



Project Fact Sheet

Esker Educate Together National School, Lucan, Dublin



PROJECT: Esker Educate Together National School, Lucan

Projects	Esker Educate Together National School, Lucan
Value	€4.2m
Client	Department of Education and Skills
Stage	Complete
Completion Date	August 2014
Description	Design & build new school consisting of 16No new classrooms, 6No SET classrooms, General Purpose Hall, Library/Resources Room, Staff Room, 2No ball courts, Junior Play Area and Associated ancillary accomodation.

FACTFILE

The design and build consortium planned a fast-track on-site construction duration of 34 weeks. With an area of 2524sq m and 16No.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 Esker, Lucan, Co. Dublin. Esker Educate Together National School was tendered on a design and build basis for the new 16 classrooms, 6 SET 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 2nd January 2014 and construction of the school was completed within a 34-week programme.

The project consisted of the construction of a 2 storey national school comprising of 16No-Classrooms, 6No support teaching classrooms and ancillary accommodation with a total floor area of c. 2524sqm. The site works to the school grounds involved of the provision of 2No 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.

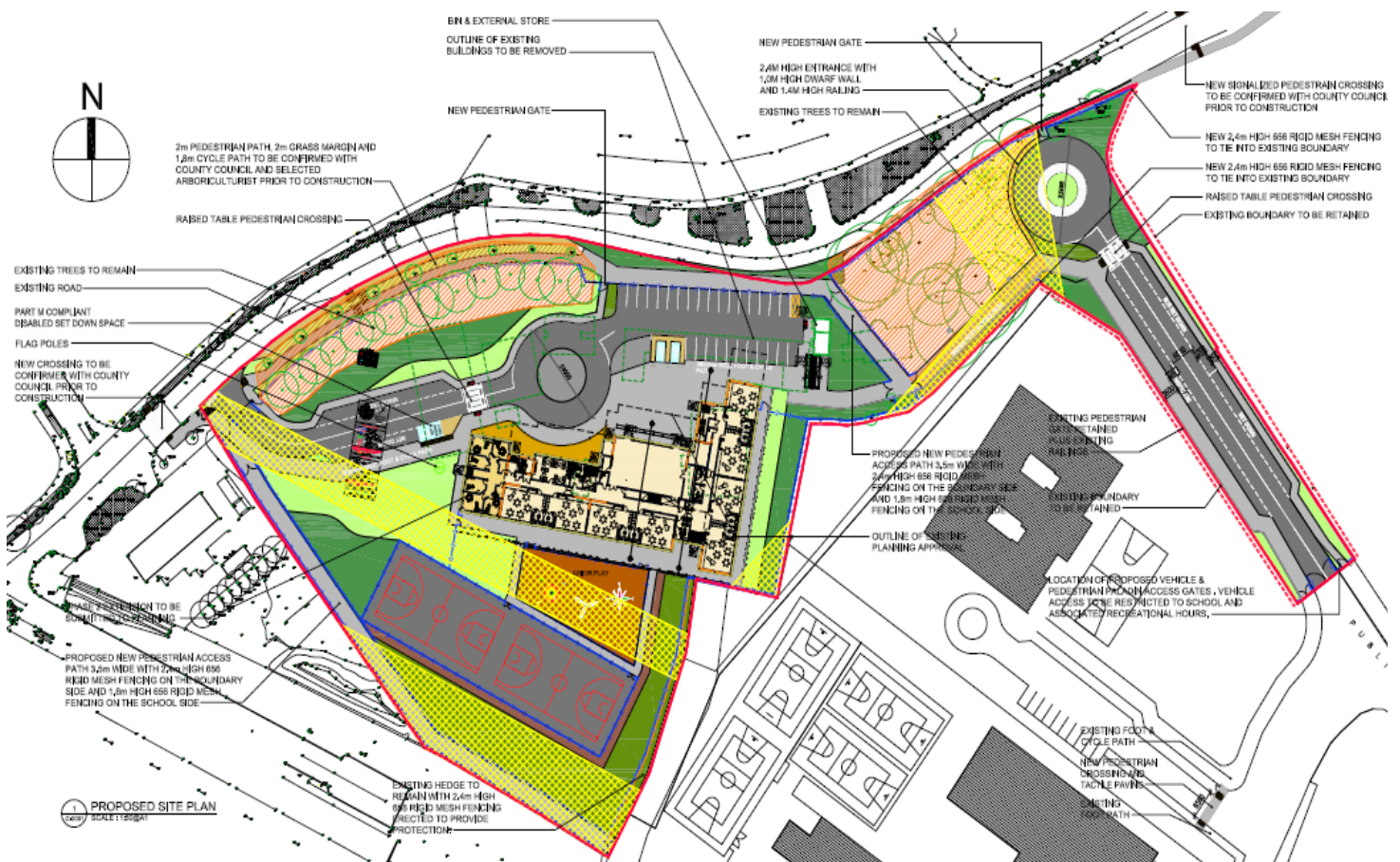


Image 1 – Site Plan Esker ETNS

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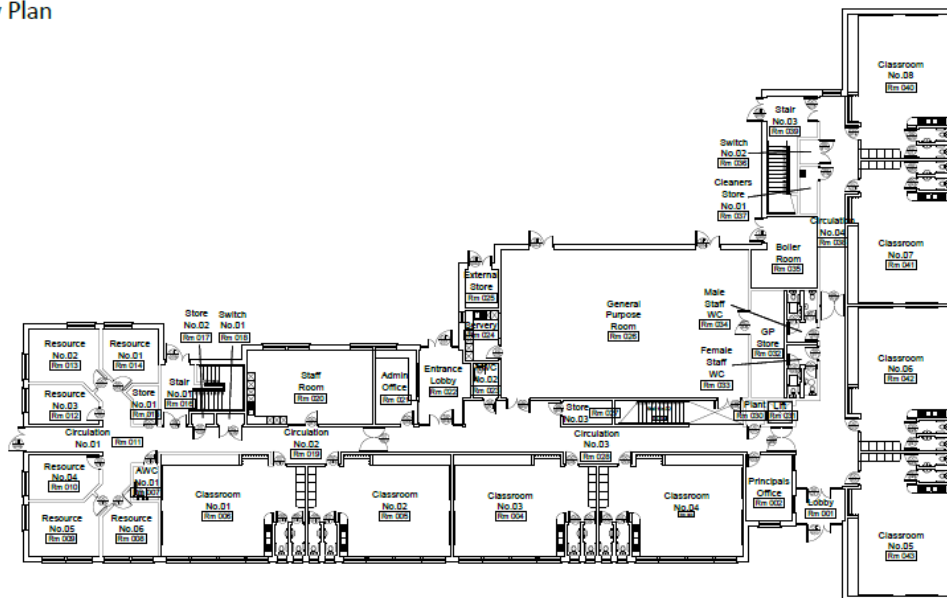
The ground works commenced simultaneously with the off-site fabrication of the Nordman steel frame system. After week four, the ground works and off-site fabrication period was complete. The steel frame system which is highly efficient in terms of transport utilisation was delivered to site from Co. 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.

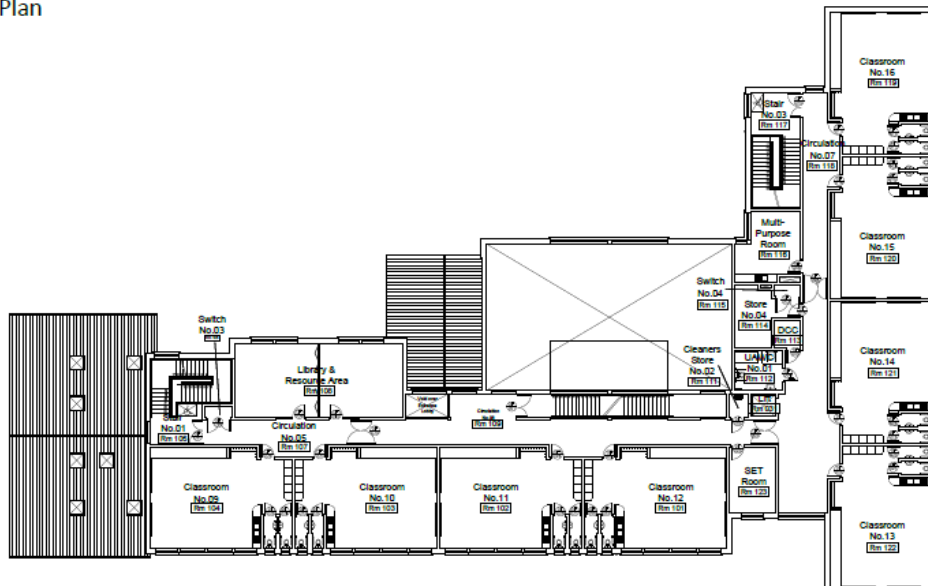
Once the windows and roof system were complete, the building was 'watertight' allowing internal finishes to begin at week 10. Wherever possible, off-site fabrication of the internal components were used such as pre-hung door sets, internal wall partitions, kitchens, cubicles, and heating pipe work runs.

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

Ground Floor
Key Plan



First Floor
Key Plan



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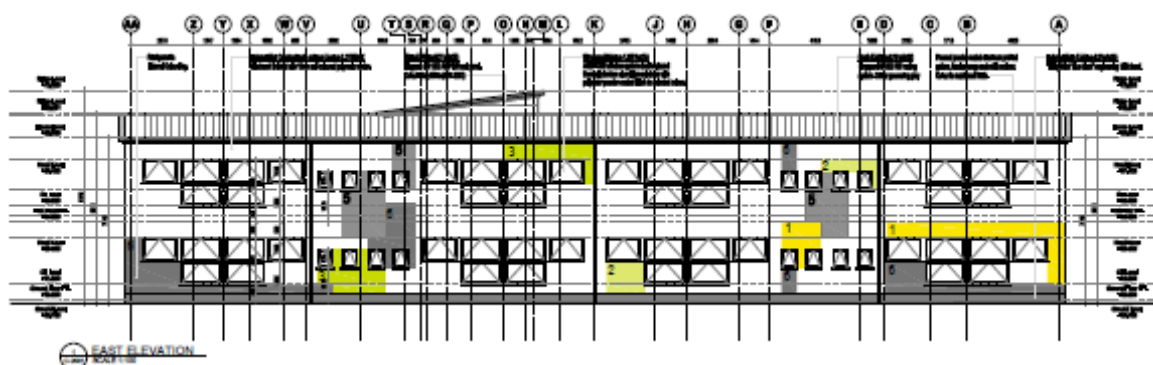
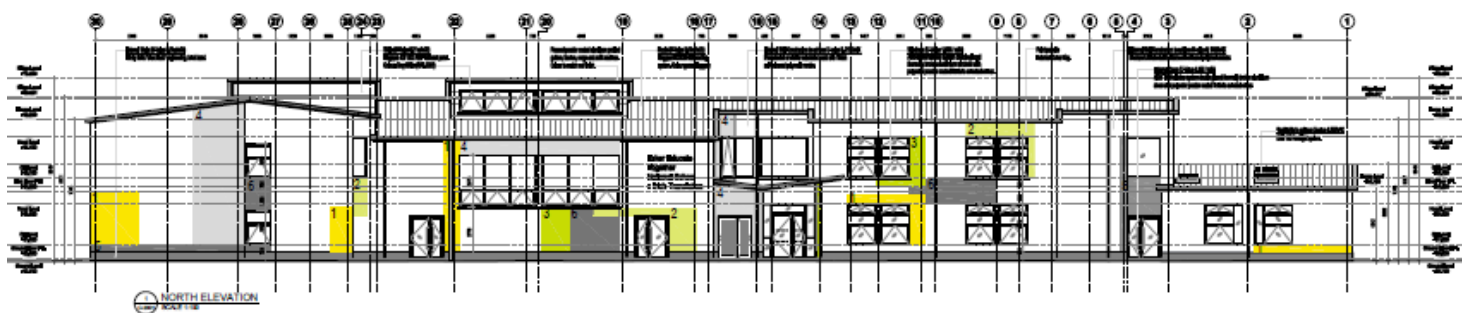
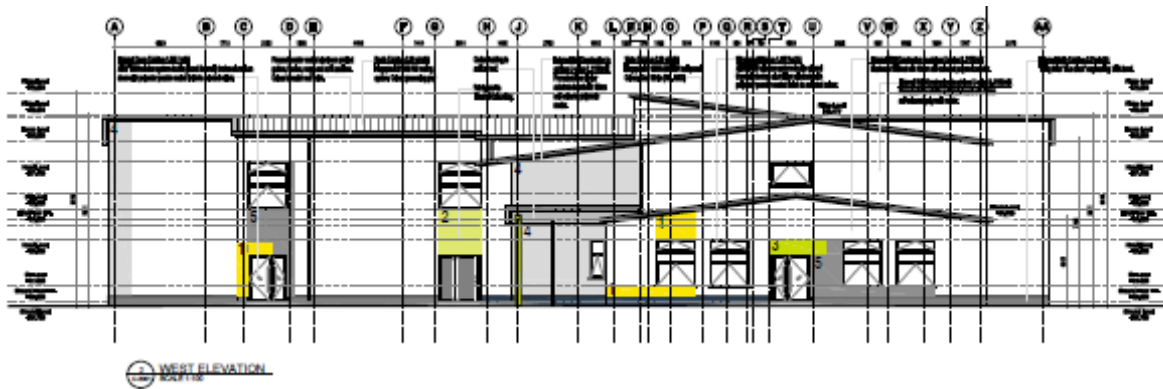
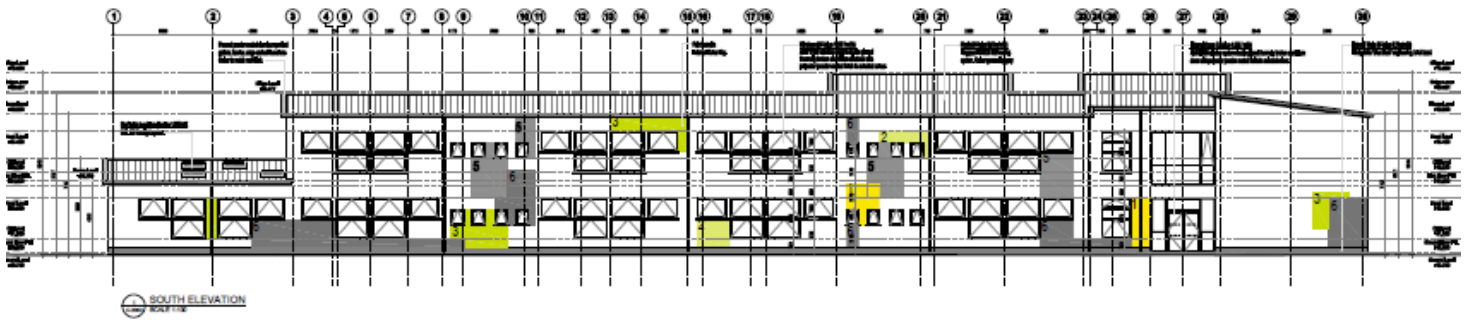


Image 4, 5, 6 & 7 – South, West, North & East Elevations



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Image 10 & 11 – General Purpose Hal & Classroom Entrance

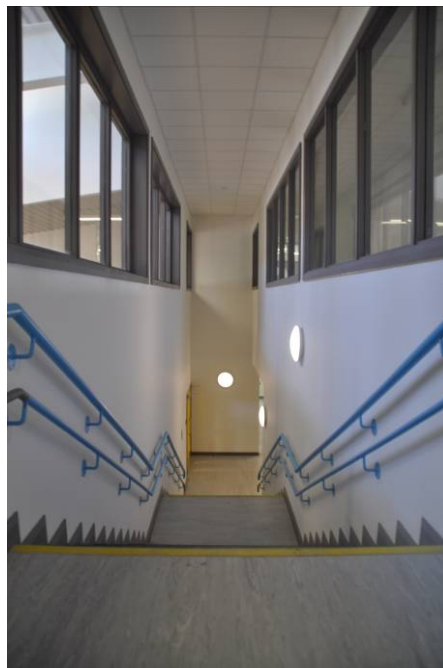


Image 12, 13 & 14 – Corridor, Stairwell & GP Hall



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Image 15 & 16 – Junior Play Area & Covered Bike Racks



Image 17 – School Sign

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 3m³/h/m² 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.

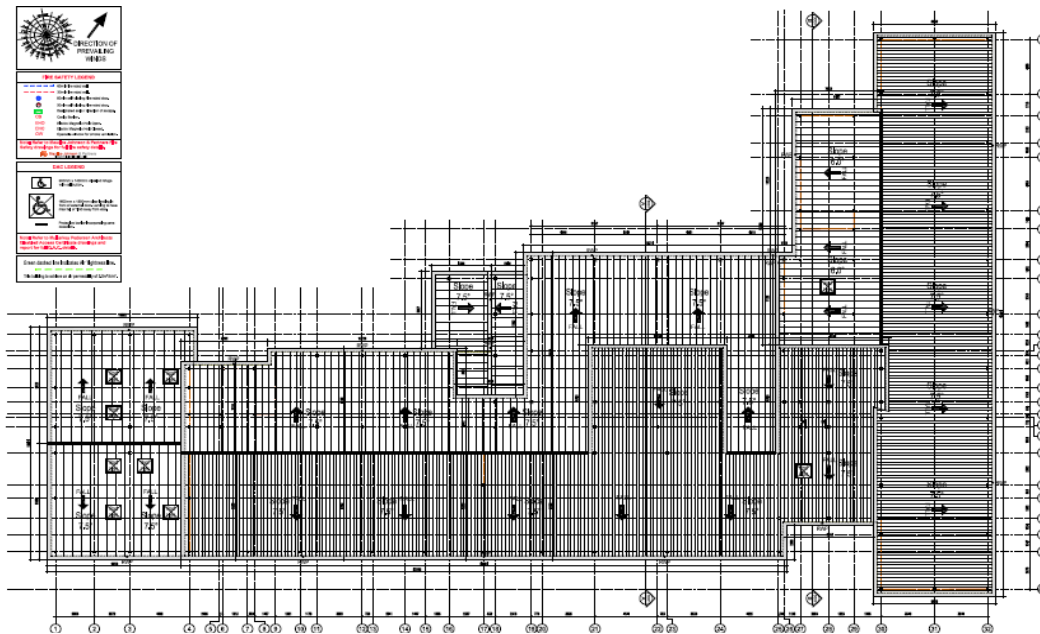


Image 15 – Roof Plan

Air Pressure Results

Air Permeability @ 50 Pa 1.30

Air Leakage Coefficient C_L (m³/hr/Pa_n) 536.9174

Correlation Coefficient (r₂) 99.06

Air Volume Flow @ 50 Pa m³/hr 6255.8702

Air Flow Coefficient C_{env} (m³/hr/Pa_n) 54.4179

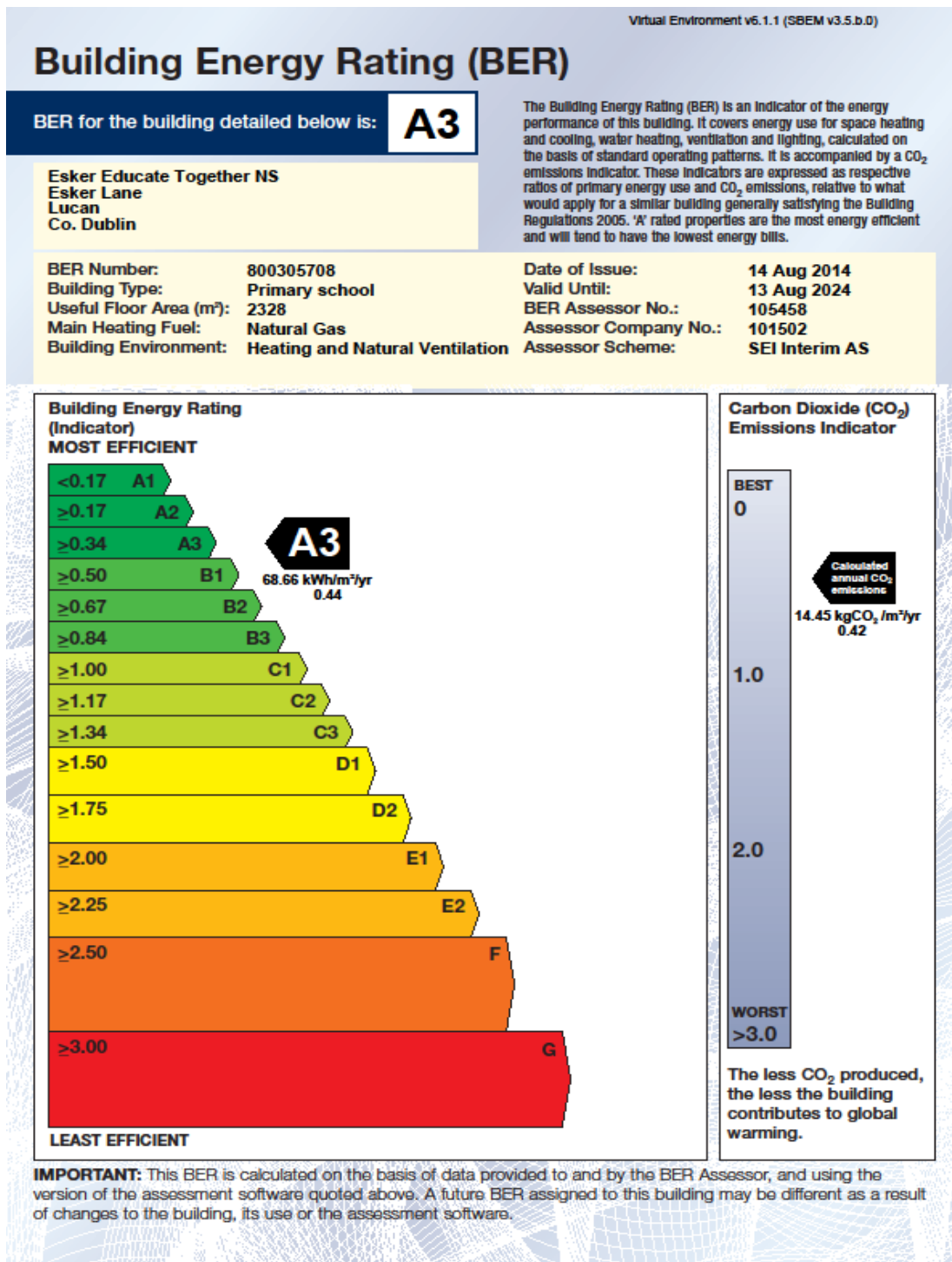
The test measured an air permeability of 1.30 (m³/hr)/m² at 50 Pa building pressure

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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 August 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 68.86kWh/m²/yr and the annual estimated CO₂ consumption is estimated to be 14.45 kgCO₂/m²/yr.





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Esker Educate Together National School completed in August 2014



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