EOBA
Eamon O'Boyle and Associates
chartered fire engineers & event safety consultants

Submission to the Dáil Committee on Housing, Planning, Community and Local Government

1.0 OPENING STATMENT

Opening statement to the Dáil Committee on Housing, Planning, Community and Local Government from Eamon O' Boyle, Chartered Engineer, Managing Director Eamon O' Boyle and Associates based at 51 Cullenswood Road, The Triangle, Ranelagh, Dublin 6.

Chairman Ladies and Gentlemen, I would like to thank you and the Committee members for inviting me to address you regarding the Committee's Review of Building Regulations, Building Controls and Consumer Protection'. In particular I have been asked to address the area of *'Issues around fire safety within buildings, how they are detected, problems with past buildings and the procedures now in place'***.** I hope I can assist the Committee in their important work. By way of introduction I am a Chartered Engineer and specialise in Fire Safety Engineering and I am Managing Director of a Consulting Engineering Practice, Eamon O Boyle and Associates (EOBA) established in 2002. Prior to establishing Eamon O Boyle and Associates I was the Assistant Chief Fire Officer in the Dublin Fire Brigade with responsibility for the administration and implementation of regulatory Fire Safety throughout the greater Dublin area.

I propose to address the issues we have been asked to address as follows

- Issues around Fire Safety
- How deficiencies are detected
- Problems with past buildings
- Procedures now in place

2.0 ISSUES AROUND FIRE SAFTY

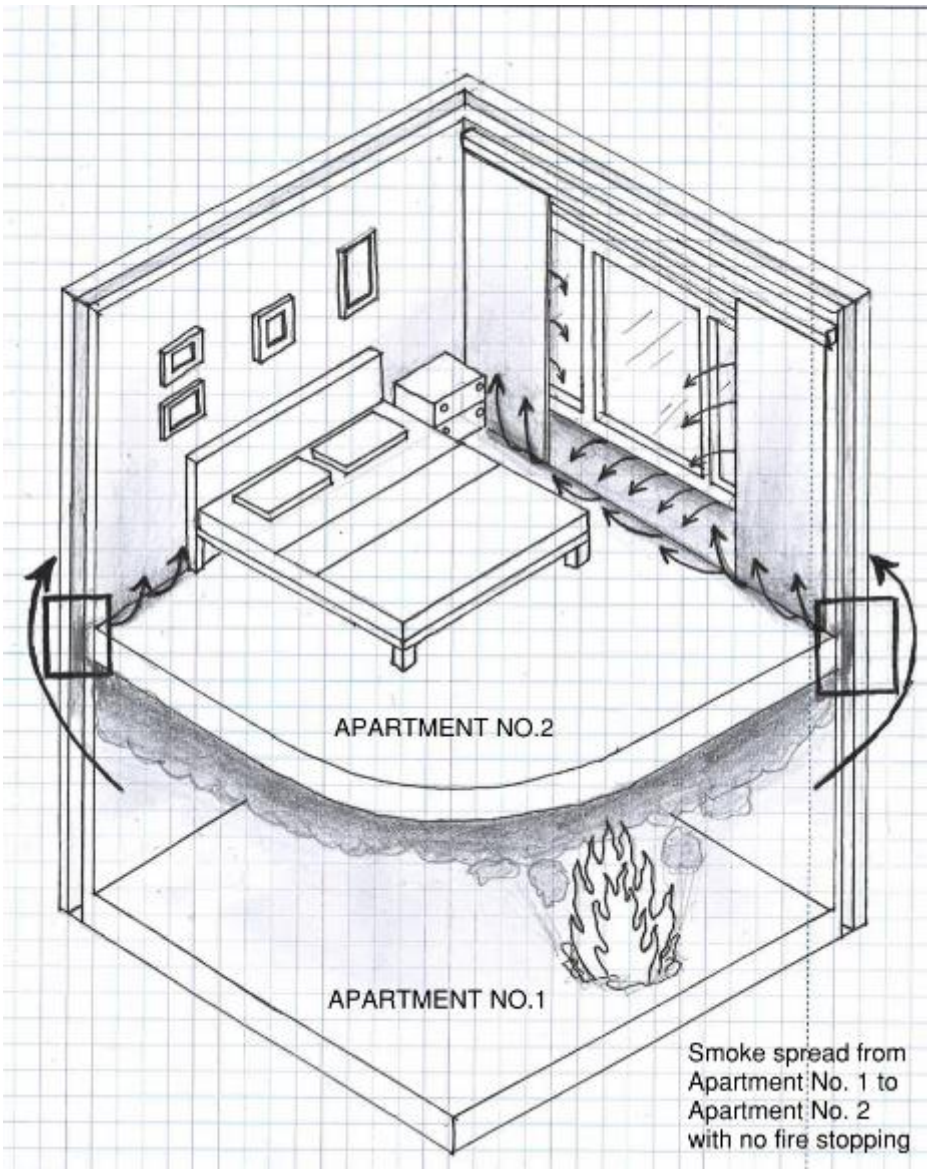
Buildings are designed with built in fire safety measures based on robust construction and properly designed electrical services. The "fire design" is approved by the Building Control Authority. The major issue which has arisen is the failure to implement aspects of the design. In buildings where there are interdependencies e.g. apartments, hospitals or office buildings a fire in one area can affect another not directly involved in the fire**.**

I have provided the Clerk with some photographs and sketches which I will refer to now. These illustrate the typical deficiencies observed. A key feature in these sketches is poor fire stopping, by Fire Stopping we mean the methods used to seal around openings in fire walls to enable the passage of pipes, wires or ducts. Fire stopping also refers to the closing off of cavities to prevent the spread of smoke from one part of a building to another.

Image 1 - Incomplete fire stopping allowing passage of heat and smoke

Image 2 - Fire stopping absent allowing the free passage of smoke or heat

Image 3 – Smoke movement with no fire stopping



It is evident from the images above that proper fire stopping is critical to fire safety within a building.

Fire Safety has three components:

Active Fire Safety Systems:
These are the features design to operate in the event of a fire or power failure. Examples would include Fire Detection and Alarm systems, emergency lighting and sprinklers

Fire Safety Management:
This area concerns the ongoing maintenance of the active systems, good housekeeping (e.g. removal of combustibles), ensuring the availability of exits, and the development of procedures as to the actions to be taken in the event of fire.

Passive fire protection (PFP):
PFP attempts to contain fires or slow the spread, through use of fire-resistant walls, floors, and doors (amongst other examples). An integral part of Passive system is referred to as fire stopping which is used to seal openings and joints in fire-resistance rated wall or floor assemblies e.g. the sealing of cavities around windows and the junction between floors and walls.

Active systems and **fire safety management** require ongoing monitoring to ensure appropriate maintenance and guarantee appropriate actions are taken in the event of a fire and ensure. **Passive** systems are provided at construction stage and must be installed correctly to ensure their effectiveness. Fire Stopping is generally concealed behind plasterboard or in door frames and hidden before the building is used and deficiencies only become apparent during a Fire Survey, generally referred to as a "Fire Risk Assessment". The absence of Passive Fire Systems can also become apparent when a fire occurs or in the most serious situation when a fire occurs and are the key focus to this presentation.

3.0 HOW FIRE DEFICIENCIES ARE DETECTED

Most Fire Safety deficiencies that have been referred to in the media and in our experience centre on inadequate passive safety systems. These are generally detected in two ways:

1. During an outbreak of fire smoke or heat travels through the building easily and emerges a distance from the source of the fire
2. It becomes apparent during a "Fire Risk Assessment", which is usually undertaken by a Fire Engineer.

4.0 PROBLEMS WITH PAST BUILDINGS (CONSTRUCTED PRIOR TO 2014)

In order to address the problems with these buildings it is important to describe the regulatory framework that applied.

Under the Building Control Act Building Regulations in respect of Fire Safety were introduced in June 1992. At the same time Building Control Regulations were introduced which made it mandatory to make an Application for a Fire Safety Certificate. A Fire Safety Certificate Application was assessed by a building Control Authority and is either granted, granted with conditions or refused. The certificate states that **if** a building is constructed in accordance with the application it **will** comply with the Building Regulations. The application contains details of how compliance with the Fire Safety requirements of the Building regulations is to be achieved.

Many of the high profile cases that have been in the media and witnessed by EOBA have had Fire Safety Certificates granted **but** the design as described in the application has not been complied with. This is particularly true in the case of passive fire safety systems. In my experience some applicants were satisfied to have a Fire Safety Certificate granted and did not understand the importance of compliance. In many cases the Fire Safety Certificate was viewed as an administrative requirement and **NOT** as a very important design and safety document.

While there have been many high profile apartment buildings that have received media attention it is worth noting that during this period there were also office blocks and hospital constructed and it is reasonable to expect that problems could exist in these buildings also

5.0 PROCEDURES NOW IN PLACE

Since the introduction of the Building Control Amendment Regulations (BCAR) in 2014 it is now mandatory to appoint professionals to undertake inspections and provide certification that Building Regulations have been complied with. While the BCAR system is still in its infancy I am of the view that it will provide a mechanism where at the very least building are inspected at all stages during construction. I also believe that it will provide a level of consumer protection, and I also believe that it must be remain under continuous review to ensure its effectiveness.

It is worthwhile examining the system that operates in the United Kingdom where codes and technical guidance is similar

Design Phase
In the United Kingdom two choices exist:

- *Local Authority Building Control section; or*
- *Independent 'Approved Inspectors'*

In both project liaison takes place at an early stage to address design issues and agree principles. Independent Assessors are approved by the Local Authority to undertake the same role.

In Ireland there is a single system where assessment of the design is undertaken by the Building Control Authority (BCA) (Fire Officers in the case of Fire Safety). Staff shortages may prolong the decision period.

Construction Phase

In the United Kingdom:

- Building Control Surveyor inspects all construction works. The builder or developer provides at least 24hrs notice to the local authority in advance of key stages in construction which enable inspection.

- Once all inspections are complete, the Building Control Authority provides a completion certificate for the building prior to occupation. The BCA must (through inspections) ascertain (after taking all reasonable steps), that the relevant requirements specified in the certificate have been satisfied.

In Ireland reliance is placed upon the BCAR system which provides oversight of the building process by qualified professionals.

6.0 SUMMARY

In summary there are significant fire safety legacy issues associated with some of the building stock nationally. It is possible to address these issues in a proportionate way by undertaking a national programme of "Fire Risk Assessments". Priority should be given to buildings in which people reside or sleep and other buildings should be assessed on a risk basis. This approach will take time but it is necessary as there is strong evidence that there are deficiencies and it is essential they are identified and remedial action taken in a planned and methodical manner based on risk and within an agreed timeframe.

APPENDICES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Page No.:	06	Task:	Sketch showing smoke movement with no fire stopping.
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