



Project Fact Sheet

Kellystown School 2008

PROJECT ABM Design and Build, Kellystown School 2008

Projects	Kellystown School
Value	5.469 million
Client	Department of Education & Science
Stage	Complete
Completion Date	Kellystown School (Aug 08)
Description	Design & build of new school including extensive external works.

FACTFILE

The design and build consortium had 3 weeks from the tender award to produce planning drawings so that applications could be lodged to allow a planning decision in mid-April and a commencement date in early May. This left a fast track construction duration on site of 20 weeks. Of the three schools awarded to ABM, one had 16 classrooms of approximately 2200sq m and the remainder had 8 classrooms of 1100sqm.

PROJECT DETAILS

Schools in rapidly developing areas

In July 2007, The Department of Education and Science prioritised funding to facilitate construction of schools in rapidly developing areas. Kellystown is located in Dublin 15 which, according to the 2006 Census data, has grown in population by 20% to a total of 21,386 people.

In January 2008, ABM Europe was awarded the Kellystown Primary School project through their Design and Build subsidiary. The programme was tendered on a design and build basis with contracts awarded to the successful candidates. It was intended that the school would be operational by the start of the school term in September 2008. The design and build consortium had 3 weeks, from the tender award, to produce planning drawings and lodge planning application to Fingal County Council in order to allow a planning decision in mid-April and a commencement of work on the site in early May. This left a 20 week programme for construction of this 16 classroom, two storey school with a floor area of 2,200sqm.

The project consisted of the construction of a Primary School Building comprising of 1 No. 16 Classroom, two storey building, support teaching spaces and ancillary accommodation with a total floor area of C. 255sqm. on a site of C. 0.97 Hectares. The site works to the school grounds consisted of the provision of cycle storage, bin stores, ball courts, project gardens, landscaping and boundary treatment and all other associated site development works. The works to the remainder of the site consisted of the provision of 32 car parking spaces, drop-off and pick-up facilities and new temporary access road approximately 50m long from the Porterstown Road.)

In order to achieve completion by September 2008, ABM Design and Build procured a system build solution which enabled 'fast track' construction. This was embodied in the tender document.

The School was constructed with a high emphasis on build quality & durability using a Fusion steel framed building system which is IBA certified. This system build solution consists of a unique pre-insulated light gauge steel external wall system, which is combined with internal load bearing walls to provide low carbon structures. This system has recently been approved for their Continuing Professional Development (CDD) from the Royal Institute of Architects of Ireland.

The ground works commenced simultaneously with the off-site fabrication of the steel frame system. All public service connections were made at The Porterhouse Road. After week four, the ground works & off-site fabrication period was complete. The steel frame system which is highly efficient in terms of transport utilisation was delivered to site from Co. Cork and craned into position just after installation of the precast concrete stairs.

The walls and façade were finished with an Aquapanel exterior cement board with acrylic finished render system with breather membrane. Also, a Makrolon multi UV 10mm transparent polycarbonate sheet was used allowing light to pass through to the void over



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the entrance doors, thus allowing light into the meeting room and corridor; allowing increased solar heat gain; and also retaining cladding line for symmetry.

The steel system took four weeks to erect. Glazing consisting of thermally broken aluminum profiles extruded from aluminum alloy complying with BS1474 with 24mm double glazed units with low 'e' argon filled glazing units were installed during the same installation period of the composite roof panel system which consisted of Kingspan KS1000 Kingzip roof panel with colour coat HPS200 Plastisol, 200 microns thick. Once the windows and roof systems were complete, the building was 'watertight' allowing internal finishes to begin at week 10. All civil works were carried out in accordance with The National Roads Authorities guidelines and parameters

Wherever possible, off site fabrication of the internal components were used such as pre-hung door sets, internal wall partitions, kitchens, cubicles, and heating pipe work runs.

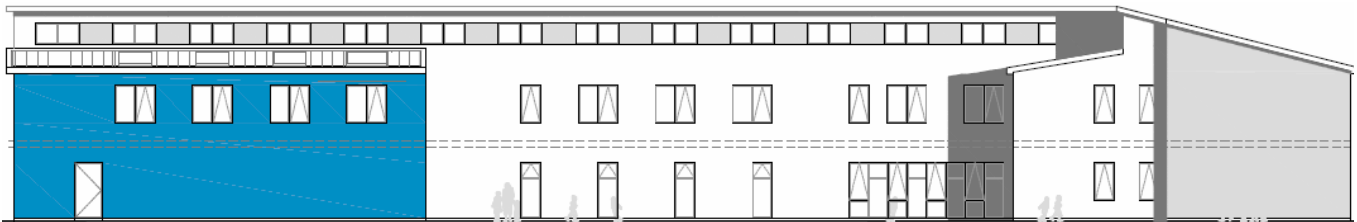


Image 1 North Elevation

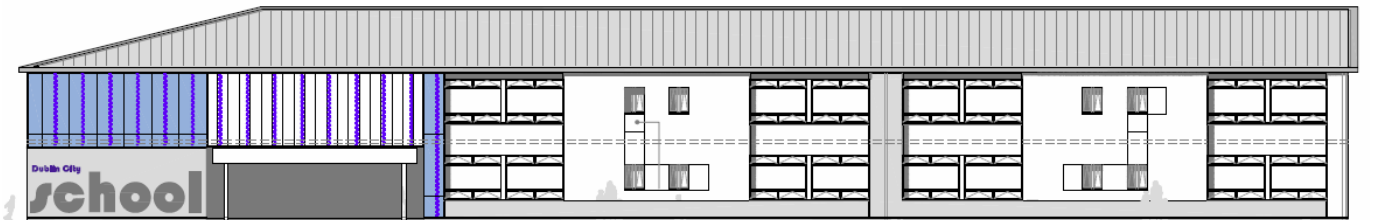


Image 2 South Elevation



Image 3 West Elevation

Sustainability

The school specification requested that the building was constructed to facilitate a passive environment which entailed light sensitive light fittings, excellent natural daylight, natural ventilation, air infiltration and water efficiency.

The requirements set out in the Departments TGD documents for air-tightness required an air loss of $5\text{m}^3/\text{h}/\text{m}^2$ at a test pressure of 50Pa . The actual results from the test at Kellystown were $2.1\text{m}^3/\text{h}/\text{m}^2$ which was exactly $2.9\text{m}^3/\text{h}/\text{m}^2$ below the minimum requirements. This was down to the quality installation and construction of all building elements. A Tyvek breather membrane was installed throughout to give the building its excellent air-tightness. Energy conservation was conveyed through thermal performance & air tightness requirements which when constructed surpassed part L requirements.

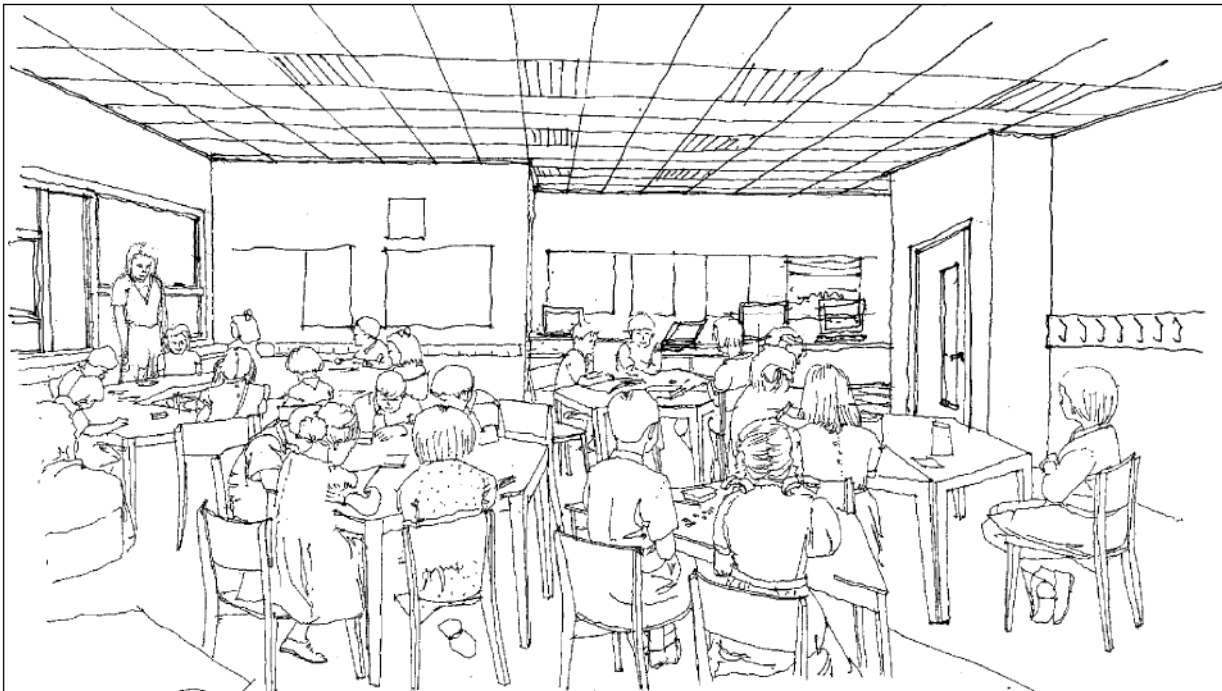


Image 4 Internal classroom sketch view

A sustainable rainwater water harvesting system was installed to collect water at roof level which is then fed through a dedicated system of underground medium density polyethylene (MDPE) pipe work to a leaf filter by gravity. Leaves and other debris are passed to the storm water system and the “filtered” rainwater is passed by gravity to an underground glass rainwater holding tank. This water is then re-used throughout the building.

Kellystown School was successfully completed within the 20 week duration and was opened for the school term on the 1st September 2008.



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