



### Project Description and Aims

Sure Start Sheerness is one of a programme of centres being built across the country under the Government's programme to provide better facilities and support for pre-school age children and their families. It comprises 1100 sqm of multi purpose accommodation in three one storey blocks and one two storey block. The facilities include the Sure Start administration offices, a fifty place day-nursery, a family services unit and a wing for primary care trust patient services for the local area.



The architect's objective was to design a building with a good ecological profile, consisting of a single skin of masonry, which provided both the structural shell and the insulation required to exceed the current building regulations. The architect also wished to minimise the use of cement based materials and utilise a system which encompassed robust detailing throughout.

### NBT role in project

NBT provided the system for the structural shell and external and internal finishes of the building. This necessitated close liaison with the architect from early on in the design phase of the project as the system was an innovative method of construction in the UK. On site NBT provided technical support and guidance to the contractor and sub-contractors.



### Sure Start Centre - Sheerness

Client: Swale Borough Council

Architect: Architype, London

Structural Engineer: Capita Symonds

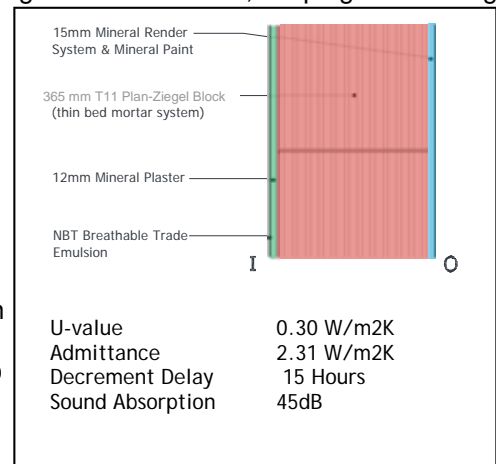
Quantity Surveyor: Gordon Hutchinson

## Performance:

The external walls were constructed using 365mm Plan-Ziegel, fired clay insulating blocks with a thin joint system, to achieve a U value of 0.30W/m2K. Internally dense acoustic Ziegel blocks were used. The lively coloured external renders were from Baunit Bayosan and are guaranteed for the walls, having compatible thermal, moisture and tensile qualities. Internally lime gypsum and lime plasters were used, also from Baunit Bayosan. The blocks are highly vapour permeable with a very low equilibrium moisture content. In conjunction with the Baunit Bayosan renders and plasters this ensures a “breathable” and dry construction, providing a healthy and thermally efficient structure. The blocks also have good thermal mass, keeping the building cool in summer and warm in winter.

## Buildability:

Plan Ziegel blocks offer a fast method of constructing a masonry shell with robust detailing throughout. The thin bed system means no restriction on the height of build per day. The dry interlocking perps allow fast, easy building without the risk of acoustic or thermal leakage. All membranes, cold bridging and damp, cold cavities are eliminated with this form of construction. A pre-cast concrete floor with a span of eight metres which rests directly on the Ziegel blocks was used at first floor level in one section of the building. Standard profile blocks were used to create in-situ cast lintels and vertical service ducts for soil pipes.



## Environmental:

Plan-Ziegel walls have less than 50% of the embodied energy and CO2 emissions compared to conventional masonry (cavity brick or block) with the same thermal performance. The blocks are made of fired clay, are non toxic and require no special precautions on final disposal. Used in conjunction with lime based renders and plasters they provide a masonry building with an exceptional ecological profile compared to buildings constructed using conventional methods.

## Design Issues:

From architect: This method of construction though standard in much of Europe did throw up some design challenges, but none which could not be satisfactorily addressed. The system allowed us to achieve our design objectives particularly in respect of ecology, cost and performance.

## Build Issues:

Progress in constructing the masonry shell was fast. However, as with any system which is unfamiliar, there were times when advice had to be sought to prevent mistakes being made including some simple techniques tips and special tools that are now available from NBT. There are clearly important advantages to be gained through single skin construction.

## Cost:

Commentary: The project was late in starting due to unforeseen circumstances at tender stage. A full cost appraisal will be undertaken by the architect/contactor once the project is complete. Speed of build and robustness give additional cost benefits.

