



Rialtas na hÉireann
Government of Ireland

Regulatory Impact Assessment

Proposed additional guidance - Technical Guidance Document B 2006 (Fire Safety)

Prepared by the Department of Housing, Planning

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Introduction

Apartment and multi-residential unit developments continue to be an increasingly common form of housing in Ireland's urban areas. Between 2002 and 2016, the number of occupied apartments increased by 85%, nationally. New apartments account for approximately 14% of new dwelling completions per annum. In line with increased construction activity, Q4 2018 saw an increase of 21.5% in new apartment completions on Q4 2017.¹ New apartments now represent approximately 40% of new planning permissions for dwelling units.

It is critical to ensure that apartment living achieves the highest standard of safety with respect to fire, while being an attractive and desirable housing option for a range of household types and tenures, and that the economic and regulatory conditions are such that apartment developments attract investment, bearing in mind affordability.

The design of apartments/ flats is also constantly evolving, with development design teams learning from best practice around the world. In particular, open plan flats are becoming increasingly popular. While appropriate standards of accommodation are set from a long term planning and sustainable development perspective and the requirements of the Building Regulations are set in broad performance terms, the current Technical Guidance Document B 2006 – Fire Safety does not provide specific guidance on open plan flat layouts.

Fire consultants have, to date, demonstrated compliance of open plan flat designs with Part B Fire Safety, through alternative approaches elaborated in Fire Safety Certificate applications, which are technically examined by Chief Fire Officers /Building Control Authorities. This has led to inconsistent application of Part B – Fire Safety.

In response to this uncertainty and in an effort to promote consistency, it is proposed to provide additional guidance on open plan flats in Technical Guidance B 2006 – Fire Safety. This will ensure that the delivery of quality and durable housing solutions will meet the needs and expectations of consumers in a manner that is safe and compliant with respect to fire safety, and sustainable.

The overall impact of this additional guidance will clarify the fire safety provisions applicable to open plan flats and provide consistency and certainty to current industry practice. In developing the additional guidance, the fire safety requirements for open plan flats in a number of jurisdictions, including England, Scotland, USA, Australia, Denmark and Hong Kong were analysed.

¹ https://pdf.cso.ie/www/pdf/20190207115128_New_Dwelling_Completions_Q4_2018_full.pdf

Section 1: Context

1.1 Policy Context

The Department of the Housing, Planning and Local Government (DHPLG) has published a number of documents on the development of buildings containing flats in the urban environment generally. They are as follows:

- Fire Safety in Ireland Report of the Fire Safety Task Force 2018²
- Sustainable Urban Housing: Design Standards for New Apartments: Guidelines for Planning Authorities 2018³
- Urban Development and Building Heights Guidelines for Planning Authorities 2018⁴
- National Planning Framework (NPF)⁵

The Design Standards for New Apartments: Guidelines for Planning Authorities 2018 identifies the need to *“Enable a mix of apartment types that better reflects contemporary household formation and housing demand patterns and trends, particularly in urban areas;”* and recommends that *“there is a need for greater flexibility in order to achieve significantly increased apartment development”*

Fire Safety in Ireland Report of the Fire Safety Task Force 2018 states that on activation of the common Fire Detection and Alarm System, flats should be evacuated simultaneously.

² https://www.housing.gov.ie/sites/default/files/publications/files/fire_safety_in_ireland_-_report_of_the_fire_safety_task_force.pdf

³ https://www.housing.gov.ie/sites/default/files/publications/files/design_standards_for_new_apartments_-_guidelines_for_planning_authorities_2018.pdf

⁴ https://www.housing.gov.ie/sites/default/files/publications/files/urban_development_and_building_height_guidelines_for_planning_authorities_december_2018_0.pdf

⁵ <http://npf.ie/>

1.2 Regulatory Context

The design and construction of buildings in Ireland is regulated under the Building Control Acts 1990 to 2014, in order to ensure the safety of people within the built environment. The Acts set out the statutory framework for the regulation and oversight of building activity based on:

- the minimum requirements for the design and construction of buildings as set out in the Building Regulations;
- detailed Technical Guidance Documents to outline how these requirements can be achieved in practice;
- clear administrative procedures for demonstrating compliance in respect of an individual building or works as set out in Building Control Regulations
- the responsibility for compliance with the Building Regulations resting, first and foremost, with building owners, developers/builders and designers; and
- the responsibility for enforcing compliance with the building regulations resting with the 31 local building control authorities.

1.2.1 Building Regulations

The Building Regulations set out the legal requirements for the construction of new buildings (including houses), extensions to existing buildings as well as for material alterations and certain material changes of use to existing buildings and are divided in 12 parts (classified as Parts A to M).

Technical Guidance Documents (TGDs) are published to accompany each of the parts and provide guidance indicating how the requirements of that part can be achieved in practice. Where works are carried out in accordance with the relevant technical guidance such works are considered to be, *prima facie*, in compliance with the relevant regulation(s).

Technical Guidance Documents cite, on occasion, other standards, codes of practice and documents, as further guidance to the requirements of the TGD.

1.2.2 Review of Part B – Fire Safety

Part B – Fire Safety sets out the legal requirements in relation to fire safety in respect of new buildings (including dwellings) and in respect of existing buildings undergoing works involving an extension, material alteration or certain material changes of use. The fire safety requirements under Part B represent the national statutory minimum standards applicable to the construction of new buildings, including dwellings.

Where works are carried out in accordance with the national guidance provided in Technical Guidance Document B – Fire Safety, this will, prima facie, indicate compliance with the fire safety requirements set out in the Building Regulations.

Use of the published Technical Guidance is one method of demonstrating compliance with building regulations, but the adoption of alternative approaches is allowed provided that the relevant requirements of the Regulations are complied with. (See Section 6.7 of TGD B 2006 also on professional judgement etc.)

Part B/ TGD B – Fire Safety is under review at present. In the interest of clarity, TGD B has been split into two volumes. Volume 1 deals with all buildings other than dwelling houses and Volume 2 deals exclusively with dwelling houses.

In 2017, Building Regulations (Part B Amendment) Regulations 2017 (S.I. No. 57 of 2017) and TGD B Fire Safety – Volume 2 – Dwelling Houses (2017) were published, and came into force on 1 July 2017. Volume 2 applies to dwelling houses only. Important revisions in TGD B Volume 2 include:

- enhanced provision for fire detection and alarm systems in dwelling houses;
- guidance on fire safety in community dwelling houses;
- guidance on timber frame construction, including new provisions in respect of timber frame party walls;
- enhanced provisions in respect of loft conversions; and
- new provisions for galleries in dwelling houses and other general updates.

Work is still ongoing on the development of the legal requirements and guidance associated with the fire safety of buildings other than dwelling houses. The next step in this process will be to issue draft amendments to Part B and a draft TGD B Fire Safety – Volume 1 – Buildings other than Dwelling Houses for public consultation.

Until the full review is complete however, the current requirements and guidance for all buildings other than dwelling houses is set out in Building Regulations (Amendment) Regulations 2006 (S.I. No. 115 of 2006) and the relevant parts of TGD B Fire Safety (2006) respectively.

1.3 Statement of objectives

The proposed additional guidance in TGD B 2006 aims to provide clarity to stakeholders involved in the design and construction of open plan flats. The proposed amendment secures adequate standards of health, safety and welfare for persons in and about buildings in respect to the resistance to the passage of fire, and means of escape without imposing disproportionate bureaucracy and costs.

The key objectives of the proposed amendments are as follows:

- a) provide additional guidance in relation to fire safety in open plan flats;
- b) improve compliance with the Part B of the Building Regulations;
- c) improve the usefulness of the Technical Guidance Document and reduce burden;
- d) identify changes in standards and practice; and
- e) further the achievement of sustainable development.

1.4 Proposed Amendments

1.4.1 Current Provisions of Technical Guidance Document B 2006

Guidance on minimum standards of fire safety in Apartment/ flats are addressed in Technical Guidance Document B 2006 (TGD B 2006). Section 1.1.2 specifies that certain Sections, namely 3 and 5 of '*BS 5588-1:1990 Fire precautions in the design, construction and use of buildings. Code of practice for residential buildings*' should be used, in conjunction with TGD B 2006, as a means to demonstrating *prime facie* evidence of compliance with the requirements of the Building Regulations.

BS 5588-1:1990 is a Code of Practice (withdrawn but still cited in TGDB 2006) for fire precautions in residential buildings (published by the British Standards Institution). However, BS 5588-1:1990 does not account for open plan flat design. Nor does it provide for extended common corridor lengths.

Where TGD B 2006 includes a reference to a technical specification the reference is to the latest edition current at the time of the publication of TGD B. However, if that version of the technical specification is subsequently revised or updated by the issuing body, the new version may be used as a source of guidance, provided that it continues to address the relevant requirements of the Building Regulations.

TGD B 2006 also states that *‘Many of the codes of practice and other documents referred to in 1.1 make references to statutory provisions which may not be applicable. These documents are quoted solely for the purpose of providing appropriate technical guidance to meet the requirements of the Building Regulations’*.

BS 5588-1:1990 was withdrawn and superseded by *‘BS 9991:2011 Fire safety in the design, management and use of residential buildings. Code of practice’*. In 2015, BS 9991 was updated to include provision for open-plan flats. While BS 9991 is an updated Code of Practice when compared to BS 5588-1, it is heavily, and explicitly predicated on a stay-put fire safety strategy. This strategy does not conform to the recommendations of the *‘Fire Safety in Ireland Report of the Fire Safety Task Force 2018’*⁶, where a simultaneous evacuation policy was adopted. Therefore, BS 9991 cannot, in isolation, be used as a basis for prima facie evidence of compliance with Part B in relation to open plan apartment buildings.

1.4.2 Proposed Additional Guidance to Technical Guidance Document B 2006

This section of the Regulatory Impact Assessment summarises and explains the nature of the proposed additional guidance to Technical Guidance Document B 2006.

This additional guidance to TGD B 2006 provides:

- **Open Plan Flats**
 - Inclusion of a new Section 1.6 relating to open plan flats,
 - Specific measures on the means of escape appropriate in open flats (irrespective of height),
 - Guidance on the fire protection required between bedrooms and the main living area and protection of the kitchen area,
 - Appropriate maximum travel distance within an open plan flat,
 - Provision of sprinkler protection within the open plan flat,

⁶ https://www.housing.gov.ie/sites/default/files/publications/files/fire_safety_in_ireland_-_report_of_the_fire_safety_task_force.pdf

- Provision for adequate separation of the main kitchen cooking appliances from the escape route, where an open kitchen is proposed.
- **Corridors**
 - Inclusion of a new Section 1.7 relating to extended corridor travel distances,
 - Maintaining tenability conditions for escape, in common escape routes; corridors, lobbies, and escape stairs as well as the ventilation of smoke and toxic gases,
 - Provision of appropriate ventilation systems for corridors.
- **Other changes**
 - Clarification with respect to the provision of refuge spaces generally in the lobby or escape stairs in Purpose Group 1(c) buildings containing flats,
 - Clarification in respect of the provision of dedicated firefighting lobbies in in Purpose Group 1(c) buildings containing flats with a floor over 20 metres.

The introduction of a 20m internal travel distance limit within the flat will allow for a degree of design flexibility and innovation not currently available. This is supported by the new provisions on travel distance limits in common corridors.

The provision for an open, or enclosed kitchen will provide flexibility to designers, while the use of a 3m separation of the main kitchen cooking appliances from escape routes in the open plan area between the inner rooms and the flat entrance door will provide a resilient standard of safety. Open kitchen layouts already feature heavily in current open plan apartment design.

The clarification of the requirement for a refuge space in stairs/lobbies will ensure the safety of persons with disabilities, in the event that evacuation is required.

The clarification of the requirement for a firefighting lobby in buildings containing flats over 20 metres will ensure the safety of persons evacuating the building, in line with national policy⁷, and will provide suitable facilities for firefighters.

The proposed amendment has taken into consideration current design trends, and requirements of Building Control Authorities in granting applications for open plan flats. As

⁷ Fire Safety in Ireland Report of the Fire Safety Task Force 2018

such the absence of a transition period proposed in this draft will have little or no impact on buildings containing open plan flats at the planning, or detailed design stage.

The proposed amendment has also been stress-tested against current open-plan flat designs. The stress test compared the main requirements, which may alter the layout of a flat – the 20m travel distance, and the requirement for a 3m⁸ separation of the escape route from the main kitchen cooking appliance, where an open kitchen is proposed. In all, 23 individual apartment layouts, across 4 distinct developments were analysed, each of which complied with the proposed requirements. Over 50% would have complied with the proposed requirements, with no modification to internal layouts.

The remainder of the apartments would also be capable of complying with the requirements of TGDB, with some modification to internal layouts.

It is envisaged that the additional guidance (Sections 1.6 and 1.7) will complement the current guidance provided in Technical Guidance Document B 2006, for adequate means of escape from flats – Section 3, and Section 5 of BS 5588-1:1990, and Section 1.4 of Technical Guidance Document B 2006.

The other changes noted in the additional guidance seek to clarify existing requirements in respect of the provision of refuges (Section 1.4.15) and Firefighting Lobbies (Section 5.3) in buildings containing flats. This is due to the fact, that although codes of practice (particularly BS 5588-1, 5588-5, and BS 5588-8) are cited, to provide guidance in addition to the provisions of TGD B 2006, they also contain a small number of provisions that are contrary to the design philosophies of TGD B 2006. In addition, some of these provisions conflict with the recommendations of *'Fire Safety in Ireland Report of the Fire Safety Task Force 2018'* with respect to evacuation policy and the subsequent design philosophy.

⁸ The 3m separation distance is consistent with the requirements for open plan arrangements for escape as specified in par. 1.3.2.1 of TGD B – Fire Safety Volume 2 Dwelling Houses, 2017

Section 2: Cost Benefit Analysis

2.1 Identification and Description of Options

The Department has considered three options for the purpose of this impact assessment.

Option (a) – Do nothing.

Option (b) – provide additional guidance within the current TGD B 2006, to provide for open plan flat designs and extended corridor travel distances, which includes:

- the provision of sprinkler protection,
- enhanced protection of inner rooms and kitchen areas,
- limiting of travel distance within the open plan flat,
- Enhanced ventilation and protection of common corridors to provide for extended travel distances where sprinklers are provided.

Option (c) – Provide additional guidance within the current TGD B 2006, to provide for the use of certain provisions of BS 9991:2015, to provide for open plan flat designs and extended corridor travel distances.

2.2 Impact Analysis

Option (a)

This will have no positive impact and no benefits are expected. TGD B 2006 will not reflect current advances in international standards or account for current trends in flat design and layout.

Failure to update TGD B 2006 may result in local, regional and national variations in fire safety requirements for open plan flats, with no clear guidance on national requirements leading to increased costs and maintaining the current status quo with respect to uncertainty.

Option (b)

The overall impact of this additional guidance will provide fire safety guidance in respect to open plan flats and provide consistency and certainty to industry and local authorities.

This will ensure that flats, which are designed with an open plan layout, are designed to national guidance. The provisions of the proposed amendment will maintain an equivalent level of fire safety to a flat with a protected entrance hall.

Option (c)

BS 9991:2015 is based on a 'stay put policy', which is a fundamentally different policy to the evacuation policy adopted in Ireland in the 'Fire Safety in Ireland Report of the Fire Safety Task Force 2018'.

The provisions in BS 9991:2015 do not provide for open kitchens in flats greater than 8 x 4 meters squared. This is smaller than the minimum size of apartment permitted under 'Design Standards for New Apartments: Guidelines for Planning Authorities, 2018'. Therefore, the issue for open kitchens would not be addressed in this option.

Furthermore, the inclusion of provisions of BS 9991 relevant to the design of flats, and buildings containing flats in TGDB 2006 would be unsuitable owing to:

- The fact that BS 9991 states in its introduction that it should be used as a contiguous document,
- Substantial differences in the policies and design philosophies between TGDB 2006 and 9991 – Simultaneous evacuation versus a Stay Put Policy,
- Lack of clarity and consistency amongst stakeholders,
- Individual decisions made by Building Control Authorities, on design variations, without clear guidance, resulting in national variation on the same issue,
- Many current apartment designs in Ireland do not reflect the specific provisions of BS 9991, requiring designers to justify the open kitchen arrangements by means of additional engineered solutions and computer analysis, and requiring approval of those variations by Local Authorities,
- BS 9991 does not consider provisions relating to disabled refuges, which is contrary to the requirements of the Building Regulations, and
- Firefighting shaft designs of BS 9991 may not be compatible with a simultaneous evacuation policy.

Having regard to the above, the use of the provisions of BS 9991:2015 only, in relation to the design of buildings containing flats, may be insufficient to satisfy the requirements of Part B of the Building Regulations.

2.3 Costs

Option (a) – The additional costs associated with this option would be substantial. As there is no national guidance relating to open plan flats, developers, designers, and regulators are forced to on a case by case basis:

- (i) Utilise a range of ‘best practice’ guidance and approaches, perhaps in an ad-hoc manner, or
- (ii) Evaluate other international guidance as alternative approaches to compliance, to determine the minimum requirements for safety. This will undoubtedly lead to variation in the application of building regulatory requirements, between Authorities, at local, regional, and national level.

As such, this will lead to an increase in the costs of development, as there will be uncertainty at the outset of the design process, potential delays to the approvals process (the Fire Safety Certificate applications) as Local Authority personnel assess designs in the absence of national guidance.

Option (b) – The additional costs associated with this option are approximately €1,000 above the cost of open plan flat layouts currently being built in Ireland.

While the costs may appear, on a unit by unit basis to be greater than that of a ‘traditional’ flat layout (incorporating a protected entrance hallway), or open plan flat layouts currently being built in Ireland, the costs of construction will ultimately represent a saving owing to:

- The provision of clear consistent guidance in relation to open plan flats, to designers, developers, and Local Authority personnel to allow them to understand and apply national requirements,
- The potential to provide a greater number of apartments on sites, owing to the extended corridor provisions,
- Reduction in time of the design phase of construction projects, and the potential reduction in time in the approval process,
- The potential reduction in fatal fires in buildings owing to higher fire safety requirements.

While these impacts cannot be readily quantified, they will be immeasurably beneficial to all stakeholders.

Option (c) – The option to provide additional guidance within TGDB 2006 to provide for the use of the relevant provisions of BS 9991:2015 in relation to open plan flat design will undoubtedly result in substantial additional costs.

The inclusion of the provisions themselves would carry their own cost, as shown in the table of costs, but these would need to be supplemented to achieve the required standard of safety, particularly for open kitchen arrangements, which are becoming increasingly common.

2.3.1 Methodology and assumptions of cost analysis

In developing any cost comparison for the purposes of this Regulatory Impact Assessment it is necessary to recognise that this new proposal is not a new requirement, rather, new additional guidance to provide for open plan design options.

It is also recognised that some Building Control Authorities have already developed their own local requirements for open plan flats and are applying these as minimum standards.

The costs analysis compared the cost of a ‘traditional’ flat layout (protected entrance hallway), with:

- (i) an open plan layout conforming to requirements currently being applied, and
- (ii) the proposed additional guidance to TGDB 2006.

The costs were based on a single apartment layout, utilised in a notional 50 unit scheme. The internal configuration of the apartment was varied, and costed individually, having regard to the relevant option. The notional flat layout is a 65m² flat, with 2 no bedrooms.

Table of Costs					
	Option (a)	Option (c)	Option (b)		Industry Practice
Design Option	Layouts as per TGDB 2006	BS 9991: 2015 open plan layouts	TGDB 2006 + additional guidance (enclosed kitchen)	TGDB 2006 + additional guidance (Open Kitchen)	Open plan layouts currently being provided in Ireland. ⁹
Estimated Cost	Current Guidance ¹⁰	+€1,100.00	+ €2,200.00	+ €2,200.00	+ €1,200.00

⁹ This represents the cost of construction of open plan layouts currently being built in Ireland.

¹⁰ This represents the current guidance for apartment designs as specified in TGD B 2006 i.e. incorporating protected entrance hallways

2.4 Benefits

Option (a) - No benefits are expected.

Option (b) - The main benefits of the proposed additional guidance to TGDB 2006 are:

- ensuring that open plan flats will have an equivalent standard of fire safety as flats that have protected entrance hallways.
- clear, consistent national guidance will be provided in relation to open plan flat design,
- that designers will have greater flexibility in the design of flats,
- that the primary escape route to a place of safety will adequately protected,
- that cost benefits of not having to construct a protected entrance hall with fire doors and door closers
- savings in design fees due to the new deemed to satisfy provisions provided for in the additional guidance to TGD B

Option (c) - No benefits are expected as it would allow the uncertainty with respect to open plan flat design to continue.

2.5 Other Impacts

2.5.1 Competition assessment

There are no significant areas where issues of competition, restriction or imbalance have been identified. The Department considers that the proposed additional guidance to TGD B 2006 would have no significant effect on competition in any markets. It is considered that the proposals apply in a proportional and equitable way.

2.5.2 Consultation

A technical review group was established to oversee the process, consisting of staff from the NDFEM and Architecture Building Standards division within the DHPLG.

The development of this additional guidance was carried out in consultation with stakeholders from industry and local authorities.

Following consultation with the various stakeholders and the conclusion of research, an updated *Technical Guidance Document – Fire Safety* is now being published by the Minister for Housing and Urban Development, for public consultation for a period of two months.

2.5.3 Regulatory burden

As this proposed additional guidance is confined to the internal layout of flats and limited in their application, and will not have a material impact on existing planning applications, a transition period in their implementation is not proposed.

It is generally accepted within the construction industry that regulatory and technical requirements e.g. national and European standards as well as codes of practice evolve over time in the light of technological advancements, new product developments and changes in construction practices.

2.5.4 Enforcement and compliance

Under the *Building Control Act 1990*, enforcement of the *Building Regulations 1997 to 2017* is the responsibility of the 31 local building control authorities who have a broad range of powers under the Act to investigate and, where appropriate, take action in the event that non-compliances are identified in buildings.

The *Building Control Regulations 1997 to 2018* set out the system of administrative controls to support compliance with the Building Regulations by requiring, inter alia, the submission of Commencement Notices, Fire Safety Certificates, Disability Access Certificates and the more recent Certificates of Compliance on Completion (introduced under S.I. No. 9 of 2014, which came into effect on 1 March 2014).

Responsibility for compliance with the requirements of the *Building Regulations 1997 to 2017* is primarily a matter for the owners, designers and builders of buildings.

2.5.5 Sectors and groups affected

Sectors and groups that would be affected include:

- (a) Professional Institutions and their members such as the Royal Institute of the Architects of Ireland; Engineers Ireland; the Association of Consulting Engineers of Ireland; the Chartered Institute of Architectural Technologists; the Institution of Structural Engineers; the Chartered Institute of Building, the Society of Chartered Surveyors Ireland; the Construction Industry Federation etc.
- (b) All those involved with the safety aspects of building design, construction and compliance certification would need to familiarise themselves with the new technical guidance;
- (c) Persons procuring new buildings and / or building works.

Section 3. Summary and Recommendations

Option (a) - While this option imposes no additional costs, it does not provide any additional benefits over and above existing requirements.

Option (b) - This is the preferred option as it provides clarity to stakeholders involved in the design and construction of open plan flats. Option (b) will ensure that the delivery of quality and durable housing solutions will meet the needs and expectations of consumers in a manner that is safe, with respect to fire safety, and sustainable.

Option (c) – This option introduces unnecessary complexity and would deliver design solutions which are already being modified through engineered solutions, and would therefore not be practicable.

In conclusion, **Option (b)** is the recommended option.

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