



Project Fact Sheet

Aston Village Educate Together, Drogheda, Co. Louth



PROJECT: Aston Village Educate Together, Drogheda, Co. Louth

Projects	Aston Village Educate Together,
Value	€2.8 million
Client	Department of Education & Science
Stage	Complete
Completion Date	October 2011
Description	Design & build of new school extensions comprising of 16 classrooms, a GP room, ancillary accommodation and a Special needs unit

FACTFILE

The design and build consortium planned a fast-track on-site construction duration of 35 weeks. This project consisted of two storey 16 classroom extensions to the existing primary school, an integrated GP Room and ancillary accommodation and a special needs unit. This was one of three school new-build contracts awarded to ABM by the Department of Education and Science under the Rapid Build Schools Programme.

PROJECT DETAILS

Schools in rapidly developing areas

In June 2009, the Department of Education and Science (DoES) advertised a Request for Proposals (RFP) from contractors to submit pre-qualification applications for inclusion on a tender shortlist for the Rapid Delivery Design & Build Schools and Framework 2009. In September 2009, the Department of Education and Science prioritised funding to facilitate the construction of schools in rapidly developing areas such as Aston Village Educate Together through a public rapid build schools tender. The programme was tendered on a design and build basis with contracts awarded to the successful candidates under the new GCCC. It was intended that the new school extensions and GP Hall were operational by mid October 2011. ABM's Design & Build proposals were successful and they were awarded the project in November 2010.

The project consisted of the construction of a 16 classroom primary school building extension to the existing school. The existing site encompassed an existing 8 classroom school with associated car parking and play areas. It is a self-contained area bounded primarily by residential areas and also agricultural/greenfield lands. The new build comprised of 16 classrooms, a GP room, ancillary accommodation and a Special Needs Unit. External works included the provision of additional car parking, turning circle, sensory garden, additional play areas and landscaping to the site.

ABM Design & Build were required to note fully the construction materials and methodology of the existing school prior to beginning construction as all materials and finishes for the new build were required to match the existing building. The design of the extensions to the existing school both complement and facilitate the full functioning requirements of the existing buildings while complying with all aspects of the planning requirements.

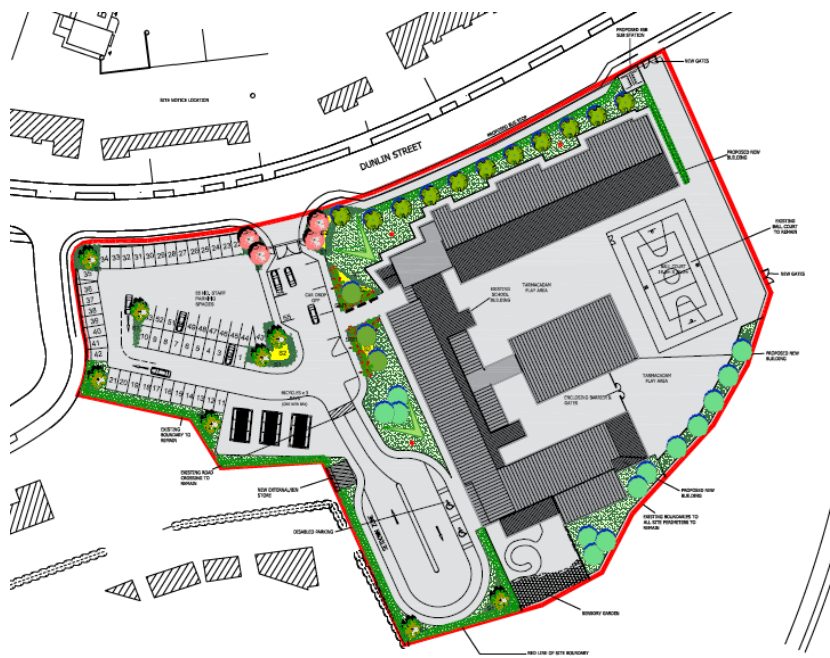


Image 1 – Site plan Aston Village Educate Together

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The project was broken down into two parts, namely extending the existing car park and extending Aston Village Educate Together School. The overall programme for the full Works, i.e. the Contract Period, was 35 weeks. ABM Design & Build were required to complete the works to the car park prior to commencement of the school work for duration of one month at the beginning of the project. This new car park provided the school with a play area while the construction of the school extensions were proceeding.

The ground floor construction consisted of a selected colour Polyfloor floor finish on Liquid DPM on 150mm Powerfloated in situ concrete floor slab on 90mm thick Kingspan Kooltherm K3 rigid insulation on Radon Barrier DPM on 50mm sand blinding on min. 225mm Clause 804 compacted Hardcore.

The external walls consisted of three coats internal matt finish paint to match existing school on 215mm fair faced blockwork with 80mm insulation with 40mm cavity. Externally, the facades comprised of 100mm block work & a Euromix CPI monocouche colour through Render system. This system has BBA certification. The first floor construction consisted of a selected colour Polyfloor floor finish on Liquid DPM on a precast hollowcore concrete floor

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

The roof envelope on the school extension was installed in five weeks and consisted of a pre-fabricated Kingspan 120mm RW system. The windows were also installed simultaneously allowing the building to be 'watertight' which in turn made way for the internal finishes to begin. 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.

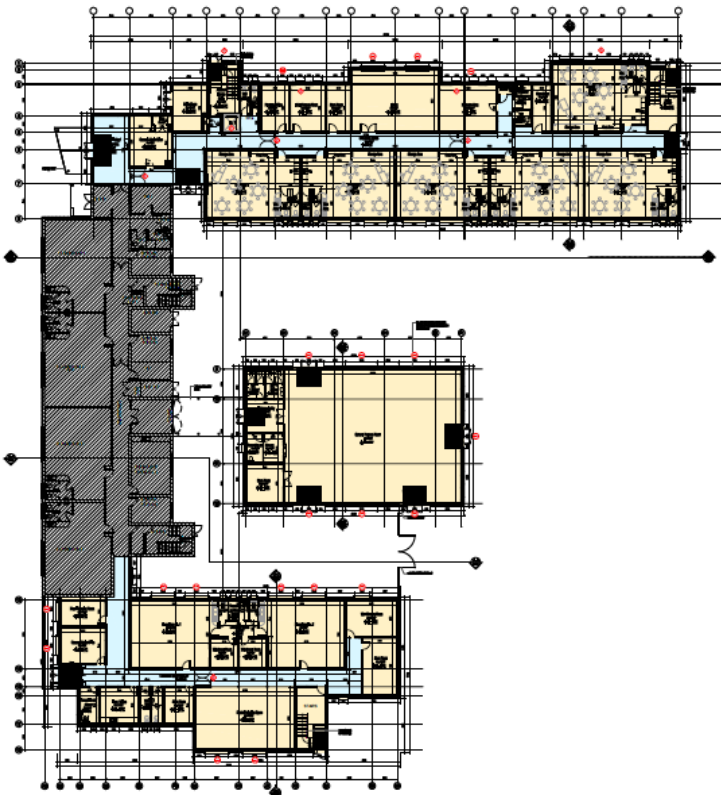


Image 2- Ground Floor Plan

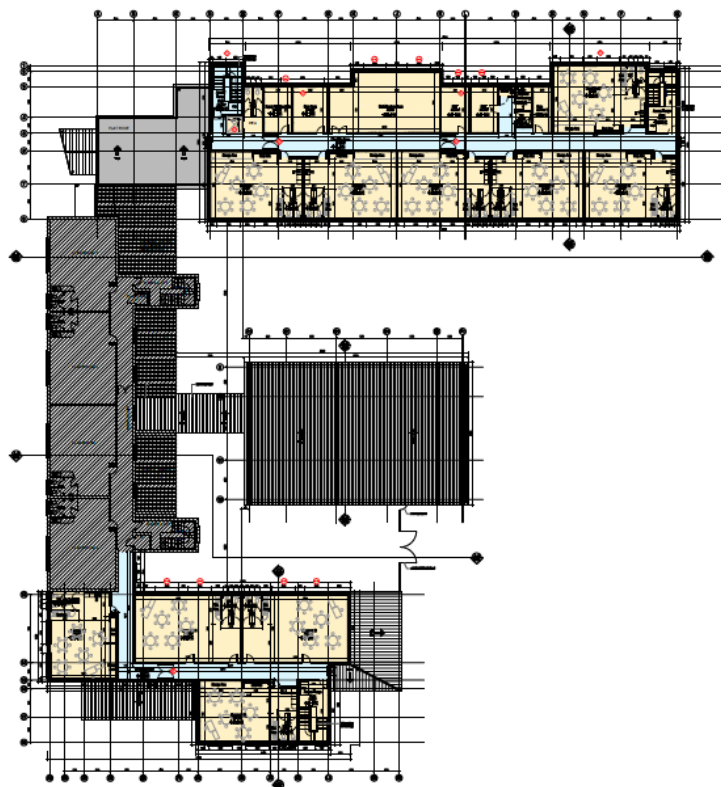


Image 3- First Floor Plan

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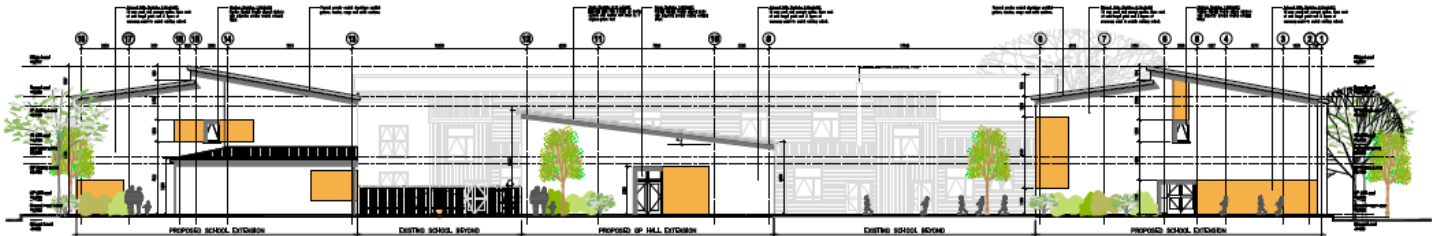


Image 4 - North Elevation

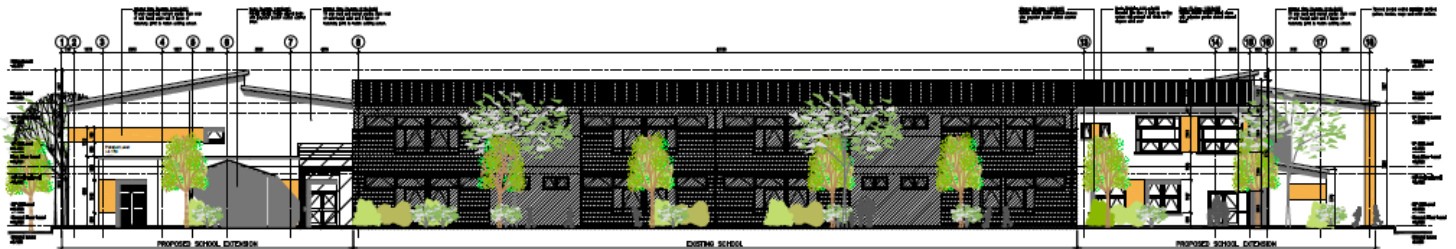


Image 5- South Elevation

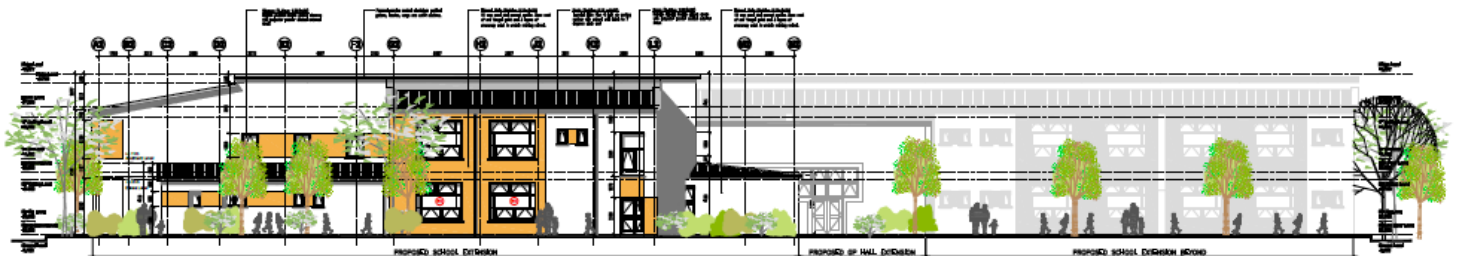


Image 6- East Elevation



Image 7- West Elevation

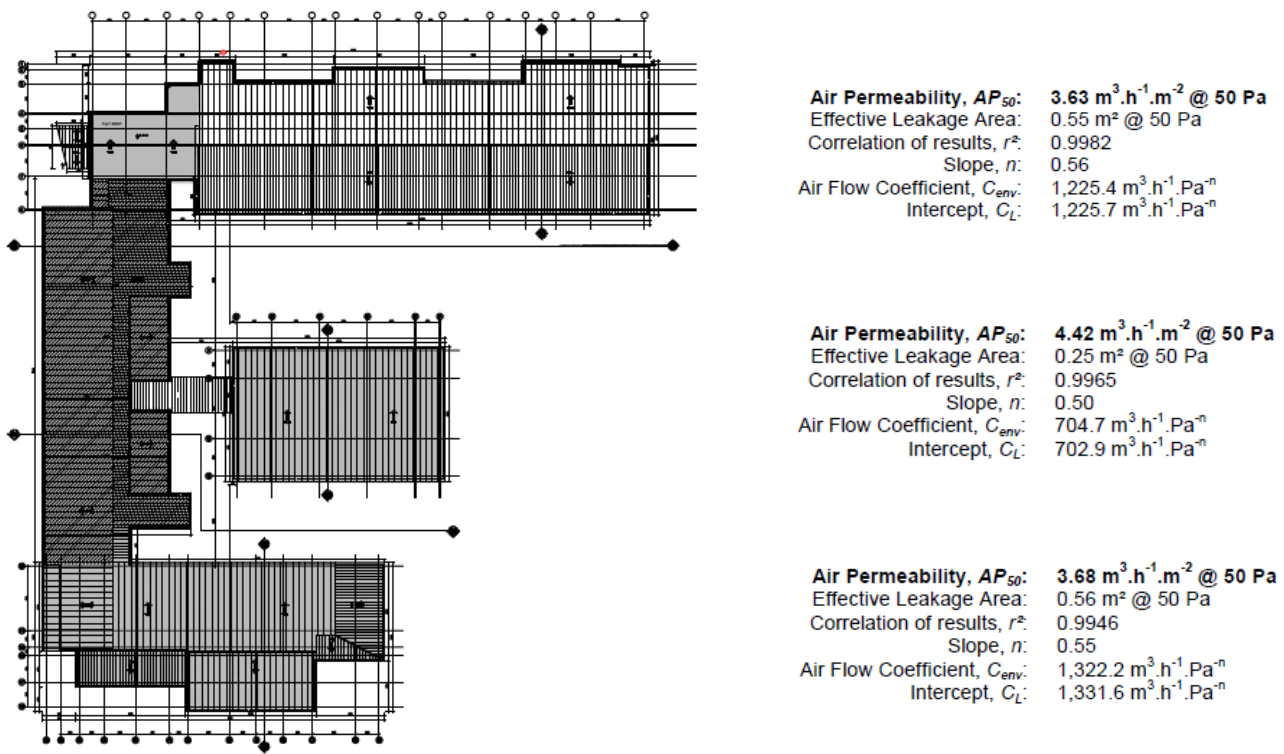
Sustainability

In accordance with the Department of Education and Science school specification, the buildings were constructed to facilitate a passive environment entailing light sensitive light fittings, excellent natural daylight, natural ventilation, air infiltration and water efficiency. The building elements were specified with a high emphasis on sustainability & efficiency. See below building elemental u-values which have been excelled with the construction of Aston Village, Drogheda.

Building Element	TGD Part L 2008 required u-value U value w/m ² k	As built U value w/m ² k	ABM Surpassed TGD Part L Requirements by U value w/m ² k
Ground floor	0.25	0.12	0.13
Walls	0.27	0.16	0.11
Windows	2.2	1.5	0.7
Doors	2.2	1.5	0.7
Roof	0.2	0.16	0.04

The requirements set out in the Department's TGD documents for air-tightness required an air loss of 5m³/h/m² at a test pressure of 50Pa. The actual results from the tests were: North block was 3.63 m³.h⁻¹.m⁻² @ 50 Pa; GP Hall was 4.42m³.h⁻¹.m⁻² @ 50 Pa; and the South block was 3.68 m³.h⁻¹.m⁻² @ 50 Pa all of which surpassed TGD requirements. This resulted from the quality of installation and construction of all building elements. A Tyvek breather membrane was installed at roof level giving the building excellent air-tightness. Energy conservation was conveyed through thermal performance & air tightness requirements which when constructed surpassed part L requirements. See below actual air tightness characteristics which have been extracted from air tightness certificates:

Image 8 – Roof plan showing air pressure results of North Block, GP Hall & South Block respectively





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Virtual Environment v5.1.1 (SBEM v3.5.b.0)

Building Energy Rating (BER)

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

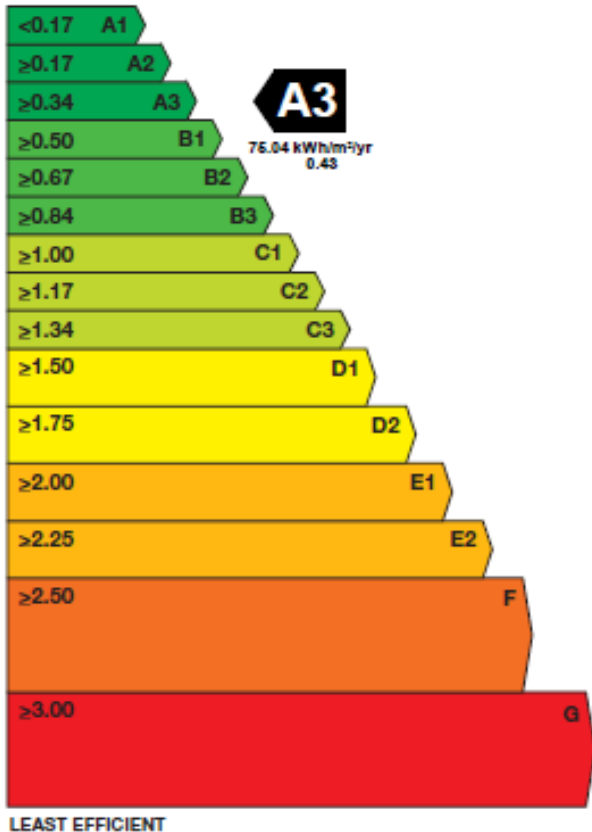
Aston Educate Together
Dunlin Street
Aston Village
Drogheda
Co. Louth

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 2006. 'A' rated properties are the most energy efficient and will tend to have the lowest energy bills.

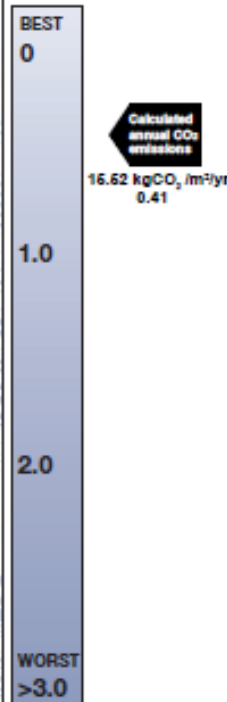
BER Number:	800097230	Date of Issue:	23 Nov 2011
Building Type:	Primary school	Valid Until:	22 Nov 2021
Useful Floor Area (m ²):	3201	BER Assessor No.:	104415
Main Heating Fuel:	Natural Gas	Assessor Company No.:	101886
Building Environment:	Heating and Mechanical Vent.	Assessor Scheme:	SEI Interim AS

Building Energy Rating (Indicator)

MOST EFFICIENT



Carbon Dioxide (CO₂) Emissions Indicator



The less CO₂ produced, the less the building contributes to global warming.

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.

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 November 2011 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 76.04kWh/m²/yr and the annual estimated CO₂ consumption is estimated to be 16.62 kgCO₂ /m²/yr.

Other sustainable technology incorporated into the design was a rainwater water harvesting system. Installed to collect rainwater at roof level, the water is then fed by gravity, through a dedicated system of underground medium density polyethylene (MDPE) pipe work to a leaf filter. Leaves and other debris are passed through the storm water system and the "filtered" rainwater is passed by gravity to an underground glass rainwater holding tank. This grey water is then re-used throughout the building.

Image 9 – BER Certificate for Aston Village Educate Together



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