



# Case Study **NW1** SYSTEM<sup>©</sup> + **NW2** SYSTEM<sup>©</sup> + **NR1** SYSTEM<sup>©</sup>



## Project Description and Aims

The Stream Edge is a large, prestigious development close to the centre of Oxford, which comprises 36 luxury apartments, social and student housing along with retail and commercial accommodation. The developer's aim was to construct buildings which were in keeping with their urban setting, but which had modern appeal and used environmentally-friendly materials wherever possible.

## 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 as work progressed on site.



## Performance

The walls were designed with a U-value of 0.18 W/m<sup>2</sup>K. This was achieved using Pavatex Diffutherm 80mm Woodfibre board which was rendered with propriety Baumit-Bayosan lime/cement render or Pavatex Pavatherm Plus 80mm Woodfibre board clad with terracotta tiles. The wall boards were backed with 150mm Sheepswool Batts which fully filled the space between the steel studwork. The Roof was designed with a U-value of 0.20 W/m<sup>2</sup>k and was constructed with 22mm Pavatex Isolair Woodfibre boards with the space between the trusses filled with 200mm Sheepswool insulation.



## The Stream Edge

### - Fisher Row , Oxford

Client: T.H.Kingerlee and Sons Ltd

Architect: Oxford Architects

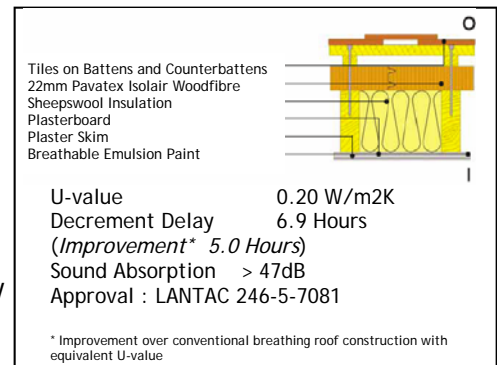
Contractor: Kingerlee Construction Ltd

Size of Contract: £15m

NW1, NW2 and NR1 Systems: Diffutherm Boards with Render, Pavatherm Plus Boards with Cladding and Isolair Roofing Boards.

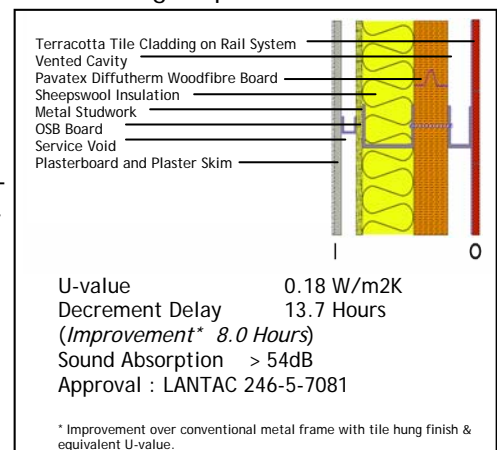
## Buildability

Diffutherm, Pavatherm Plus and Isolair Woodfibre boards are all available in three thicknesses and are interlocking on all four sides. They are quick and easy to install and have excellent moisture regulating properties, which eliminate the need for membranes and vapour checks. The boards provide enhanced thermal and acoustic insulation; airtightness; heat loss and overheating control and the Isolair board eliminates the need for any venting of the roof space. The boards are impregnated with either natural paraffin (Diffutherm) or natural Latex (Isolair and Pavatherm Plus) and once installed can be left exposed and unprotected for up to three months without detriment to their integrity or performance. Sheepswool and cellulose insulations are easy to install without the need for any special precautions to be taken. The Baumit-Bayosan renders were generally applied by machine for speed and ease of application.



## Environmental

Diffutherm, Isolair and Pavatherm Plus Woodfibre boards have an excellent ecological profile and are manufactured from 99.5% waste pinewood with 0.5% natural paraffin in the case of Diffutherm and from 95% waste pinewood and 5% natural latex (for waterproofing) in the case of Isolair and Pavatherm Plus. None of the boards contain any wood preservatives, are non-toxic, non-irritant and contain no substances which can off-gas. The boards will compost naturally and therefore require no special precautions to be taken on final disposal. The propriety Baumit-Bayosan renders used in conjunction with Diffutherm boards are mineral based, have low embodied energy and are highly vapour open. Sheepswool and cellulose insulation are both made entirely from recycled material. Both these natural insulations are moisture regulating and non-toxic and will decompose naturally without special precautions required for disposal.



## Design Issues

Architect: This was a high profile project in respect of its design criteria and ecological requirements. The use of NBT materials helped to achieve both these objectives.

## Build Issues

Developer: NBT gave full support at all stages of the project and provided comprehensive instruction on site to subcontractors which was important to the success of the build.

## Cost

Costs compared favourably with conventional construction, particularly when taking into account the very high thermal, acoustic and general performance ratings achieved in the buildings.

## Performance Results

The buildings have been designed to significantly reduce running costs whilst providing a comfortable living environment at all times of year. NBT will gain feedback on the practical aspects of this through communication with residents in the future.

