. Added to this was the cost for mechanical ventilation heat recovery (MVHR), heat mat all electric cable underfloor heating, painting and tiling throughout each apartment.

“It’s always nice to see H+H products and solutions being used with sustainability at the forefront. Oyster Reach is a beautiful development and is unique in its approach to the environment.

The Thin-Joint System is easy to use and promotes the use of larger blocks, such as Jumbo Bloks, with 2mm joints rather than the traditional 10mm joint. This enables a building to be built faster whilst reducing cost and waste on site.”

John Churchett at H+H



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U-Value:

External walls built to achieve a maximum U-value of 0.15W/m²K.

External walls:

Celcon Jumbo Bloks 100mm thick (7.3n/mm²) joined with Celfix mortar using the Thin-Joint System. The external walls were finished using fibre cement cladding and a render system.

Internal walls:

Internal walls constructed with H+H Jumbo Bloks 100mm thick (7.3n/mm²) using the Thin-Joint System. The internal walls were finished with two coats of gypsum plaster.

Foundations:

H+H Celcon Foundation Blocks were used throughout the development. All foundations were dug to a minimum depth of 1 metre, standard strip. The foundation concrete used was a minimum grade of C₂₀ and below DPC.

Windows:

Unilux triple-glazed high performance windows in aluminium were used. 75% of the glazing is facing north, out to sea.

Floors:

Heat mat all electric cable underfloor heating finished with ceramic and porcelain tiles throughout.



“After Wye Manage Ltd suggested looking at Passivhaus construction we knew straight away that the Thin-Joint System was right for the job. Masonry Frame Systems has over ten years’ experience in using the system and believe it is the best modern method of construction on the market.

Even more so, using H+H Jumbo Bloks allowed us to consider other aspects of the building envelope before considering any renewable technologies due to the blocks thermal insulation properties.

I think there is a natural synergy with a fabric first approach, the building does the work but when coupled with the very latest in renewable technologies it sets a gold standard for ultra-low energy homes. This is something we are really passionate about developing at Masonry Frame Systems. We have thoroughly enjoyed working on this project.”

Norman Hinckes
Contractor





Product benefits:

- Easily meets or exceed Part L and Part E of the Building Regulations
- Simplifies the construction process
- H+H aircrete products use up to 80% recycled material
- Achieves A+ rating in the BRE Green guide
- Meets Passivhaus standards

Other benefits included:

- Block-work is highly adaptable, easily allowing for any last minute design changes
- Aircrete achieves an air permeability of 0.12m³/hr/m²
- Has excellent fire resistance with a Class 0 rating for surface spread of flame

H+H aircrete applications

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

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.

Contact details

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Further reading

Designing with Aircrete
Building with Aircrete
Thin-Joint as an MMC
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