



An Roinn Oideachais
agus Scileanna
Department of
Education and Skills

CA EED Irish study visit

School sector



Overview of SEAI/Department of Education & Skill supports for schools

SEAI/DES

- Energy in Education (energy management)
- National Energy Efficiency Upgrade pilot programme for schools (capital projects)

SEAI

- M&R helpdesk, workshops & supports
- Schools programme (teaching & learning support)
- Stands at education and stakeholder events

SEAI/DES/DECC

- Long term strategy collaboration





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Energy in Education





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The Energy in Education programme offers a range of supports developed by the Sustainable Energy Authority of Ireland (SEAI) in partnership with the Department of Education and Skills designed to help schools to improve energy management practices, reduce school operating costs and protect the environment.



Stakeholders



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Department of
Education and Skills

Association of Community and Comprehensive Schools

Catholic Primary Schools Management Association

Educate Together

Educate Support Centres Ireland

Education Training Board Ireland

General Synod Board of Education (RI) COI

Irish Primary Principals Network

Joint Management Board / Schools Procurement Unit

National Association of Boards Management in Special Education





Information for Schools

- About Energy in Education
- Integrating with Green-Schools
- Energy management – getting started
- Involve pupils/teach energy
- Measure energy use
- Find savings
- Energy Management Courses
- Resources and links
- Case Studies**
- Monitor and Report
- Funding Energy Efficiency Projects



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Case Studies

- [CBS Michelstown, Co Cork](#)
- [Milford National School, Castletroy, Co Limerick](#)
- [Moneystown National School, Co Wicklow](#)
- [Ashbourne Community School, County Meath](#)
- [Scoil Chaitríona Cailíní, Coolock, Dublin 5](#)
- [Scoil Eoin Phóil II Naofa, Tullamore, County Offaly](#)
- [Mary K's Childcare, Preschool & Montessori, Ennis, County Clare](#)
- [Blackrock Education Centre, Blackrock, Dublin](#)
- [Marino School, Bray, County Wicklow.pdf \(size 572.6 KB\)](#)
- [Scoil Bhríde, Kilbride, Clonee, County Meath.pdf \(size 511.8 KB\)](#)
- [St Louis Community School, Kiltimagh, Co Mayo.pdf \(size 597.6 KB\)](#)
- [Blakestown Community School - Students lead the way to energy saving.pdf \(size 870 KB\)](#)
- [St Aidans Community School - Team work delivers energy savings.pdf \(size 812.5 KB\)](#)
- [Saving Energy at St Clare's Primary School](#)



- Energy management training
- Energy assessment (basic energy audit)
- Website with technology fact sheets, case studies, videos etc
- Links to EU wide 'Green Schools' Programme



Energy in Education Energy Management Supports

- Website www.energyineducation.ie
- Energy Management Workshops
- Guides and workbooks
- Assessment, Advice and Mentoring service
- Three months mentoring



energy in education
Promoting energy efficiency in schools
A partnership initiative of SEAI and DES

You are here: [Energy In Education](#) > [Information for Schools](#) > [Case Studies](#)

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seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

seai is a partnership between SEAI and DES to support energy management in schools

Schools energy management training and assessments



- 800 schools trained from approx 3700 Schools
- From 20 – 1200+ pupils
- Circa 10% of PS energy use
- €1m saved

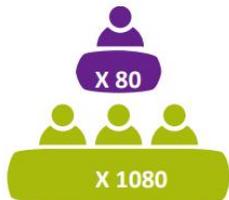
Energy in Education Statistics 2011-2020



Energy management training for schools	Total
People trained	795
Total energy spend of the schools	€23,661,337
Energy assessments undertaken	611
Average % savings implemented in first three months	3.86%
Average 12 month savings likely to be achieved	9.90%

€1m saved

Ashbourne Community School, Meath



Key energy saving opportunities

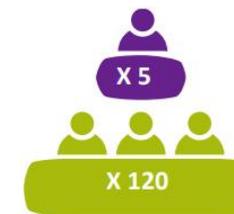
- Take regular electricity and gas meter readings to improved monitor use and target savings.
- Form a student energy committee.
- Run an energy awareness campaign.
- Implement a 'Switch It Off' policy.
- Install more energy efficient lights (Replace T8 with T5 fixtures).
- Better utilisation of natural light.
- Install 7-Day time-clocks on vending machines.
- Reduce boiler operating times appropriately.



This is what the students think...

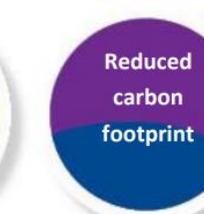
We ran an energy awareness campaign at school called 'Flick that Switch'. It was all about getting people to make small changes to their daily energy habits, like switching off equipment and lights that we are not using. If we can do it, so can you. so come

Moneystown National School, Roundwood, County Wicklow



Key energy saving opportunities

- Isolate the large hot water tank in the school, which serves wash hand basins and the shower, which is not in use to avoid heating too much water.
- Consider having full-fill insulation installed in the wall cavities.
- Upgrade lighting from T8 fluorescent tubes to more efficient T5s.
- Install occupancy detectors to control lighting in circulations spaces / corridors.
- Consider an upgrade of external lighting using LEDs.
- Switch off overhead projectors and smart boards when not in use, especially during holidays. Use Eco-mode at other times.
- Formally publish an Energy Statement, signed by the school principal. Post it up in the lobby and on the school website to make sure everyone knows about it.



For more school case stories and tips on saving energy visit www.energineducation.ie

From
1000+
pupil
schools...

To 20+
pupil
schools...

Testimonials



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‘Attend and save money, it’s a no brainer. A most informative course, you will make savings for your school, if you need money for teaching and learning, save on energy costs...provide money for other curricular areas’

‘It was great to focus on energy savings and how small changes can make a big impact’

‘Very practical tips on energy saving, well presented, hope to get all school staff involved’



Ashbourne Community School

€54,000 spend, 25% estimated saving

*Our school has really benefitted from the Energy in Education programme. The two-day workshop provided us with the tools we needed to begin to monitor our energy usage more closely and enabled us to plan for reducing our energy usage. Our energy adviser confirmed that we were on the right track and advised us on implementing an energy management plan.— **Teacher***



Schools module on energy academy



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Learn how to save energy and grow your business through energy efficiency. This free online resource is designed by experts and gives you access to high quality energy training.

SEAI Schools Programme

Emer Barry/Aoife Cannon, SEAI

SEAI Education Programme

- Engaging teachers and pupils in the energy transition
- There are 3 main areas of the education programme
 - Teaching Resources
 - Workshops
 - Competition

Teaching Resources

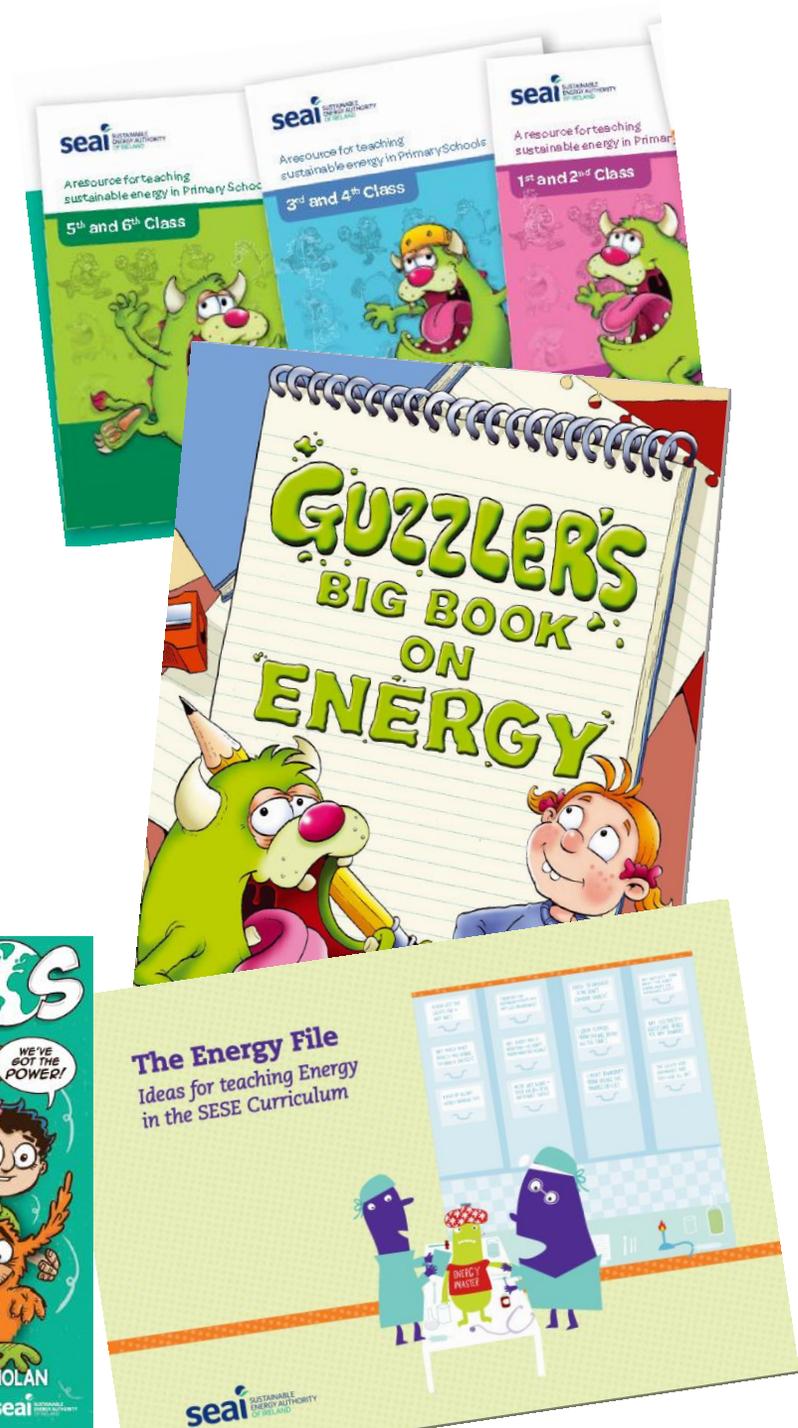
Free resources to primary & post primary schools:

Primary

- Linked to the science and civics curriculum
- Interactive White Board lesson plans and hands on activities

Post Primary

- Linked to various curricula including Science, Home Economics, Geography, CSPE
- Online activities and lessons plans on the topic of energy, sustainability and climate action



Free Workshops

Student workshops

- Hands on age appropriate activities and experiments on the topic of energy, sustainability and climate action.



Teacher workshop

- SEAI give teachers the tools and activities to help teach about the topics of energy, sustainability and climate action



One Good Idea Competition

- Research an area where you could save energy and take climate action
- Students create and run an awareness campaign in their school or community
- Create a short video
- Calculate savings



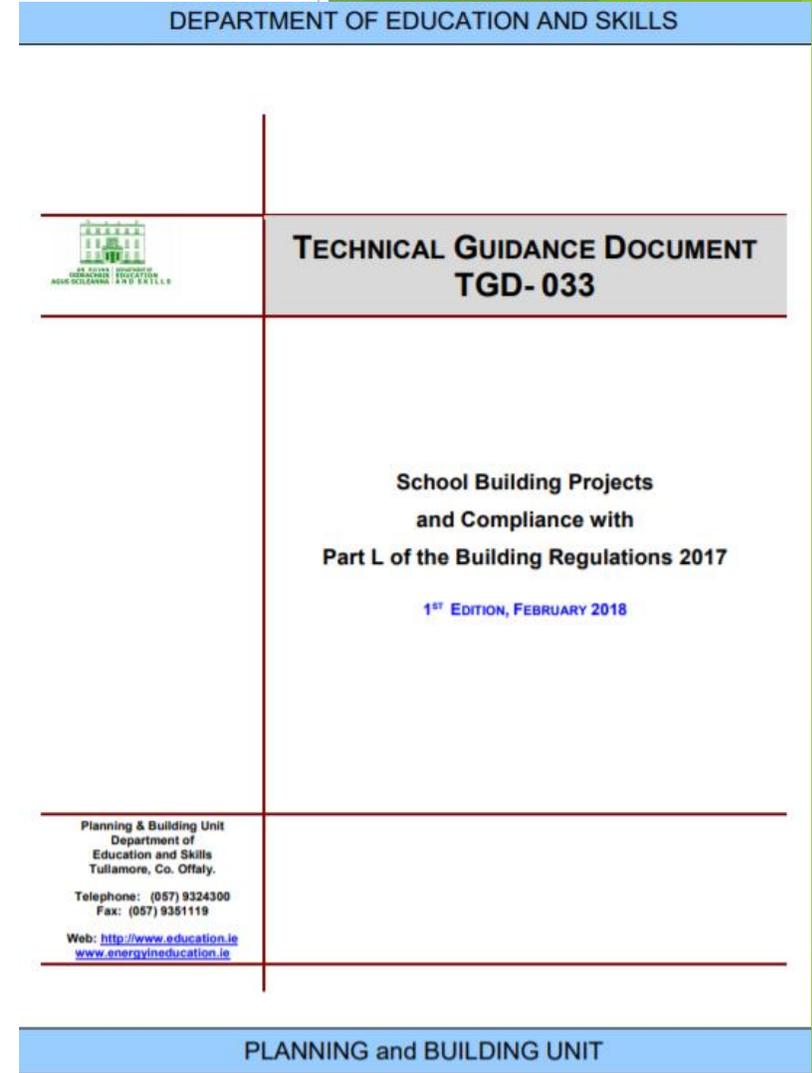
Department of Education and Skills Energy Programme

Fergus Sharkey, SEAI



Energy Policy and Research Programme

- Policy is informed by Building Unit & internal and external partnerships
- Evolved from energy research programme in 1997
- Driven by technical guidance documents
- Updated by continued energy research and development
- Disseminated via publications, conferences & annual report
- Research projects have got specific support from SEAI
- Programme has been acknowledged by national and international energy awards



Energy Policy and Research Programme

- **Schools needs: not the same as domestic/ commercial market needs (different operational profiles)**
- **Short hours of operation**
- **Technical ability limited on site**
- **Energy not a core function**
- **Solutions must be simple, robust, reliable**
- **System must be responsive to needs**
- **Over design costs schools money**
- **Solutions must not distract from school function**
- **Optimise capital, running and maintenance costs**



Energy Research Programme projects that informed approach



Gaelscoil
an Eiscir
Riada
Tullamore -
2002



Colaiste
Choilm
Tullamore
2007



Moynalty
NS, Meath &
Powerscourt
NS Wicklow
2009 /2010



Energy Research Programme projects that informed approach



St Patrick's NS
Greystones
2013



St
Catherine's
NS
Aghrim
2017



The Downs
NS
Mullingar
2018



Laurencetown
NS - Galway
2019



Education and Climate Change

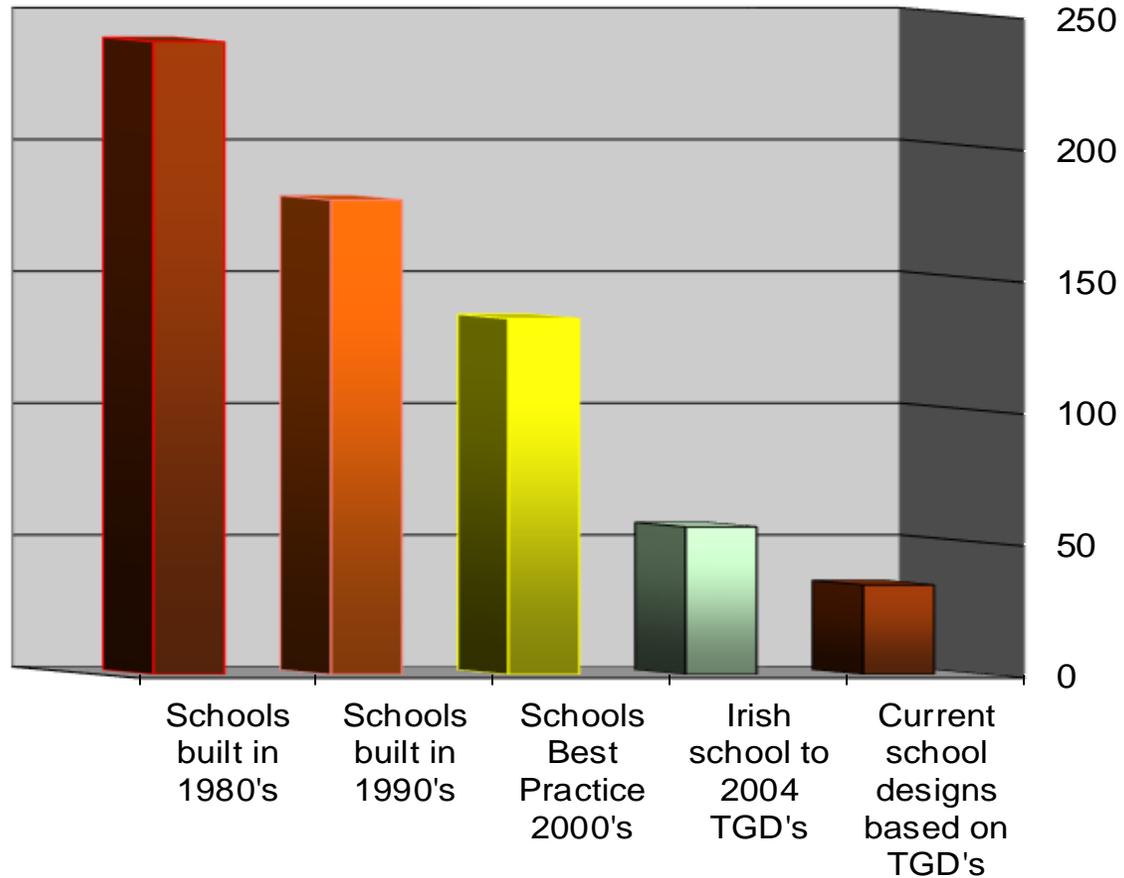


Figure 1
energy usage in new primary schools. kWh/m²/year



Education and Climate Change

Delivery through TGD 033



Maximising Nature



Daylighting



Natural ventilation



Passive solar gain



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Education and Climate Change

Delivery through TGD 033



Technologies

- ✓ enhanced U values
- ✓ air tightness
- ✓ lighting & controls
- ✓ heating & controls
- ✓ water efficiency
- ✓ enhanced glazing
- ✓ Condensation risk analysis
- ✓ Renewable Energy
- ✓ Thermal Bridging



renewables in schools



energy in education

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Enter Search Term

Information for Schools 

Information for Designers, Contractors and School Boards of Management 

Energy in Education

The Energy in Education website is one of a range of supports developed by the Sustainable Energy Authority of Ireland (SEAI) in collaboration with the Department of Education and Skills designed to help school boards of management, principals, teachers, administrators, caretaking staff, pupils and parents to improve energy use practices and to reduce school operating costs along with helping to protect the environment for future generations.

There is a statutory requirement for public sector organisations to reduce energy consumption by 33% by 2020. Public bodies, including schools, will also be obliged to monitor and report energy use to SEAI from 2011.

Remember to switch off all your energy consuming equipment before the holidays. Click [here](#) for our summer shut down factsheet.

 **Find Savings**

 **Linking to Green-Schools**

 **Involve Pupils Teaching Resources**

 **Measure Energy Use**

 **Energy management Getting Started**

 **Get a Display Energy Certificate**

www.energyineducation.ie



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Education and Climate Change

Modelling results show for energy improvement in addition to the new 2017 Building Regulations.

800 pupil Post Primary school 20%

16 Classroom Primary School 18.5%

10% of primary energy provided by PV



Other Innovative approaches to energy reduction and improved learning

- CO² monitors in all teaching spaces allowing the users to be aware of CO² levels enabling intervention to maintain the comfort levels and air quality
- The school electrical system is linked to the intruder alarm & shuts down power to non-essential electrical power outlets when alarm is in activated mode



Schools Pathfinders SEAI/DES

Fergus Sharkey and Gerry Woods, SEAI, John Dolan, DES



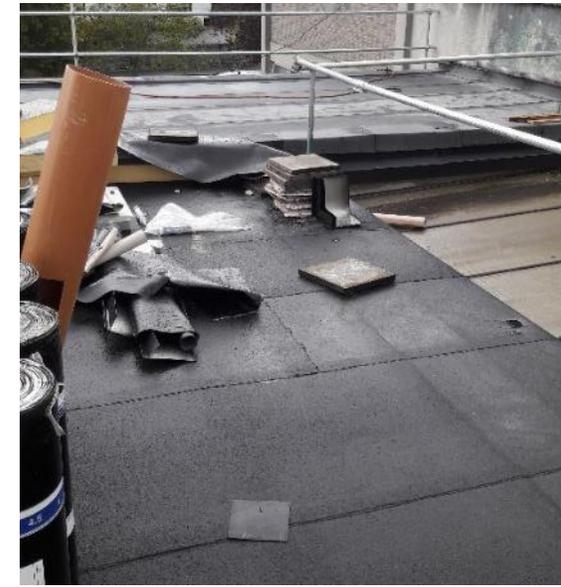
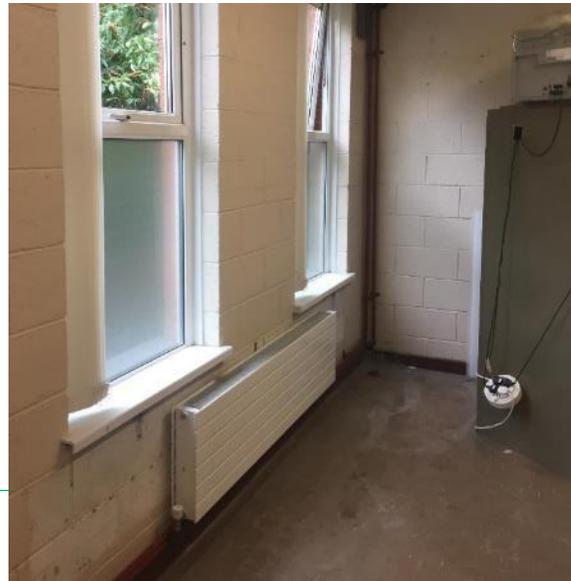
Background and Objectives

- Close partnership with Department of Education
- EinE delivered for 800+ schools
- 50/50 funding arrangement
- Supports SEAI's approach to Public Sector Project Pipeline

- Objectives of the Retrofit Pilot
 - Build a **scaleable model** for schools energy retrofits
 - Identify best practice retrofit measures
 - Identify cost optimal approach to meeting national targets (BER B, 50% EE, 30% CO₂)
 - Build an evidence base on impact
 - Test delivery approaches
 - Understand barriers to larger scale delivery

2017 Pilot Summary

- 20 Schools Selected Initially
 - **Criteria:**
 - Range of age, building types, primary and secondary
 - Undertook Energy in Education training
 - Application for Summer Works
 - School was willing and able to undertake the works
- 19 Schools received comprehensive Energy audits through SEAI panel
- Shortlist of 10 schools selected to progress to capital works, based on impact to scheme and replicability



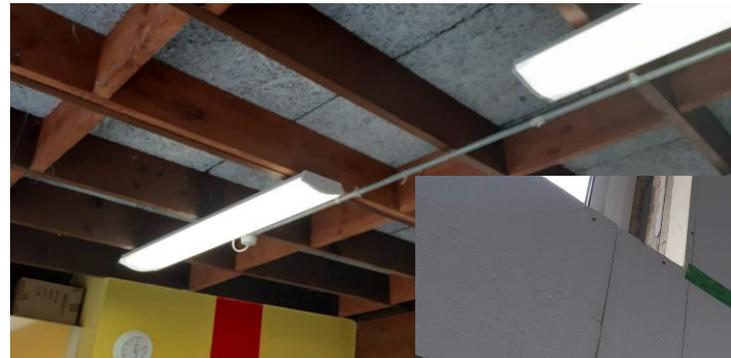
2018 Pilot Summary

- 6 Schools Selected
 - Criteria:
 - Any 2017 schools that did not proceed
 - Close gaps in range of age, building types, primary and secondary
 - Undertook Energy in Education training / M&R Compliant
 - Close gaps in range of retrofit measures
 - School was willing and able to undertake the works
- Trialling of 'clustering' approach for 2019 (two Limerick schools)



2019 Pilot Summary

- 16 Schools Selected
 - **Criteria:**
 - 5 Geographic Clusters (2 Large Towns, 2 Medium Towns, 1 Rural)
 - Single Design Team for each cluster
 - Undertook Energy in Education training / M&R compliant
 - School was willing and able to undertake the works
 - Undertook deep retrofit in one school with renewable heat
- Trialling of 'clustering' approach to design teams (more consistency and easier to manage)
- Trialling of inventory led approach to audit and selection of measures (more consistency and trialling scalable approach)



2020 Pilot Summary

- 8 Schools Selected (7 progressed to works)
 - Criteria:
 - Range of school types (small and large primary, small-large post-primary)
 - Large energy spend targeted
 - Undertook Energy in Education training / M&R compliant
 - Targeted retrofit approach to BER 'B' – mostly from BER of 'E' or 'D'
 - School was willing and able to undertake the works
- Two major approaches to project delivery
 - Traditional design team – BER led, design team to select cost-optimal measures to achieve target BER of B
 - Design and Build – BER led, tender competition for MEAT to achieve target BER, BER is guaranteed with performance related payment

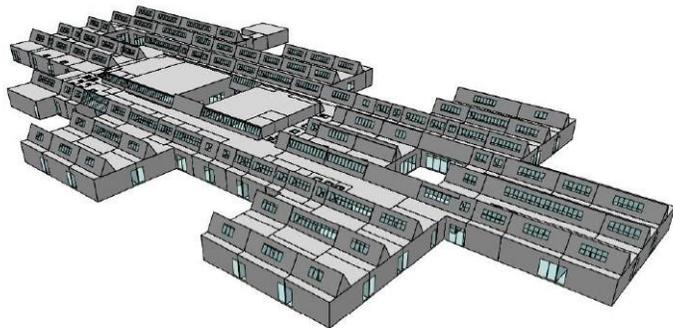


Figure 20. North/West View of the Proposed School



Next Steps

- Pilot will continue in 2021 & 2022
- Development of Guidance for National Retrofit Programme
- NDP identifies a total of €2.5bn for the refurbishment and construction of schools including a commitment to undertake a “ energy retrofit of schools built prior to 2008”
- Schools built after 2008 would have achieved an A3 Building Energy Rating (BER) when designed and built in accordance with this Department’s technical guidance documents. Typically up to 40 % better than National Building Regulations at the time
- The number of schools that are pre 2008 construction is approximately 93% Primary Schools and 91% Post Primary Schools
- National Energy Profile of School Accommodation to be developed



Thank you

