



Assigned Certifier Perspective – Defects

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WE ARE ORS

A World-Class Multidisciplinary Building Consultancy

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A high-visibility yellow-green jacket with the ORS logo on the back. The logo consists of a vertical yellow bar to the left of the letters 'ORS' in a white, sans-serif font.

We are ORS


For over 30 years, trust and integrity have been the foundations of our culture. Multi-awarded for our proactive employee care initiatives, supporting good causes nationwide is also very important to us.

Our people are supported in their sense of purpose, individually and collectively. Our many partners benefit from this strong cultural foundation, and it translates to a service that's consistent in **quality** and **innovation**.

We do things differently. Our intelligent solutions are focused on efficiency and performance that is sustainable. Guaranteeing unrivalled service delivery, our clients have access to superior technical consultancy nationwide.



Our Multidisciplinary Approach

 Civil and Structural Engineering

 Project Management

 Infrastructure

 Health & Safety Management

 Building Surveying

 Assigned Certifier

 Fire Safety

 Energy Management

 Environmental

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Topics Covered

- BCAR – Roles & Responsibilities
- Common Defects: Construction & Design
- Radon
- TGD Part D - Materials & Workmanship
- TGD part B – Fire
- Services
- Ventilation
- Intumescent/ Fire protection
- TGD Part K -Guarding
- TGD Part L – Common Issues
- TGD Part M
- Bathroom Pods
- Phasing
- Fit outs



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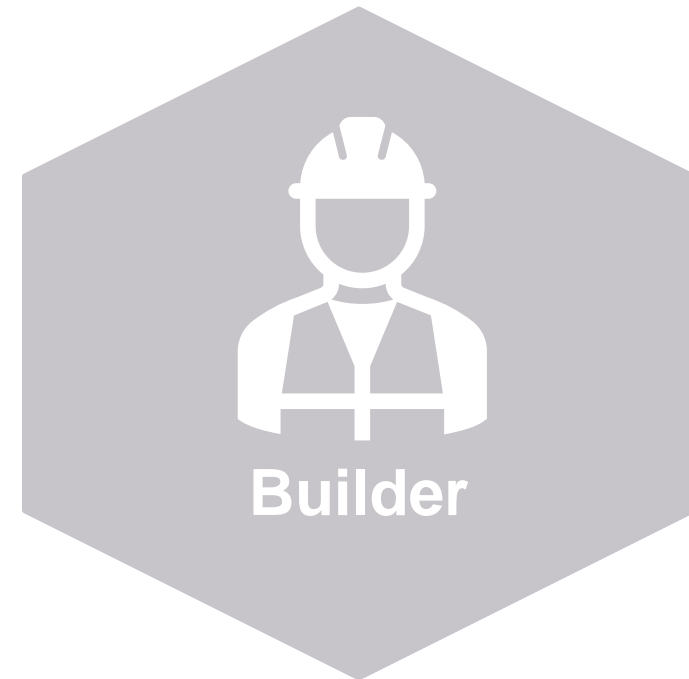


Appoint Assigned Certifier & Builder, DC & AC

Ensure Builder, AC, DC and Design Team are competent persons

Sign Commencement Notice/ 7 day notice

Sign Notices of Assignment of Assigned Certifier and Builder



Coordinate all Sub-Contractors & Obtain all Certificates

Submit all Information to the Assigned Certifier for Submission to BCMS

To Co-sign the CCC with the AC

BC(A)R - Roles & Responsibilities



Appoint Assigned Certifier & Builder

Sign Commencement Notice

Sign Notices of Assignment of Assigned Certifier and Builder



Accept the Role of A.C. from the Building Owner

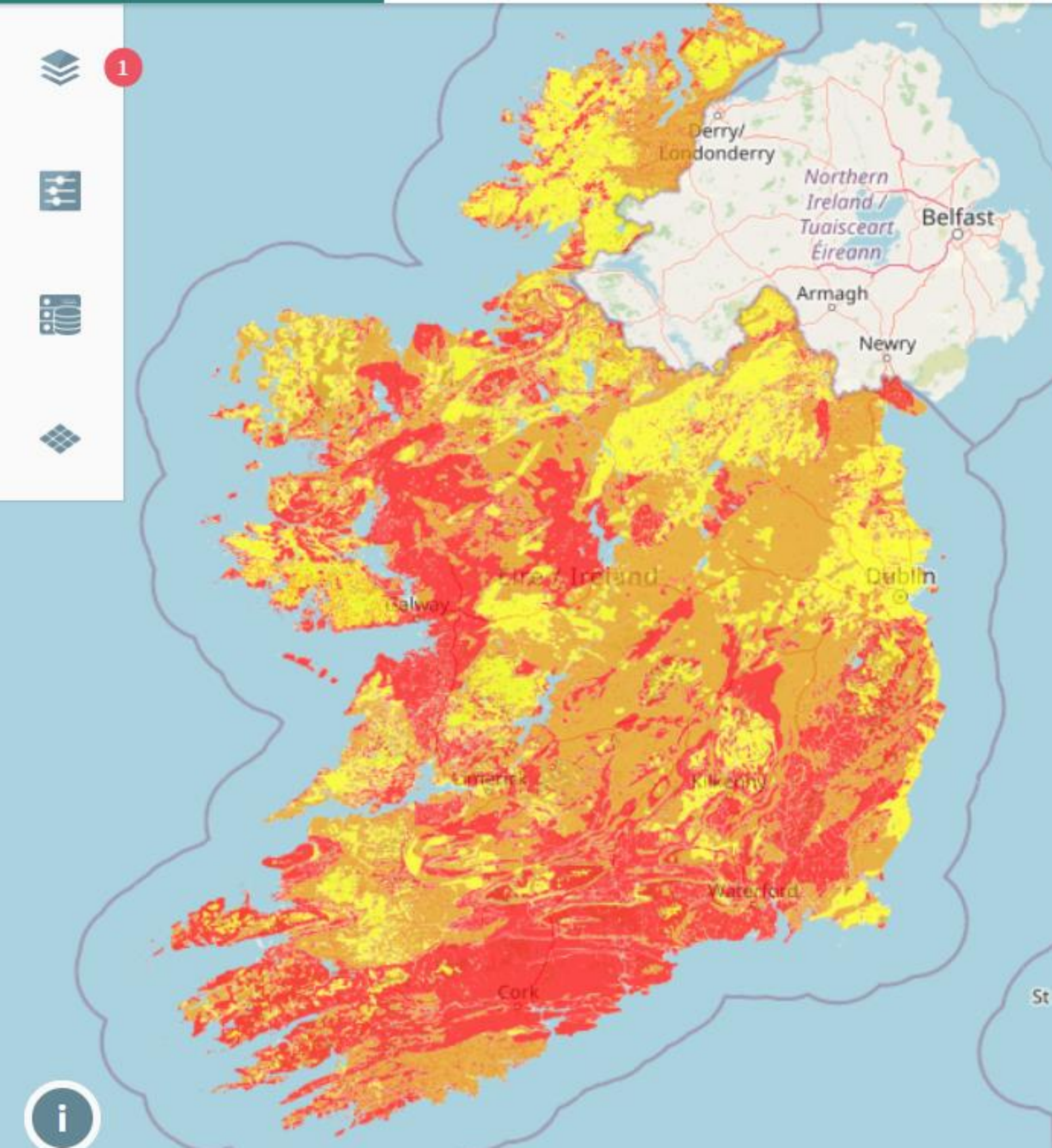
Inspect/ Coordinate Inspections of others during Construction

Liaise directly with Building Control & the Contractor throughout the project

Issue Certificate of Compliance on Completion

Common Defects Construction & Design





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Radon – Common Issues

- 300 cases of lung cancer every year linked to radon in Ireland, directly attributed to 200 deaths/year
- Average radon level in Ireland 89 Bq/m³. This is the 8th highest in the world
- National Reference Level for long term exposure to Radon is **200Bq/m³** in Dwellings and **300 Bq/m³** in the workplace
- EPA has powers to direct testing and remediation under S.I. 125
- In domestic situations, the basic requirements are:
 - Areas of high radon (>10%) - require radon membrane, sump and sump network
 - Areas other than high-risk radon areas (<10%) - sump and sump network

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Radon – Common Issues



- Laying sump pipe at a fall creating a water trap or failure to link sumps
- The radon barrier must extend to the outer leaf (potential for radon to migrate through wall cavities)
- Sharp protrusions / insufficient blinding layer
- Laying sump pipe at a fall creating a water trap
- Poor workmanship
- Poorly sealed joints
- Tears to Radon Membrane
- Protection board not used



Sequencing Issues

- Plasterboard and Air-tightness membrane seals damaged due to ingress of water as windows were not installed prior to the fitting of airtightness membrane and plasterboard internally
- Incorrect sequencing of works by the contractor
- Façade was **not weathertight** before installing airtight membrane and plasterboard internally
- Temporary weathering screens provided throughout
- Full survey required and remedial detail implemented



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TGD Part B (Fire) – Specialist Partitions

Partition Systems – Specialist Items

- Proprietary tested partition system by specialist manufacturer – Gyroc, Siniat etc.
- [Practice Note 2](#), Example 10 – Specialist Manufacturer Systems
- Full system must be installed in accordance with manufacturers' requirements
- Ancillary Certificate must reference the manufacturers system used.

Common Issues

- Higher rated Fire rated partitions – takes precedence
- Mixed use of screws
- Fixings too far apart
- Deflection head
- Above Ceiling not completed – filled, taped, screw heads not filled



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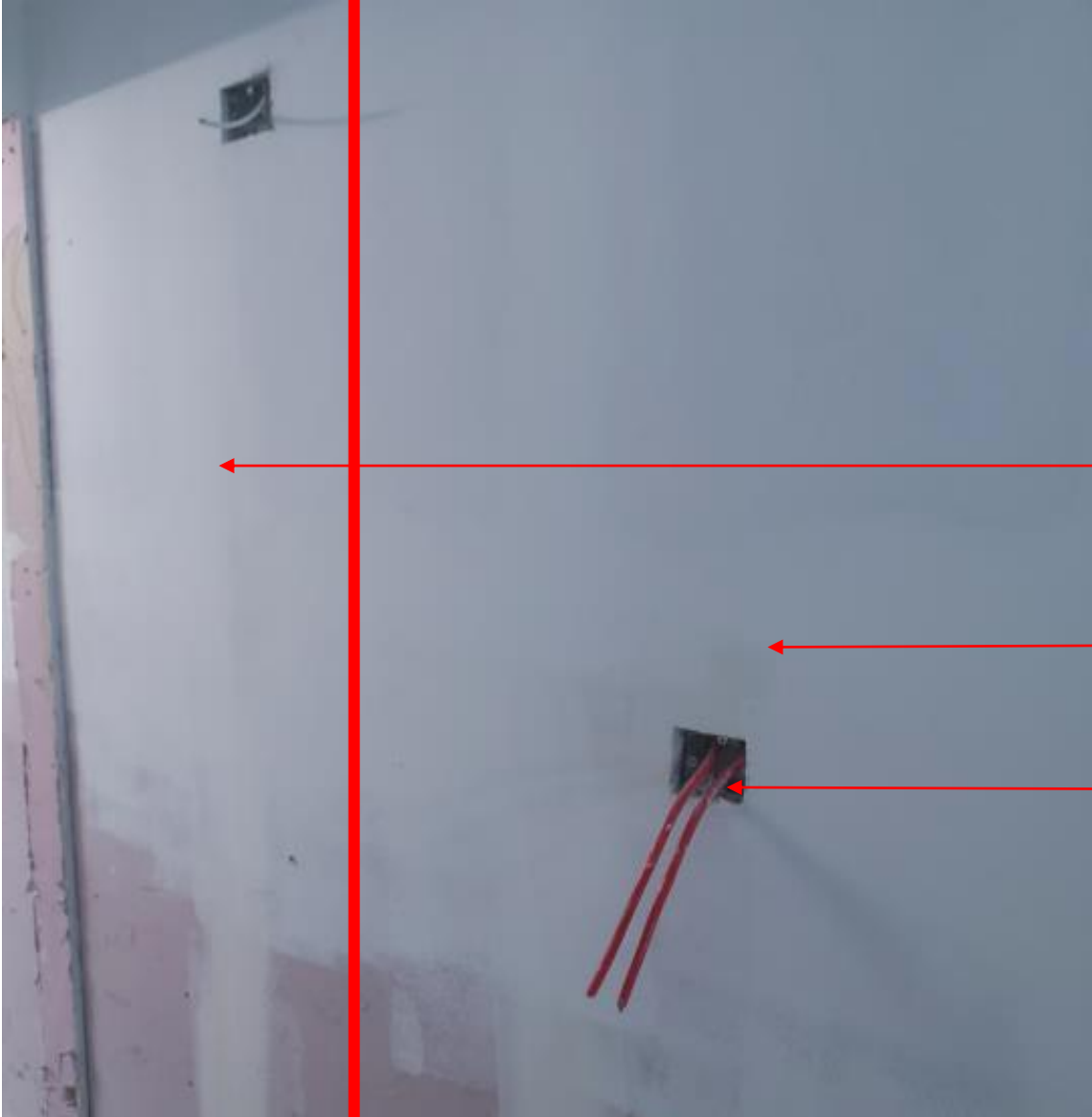
TGD Part B - Compartmentation

Problem

- Services fitted within Compartment Wall.
- Conduit brought down from ceiling within the Compartment wall construction
- The photo shows a section of wall that makes up the Fire Fighting Shaft enclosure

Impact

- Walls had to be stripped back with the following actions
 - Service drops and penetrations removed from Stud wall makeup
 - New sacrificial service zone to be provided outside line of Compartment wall
 - Large cost implications for client.



Fire Fighting Shaft
120 minutes Compartment
Wall

60 minutes Fire rated
Compartment Wall

Services installed within the
Stud wall makeup



— Compartment wall/floor achieving 120 minutes fire resistance rating in accordance with BS 476: Part 8/20-24 and relevant recommendations of Appendix A of Technical Guidance Document B 2006

— Compartment wall/floor achieving 60 minutes fire resistance rating in accordance with BS 476: Part 8/20-24 and relevant recommendations of Appendix A of Technical Guidance Document B 2006

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Fire Doors – Common Issues

- All fire doors must be installed in accordance with the fire door test report & manufacturer recommendations
- Excessive gaps around the edge of the door
- Smoke/intumescent seals not installed
- Incorrect no. of hinges or use of incorrect hinges (non-fire rated) that the fire door test report has not specified
- Door closers not installed, or that do not close the door from any angle
- Doors not opening 90 degrees
- Intumescent seal not installed around glazing panels
- Door identification tags and signage not installed
- Doors on escape routes must be fitted with thumb turn locks to escape side
- Ironmongery must be as specified by the fire door test report



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TGD Part B – Fire Fighting Shaft

Problem

- Services not serving Fire Fighting Fire Fighting Shaft passing through Fire Fighting Shaft lobbies
- Design coordination issue between Architect and M&E

Impact

- Shaftwall ceiling/ encasement to be provided as remedial detail to the same rating as the Firefighting shaft



Services not serving the Firefighting Shaft passing through Fire Fighting Lift Lobby



Services not serving the Firefighting Shaft passing through Fire Fighting Lift Lobby



Compartment wall/floor achieving 120 minutes fire resistance rating in accordance with BS 476: Part 8/20-24 and relevant recommendations of Appendix A of Technical Guidance Document B 2006

Compartment wall/floor achieving 60 minutes fire resistance rating in accordance with BS 476: Part 8/20-24 and relevant recommendations of Appendix A of Technical Guidance Document B 2006

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Dry Riser Landing Valves

Dry Riser Landing Valves

- IS 391 invert of outlet approx 750mm above floor cabinet to conform to BS 5041-1
- Landing valve height is to be about 750mm from bottom of valve to floor level as per BS9990,
- Valves also not less than 230mm from bottom of box and;
- not less than 150mm to either side of box as per BS 5041-1.

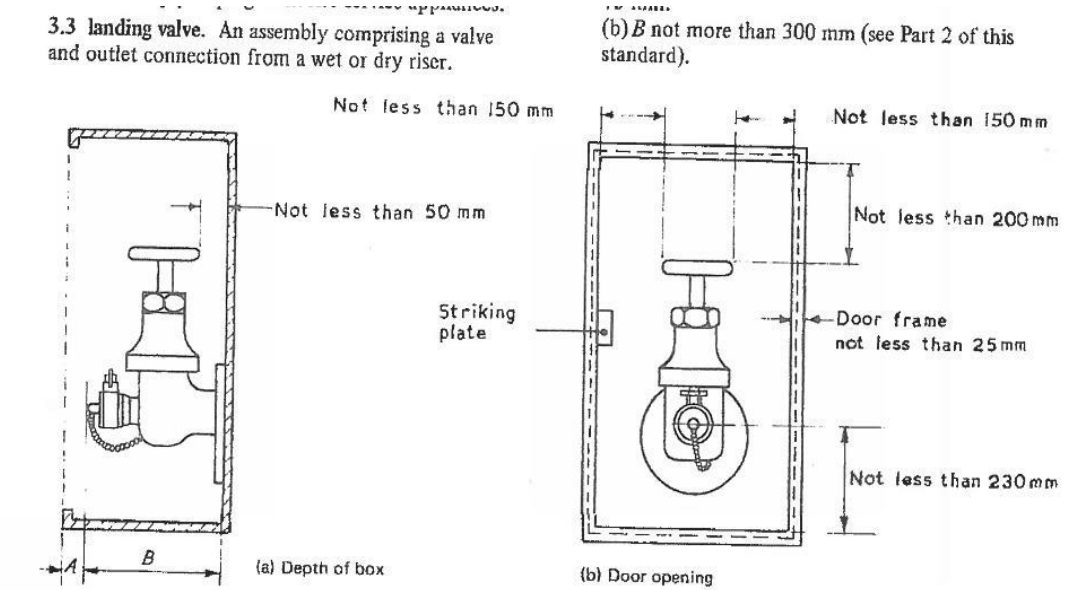


Figure 1. Ruling dimensions of box

NOTE 2 For tests on fire mains see 7.3.1.

In all cases a landing valve should be installed with its lowest point about 750 mm above floor level.

Landing valves for fire mains should preferably be protected by, and installed within, a box in accordance with BS 5041-4 (see Annex A).

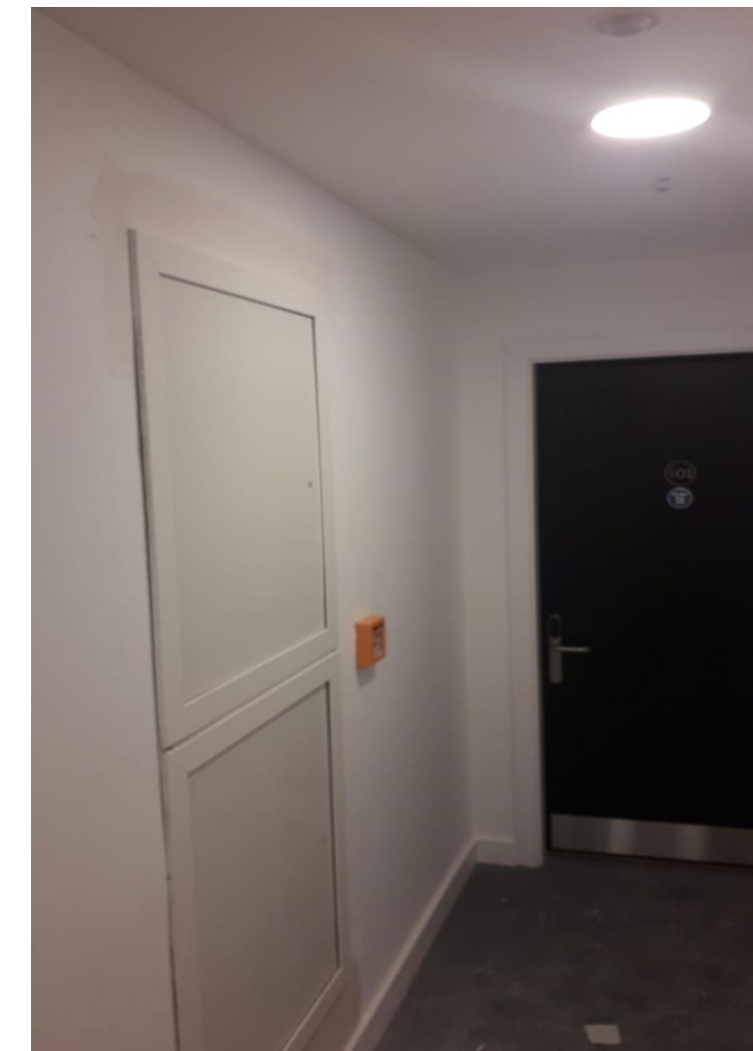
Landing valves for dry mains should conform to BS 5041-2 and those for wet mains should conform to BS 5041-1.

Outlets should be flanged rather than directly threaded to allow for ease of maintenance.



Automatic Opening Vent (AOV) to Protected Corridor

- AOV's within protected corridor were installed at the incorrect height.
- TGD Part B 2020 1.7.2 (a)(ii) - AOV openings in protected corridors min 1.5m² and as close to the top of the ceiling as possible but be at least as high as the top of the door connecting the protected corridor to the stairwell.
- AOV doors were removed, and concrete had to be cut out for openings to be raised.
- All smoke shafts to be fully tested to show compliance with CFD model produced by Smoke extract specialist.
- Air Leakage Test to smoke shaft and confirmation results are in compliance

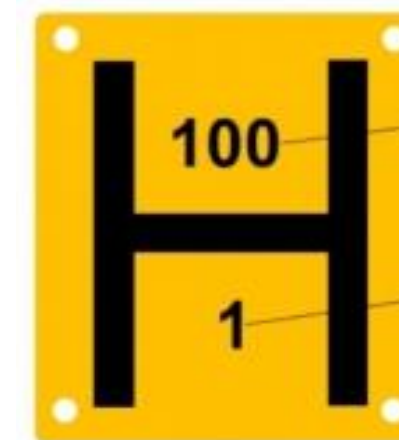
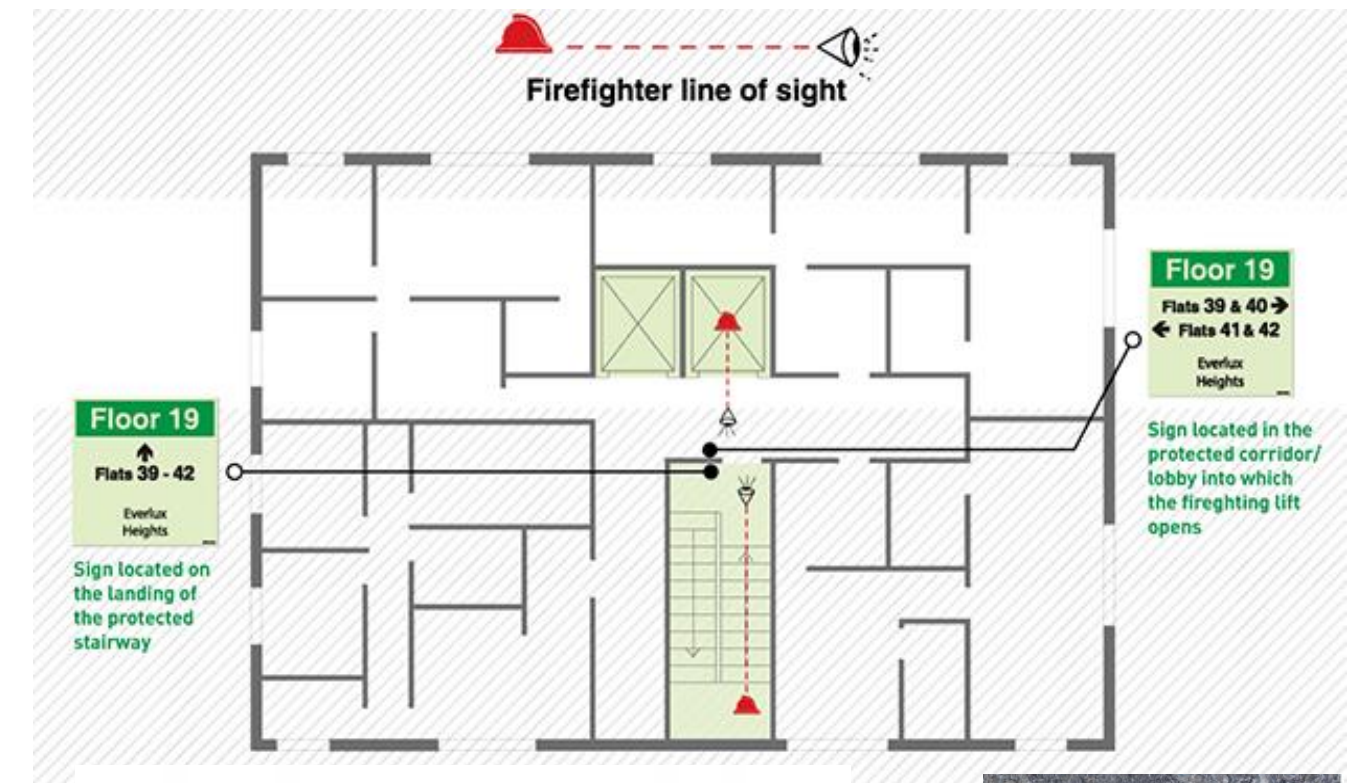


Fire Fighting Shaft Signage

- Firefighting Shaft Signage not provided as per TGD B.
- Signs should be provided in firefighting shafts as follows:
 - A storey identification sign, in each firefighting stairs, at each storey landing, that identifies the floor by number.
 - A storey identification sign, in each firefighting lobby, that identifies the floor by number.
 - Where there is more than one firefighting shaft in a building, the storey identification number should be supplemented by a shaft identification number (e.g. A-1, A-2, etc., or similar).

External Signage

- Hydrant marker signage not provided as per requirements of FSC.
- Hydrants marker plates should indicate **Pipe diameter in mm** and **distance from sign to hydrant in metres**
- Dry Riser Inlet Valves – signage should be provided.
 - Should not be obscured by vegetation as it matures



Pipe diameter in mm

Hydrant distance from sign in metres



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Services

- Non Combustible ties to Fire Alarm Cable
- Excessive lengths of flexible ductwork
- All services penetrating Fire rated walls to be supported <300mm each side of wall or as per tested system
- Insufficient services supports



Ventilation validation certificate



Dwelling address	Sandyford Central Block A Apt 101		
Dwelling type	Apartment		
Total floor area	88.57	m ²	
Ventilation system	MVHR		
Date of test	04.07.2023		
Installer/builder (if applicable)	John Paul Construction		
Validation certificate number	1.92.055.23.198		

Supply air	Presented design supply air flows rates		Measured supply air flow rate at trickle		Measured supply air flow rate at boost	
	Trickle	Boost	Trickle	Tolerance check	Boost	Tolerance check
Living room (1)	9.00	13.00	8.60	Within 1 l/s	13.50	
Dining room						
Playroom						
Study room						
Reception room						
Bedroom 1	8.00	12.00	8.30	Within 1 l/s	13.10	
Bedroom 2	8.00	12.00	8.00	Within 1 l/s	12.80	
Bedroom 3						
Bedroom 4						
Bedroom 5						
Bedroom 6						
	25.00	37.00	24.90	-0.40%	39.40	

Extract air	Presented design extract air flows rates		Measured extract air flow rate at trickle		Measured extract air flow rate at boost	
	Trickle	Boost	Trickle	Tolerance check	Boost	Tolerance check
Kitchen	9.00	13.00	8.40	Within 1 l/s	14.00	
Utility room	5.00	8.00	5.00	Within 1 l/s	8.50	
Bathroom/Ensuite (1)	5.00	8.00	5.20	Within 1 l/s	8.50	
Sanitary accommodation (no bath or shower) (1)						
Bathroom/Ensuite (2)	5.00	8.00	4.80	Within 1 l/s	8.50	
	24.00	37.00	23.40	-2.5%	33.00	

RESULTS

Allowable supply trickle error/uncertainty*
 Allowable supply boost error/uncertainty*
 The total measured supply **trickle** air flow rate was within tolerance of the presented design trickle air flow rate
 The total measured supply **boost** air flow rate was within tolerance of the presented design boost air flow rate
Trickle supply > trickle extract but >15%
Boost supply > boost extract but >15%
 Check on individual minimum **boost** extract rates

Opinion on compliance that the measure system achieved the presented design air f

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Ventilation Independent third-party validation

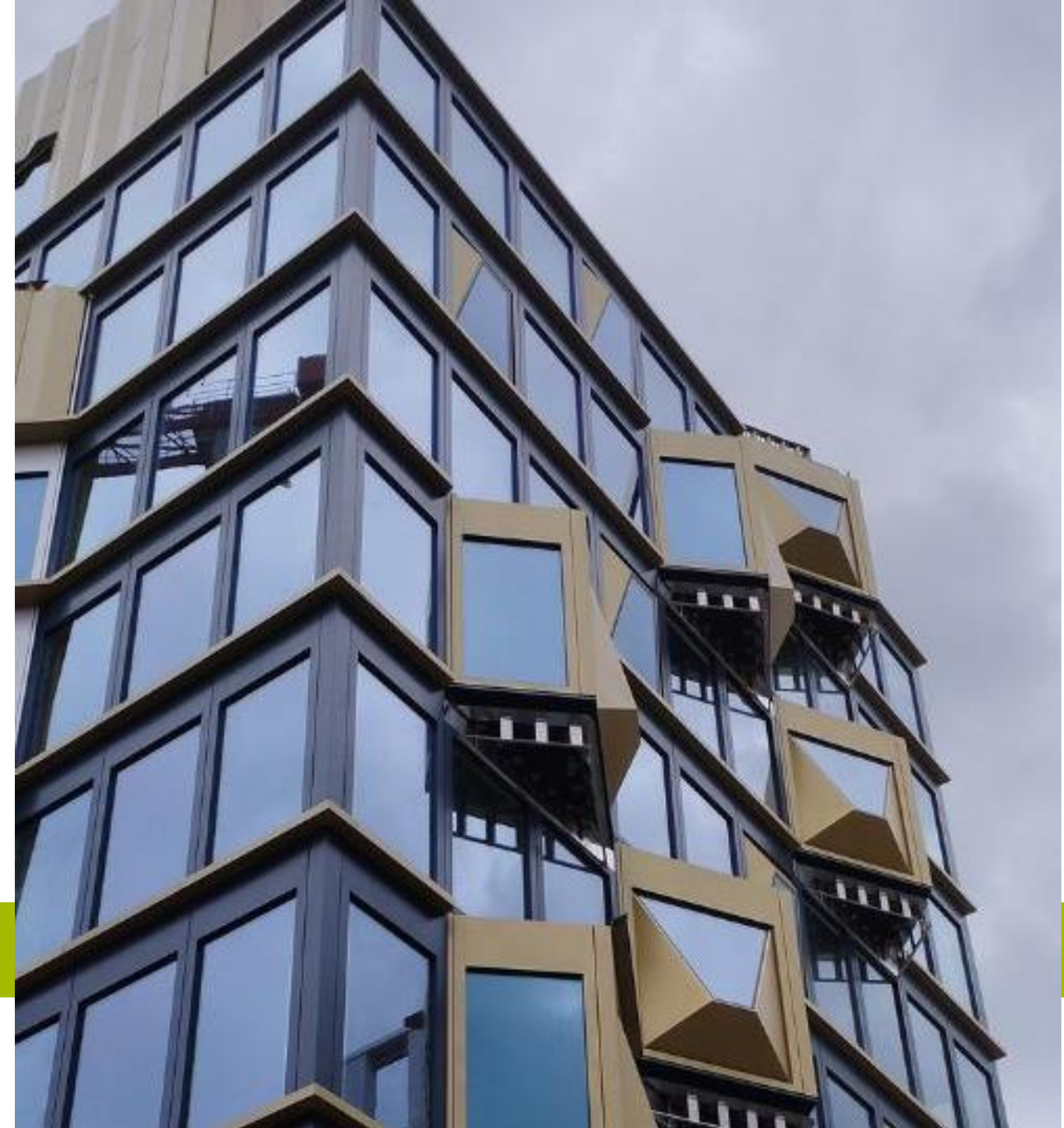
Section 1.2.1.10 of TGD Part F outlines that ventilation systems should be designed by competent designers and installed, balanced and commissioned by competent installers.

Systems, when commissioned and balanced, should then be validated by a competent person to ensure that they achieve the design flow rates. The validation should be carried out by a person certified by an independent third party to carry out this work, e.g. Irish National Accreditation Board (INAB), National Standards Authority of Ireland (NSAI) certified or equivalent

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Façade Design Responsibility

- Design Responsibility for the façade and various elements is to be clarified before commencement by way of a Design Responsibility Matrix
- Façade Consultant provides ancillary certificates of design, as even providing advice to the design team is part of a design role.
- Thermal Bridging – non-standard details outside of ACD's developed by the DHPLG should be thermally modelled by an NSAI-accredited thermal modeller
- Architect to ensure that window and door schedules are fully cross checked with granted FSC and DAC documentation



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Façade Balcony Design

Structural Connections

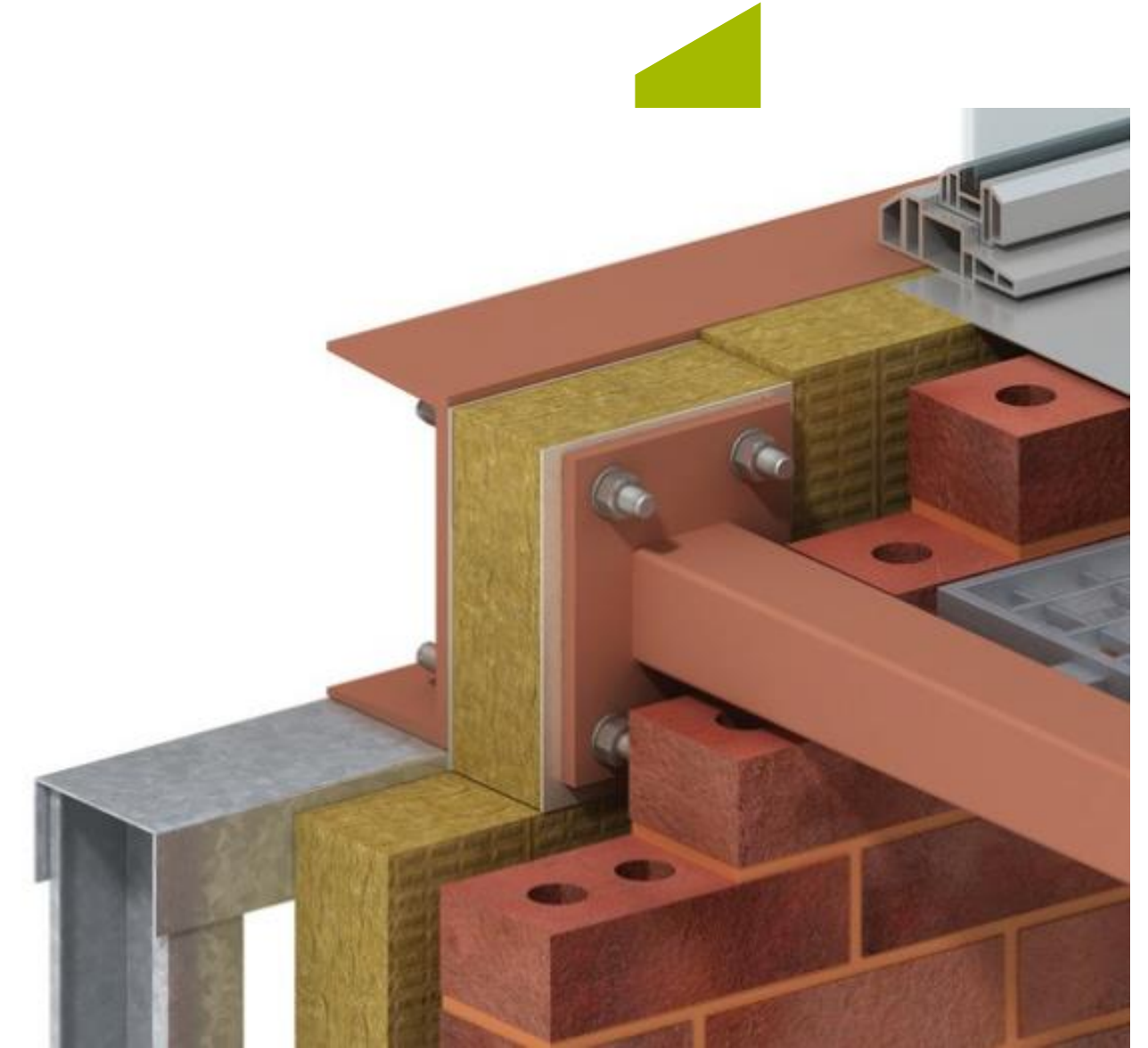
- Design Responsibility for structure and connections to main building
- Proprietary Connection System – ancon or similar is preferred
- Thermal Isolation – Ensure thermal isolator is provided to limit thermal bridging at the junction with façade

Balcony Drainage

- Positive drainage required where area of balcony is 6m² or greater
- Discharge to a drainpipe by way of an outlet or hopper
- Sizing of outlets and pipes to be provided by specialist designer or architect

Combustibility

- In buildings over 18m, all materials, including decking to be of limited combustibility



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Intumescent Coatings

- Specialist testing is required to confirm that intumescent coatings have been applied to achieve the required fire-resisting rating as per the FSC report. On-site Dry Film Thickness DFT measurements are required to ensure they achieve the required rating.
- Issues arise with the application of intumescent coatings; scratched coating, installed in unsuitable conditions or parts of the steel structure are covered whilst the coating is being applied.
- Full inspection should be carried out and touch-ups/repairs should be carried out prior to closing in.



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TGD Part K – Guarding

Window Cills

- *Cill >300mm above Floor level*
- *Can act as a step making cill level effectively floor level*
- *Effective height to bottom from Cill to bottom of opening Section <800mm*
- *Additional guarding required – huge extra cost*

Balconies

- Window cills acting as steps reducing effective height of guarding to <1100mm
- Remedial works required to ensure compliance



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- Insulation not kept tight to inner leaf
- Thermal Bridging – mortar crossing cavity
- Residual Cavity <40mm for partial fill cavity insulation
- Thermal breaks not installed behind angles in cavity supporting larger windows

TGD Part L – Common Issues



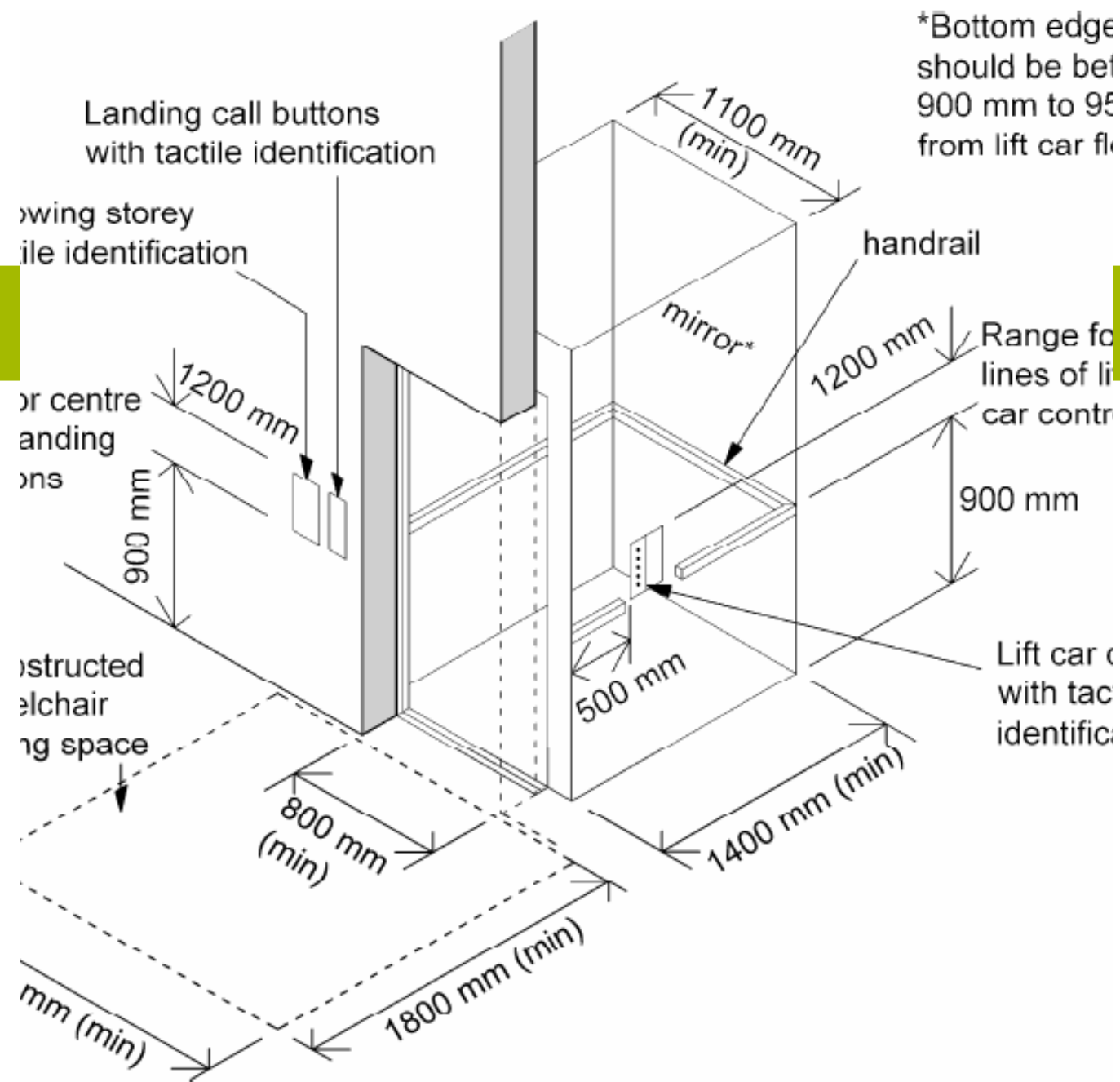
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Part M – Sanitary Facilities



- Insufficient floor area as per DAC requirements, door swinging inwards
- Sanitary furniture (handrails, mirrors, w.c., hooks, basin etc.) not installed or incorrectly as per section 1.4, Part M dimensions e.g. diagrams 15a -25
- Colour contrast to be provided in accordance with TGD Part M 1.4.4 (p):
 - 30 LRV between sanitary fittings, grab rails, doors and their background,
 - 20 LRV between wall & floors
- Alarm pull chord incorrectly positioned
- On site test confirming that Drop down rails in sanitary facilities are capable of carrying a load of 171kg as per BS 8300-2 2018

Diagram 13 Key dimensions associated with passenger lifts



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Part M – Passenger Lifts

- Passenger Lifts are required to be installed in accordance with TGD Part M 1.3.4.2
- Diagram 13 outlines the required dimensions set out within TGD M 1.3.4.2
- In addition to the required dimensions, a requirement that can be missed is **the floor of the lifting device should not be a dark colour**, as this can create the illusion of stepping into an open lift shaft.
- A handrail of contrasting colour with its surroundings should be provided on at least one wall and positioned as per TGD M 1.3.4.2

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Bathroom PODs



Certification

- No EN Standard for Bathroom PODs
- Bathroom Pod supplier to provide specialist designer Certificate of Design and Inspection
- All materials forming part of the pod system to be included in Transmittal for the POD including CE Cert/ DOPs for Sanitaryware, tiling, plasterboard etc.
- Determine who fits the Pod on-site – Pod manufacturer, builder or outside agent

Part M Compliance

- Factor in pod base depth and form an adequate recess
- Ensure recess in the floor is completely free from water prior to fitting bathroom pod as this will lead to degradation of materials
- Must consider an **acoustic layer** in the recess in the floor slab



Quality Control

- Benchmarking of first-of-kind install for all PODs installed.
- Ensure Compliance with TGD Part D – material storage.
- Possible Issues include exposure to moisture for excessive periods of time, leading to corrosion of the frame/ degradation of rials/ mould growth.
- As PODs can arrive early onsite, contractor should provide Pod tracker and QC check sheet for each pod prior to installation.
- Recess in slab to be cleared of water prior to install.

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Phasing

Develop a **Phasing Strategy** for inclusion in the overall design of the works

- Maintenance of **Fire Brigade Access** routes, including fire tender access, personnel access and all escape routes
- **Segregation of services** between proposed phases particularly Life Safety Systems, FDAS, Sprinkler systems etc. to allow commissioning of systems on a phased basis.
- The Assigned Certifier engages with the assigned **BCO** following commencement stage to act as single point of contact.





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Fit-out Projects – Common Issues

- Ensuring compliance with shell & core FSC and fit-out FSC
- Change of builder from shell & core stage to fit-out stage
- Identify deferred works from the shell & core FSC/CCC that may transfer to the fit-out works
- Liaison with Building Control is crucial for these projects to ensure the flow of the project from shell & core to the fit-out stage is carried out correctly
- Quick turnaround time; many retail fit-outs have strict opening date deadlines.
- ORS ensure open lines of communication with building control throughout construction to ensure deadlines are met

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ANY QUESTIONS?

Thank you!

