

# Sawston Village College Science Wing - Cambridge



**Client:** Cambridgeshire County Council

**Project:** A new science wing built in two phases around the 1,004-pupil college's teaching terms, to contain eight classrooms

**Value:** £2.6 million

**Location:** New Road, Sawston, Cambridge CB22 3BP

**Type of contract:** JCT 2005

**Executive summary:** H+H UK's Plus Blocks using the Thin-Joint system meet the acoustic requirements internally and thermally insulates the external walls for a fast-track construction programme. After using on the first phase, this construction provided the advantage of speed against phase two's summer holiday deadline

**Architect:** Capita Symonds – Project Manager, Matthew Hucklesby

**Contractor:** Morgan Ashurst

**Bricklaying subcontractor:** Hall Contracts of Norfolk

## Project description:

The extension provides eight new classrooms to develop the college's specialism in teaching the sciences to 11-16 year olds.

The first phase to create five classrooms over a 700m<sup>2</sup> floorspace was completed within 37 weeks by the Christmas holiday of 2008. The second phase to create three classrooms over a 450m<sup>2</sup> floorspace was completed within 27 weeks by the start of the summer holiday. The fittings and furnishings were installed during the holidays.

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## Product used/aircrete specification:

Standard Grade Plus Blocks 215mm with the Thin Joint System.

**Internal separating walls** – 6m-high of solid aircrete blockwork to the pitched roof apex using 7N/mm<sup>2</sup>-rated Plus Block (610mmx215mmx200mm) and the Thin Joint System. Murfor prefabricated stainless steel horizontal bedjoints every 2nd course. After using a three-coat plaster system at 6-8mm thickness on the first phase, the result was improved on the second phase by using a 10mm single coat spray plaster by Lafarge. Spray plaster applied beyond suspended ceiling levels to maintain acoustics.

**External cavity walls** – 6m-high cavity-construction walls using Plus Block (610mmx215mmx100mm) and the H+H Thin-Joint system with 17mm Kingspan Kooltherm insulation boards plus 100mm facing bricks. Stainless twist ties for lateral support within the 118mm cavity. Concrete ring beams on top spread the load for the 3.6N/mm<sup>2</sup>-strength Plus Blocks.

## Build time (blockwork):

6 weeks. Some 1,617m<sup>2</sup> of aircrete in use.

## Reasons for choosing H+H aircrete products:

For a Modern Method of Construction, the product's sustainability in terms of production, waste control, packaging and delivery transportation.

## Production:

H+H aircrete consists of 80% pulverised fuel ash waste recycled from power stations that would otherwise be destined for landfill.



## Quality of productivity on site:

For accuracy in the finish, which is essential for non-toxic spray plastering. The accurately-flush wall facing possible with the Thin Joint System enables 2mm-thin spray plaster to be used, which doesn't contain any toxic gypsum.

## Speed of build:

The Thin-Joint system enables the structure to be erected faster and to a better quality, allowing follow-on trades to start work sooner in a weatherproof environment.

## Acoustic credentials:

The walls are specified to achieve a minimum acoustic insulation level of 49dBRW, because the BB93 requirement is in the range of 40-45DnT(Tmf,max).

“The Thin-Joint system's mortar for each course dries within 10 minutes, so we are building the 6m-high walls much quicker than I've ever known for traditionally mortared concrete. I've been in the trade since 1973. The Thin-Joint mortar is also good for temperatures below that of traditional mortar, which was important during the especially cold winter.”

**Stuart Lovesey,**  
**Site Manager, Morgan Ashurst**

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## Thermal insulation:

Having a 0.15W/m<sup>2</sup>K U-value for thermal insulation, enabled the external wall specification to be lenient in other details such as the windows and doors. This thermal rating also enabled the external wall cavity to be narrower than for concrete breezeblocks, freeing up more floorspace.

## Health & Safety:

The aircrete product presents minimal risk on site, especially in terms of its light weight for manual handling. This is not only important to the builders, but also to the architects because they are legally liable for the H&S of handling the specified products on site.

## Client's use of the completed walls:

Aircrete is an acceptable direct substrate for the fixings of load-bearing fittings such as shelves and cupboards, as well as for heavy plant such as heaters.

"While most masonry manufacturers claim general acoustic insulation performance for products in housing, quantifiable substantiation of their performances was difficult to pin down against the BB93 standard for schools. From this first experience of aircrete, I will certainly specify it for future projects."

**Matthew Huckelsby,**  
Project Manager, Capita Symonds



## Contact details

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[www.hhcelcon.co.uk](http://www.hhcelcon.co.uk)