



Project Fact Sheet

Scoil Mhuire National School, Saggart, Co. Dublin



PROJECT: Scoil Mhuire National School, Saggart

Projects	Scoil Mhuire National School, Saggart, Co. Dublin
Value	€5.5m
Client	Department of Education and Skills
Stage	Complete
Completion Date	August 2014
Description	Design & build new school consisting of 24No new classrooms, 2No SNU classrooms, General Purpose Hall, Library/Resources Room, Staff Room, 3No ball courts, Junior Play Area and Associated ancillary accomodation.

FACTFILE

The design and build consortium planned a fast-track on-site construction duration of 32 weeks. With an area of 4558sq m and 24No.classrooms, this was one of four school new-build contracts awarded to ABM by the Department of Education and Skills Rapid Build Programme.

PROJECT DETAILS

Schools in rapidly developing areas

In July 2013, the Department of Education and Skills prioritised funding to facilitate the construction of schools in rapidly developing areas such as Saggart, Co. Dublin. Scoil Mhuire National School was tendered on a design and build basis for the new 24 classrooms, 2 SNU classrooms with GP hall in October 2013. It was intended that the school would be operational by the start of the school term in September 2014/15. The commencement date was 20th January 2014 and construction of the school was completed within a 32-week programme.

The project consisted of the construction of a 2 storey national school comprising of 24No-Classrooms, 2No support teaching classrooms and ancillary accommodation with a total floor area of c. 4558sqm. The site works to the school grounds involved of the provision of 3No ball court, Bike shed, 1No junior play area gardens & landscaping boundary treatments. New roundabout and set down area, disabled parking and teacher parking provision.

In order to achieve completion by August 2014, 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 Nordman Steel Framing system, an off-site manufactured steel framed building system which is 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 Esker ETNS

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The ground works commenced simultaneously with the off-site fabrication of the Nordman 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 from Co. Clare 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.

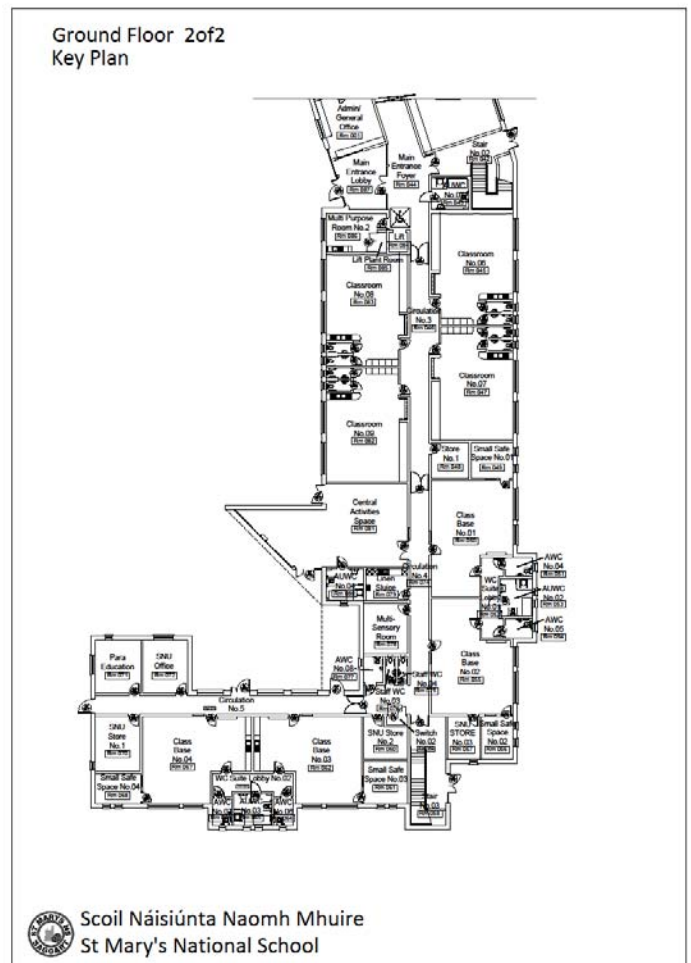
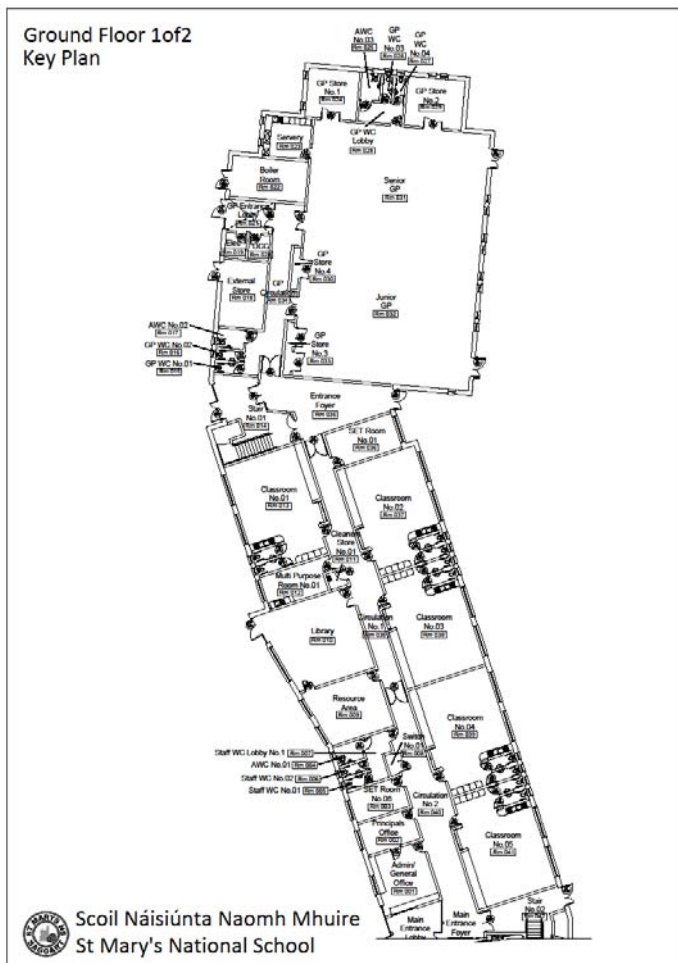


Image 2 & 3 – Ground Floor Layouts

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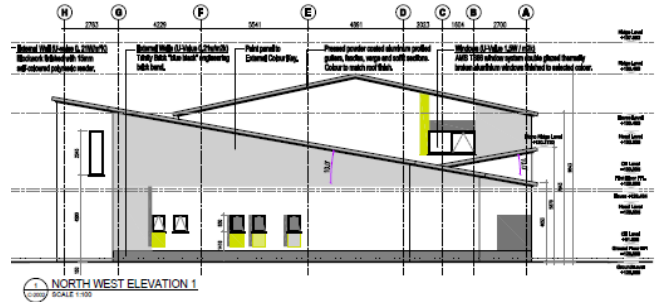
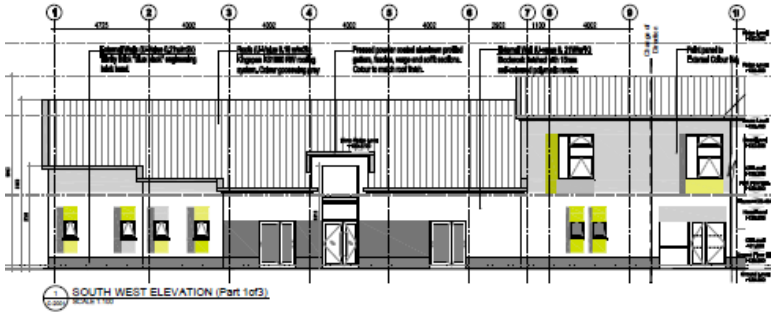


Image 4, 5, 6, 7 & 8 – South West, North West, South West (part 2), South West (Part 3) & South East Elevations



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Image 9, 10 & 11 – Upstairs Classroom, Hallway Corridor & Special Needs Unit



Image 12 & 13 – Junior Play Area & North West Elevation



Image 14 – Front Entrance

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 $3\text{m}^3/\text{h}/\text{m}^2$ 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.

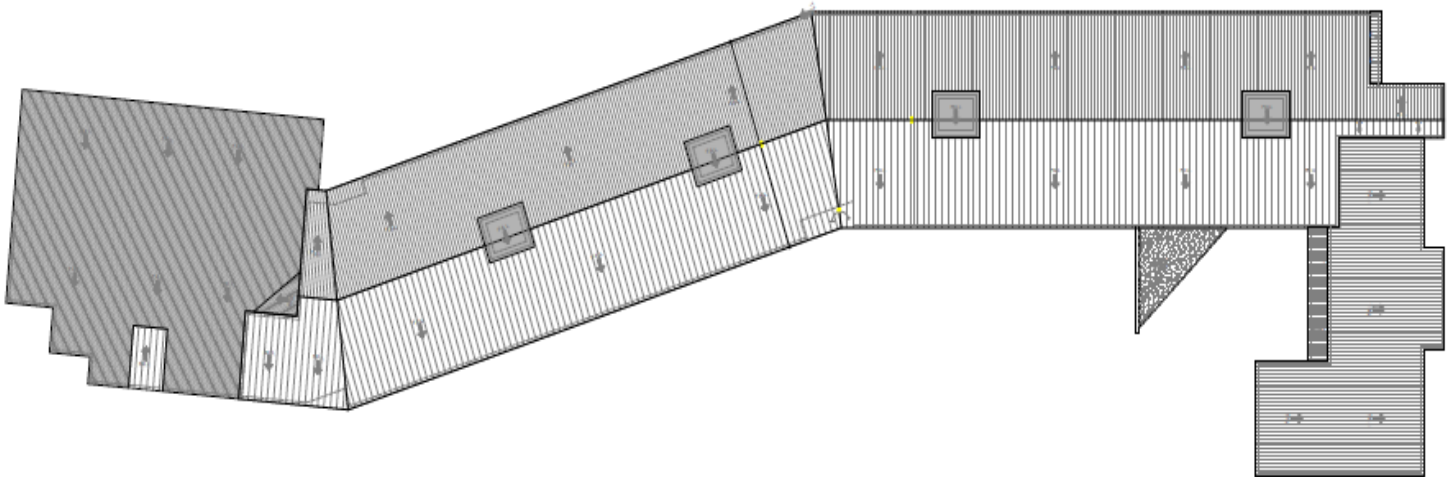


Image 15 – Roof Plan

Air Pressure Results

Air Permeability @ $_P$ 50 Pa 1.70

Air Leakage Coefficient C_L ($\text{m}^3/\text{hr}/\text{Pa}_n$) 1230.4045

Correlation Coefficient (r_2) 98.99

Air Volume Flow @ 50 Pa m^3/hr 1230.66

Air Flow Coefficient C_{env} ($\text{m}^3/\text{hr}/\text{Pa}_n$) 1230.6591

The test measured an air permeability of **1.70 ($\text{m}^3/\text{hr})/\text{m}^2$ at 50 Pa** building pressure



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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 CO₂ emissions indicator.

The Building energy rating survey was carried out in September 2014 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 62.59kWh/m²/yr and the annual estimated CO₂ consumption is estimated to be 12.81 kgCO₂/m²/yr.

Virtual Environment v6.1.1 (SBEM v3.5.b.0)

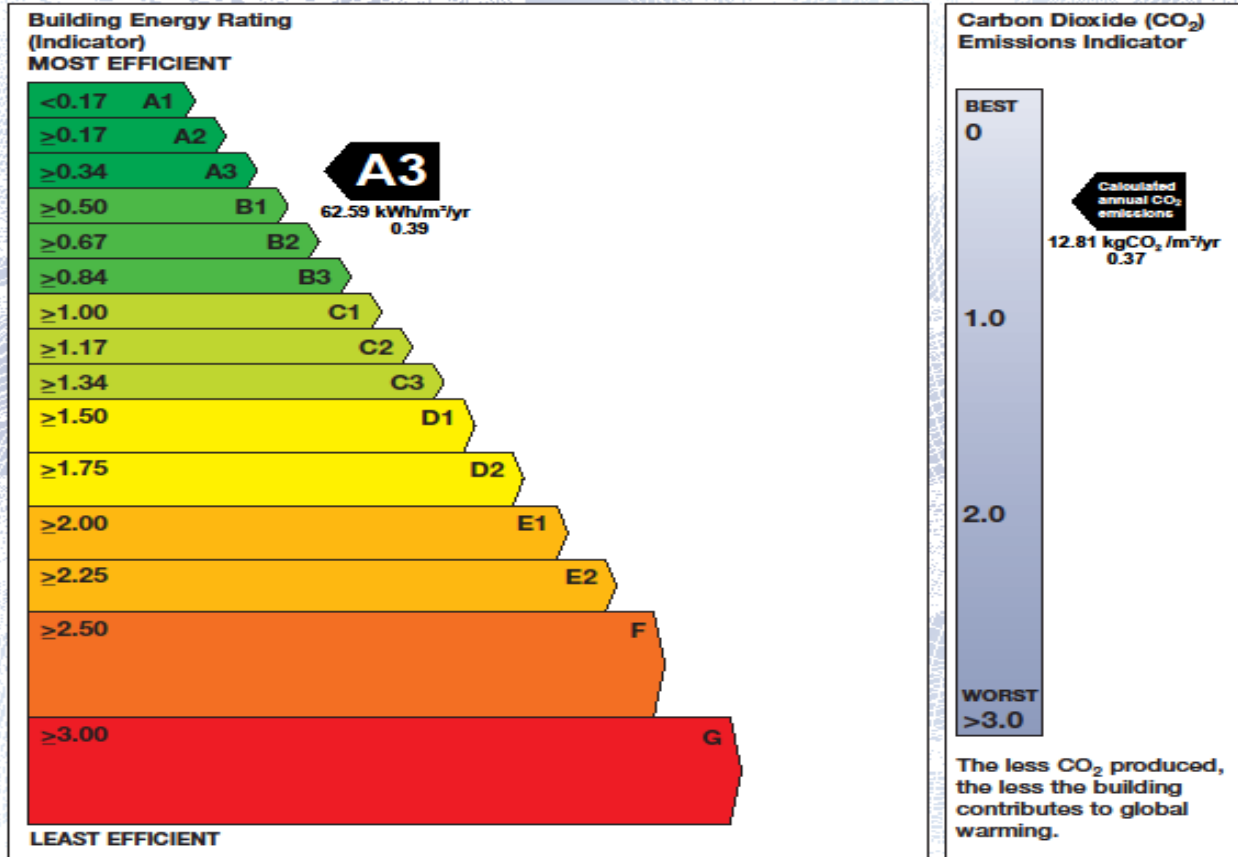
Building Energy Rating (BER)

BER for the building detailed below is: **A3**

Scoil Mhuire National School
Church Road
Saggart
Co. Dublin

The Building Energy Rating (BER) is an Indicator of the energy performance of this building. It covers 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 CO₂ emissions indicator. These indicators are expressed as respective ratios of primary energy use and CO₂ emissions, relative to what would apply for a similar building generally satisfying the Building Regulations 2005. 'A' rated properties are the most energy efficient and will tend to have the lowest energy bills.

BER Number:	800315194	Date of Issue:	11 Sep 2014
Building Type:	Primary school	Valid Until:	10 Sep 2024
Useful Floor Area (m ²):	4587	BER Assessor No.:	105716
Main Heating Fuel:	Natural Gas	Assessor Company No.:	101502
Building Environment:	Heating and Natural Ventilation	Assessor Scheme:	SEI Interim AS



IMPORTANT: This BER is calculated on the basis of data provided to and by the BER Assessor, and using the version of the assessment software quoted above. A future BER assigned to this building may be different as a result of changes to the building, its use or the assessment software.



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Saggart Scoil Mhuire National School Completed in August 2014



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