

## Project Description and Aims



This existing school is being enlarged to allow it to cope with a wider age range of pupils. The development will more than double the amount of space available on the site and provide additional teaching and general purpose accommodation. The new buildings were constructed using a structural steel frame which was in-filled with a light-weight steel sub-frame. A key requirement was to ensure that the buildings had good thermal and acoustic performance and that summer overheating was regulated by providing high levels of insulation in the walls and roof. For the walls this was achieved by using NBT's Pavatex Woodfibre boards which were then rendered to provide the decorative finish.



## NBT role in project

NBT provided design support and calculations to the architect at various stages of the project. Technical support was given to the contractor and sub-contractors as work progressed on site. All the Woodfibre boards, fixings and renders were supplied by NBT.

## Richard Coates Middle School

Address: Ponteland, Newcastle, Tyne and Wear  
Client: Northumberland CC  
Architect: Waring and Netts, Newcastle  
Contractor: Gleeson Building Ltd  
Contract Value: £5.5M

### Performance:

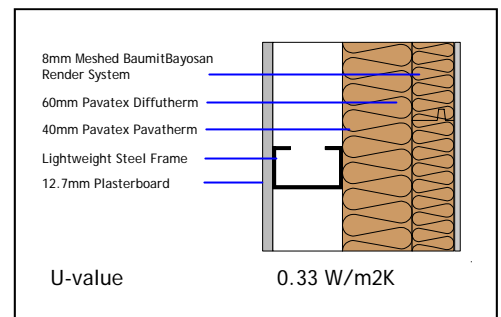
The walls were designed with a U-value of 0.33W/m<sup>2</sup> degree C. This was achieved by using two different types of Pavatex Woodfibre boards together, a 40mm thick Pavatherm board and a 60mm thick Diffutherm board, both of which were fixed externally to the lightweight steel sub-frame. In this design the Diffutherm board also acted as the render carrier.

### Buildability:

NBT's Pavatex Woodfibre boards are available in a variety of different types and thicknesses (22mm to 100mm) and are interlocking on all four sides. They are quick and easy to install and eliminate the need for membranes and vapour checks. They provide enhanced thermal and acoustic insulation; airtightness; heat loss and overheating control. The Diffutherm board was used as the render carrier for the Baumit-Bayosan lime based renders which provide a hardwearing, attractive finish.

### Environmental:

Pavatex Woodfibre boards have an excellent ecological profile and are manufactured from 99.5% waste pinewood and 0.5% paraffin (for waterproofing). They contain no glue or wood preservers. The boards are non toxic or irritant and contain no substances which can off-gas. The boards will compost naturally and no special precautions need to be taken on final disposal. The Baumit-Bayosan mineral renders which were used on the project consisted of an MC55 base-coat 8mm thick with a KRP02 topcoat 2mm thick. The renders are lime based and are manufactured to compliment the vapour open and moisture regulating properties of the boards.



### Design Issues:

From architect: This was a project on which the client required a fast, proven method to clad the building which provided high performance within fairly tight cost parameters.

### Build Issues:

From contactor and subcontractor: Two different suppliers were used for the lightweight steel sub-frame, however no problems were encountered with either the fixing of the boards or the application of the render finishes. Overall the system was fast and straightforward to build.

### Commentary

School buildings must provide a comfortable working environment in which overheating, acoustics and indoor air quality are all carefully considered during the design process. NBT provide a variety of frame and masonry systems which help to achieve these objectives, that are economic and simple to build.

