



## Project Fact Sheet

Thornleigh Educate Together School, Swords, Co. Dublin



### PROJECT: Skerries Educate Together

<b>Projects</b>	Thornleigh Educate Together National School
<b>Value</b>	€2.6m
<b>Client</b>	Department of Education and Skills
<b>Stage</b>	Complete
<b>Completion Date</b>	August 2011
<b>Description</b>	Design & Build extension to existing primary school consisted of 10No new classrooms, 2No New ball courts, 1No new junior play court and associated ancillary works.

### FACTFILE

The design and build consortium planned a fast-track on-site construction duration of 28 weeks. With an area of 1800 sq m and 10No. classrooms, this was awarded to ABM by the Department of Education and Skills Rapid Build Programme 2012.

# Project Fact Sheet

Thornleigh Educate Together School, Swords, Co. Dublin

## PROJECT DETAILS

### Schools in rapidly developing areas

In 2011, the Department of Education and Skills prioritised funding to facilitate the construction of schools in rapidly developing areas such as Swords, Co. Dublin. Thornleigh Educate Together was an existing 2 storey school and the programme was tendered on a design and build basis for the new 10 classroom extension.

This project was one of 10 design & build schools tendered in 2012 under the Rapid Build Schools Delivery Programme. Construction commenced on site on 10<sup>th</sup> January 2011 and the school was substantially completed on 31<sup>st</sup> August 2011 prior to the start of the 2011/2012 academic year. The Actual commencement date was 10<sup>th</sup> January and was completed within a 28-week programme.

The project consisted of the construction of a 2 storey extension to existing primary school including link corridors comprising of 10No-Classrooms, 2No ball courts, 1No junior play court and associated ancillary accommodation with a total floor area of c. 1800sqm. The site works to the school grounds involved of the provision of gardens & landscaping and boundary treatments.

In order to achieve completion by August 2011, ABM Design and Build procured a system build solution which enabled 'fast-track' construction. The school was constructed with a high emphasis on build quality and durability and the solution to this was to utilise a Steel Framing infill system manufactured off site which was IBA certified. This system build solution consisted of a unique pre-insulated light gauge steel external wall system, which was combined with internal load bearing walls to provide low carbon structures. The application of this particular system has recently been approved, by the Royal Institute of Architects of Ireland, as a Continuing Professional Development (CPD) course.

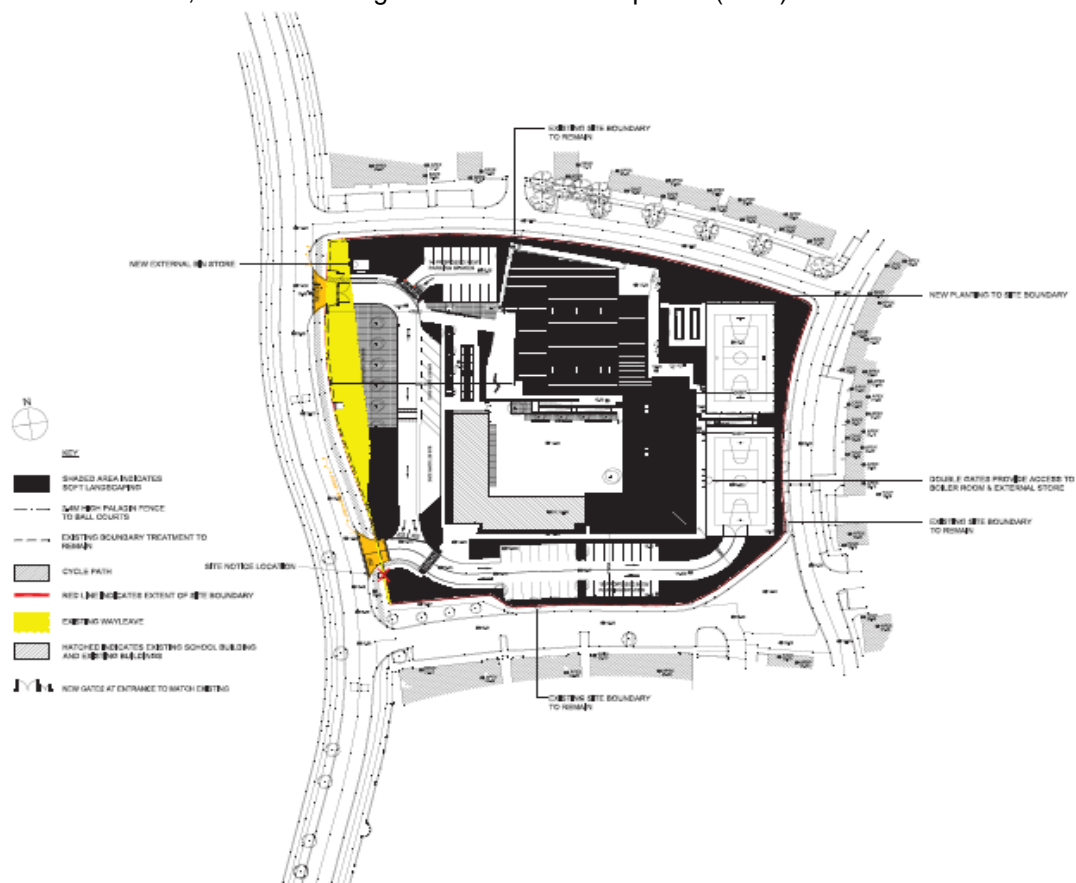


Image 1 – Site Plan

## Project Fact Sheet

Thornleigh Educate Together School, Swords, Co. Dublin

The ground works commenced simultaneously with the off-site fabrication of the steel frame system. After week four, the ground works and off-site fabrication period was complete. The steel frame system which is highly efficient in terms of transport utilisation was delivered to site and craned into position just after installation of the precast concrete stairs.

Externally, the façade comprised of concrete block work outer leaf with coloured cement sand render finish.

Once the windows and roof system were complete, the building was 'watertight' allowing internal finishes to begin at week 10. 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.

All civil works were carried out in accordance with The National Roads Authorities guidelines and parameters.

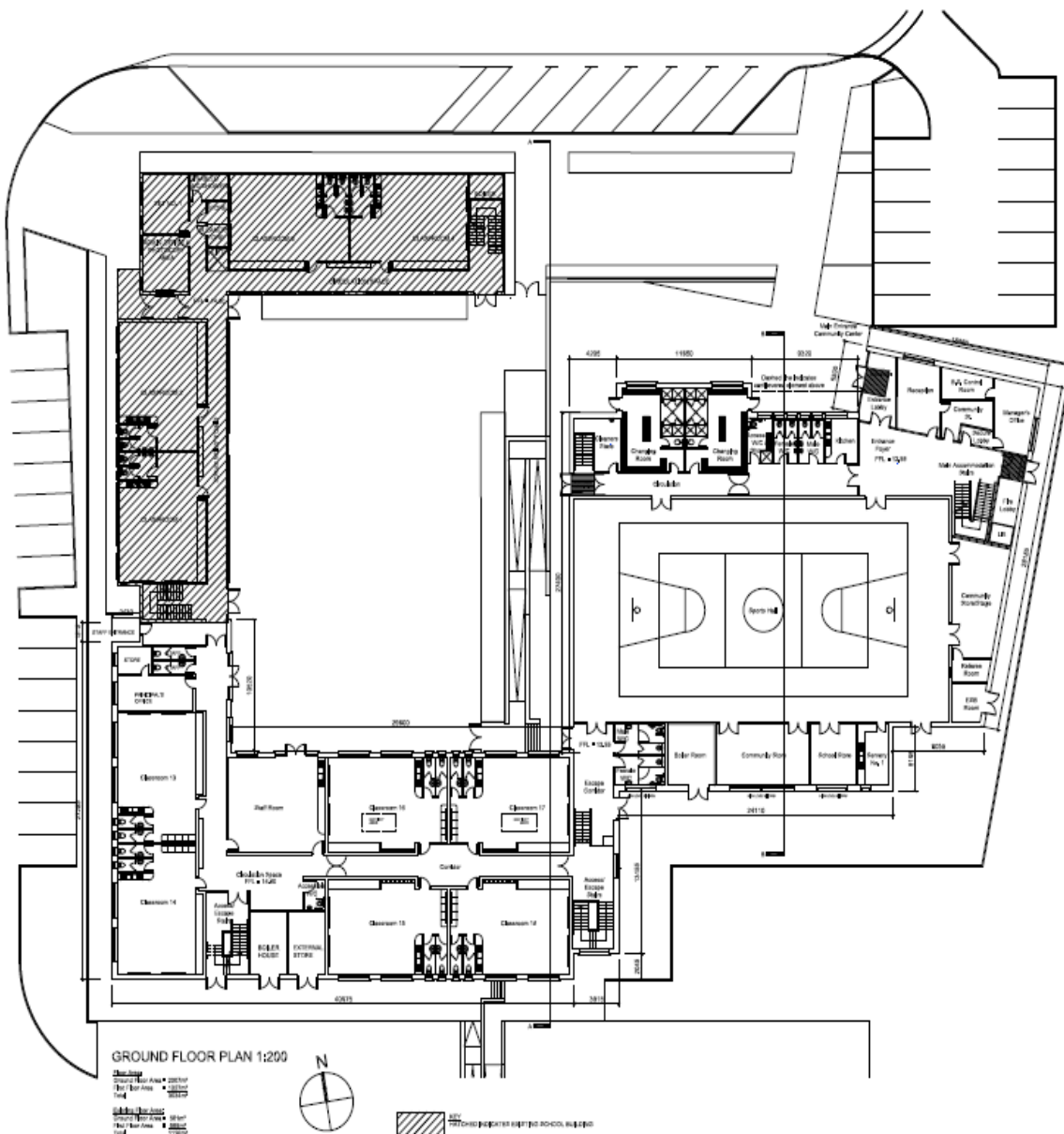


Image 2 – Ground Floor Layout

# Project Fact Sheet

Thornleigh Educate Together School, Swords, Co. Dublin



1 NORTH FACING ELEVATION  
SCALE 1:100



2 WEST FACING ELEVATION  
SCALE 1:100

Image 4 & 5 – East & North Elevations



1 SOUTH FACING ELEVATION - FOR REFERENCE ONLY  
SCALE 1:100



Image 6 & 7 – West & South Elevations



# Project Fact Sheet

Thornleigh Educate Together School, Swords, Co. Dublin



Image 8 & 9 – Entrance & Classroom



Image 10, 11 & 12 – Ground Floor Hall, First Floor Hall & First Floor Classroom



Image 13 & 14 – Games Hall & Ground Floor Classroom

## Sustainability

In accordance with the Department of Education and Skills school specification, the building was constructed to facilitate a passive environment entailing light sensitive light fittings, excellent natural daylight, natural ventilation, air infiltration and water efficiency.

Building Element	TGD Part L 2008 required U-Value	As Built U-Value W/m2k	ABM Surpassed TGD Part L Requirements by U-Value w/m2k
Ground Floor	0.25	0.12	0.13
Walls	0.27	0.16	0.11
Windows	1.8	1.5	0.3
Doors	1.8	1.5	0.3
Roof	1.8	0.14	0.02

The requirements set out in the Department's TGD documents for air-tightness required an air loss of 3 m<sup>3</sup>/h/m<sup>2</sup> at a test pressure of 50Pa. The actual results from the test at surpassed the minimum requirements. This was down to the quality of installation and construction of all building elements. A Tyvek breather membrane was installed throughout to give the building excellent air-tightness. Energy conservation was conveyed through thermal performance & air tightness requirements which when constructed surpassed part L requirements.

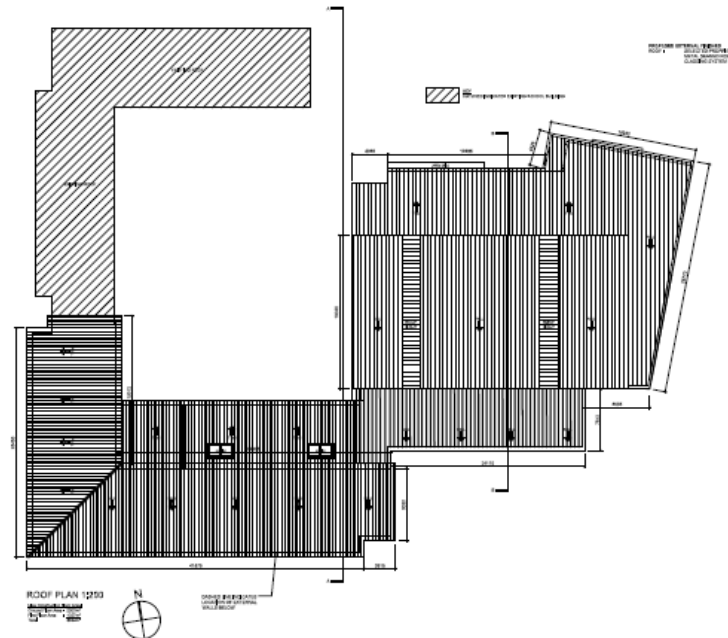


Image 15 – Roof Plan

**Air Permeability,  $AP_{50}$ :** 2.96 m<sup>3</sup>.h<sup>-1</sup>.m<sup>-2</sup> @ 50 Pa  
**Effective Leakage Area:** 0.48 m<sup>2</sup> @ 50 Pa  
**Correlation of results,  $r^2$ :** 0.9970  
**Slope,  $n$ :** 0.64  
**Air Flow Coefficient,  $C_{env}$ :** 788.4 m<sup>3</sup>.h<sup>-1</sup>.Pa<sup>-n</sup>  
**Intercept,  $C_L$ :** 791.6 m<sup>3</sup>.h<sup>-1</sup>.Pa<sup>-n</sup>

The test measured an air permeability of 2.96 (m<sup>3</sup>/hr)/m<sup>2</sup> at 50 Pa building pressure.



# Project Fact Sheet

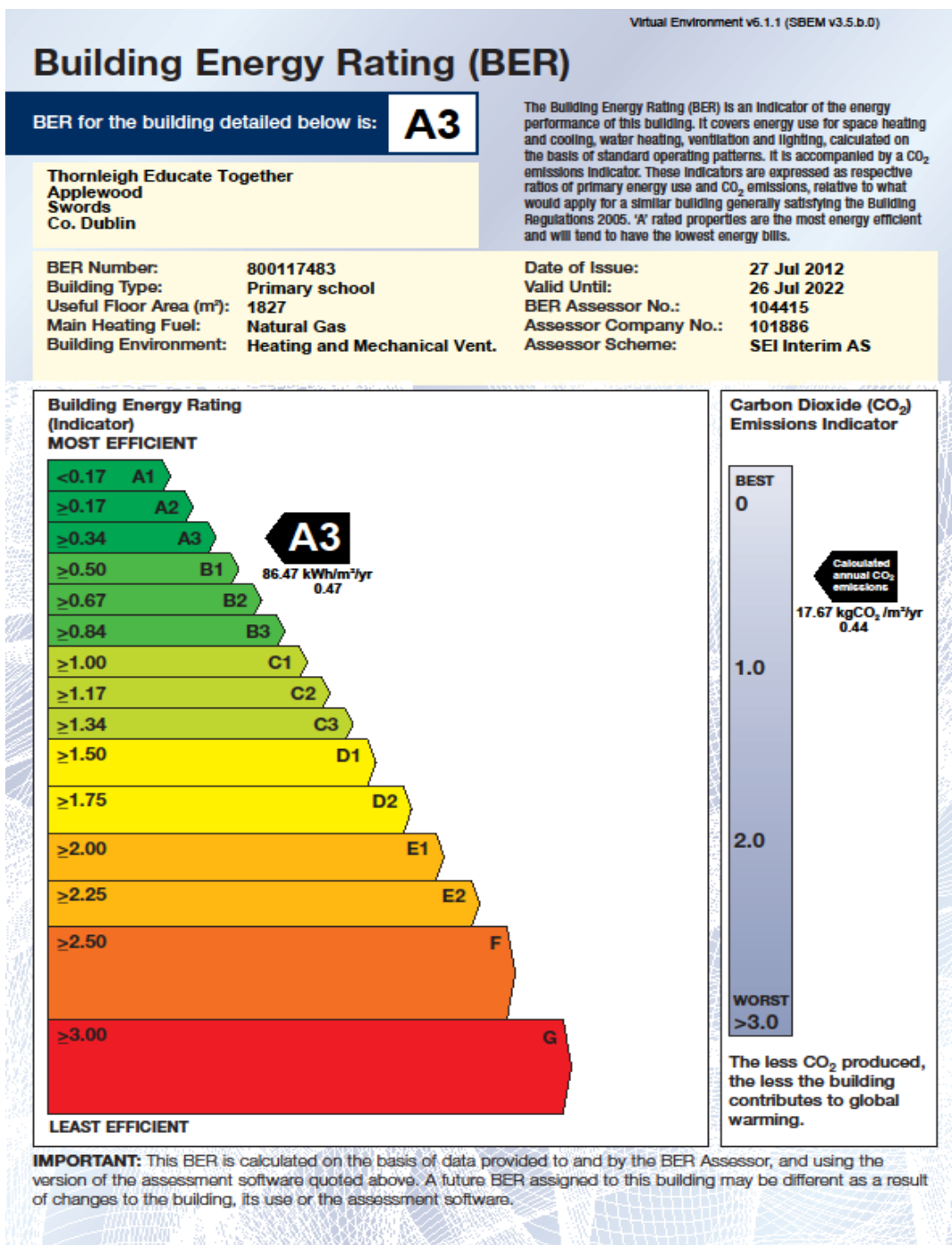
Thornleigh Educate Together School, Swords, Co. Dublin

A building energy rating certificate and advisory report formed part of the original TGD documents. The BER is an indicator of energy performance covering energy use for space heating and cooling, water heating, ventilation and lighting, calculated on the basis of standard operating patterns.

It is accompanied by a CO<sub>2</sub> emissions indicator.

The Building energy rating survey was carried out in July 2012 which resulted in the building receiving a highly sustainable building energy rating band of A3.

The estimated annual energy consumption is a highly efficient value of 86.47kWh/m<sup>2</sup>/yr and the annual estimated CO<sub>2</sub> consumption is estimated to be 17.67 kgCO<sub>2</sub>/m<sup>2</sup>/yr.





## Project Fact Sheet

Thornleigh Educate Together School, Swords, Co. Dublin

Thornleigh Educate Together, Swords was completed in July 2011



Image 16 – School Frontage