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AGUS EOLAÍOCHTA | DEPARTMENT OF
EDUCATION
AND SCIENCE

Planning & Building Unit

Technical Guidance Document TGD-021

Construction Standards for Schools

1st Edition, January 2008

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DEPARTMENT OF EDUCATION AND SCIENCE

PLANNING AND BUILDING UNIT

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1.0 Introduction

1.1 Purpose

- (a) These Guidelines state the Construction Standards to be used in the design of Primary and Post-primary educational facilities with an emphasis on achieving build quality; value for money; Safety in Design, Construction and Use; effective management & operation of the building; life cycle costing; and timely completion of the project.
- (b) This document, in conjunction with other relevant design guidance, is intended both as a design aid for the Client* & Design Team and as part of a set of reference documents for the evaluation of design submissions.

* In the case of Community and Comprehensive Schools and some Primary Schools the Minister for Education and Science is the Client, but for the purposes of this document the term "Client" shall also encompass the School Authorities.

1.2 Design Guidance Suite

- (a) The [Construction Guidelines and Standards For Schools](#) is part of a suite of Department of Education and Science [DoES] Technical Guidance Documents for Primary and Post Primary schools which includes:

DoES Technical Guidance Document [TGD]	DoES -TGD
General Design Guidelines for Schools	020
Construction Guidelines and Standards for Schools	021
Primary School Design Guidelines	022
Post-primary School Design Guidelines	023
Post-primary Fixed furniture Details	024
Post-primary Room Layouts	
Mechanical & Electrical Building Services Engineering Guidelines for Temporary Accommodation School Buildings	001
Mechanical & Electrical Building Services Engineering Guidelines for Primary School Buildings	002
Mechanical & Electrical Building Services Engineering Guidelines for Post Primary School Buildings	003
Information and Communication Technology (ICT) Infrastructure Guidelines for Primary Schools	004
Information and Communication Technology (ICT) Infrastructure Guidelines for Post Primary Schools	005
Energy Information Form	006

All the above Guidance Documents are available on the Department of Education and Science web-site at www.education.gov.ie.

- (b) The above Suite of Design guidance documents replaces all previous Design Guidelines for both Primary and Post-primary schools.

1.3 Application

- (a) These Construction Guidelines and Standards for Schools apply to all Primary and Post-primary construction projects funded in part or in whole by the Department of Education and Science (unless otherwise directed by the Department in writing) where a decision to commence architectural design and planning has been confirmed in writing by the Planning and Building Unit.

1.0 Introduction (continued)

1.3 Application (continued)

- (b) Where it is proposed to construct a new school these Construction Guidelines and Standards and all associated documents in the suite of Design Guidance should be consulted and appropriately applied.
 - (c) In the case of existing school buildings where an extension, conversion or renovation is proposed, These Construction Guidelines and Standards and all associated documents in the suite of Design Guidance should apply to all new-build work and so far as is practicable to all alterations and repairs.
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1.4 Further information

- (a) This document and all other Guidance Documents mentioned above are available on the Department of Education and Science web-site at www.education.ie. ❖
 - ❖ *Always check the Department's web-site for the most up-to-date version.*
- (b) For further advice on these guidelines or any other matters relating to this document, please contact:

Department of Education and Science, School Building Unit,
Portlaoise Road,
Tullamore, Co. Offaly.
Telephone: (057) 9324300;
Fax: (057) 9351119

1.5 Technical Reference

- (a) The provision of Technical References in this document is for guidance purposes only. The list of Technical References is not exhaustive and the onus shall be on all the members of the Design Team acting collectively to ensure that all the relevant standards are applied in all instances. The Design Team must ensure that the Construction Standards used in the design of educational facilities will achieve build quality; value for money; energy efficiency; safety in design, construction and use; appropriate consideration of life cycle costing and timely completion of the project. The design must also facilitate the effective management and operation of the building.
 - (b) All references to Acts and Regulations shall be deemed to mean the current Acts and Regulations.
 - (c) The Design Team shall also apply, where necessary, any new standards or Acts (and their associated Regulations), relevant to the design and construction process, which may also come into force after the publication of this document.
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1.6 Comments & Suggestions

- (a) The Department of Education and Science welcomes comments and suggestions on how to improve these Construction Guidelines and Standards. Such comments and suggestions should be sent by email to Technical_staff@education.gov.ie
- (b) All comments and suggestions will be considered at the next review of this document.

2.0 Health & Safety

2.1 Statutory Regulations

- (a) All Designers must ensure that all current regulations relating to safety, health and welfare at work are taken into account in the design of all building projects. In particular Designers are required to comply in full with the Safety, Health & Welfare at Work Act, 2005 and the Safety, Health & Welfare at Work (Construction) Regulations 2006
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2.2 Design Team Duties

- (a) Each Design Team member and the Design Team as a whole must consider safety in the design from acceptance of the commission to handover of the building and the subsequent safe operation of the building by the client thereafter.
 - (b) See also [DoES TGD-020 General Design Guidelines for Schools](#) (Primary & Post-primary)
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2.3 Safety and Construction Standards

- (a) Notwithstanding any guidance on Construction Standards stated in this document, safety in design construction and use is paramount. The guidelines are minimum standards only.
- (b) All designers are required to individually and collectively consider the briefing material provided, all construction sequences, methods of construction, components and finishes to ensure safety in design, construction and use.
- (c) Where the application of these Construction Standards create an avoidable hazard, increase a risk or prevent the mitigation of that risk the Design Team has a duty to consider alternatives which follow the principles of prevention as stated in the Safety, Health & Welfare at Work (Construction) Regulations 2006.
- (d) Where due to Health & Safety considerations the Design Team propose an alternative method of construction, component and/or finish, the relevant Designer should identify the nature of the hazard or risk presented and how the alternative proposed mitigates that hazard/risk, and inform the client accordingly.
- (e) Where the standard used is higher than that stated in these guidelines and the overall project can be constructed within the approved cost limits no further action or approvals are required.
- (f) Where arising from the alternative method of construction, components and/or finishes, the overall project cannot be constructed within the approved cost limits, the Design Team must demonstrate both (a) that there are no other viable strategies to mitigate that hazard/risk and (b) that the proposed alternative strategy represents value for money. For further details on abnormal costs and the approvals required refer to the DoES Design Team Procedures 2007 available on the web at www.education.ie.

3.0 Compliance

3.1 Building Regulations

- (a) Design Teams are required to comply in full with the Building Regulations 1997 and the current associated Technical Guidance Documents in addition to the other compliance requirements below and the standards in this document.
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3.2 Irish & International Standards

- (a) All components used for construction must be manufactured to meet the relevant Irish Standard, or other recognised international Standard where no Irish Standard exists.
- (b) All new components and processes for which published national standards or other recognised international standards do not exist must be installed and perform in accordance with the relevant Irish Agrément Certificate or other recognised International Certification System.
- (c) No component for which there is no Irish Standard or Agrément Certificate or recognised International Standard or Certification shall be used in the construction process.
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3.3 Reference

Building Regulations, Technical Guidance Documents

(published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government)

- **Technical Guidance Document A - Structure**
- **Technical Guidance Document D - Materials and Workmanship**

For the most up to date publication of the Building Regulations, Technical Guidance Documents refer to <http://www.environ.ie>

Continued overleaf

4.0 Build Quality & Durability

4.1 Durability

- (a) The completed building structure including roof structure, primary roof deck or slab and walls should be designed to have a minimum designed life span of 60 years. It should be built to last and be easy to maintain based on whole life cost principles. The detailing of junctions and materials should be well considered, robust and attractive.
 - (b) Where practicable the design team should require appropriate insurance backed guarantee for the building constituent elements. The extent of the guarantee to be based where practical on the designed life span of the various constituent components as set out in this section.
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4.2 Construction methods

- (a) Each component used in the construction process must be manufactured to the appropriate standard and used for the correct purpose. All components must be correctly installed as recommended by the manufacturer and in accordance with the accepted industry standard. At all times the safety of the construction process and safety in use must be considered.
 - (b) The current issue of the following publications can be used as reference documents for the methods of construction, detailing and specification:
 - For traditional block construction - the House Building Manual published by the National House Building Guarantee Company Ltd., Canal Road, Dublin 6.
 - For timber frame construction Timber frame construction published by Trada Technology, Stocking Lane, Hughenden Valley, High Wycombe, Buckinghamshire, HP 14 4ND UK.
 - (c) The above forms of construction are not exhaustive but where alternative forms of construction are proposed the onus will be on the Design Team to demonstrate that they are equal to or exceed the Department's required standard and can be constructed safely. All members of the Design Team acting collectively will need to consider the enhanced level of detailing and design necessary to meet the build quality and durability standards required in this document (e.g. air-tightness, radon mitigation, etc.)
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4.3 Material Selection

- (a) There are limitations as to the materials, which can be used in the school environment for reasons of health, safety, toxicity, performance and maintenance.
 - (b) **Permitted materials (based on their proved track record in educational buildings across the country) are identified in subsequent sections of this document. The use of other materials not specifically mentioned is allowed, but the onus is on the Design Team to ensure that those other materials proposed are equal to or exceed the Department's required standard.**
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4.4 Reference

Building Regulations, Technical Guidance Documents

(published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government)

- **Technical Guidance Document A - Structure**
- **Technical Guidance Document D - Materials and Workmanship**

For the most up to date publication of the Building Regulations, Technical Guidance Documents refer to <http://www.environ.ie>

5.0 Energy Conservation

5.1 Thermal Performance

- (a) The thermal performance required shall meet or exceed the standards set out in Technical Guidance Document L, Conservation of Fuel and Energy published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government.
 - (b) The Elemental Heat Loss Method shall be used to demonstrate compliance with Technical Guidance Document L, Conservation of Fuel and Energy published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government.
 - (c) Refer also to DoES TGD-001, 002 and 006, Mechanical & Electrical Building Services Engineering Guidelines.
 - (d) As a further guide to achieving better thermal performance and eliminating thermal bridging the Accredited Construction Details published by the Department for Communities and Local Government's (DCLG) in the UK will assist the designer
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5.2 Air-Tightness

- (a) In addition to the requirements of Technical Guidance Document L, Conservation of Fuel and Energy published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government, the Department of Education and Science has set a specific requirement with respect to air tightness and the standard required is an air loss of less than $5\text{m}^3/\text{h}/\text{m}^2$ of measured envelope area at a test pressure of 50Pa **when tested in accordance with I.S. EN 13829:2000 Thermal performance of buildings - Determination of air permeability of buildings – Fan pressurization method (ISO 9972:1996, Modified)**
- (b) The air-tightness performance of the completed building must be certified by an approved independent testing company. The minimum test required to show compliance shall be a pressure test to the parameters set out at (a) above.
- (c) A smoke test may be used to assist in the identification of areas in the building's envelope which may be causing the building to fail the air-pressure test. Where remedial action is necessary subsequent testing will be required to prove compliance.
- (d) As a further guide to achieving the required air-tightness performance the Accredited Construction Details published by the Department for Communities and Local Government's (DCLG) in the UK will assist the designer and the construction industry to achieve the air-tightness standard required by the Department of Education and Science.
- (e) Additional guidance on appropriate measures to limit air infiltration in larger buildings is given in BRE Report BR 448, Air tightness in commercial and public buildings.
- (f) Guidance on methods to limit air infiltration through twin skin metal cladding and roofing systems is contained in Steel Construction Institute (SCI) Technical Information Sheet No. 311, The design of twin-skin metal cladding.

Continued overleaf

5.0 Energy Conservation (continued)

- 5.2 **Air-Tightness** (continued)
- (g) For additional information on air tightness please refer to the [TGD-020 General Design Guidelines for Schools \(Primary & Post-primary\)](#).
 - (h) Care should be taken to ensure that measures to limit air infiltration do not negatively affect compliance with the ventilation requirements of [Technical Guidance Document F – Ventilation](#), and [Technical Guidance Document J - Heat Producing Appliances](#), both published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government.

5.3 Reference

Building Regulations, Technical Guidance Documents

(published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government)

- **Technical Guidance Document L - Conservation of Fuel and Energy .**
- **Technical Guidance Document J - Heat Producing Appliances.**
- **Technical Guidance Document F - Ventilation.**

For the most up to date publication of the Building Regulations, Technical Guidance Documents refer to <http://www.environ.ie>

- **BR 448 Airtightness in Commercial and Public Buildings.**
Published by the British Research Establishment.
- **Accredited Construction Details**
Published by the Department for Communities and Local Government's (DCLG) in the UK.

Department of Education and Science, Technical Guidance Documents

Available at www.education.ie

- TGD-020 General Design Guidelines for Schools (Primary and Post-primary).
- TGD-001 to TGD-006 Mechanical & Electrical Building Services Engineering Guidelines DoES.

6.0 Radon / Landfill Gases

6.1 Radon

- (a) Exposure to elevated levels of radon gas increases an individual's risk of developing lung cancer in later life. Statutory Instrument No. 125 of 2000 sets down a national reference Level for workplaces of 400Bq/m³ averaged over any three month period. The Department of Education and Science has, as a policy, reduced the acceptable level of radon concentration in educational buildings to not greater than 200Bq/m³.
- (b) It is a requirement of the Department of Education and Science that a radon barrier (with an Irish Agrément Certificate or other similar internationally recognised certification) and a standby radon sump system consisting of radon sumps and connecting pipework terminated and capped at suitable points outside the external wall of the building should be installed in all educational buildings. The potential future location of vertical external vent pipes must be carefully considered, taking into account aesthetics and potential noise generated by electric fans.
- (c) As the radon concentration within a building can not be predicted prior to construction; it is a requirement of Department of Education and Science that the Design Team undertake the measurement of the radon concentration in the completed school building. The Design Team are required to ensure that a radon test is carried out within the defects liability period (test to commence 6 months after practical completion or as soon as possible thereafter) so as to facilitate further action where necessary. This test can be organised through the offices of the Radon Department of the Radiological Institute of Ireland (Freephone 1800 300 600) or other approved Radon Measurement Service Provider and will require a minimum of three months to complete.
- (d) For radon concentrations between 400Bq/m³ and 200Bq/m³ it shall normally be sufficient to increase the passive ventilation in the affected area to reduce the concentrations to below 200Bq/m³ but this must be verified by a further radon test in all instances.
- (e) For Radon concentrations greater than 400Bq/m³, remedial work will consist of extending the pipework and installing and activating a fan, (i.e. the standby radon sump system becomes a sub floor gas extraction system). The ventilation pipe terminals should be located so that the pipework and fan can be practically fitted, without causing unnecessary obstruction or maintenance difficulties.

6.2 Landfill Gas

- (a) Guidance on the appropriate measures to be taken in the design and construction of buildings on or near sites containing landfill is provided in the Department of Environment publication 'Protection of New Buildings and Occupants from Landfill Gas'

6.3 Reference

- **Building Regulations Technical Guidance Document C - Site Preparation and Resistance to Moisture.**
Published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government. (For the most up to date publication refer to <http://www.environ.ie>)
- **Radon in Buildings.**
Published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government.

7.0 Structural Integrity

7.1 Methods of Construction

- (a) Considerations should be given to the build-ability of schools (i.e. simplicity of design and economy of construction). Innovative forms or methods of construction may be considered, but the designer must ensure that the end product i.e. the building – is both functional and provides an appropriate educational environment. Structural schemes used should have flexibility with regard to change of use of spaces, maintenance of air tightness, thermal or acoustic insulation measures and future enhancement of these measures where practical.
 - (b) It must be possible to safely undertake maintenance work and to repair or replace components of the building such as fittings, finishes and services with minimum disruption and cost when necessary.
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7.2 Standards

- (a) All structures must comply with the standards set out in the Building Regulations – Technical Guidance Document A – Structure.
 - (b) Structures must have a degree of robustness, so that they are unlikely to be sensitive to adverse effects, such as misuse or accident, leading to damage disproportionate to the cause. Detailed consideration at design stage should be given to the safety of the building envelope both during construction and in use.
 - (c) The Structural design must provide adequate strength, stability and durability, (i.e. to avoid such things as spalling masonry, the failure of fixings for cladding, and the loosening of concrete cover because of corrosion).
 - (d) The building structure should be serviceable. Deformation, movement, cracking and vibration should comply with the requirements of the relevant codes of practice for structural design and, in addition, must not impair the use of the building during its design life. Deterioration or defects should be limited, and appearance should remain acceptable.
-

7.3 Materials & Components

- (a) The structural design should take account of the durability of all the materials and components used in the building structure in terms of their individual performance, their performance when considered in the context of the building detailing and their performance in terms of compatibility of adjacent materials, to ensure that the design life of the structure is achieved. Materials may not all be equally durable, and the deterioration to which they are susceptible should be taken into account in design.
 - (b) It is important to identify and evaluate the factors affecting the performance of individual elements and the building as a whole, and to see that each is treated appropriately. The setting of appropriate values for performance criteria will not in itself provide structural adequacy. This is merely one item in the overall design and construction process; in particular cases, skilled judgement will be required on many items in the process in order to achieve structural adequacy.
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7.4 Reference

- **Building Regulations Technical Guidance Document A – Structure.** Published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government.

For the most up to date publication refer to <http://www.environ.ie>

8.0 Floors

8.1 Forms of construction for floors

- (a) The design lifespan of the floor and its components must not be less than the overall lifespan of the building. See also [3. Build Quality & Durability](#); [5.0 Radon](#), and [7.0 Structural Integrity](#).
- (b) The following forms of construction (for both ground and upper floors) are generally acceptable for use in schools:
- Ground bearing concrete floor slab
 - Suspended concrete floor slab
 - Pre-stressed concrete floor slab
 - Block and plank with screed
 - Cast in-situ concrete floor slab.
- (c) This list is not exhaustive and the onus will be on the Design Team to demonstrate that, whether the above structural components or alternative forms of construction are proposed, they meet the relevant standards, and can be constructed safely.
- (d) To ensure adequate durability and acoustic performance the use of suspended timber floors is not recommended.
- (e) Where designers intend to use a proprietary metal deck floor, the onus is on the designers to demonstrate that the floor meets the required standard for durability, fire safety and acoustic performance.

8.2 Reference

Building Regulations, Technical Guidance Documents

(published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government)

- **Technical Guidance Document A – Structure.**
- **Technical Guidance Document C - Site Preparation and Resistance to Moisture.**

For the most up to date publication of the Building Regulations, Technical Guidance Documents refer to <http://www.environ.ie>

Continued overleaf

9.0 Walls

9.1 Forms of construction for Walls

- (a) The design lifespan of the walls and its components must not be less than the overall lifespan of the building. See also 4. [Build Quality & Durability](#); 6.0 [Radon / Landfill Gases](#), and 7.0 [Structural Integrity](#).
- (b) When using timber frame or timber infill panels; the added fire risks both during construction and as part of the completed construction need to be carefully considered.
- (c) The impact and weather resistance of material used in the school environment is an important factor and needs to be considered when selecting materials.
- (d) The following forms of construction (for external and internal walls) are generally accepted for use in schools:

External leaf

- Concrete block (plastered, dashed wet or dry)
- Brick (clay or concrete)
- Self finish blocks
- Timber cladding (Teak or Cedar only - 15% overall wall area max.)
- Fibre cement sheeting
- Concrete panelling

Internal Leaf

- Concrete block (plastered sand and cement - no hardwall)
 - Fair faced concrete block
 - Fair faced concrete
 - Timber Stud (with appropriate impact resistant plasterboard lining)
 - Steel Stud (with appropriate impact resistant plasterboard lining)
 - Concrete panelling.
- (e) The above lists are not exhaustive and the onus will be on the Design Team to demonstrate that, whether the above forms of construction or alternative forms of construction are proposed, they meet the relevant standards and can be constructed safely.

9.2 Reference

- **Building Regulations Technical Guidance Document A – Structure.**
Published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government

For the most up to date publication of the Building Regulations, Technical Guidance Documents refer to <http://www.environ.ie>
- **Timber Frame Construction .**
published by Trada Technology, Stocking Lane, Hughenden Valley, High Wycombe, Buckinghamshire, HP 14 4ND UK
- **House Building Manual .**
published by The National House Building Guarantee Company Ltd., Construction House, Canal Road, Dublin 6

10.0 Roofs

10.1 Forms of construction for Roofs

All Roofs

- (a) The design lifespan of the roof structure and its components must not be less than the overall lifespan of the building. See also 4. Build Quality & Durability and 7.0 Structural Integrity

Pitched Roofs

- (b) The roof covering should have a minimum design life span of 40 years. Safe access to roof for repairs and maintenance should be provided.
- (c) When considering the use of a low pitch roofing material the Design Team must in consultation with the manufacturer examine the geographical, site elevation, exposure and all other relevant factors to determine the minimum recommended manufacturer's pitch for the site. The minimum pitch acceptable to the Department of Education and Science will be 5° above the established minimum recommended manufacturer's pitch for the site.
- (d) The following materials are generally acceptable:
- Slates, Tiles (concrete, clay) Metal profile sheeting
 - Composite roofing system
 - Build-up roofing system
 - Other approved roofing system equal to above.

Flat Roofs

- (e) The area of flat roof shall not exceed 10% of the overall roof area of the entire development when measured on plan.
- (f) All flat roofs are to have a minimum fall of not less than 5° and should be drained at the perimeter with rainwater outlets located outside the external walls of the building.
- (g) A minimum 15-year Guarantee for materials and labour for the roof membrane will be required. The Guarantee should be an insurance backed guarantee to ensure that in the case of failure redress can easily be sought, and should extend to and include the outlets and design liability for the fixing method.
- (h) The following materials are generally acceptable:
- Asphalt
 - PVC
 - Modified Bitumen Membranes
 - EPDM
 - Rubber
 - Poly-isobutylene membrane.
- (i) The above lists are not exhaustive and the onus will be on the Design Team to demonstrate that, whether the above materials or other materials are proposed, they meet the relevant standards.

Continued overleaf

10.0 Roofs (continued)

10.1 Forms of construction for Roofs (continued)

- (j) The Design team must at the earliest possible stage ensure that unnecessary roof penetrations are avoided where possible. Penetrations in flat roofs which can not be avoided should never be located at the lowest point of drainage runs.
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10.2 Reference

Building Regulations, Technical Guidance Documents

(published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government)

- **Technical Guidance Document A – Structure.**
- **Technical Guidance Document C - Site Preparation and Resistance to Moisture.**

For the most up to date publication of the Building Regulations, Technical Guidance Documents refer to <http://www.environ.ie>

Department of Education and Science, Technical Guidance Documents

Available at www.education.ie

- TGD-002 Mechanical and Electrical Building Services Engineering Guidelines for Primary School Buildings.
 - TGD-003 Mechanical and Electrical Building Services Engineering Guidelines for Post Primary School Buildings.
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Continued overleaf

11.0 Site Works

11.1 General

- (a) This section should be read in conjunction with the Department of Education and Science TGD-020 General Design Guidelines for Schools; Section 10 External circulation, and Section 12 External Landscaping.
 - (b) Refer also to DoES TGD-022 Primary School Design Guidelines, Section 5 and DoES TGD-023 Post Primary School Design Guidelines Section 11.
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11.2 Roads, Paths parking bays

- (a) The provision of Roads, Turning Areas, Lay Bys, Parking Bays and Footpaths will all require specific engineering input to the design of base courses, site preparation, etc. to suit site conditions.
 - (b) The following surface finishes are generally acceptable in schools:
 - Tarmac
 - Concrete paving slabs
 - Concrete paving bricks (small areas subject to cost)
 - Concrete (textured to prevent slip hazards)
-

11.3 Hard Play Areas

- (a) Hard play areas should be properly graded and drained and fit for the purpose of play. Raised kerbs or other edging which could cause a trip hazard are to be avoided.
 - (b) Vehicular access to areas designed as play areas may sometimes be required (e.g. fire tender access or over flow car park). In such instances the play area and vehicular route to the play area must be designed to accommodate the additional loadings this will present. The risks to pupils of traffic accessing play areas need to be carefully considered and addressed.
 - (c) The following playing surfaces are generally acceptable in schools:
 - Tarmac
 - Concrete paving bricks
 - Concrete paving bricks (small areas subject to cost)
 - Concrete (textured to prevent slip hazards).
-

11.4 Playing Pitches

- (a) A natural grass pitch without improved drainage may only sustain a little more than three hours use per week during the winter months. Where it is intended to use a natural grass pitch in excess of these hours a site specific engineered solution may be necessary.
- (b) Where dedicated funding is available the Design Team may wish to consider an improved construction specification and drainage techniques from the outset.
- (c) Amongst the options for improving existing natural turf facilities are the introduction of a drainage matrix of sand / gravel slits, and completely replacing the root-zone with medium fine sand, possibly combined with the strategic use of reinforcement materials to help stabilise areas prone to intensive wear.

Continued overleaf

10.0 Site Works (continued)

11.4 Playing Pitches (continued)

- (d) For guidance on Gaelic playing surface dimensions please refer to Official Guide Part 2 published on behalf of the Gaelic Athletic Association by the Central Council of the Association, Croke Park, Dublin.
 - (e) Refer to TGD 023 Post-primary School Design Guidance for other pitch sizes.
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11.5 Reference

- **Road Geometry Handbook.**
As published by the National Roads Authority, St. Martin's House, Waterloo Road, Dublin.
- **Official Guide Part 2.**
Published on behalf of the Gaelic Athletic Association by the Central Council of the Association, Croke Park, Dublin.
- **Building Bulletin 85 School Ground - A Guide to Good Practice.**
Published by the Department for Education and Employment in the UK

Department of Education and Science, Technical Guidance Documents

Available at www.education.ie

- Post-primary Design Guidelines TGD 023.
 - Mechanical and Electrical Building Services Engineering Guidelines for Primary School Buildings TGD-002.
 - Mechanical and Electrical Building Services Engineering Guidelines for Post Primary School Buildings TGD-003.
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Continued overleaf

12.0 Non Structural Elements

12.1 General

- (a) The use of furniture and fittings should in all instances comply with the Code of Practice for Fire Safety of Furnishings and Fittings in Places of Assembly published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government.
 - (b) Materials should be suitable robust and durable, taking account of location, exposure and function. Details and junctions of materials should be robust yet refined.
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12.2 Floor Finishes

- (a) Floor finishes to be contract quality, hard wearing and durable, consistent with room use, and requiring low maintenance.
 - (b) Floor finishes to be slip resistant in all areas where the function and use of the room may create a slip hazard and in particular toilets, wet areas and other areas where the floor may become wet or damp. Designers should also consider the particular risk associated with junctions between surfaces with different slip resistances.
 - (c) Timber floors if used should be confined to Sports Halls and Primary School General Purpose Rooms
 - (d) Floor coverings should comply with the performance requirements of "a low radius of effects of ignition" as defined in BS 5287: 1976.
 - (e) Subject to the above the following floor coverings are generally acceptable in schools:
 - Vinyl tiles/sheeting,
 - Contract carpet,
 - Linoleum tiles/sheeting
 - Ceramic tile
 - Rubber flooring
 - (f) The above list is not exhaustive and the onus will be on the Design Team to demonstrate that, whether the above materials or other materials are proposed, they meet the relevant standards.
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12.3 Wall Finishes

- (a) Wall finishes to be durable, washable, low maintenance and consistent with room use.
 - (b) The following surface finishes are generally acceptable in schools:
 - Fair faced blockwork (blocks must be fair faced quality)
 - Paint/proprietary paint finishes (durable and washable)
 - Ceramic Tiles.
 - (g) The above list is not exhaustive and the onus will be on the Design Team to demonstrate that, whether the above finishes or other finishes are proposed, they meet the relevant standards and requirements above.
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Continued overleaf

12.0 Non Structural Elements (continued)

12.4 Ceilings

- (a) Ceiling finishes to be durable, low maintenance and consistent with room use.
 - (b) The use of timber ceiling linings is to be discouraged due to their flammable nature, the added requirement for intumescent paints and its frequent re-application resulting in increased maintenance costs.
 - (c) The following surface finishes are generally acceptable in schools:
 - Plasterboard
 - Modular ceiling tiles (clipped, moisture resistant)
 - Exposed structural soffits.
 - (d) The above list is not exhaustive and the onus will be on the Design Team to demonstrate that, whether the above finishes or other finishes are proposed, they meet the relevant standards.
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12.5 Fitted Joinery

- (a) All fitted joinery to be contract quality, robust, fit for purpose and suitable for use in schools.
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12.6 Ironmongery

- (a) All ironmongery shall be designed for heavy duty use and must be provided in anodised aluminium or stainless steel, appropriate to the level and frequency of use.
 - (b) All doors must be provided with an individual keyed mortice dead lock (min five levers), and a master keyed facility must also be provided for all doors.
 - (c) All window openings and associated ironmongery must be designed as not to present a hazard when opened or allow occupants to fall from a height.
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12.7 Windows

- (a) Windows and Curtain Walling should have a minimum design life span of 40 years. Windows must be of robust construction and comply with relevant Irish and EU standards. All windows must be safe in closed and open positions.
 - (b) The complete window or curtain wall assembly (frame and glazing) must be considered when calculating the appropriate U-Value for the entire unit.
 - (c) Windows must be easy to clean and maintain or replace in a safe manner. All window or curtain wall installations shall include all products, fixings, and interface components necessary to provide a watertight enclosure when tested in accordance with BS 6275-1:2004.
 - (d) All windows and curtain wall installations must meet the air tightness requirements as determined by the criteria set down in BS 6275-1:2004.
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Continued overleaf

12.0 Non Structural Elements (continued)

12.8 Doors

- (a) Doors should have a minimum guaranteed life span of 15 years. Due to the wear and tear of school activities it will be necessary in all instances internally to provide solid core doors.
- (b) In addition to any fire safety requirements which have to be met, it is also necessary to provide vision panels in all internal doors with the exception of stores and toilet cubicles.

12.9 Reference

- **Code of Practice for Fire Safety of Furnishings and Fittings in Places of Assembly.**
Published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government
- **Building Regulations Technical Guidance Document B – Fire.**
Published by the Stationery Office Dublin on behalf of The Department of the Environment, Heritage and Local Government

For the most up to date publication of the Building Regulations, Technical Guidance Documents refer to <http://www.environ.ie>