DEXMAH

CPD SEMINAR

Translating fire engineering reports into architectural design

From the report to the drawings, one building at a time.

PRESENTED BY

Julio Kosta

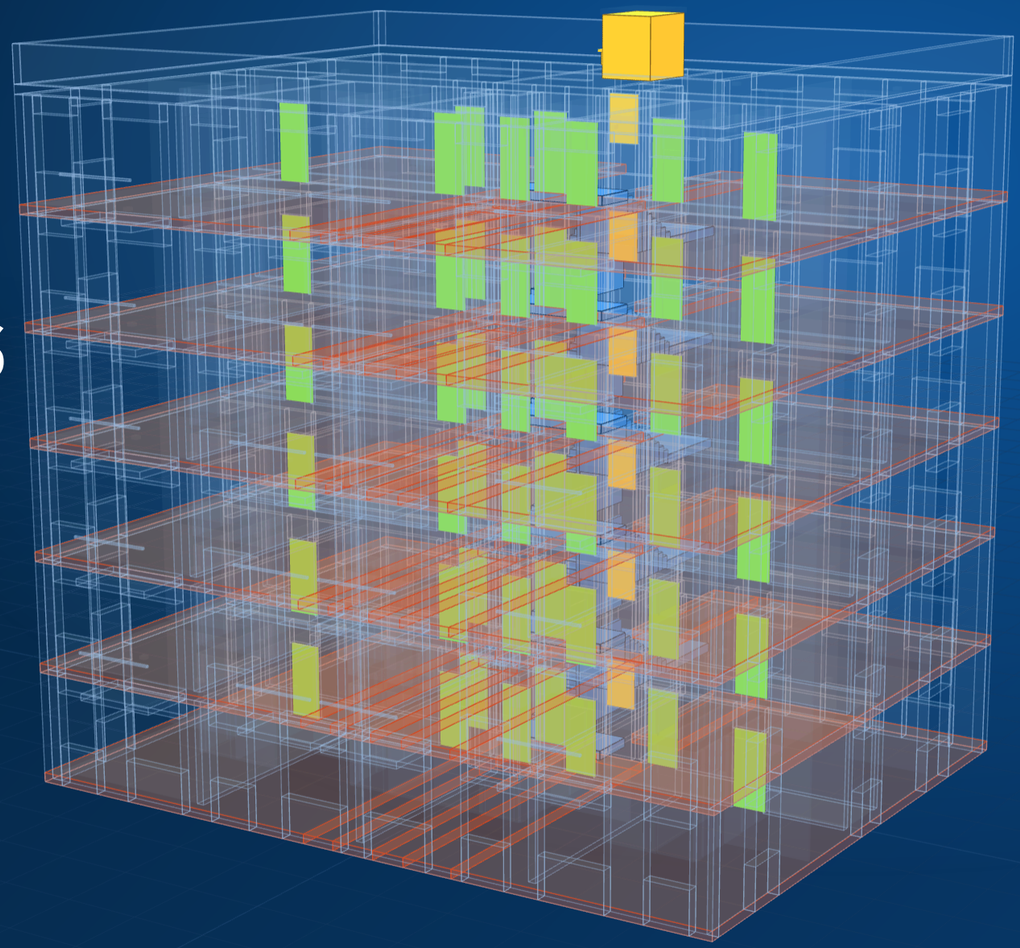
Fire Engineer, Dexmah

FOR

GBS Architects

DATE

24 November 2026



ABOUT THIS SESSION

By the end of the hour you can



Find what changes your drawings

in a fire strategy report



Read the ratings

R, E, I, S_a, s and d



Put it on the plan

walls, doors, vents, distances



Spot the changes

that need the fire engineer back



Keep it consistent

strategy, drawings, schedules, spec

FORMAT

45 minutes with hands-on exercises, then 15 minutes of questions

TAKE AWAY

One-page checklist: before you issue a drawing

SCOPE

England. ADB Volume 1, 2019 edition with the 2020 to 2026 amendments, and BS 9991:2024

AGENDA

Six parts, then your questions

01	02	03	04	05	06	?
Why fire strategies get lost	What's in the report	Fire ratings explained	Putting it on the plan	When the design changes	Keeping it consistent	Your questions
6 min	5 min	8 min	10 min	6 min	10 min	15 min

Hands-on parts

OUR EXAMPLE

A six-storey block of flats

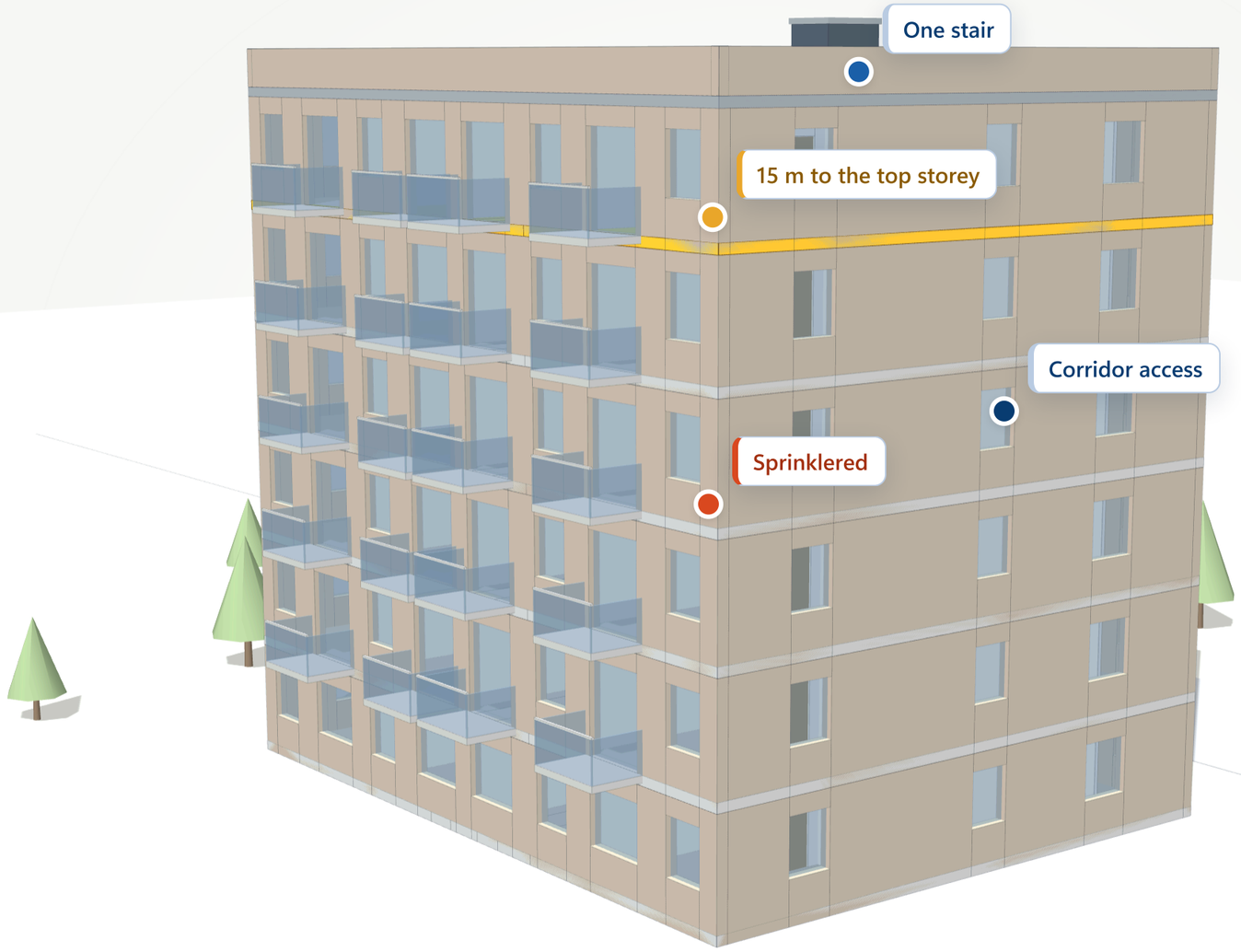
1 stair	**6** flats a floor
15 m top storey	**Yes** sprinklered

15 m to the top storey

Measured to the floor of the top storey. Under 18 m and six storeys, so not a higher-risk building.

ADB Diagram D6 · SI 2023/275

Click a label on the model. Drag to turn it.

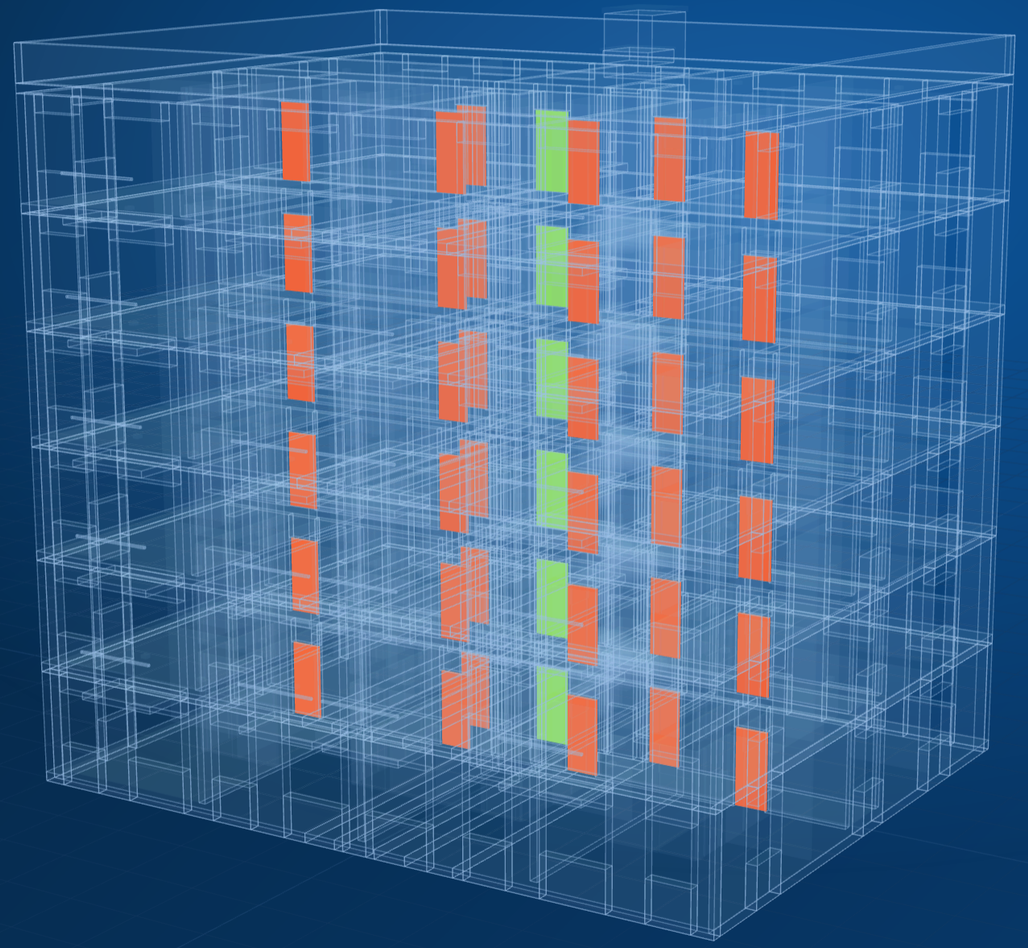


Fictional building, drawn for teaching. Illustrative.

01

Why fire strategies get lost

A requirement only gets built if it reaches the drawings.



ONE DOOR'S JOURNEY

One front door, from report to site

The detail drops out	It is carried through

1	**Fire strategy** Fire engineer	FD 30 S, self-closing
2	**Fire layout** Architect	"Fire doors to fire strategy"
3	**Door schedule** Architect	Rating column blank
4	**Specification** Specifier	Standard timber door
5	**On site** Contractor	No closer, no seals

THE RESULT A front door that will not hold back smoke. Every step looked reasonable.



Illustrative example, written for teaching.

ON REAL PROJECTS

Four ways a strategy gets lost

1 A rating in a table

REPORT Report: E 30 S_a, self-closing.

DRAWING Schedule: "FD30". No closer column.

2 A distance that moved

REPORT Single stair. 7.5 m maximum.

DRAWING Two flats added at the end.

RESULT The furthest door is now 10.6 m away.

THE FIX Dimension the worst distance. Recheck at every change.

ADB Table 3.1 | ADB 3.27

3 A vent drawn as a rooflight

REPORT Stair-head vent, 1.0 m^2 free area.

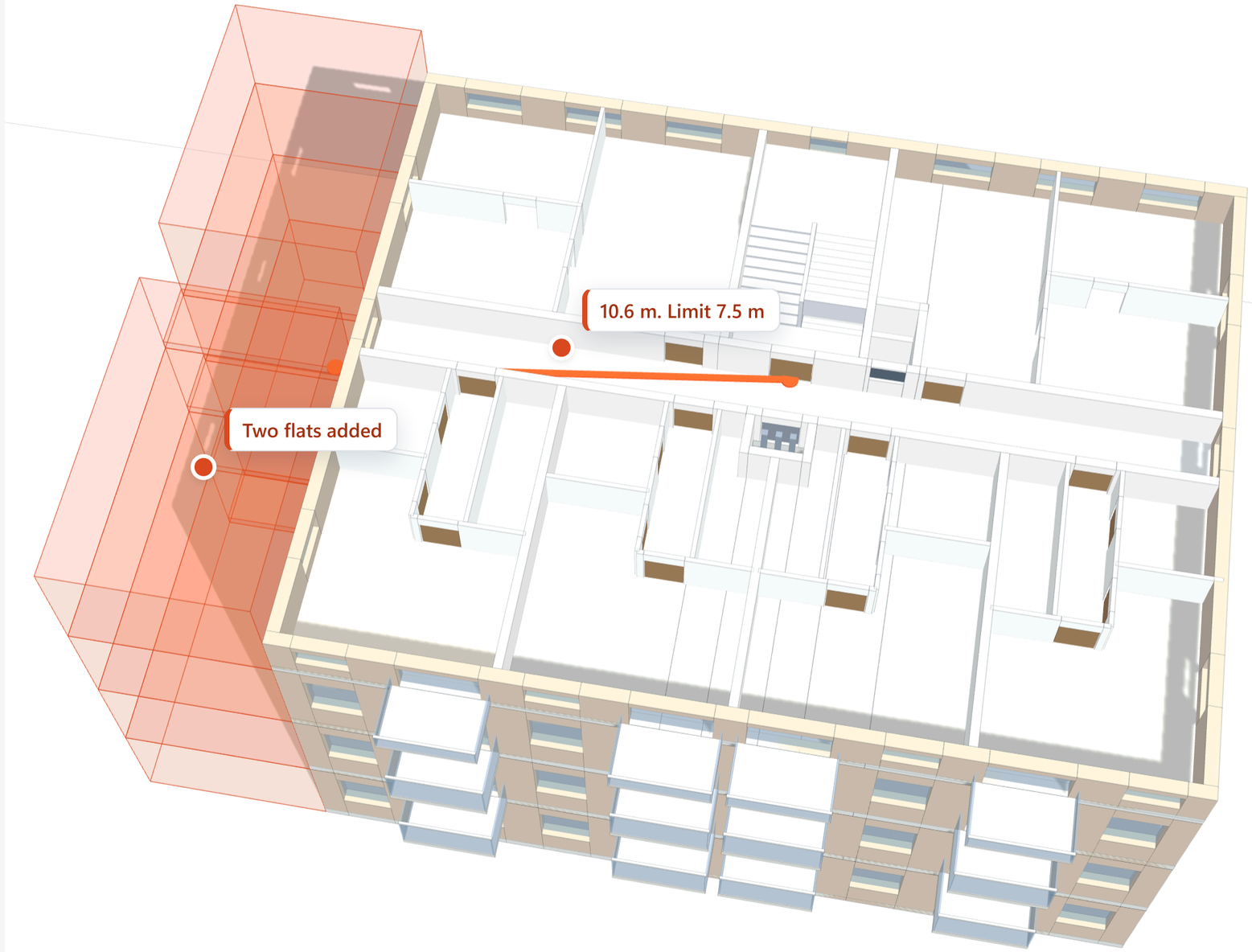
DRAWING A rooflight with a small hatch.

4 A riser door without a rating

REPORT Risers are protected shafts, REI 60.

DRAWING Riser door drawn as a cupboard.

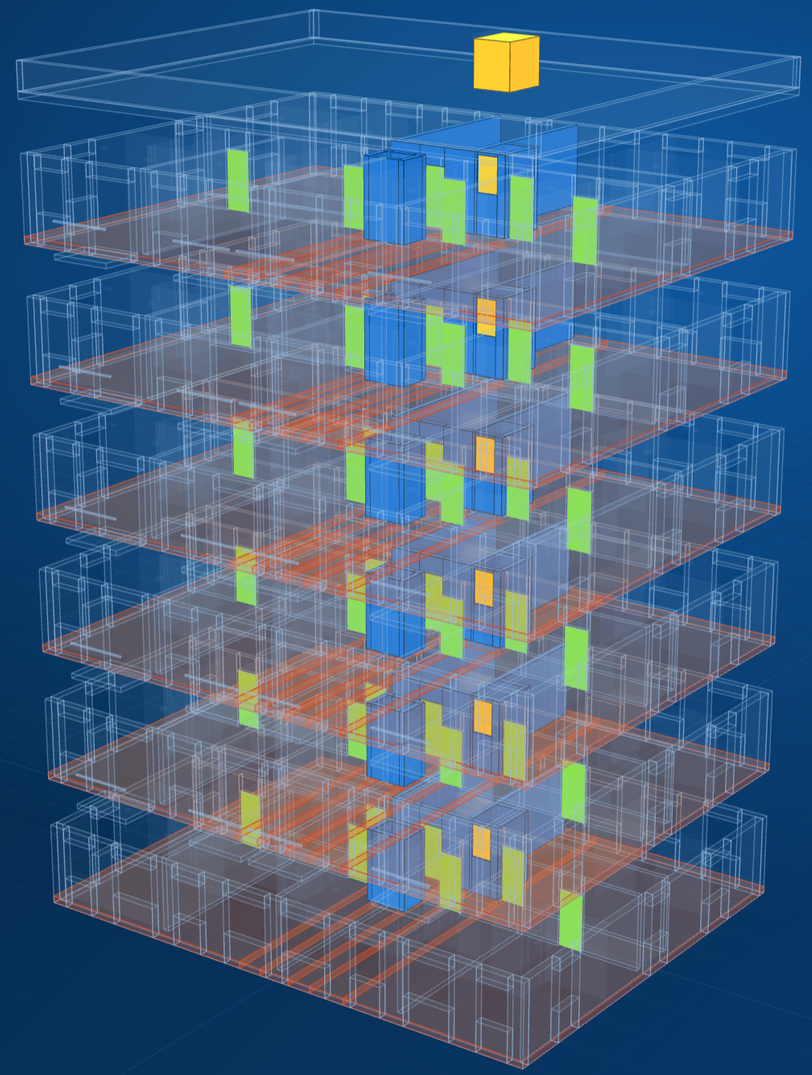
Composites of common issues, written for teaching. Not from any one project.



02

What's in a fire strategy report

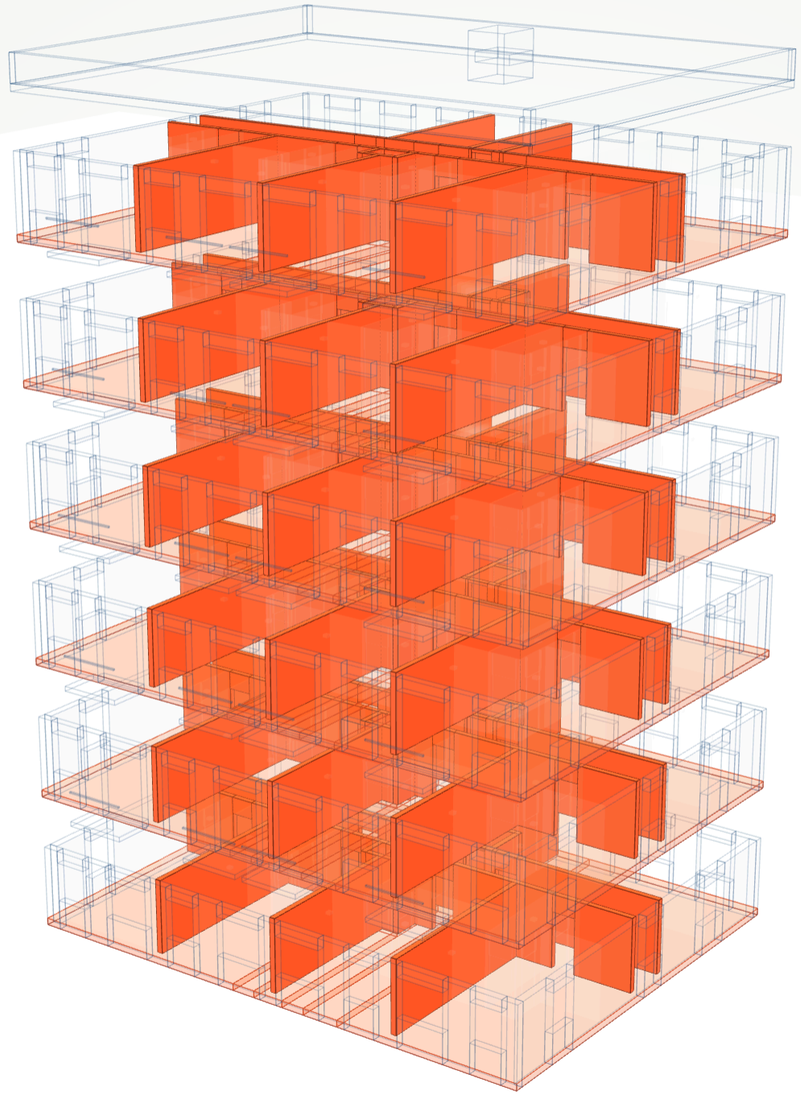
Every section becomes something you draw, schedule or specify.



THE CONTENTS PAGE

Each section is something to draw

01	**Basis** Guidance, edition, height	02	**Means of escape** B1
03	**Linings** B2	04	**Compartments** B3
05	**Fire doors** Appendix C	06	**Smoke control** Vents
07	**External walls** B4	08	**Fire service, management** B5



ON YOUR DRAWINGS

- ✓ Compartment lines with periods
- ✓ Cavity barriers and fire-stopping details
- ✓ Sprinkler extent

ASK THE FIRE ENGINEER

Where do services cross a compartment line?

ADB 7.4, 7.5 | ADB 8.2 to 8.8 | ADB 9.24 to 9.27

COMPARTMENTS AND STRUCTURE

Pull the building apart

Compartment floors	REI 60
Flat walls	REI 60
Protected shafts	REI 60
Cavity barriers	E 30, I 15
Fire-stopping	Tested system

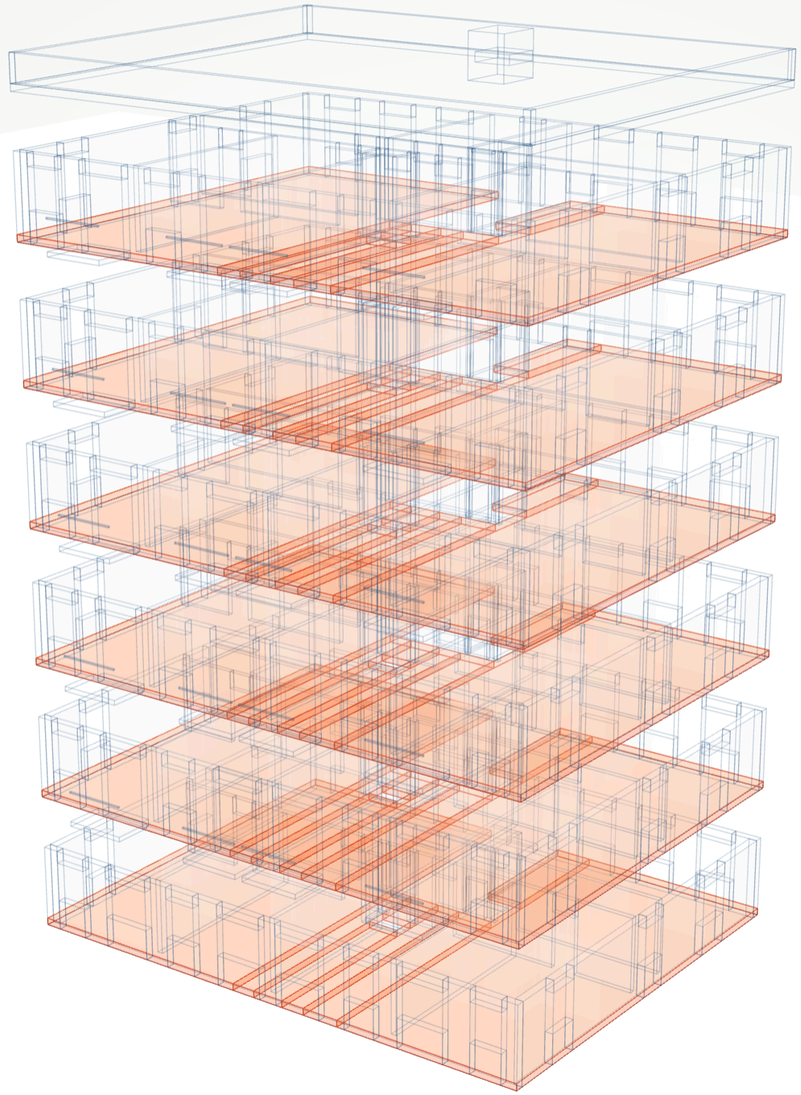
Each layer is a line or a detail on your drawings, with its rating.

Separate the floors

Compartment floors REI 60

Each floor is a complete barrier.

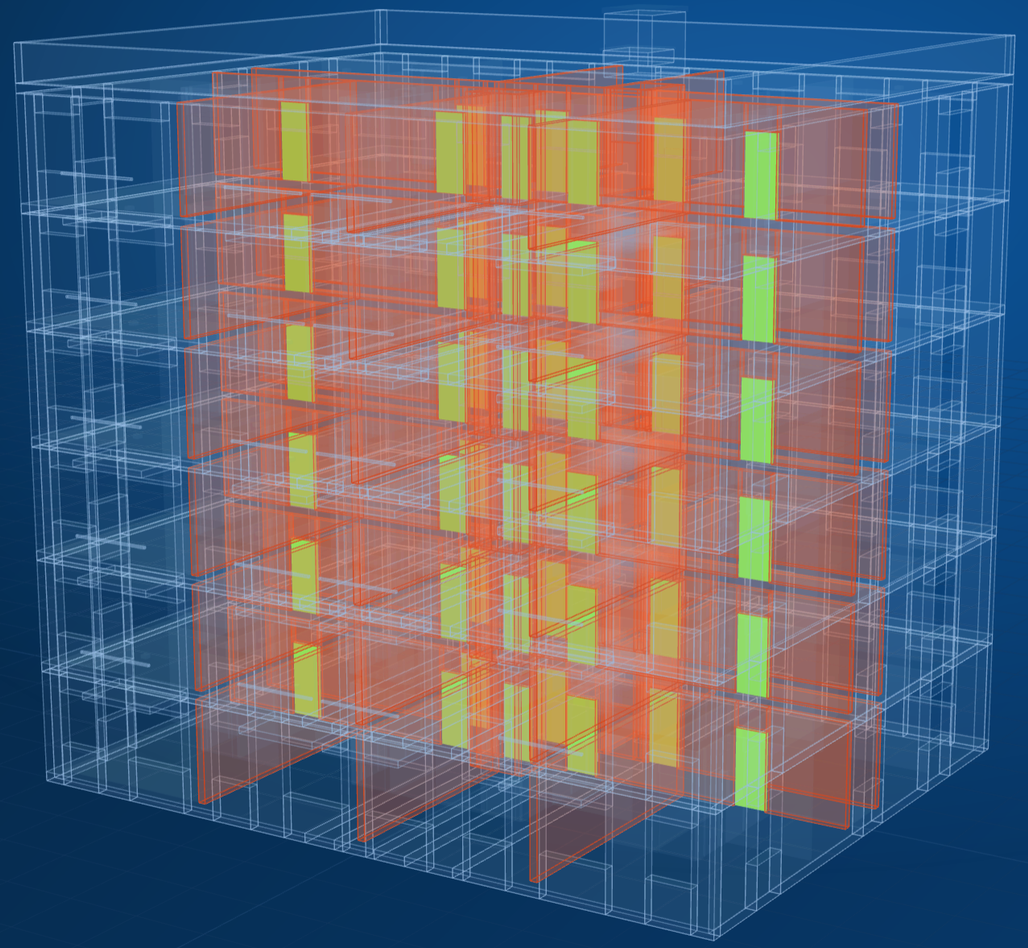
ADB 7.5



03

Fire ratings explained

One wrong letter, and the wrong door or wall gets ordered.



What the letters mean

REI 60	EI 60	**E 30 S_a**	FD 30 S
E 30 / I 15	B-s3, d2	A2-s1, d0	Door: REI 30

E 30 S_a Flat entrance door

E
Integrity
Doors are classed by integrity.

30
Minutes
Integrity period.

S_a
Smoke leakage
Restricted at ambient temperature (BS EN 1634-3).

ADB Table C1 2a | ADB C2 | ADB C8



FIRE DOOR RATINGS

FD 30 S and E 30 S_a: same job, two tests

BRITISH		EUROPEAN
FD	Fire door: classed by integrity. Stops flames and hot gases.	E
30	Minutes in a standard test, not real time.	30
S	Smoke seals: limits cold smoke leaking past.	S_a

1. **Not automatically equal.** Different test standards and test conditions, so a pass in one is not a pass in the other. Use the class the strategy asks for. — Table C1 note
2. **The whole doorset counts:** frame, seals, closer, hinges, glass. — ADB C4
3. **From now on, specify E 30 S_a.** FD 30 S leaves ADB on 2 Sep 2029. — 2029 amendments

E 30 S_a	Flat front, stair and corridor cross doors. Self-closing.
E 30	Riser and duct doors. Locked, no closer.
E 20	Doors off the protected hall in a flat.



ADB TABLE C1 ITEM 2A

A flat front door, up close

Door and frame	E 30
Smoke seals	S_a
Self-closer	Required
Hinges and hardware	As tested
Signs	Not needed

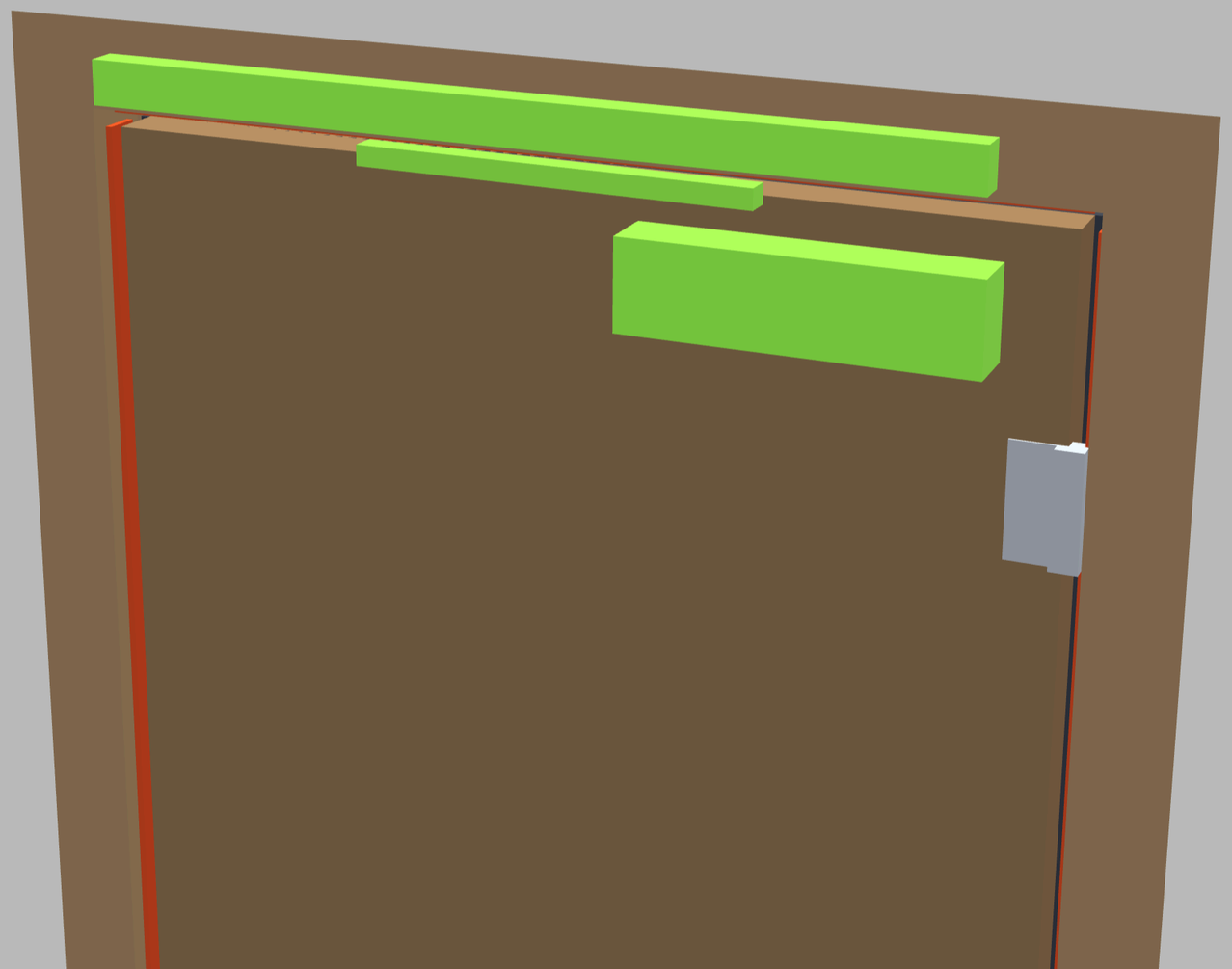
Corridor side | **Flat side**

Open it, let go | Smoke test | Without seals

Self-closer Required

On the flat side, the side the door opens into.

ADB C5



Illustrative doorset. Gaps and seals drawn larger than life.

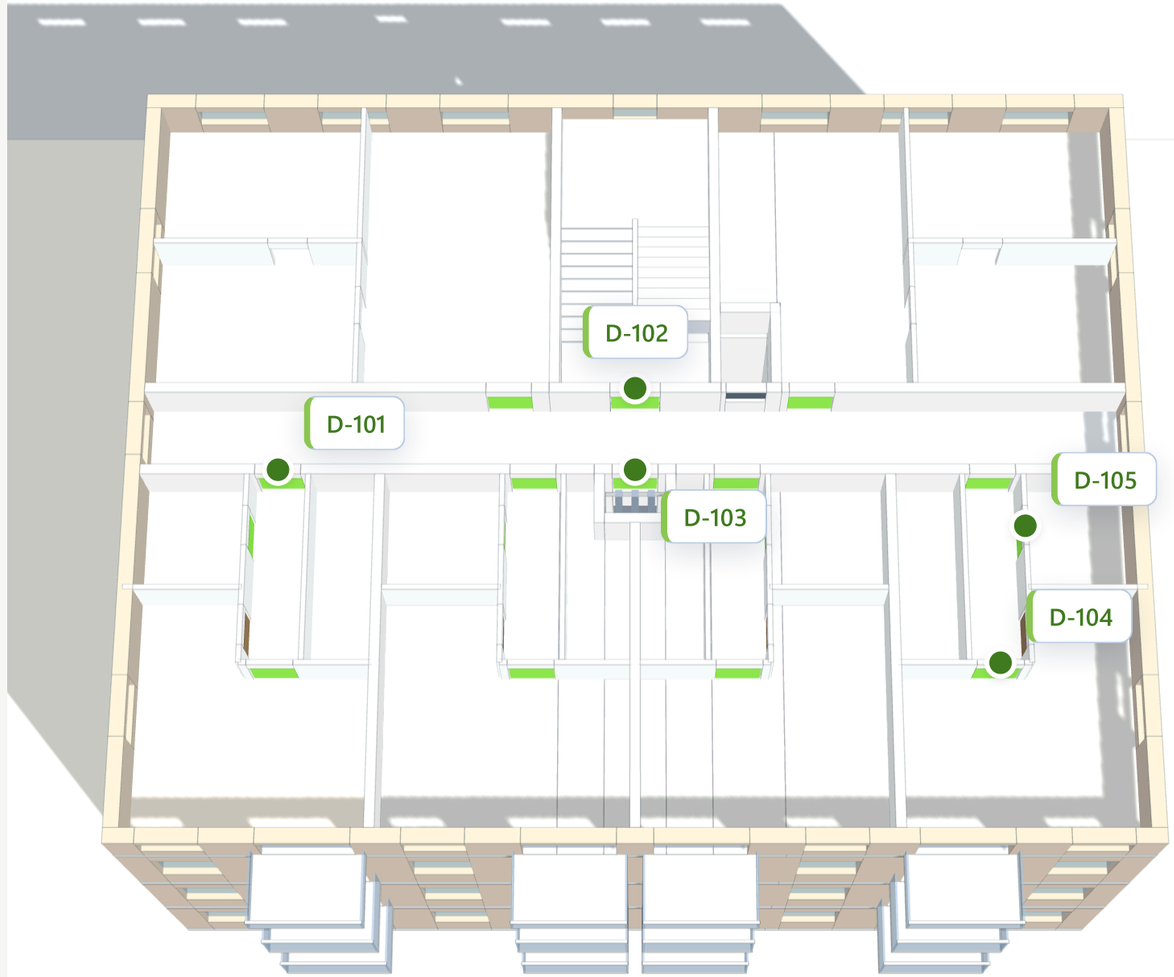
ADB VOL 1, TABLE C1

Fill in the rating column

REF	DOOR	RATING			
D-101	Flat entrance door	E 30 S_a	E 30	E 20	No fire door
	Right. Self-closing. ADB Table C1 2a · ADB C5				
D-102	Stair door	E 30 S_a	E 30	E 20	No fire door
	Right. Self-closing. "Fire door keep shut" both sides. ADB Table C1 4a · ADB C5 · ADB C11				
D-103	Riser door, 60 min shaft	E 30 S_a	E 30	E 20	No fire door
	Right. Half the shaft period, 30 min minimum. Locked, no closer, "Fire door keep locked shut". ADB Table C1 2d · ADB C5b · ADB C11b				
D-104	Kitchen door off the protected hall	E 30 S_a	E 30	E 20	No fire door
	Right. No self-closer needed inside a flat. ADB Table C1 9 · ADB C5c				
D-105	Bathroom door	E 30 S_a	E 30	E 20	No fire door
	Right. No fire doorset where the bathroom is enclosed in fire-resisting construction. ADB Diagram 3.2 note				

Check the schedule | Clear

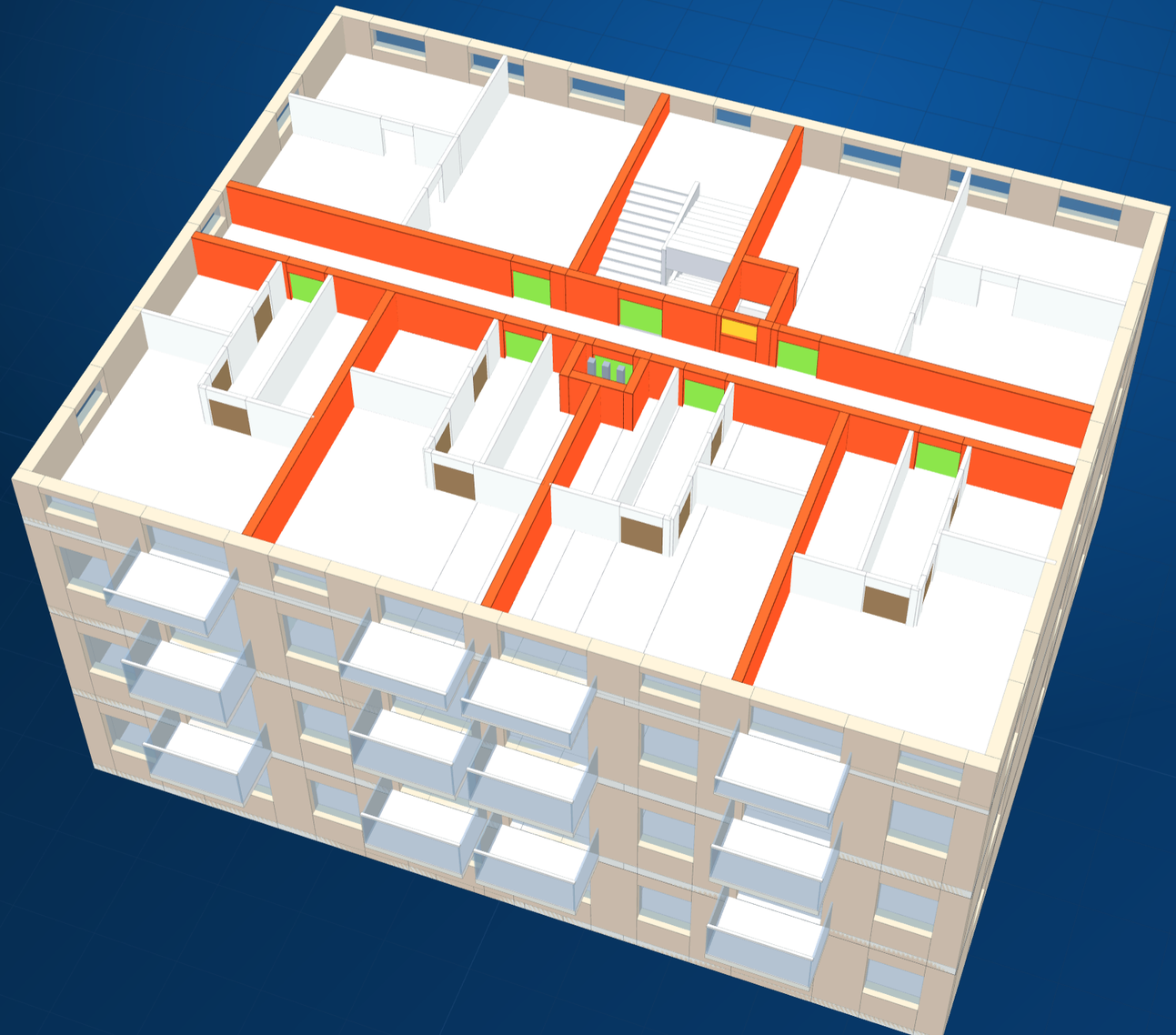
5 of 5 right. S_a, closer and sign go in the schedule too.



04

Putting it on the plan

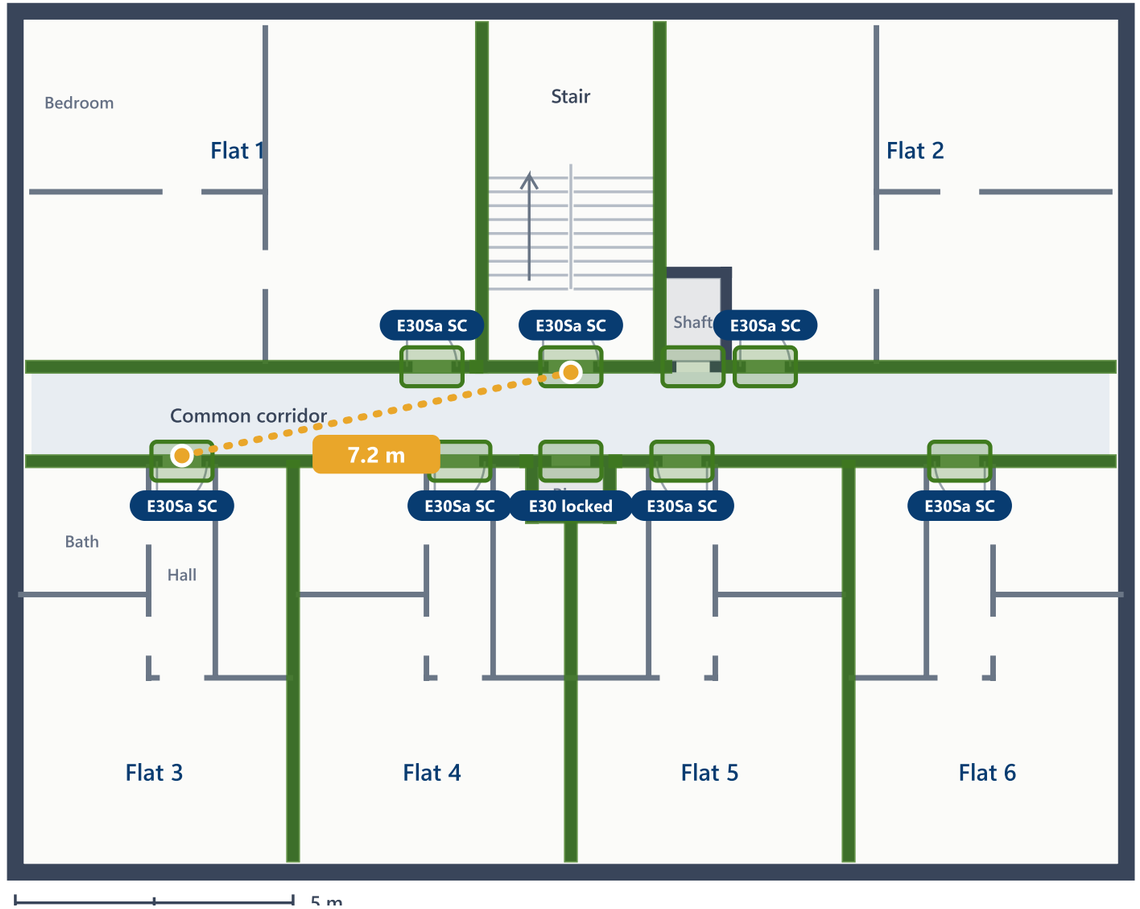
The strategy says it in words. The plan has to show it: walls, doors, vents and distances.



Turn the strategy's words into lines on the plan

Compartment walls | Fire doors | Smoke vent | Measure

Check | Answer | Clear | See it in 3D



STRATEGY EXTRACT

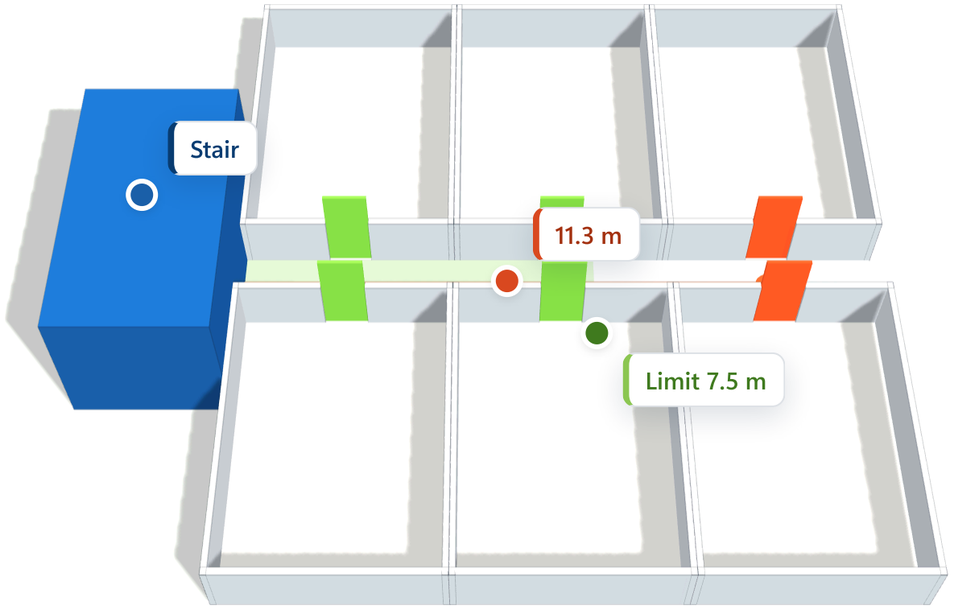
1. Each flat is a compartment. Walls between flats, and between each flat and the corridor: REI 60. ADB 3.38
2. Stair and riser are protected shafts, REI 60.
3. Flat entrance doors and the stair door: E 30 S_a, self-closing. Table C1 2a, 4a
4. Riser door: E 30, kept locked. Table C1 2d
5. Corridor vent in front of the stair door into a 1.5 m^2 smoke shaft, opened on detection. ADB 3.54, 3.55, 3.57
6. Flat door to the stair door: 7.5 m maximum. ADB Table 3.1

Flat 3 to the stair door: 7.2 m, shortest route. Limit 7.5 m. Within it, but only just.

ADB Table 3.1 | ADB D3

ADB VOL 1, TABLE 3.1

Stretch the corridor, watch the rules respond



Flats each side

3

Width of each flat along the corridor

4.5 m

One stair | A stair each end | Small single stair (up to 11 m)

6 FLATS A STORIEY, CORRIDOR 13.5 M

7.5 m — FAILS
Furthest door: **11.3 m**, one direction
ADB Table 3.1

Single route — FAILS
Only within the one-direction distance
ADB 3.27

Vent — APPLIES
In front of each storey exit, 1.5 m^2 or a smoke shaft
ADB 3.54, 3.55

Detection — APPLIES
Single stair: vents open on smoke detection
ADB 3.57

Door — NOT HERE
Corridor divided by a self-closing E 30 S_a door
ADB 3.39

3.32 — NOT HERE
Top storey up to 11 m, no more than 3 storeys above ground
ADB 3.32, Diagram 3.9

Stair vent — APPLIES
1 m^2 from the top storey of each stair
ADB 3.56

Simplified: doors at the centre of each frontage, distance along the corridor. Measure the real shortest route (ADB D3). "Small single stair": top storey no more than 11 m and no more than 3 storeys above the ground storey (ADB 3.32, Diagram 3.9).

SMOKE CONTROL

Where the smoke goes

1.0 m² — **Corridor vent**

Into a 1.5 m² smoke shaft, in front of the stair door. Top edge at least as high as the door head.

ADB 3.54 · ADB 3.55

1.0 m² — **Stair-head vent**

From the top storey of the stair.

ADB 3.56

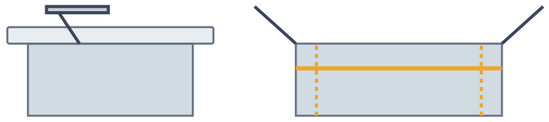
Detection — **How they open**

Single stair: the fire floor's corridor vent and the stair-head vent open on smoke detection.

ADB 3.57

Start a fire on the third floor | Reset

Free area is not glass area

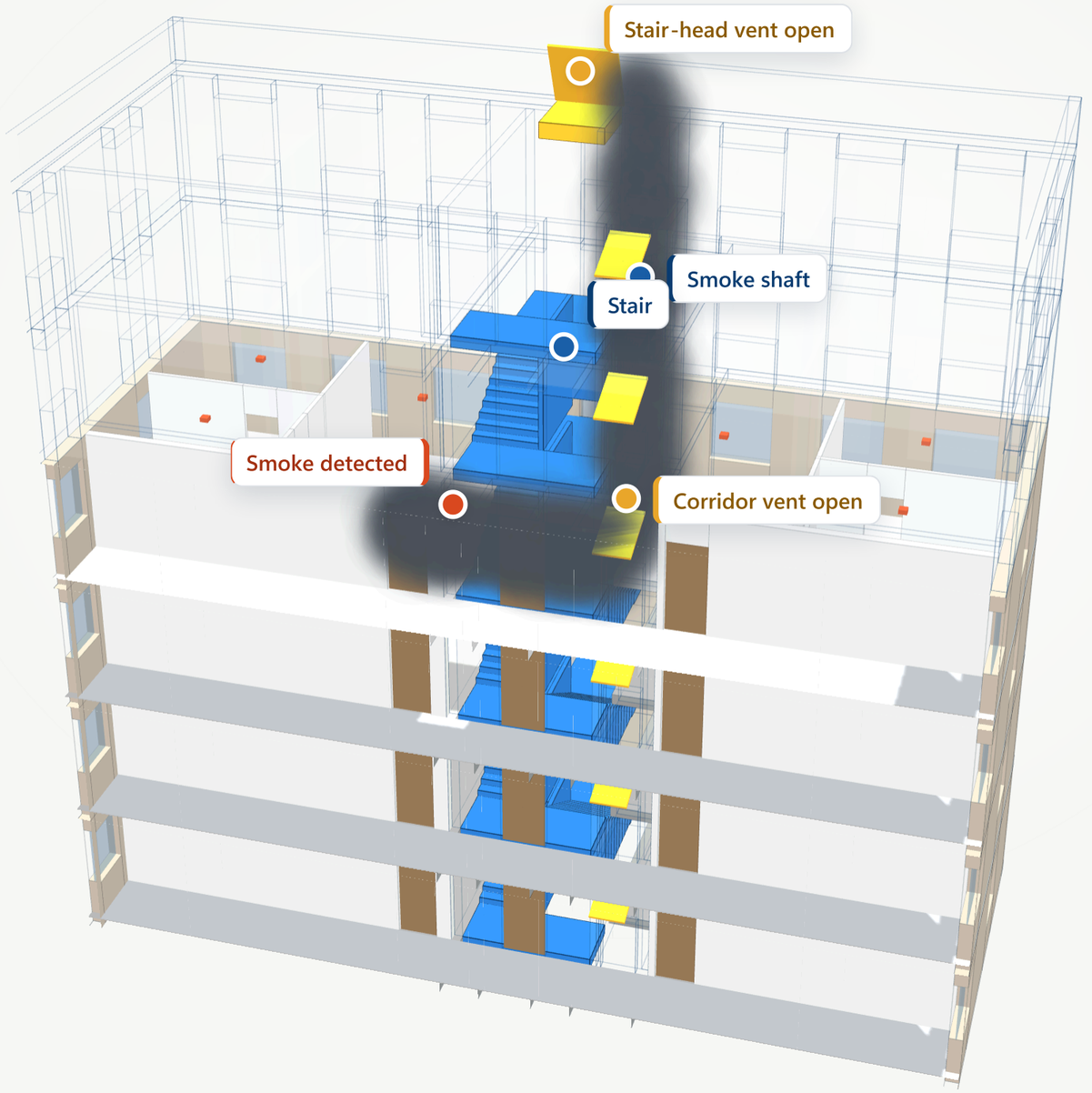


Glass 1.5 m², hatch opening small

Measured at the narrowest plane

Free area: declared aerodynamic free area to BS EN 12101-2, or geometric free area at the narrowest plane. ADB D5, Diagram D7

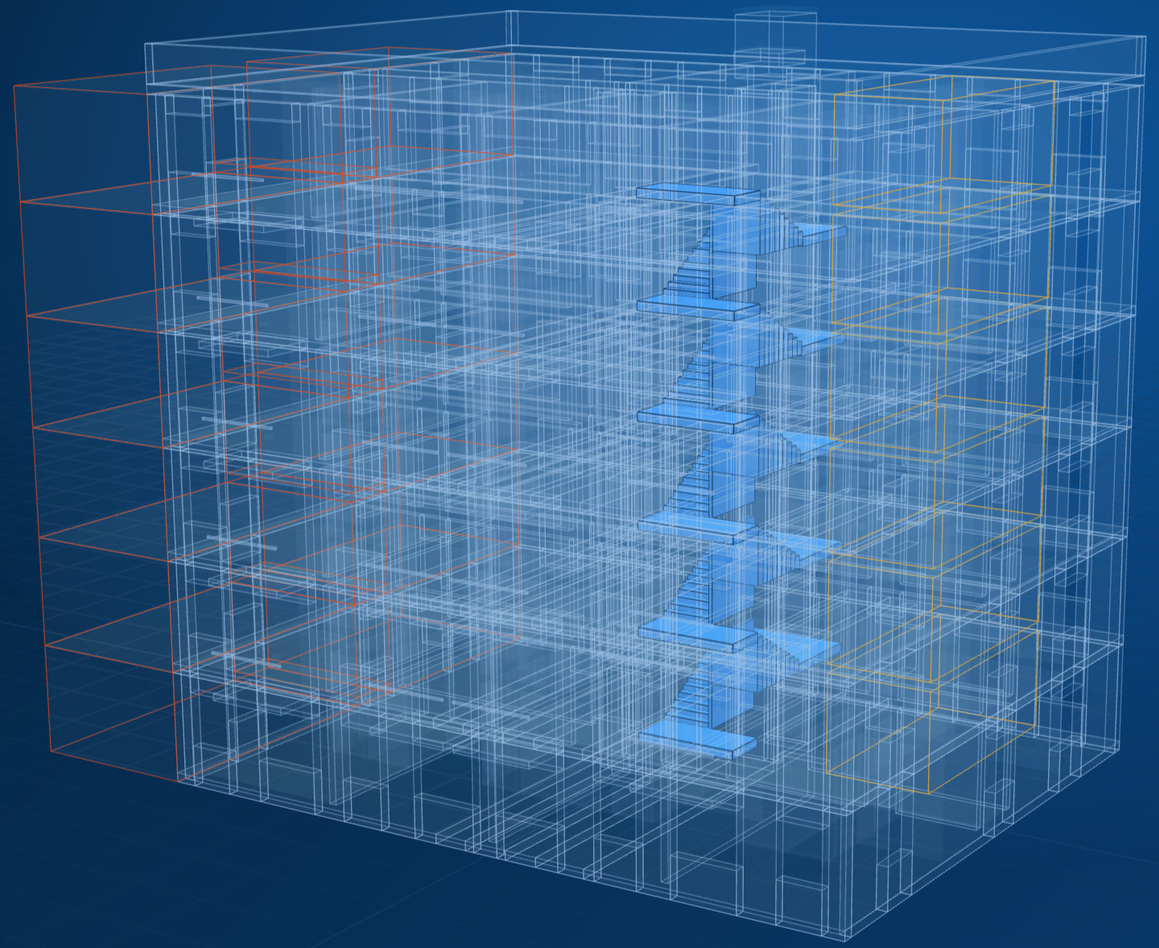
BS 9991 F.5.2.3



05

When the design changes

Some changes break the strategy. Others only need recording.



DECISION GAME

Fire engineer, or record it?

Two flats added at the end of the corridor

BACK TO THE FIRE ENGINEER

The furthest door may now be more than 7.5 m from the stair in one direction. **ADB Table 3.1, ADB 3.27**

Door supplier changed, same E 30 S_a doorset

RECORD IT AND CARRY ON

Record it with the new test evidence, covering the complete installed doorset. **ADB C4**

Kitchen opened into the hall of a flat

BACK TO THE FIRE ENGINEER

The protected entrance hall is lost. The flat then relies on the 9 m layout or an alternative exit. **ADB 3.18, Diagram 3.2**

Bathroom door in a flat changed to a standard door

RECORD IT AND CARRY ON

No fire doorset needed where the bathroom walls are fire-resisting. Record it. **ADB Diagram 3.2 note**

Brick facade swapped for a timber rainscreen

BACK TO THE FIRE ENGINEER

Above 11 m the external surface should be A2-s1, d0 or better. **ADB Table 10.1, ADB 10.14**

"Fire door keep shut" signs left off the flat front doors

RECORD IT AND CARRY ON

Signs are not needed on doors to or within flats. Record it. **ADB C11, ADB C12**

Corridor walls lined with timber panelling

BACK TO THE FIRE ENGINEER

Common areas need B-s3, d2 linings, shown by classification. **ADB Table 4.1**

Riser door drawn with no self-closer

RECORD IT AND CARRY ON

Fine if kept locked shut. Sign it "Fire door keep locked shut". **ADB C5b, ADB C11**

The stair moves 6 m along the corridor

BACK TO THE FIRE ENGINEER

Every travel distance and the vent in front of the storey exit move with it. **ADB Table 3.1, ADB 3.54**

Carpet in the flats swapped for vinyl

RECORD IT AND CARRY ON

Table 4.1 covers wall and ceiling linings, not floors in a flat. Record it. **ADB Table 4.1**

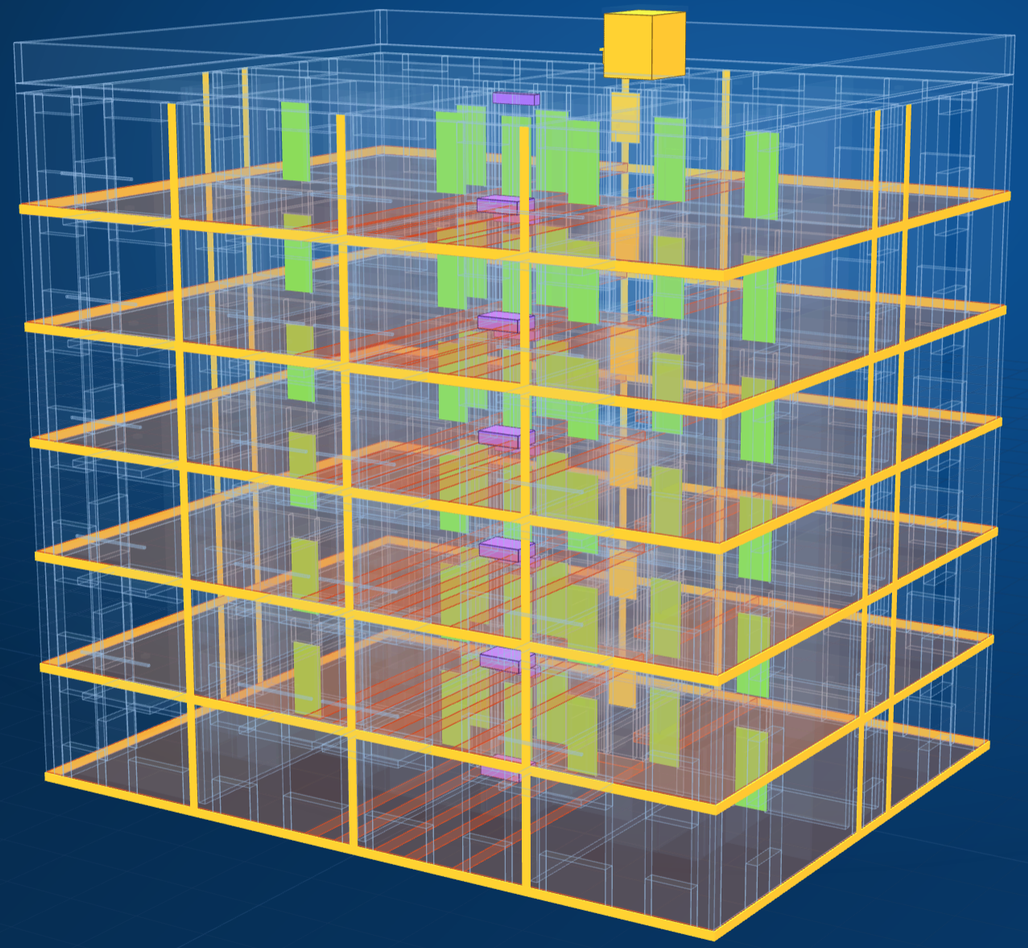


THE LAW Designers take all reasonable steps so the design, if built, would comply. Higher-risk buildings have formal change control. **Reg 11K; SI 2023/909 regs 18 to 21**

06

Keeping it consistent

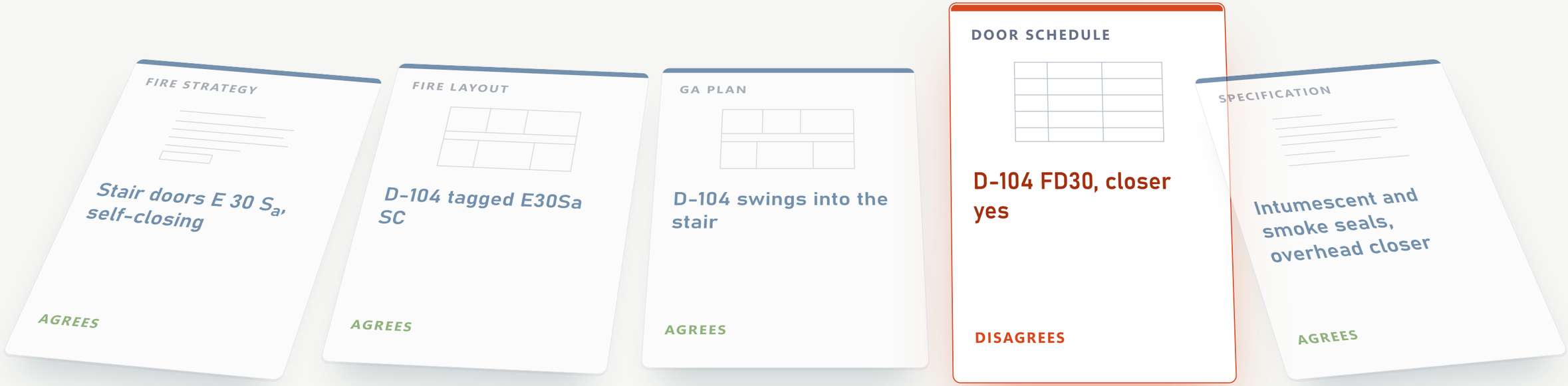
Each requirement reads the same in every document, through to handover.



SPOT THE MISMATCH

One fact, five documents. Which one disagrees?

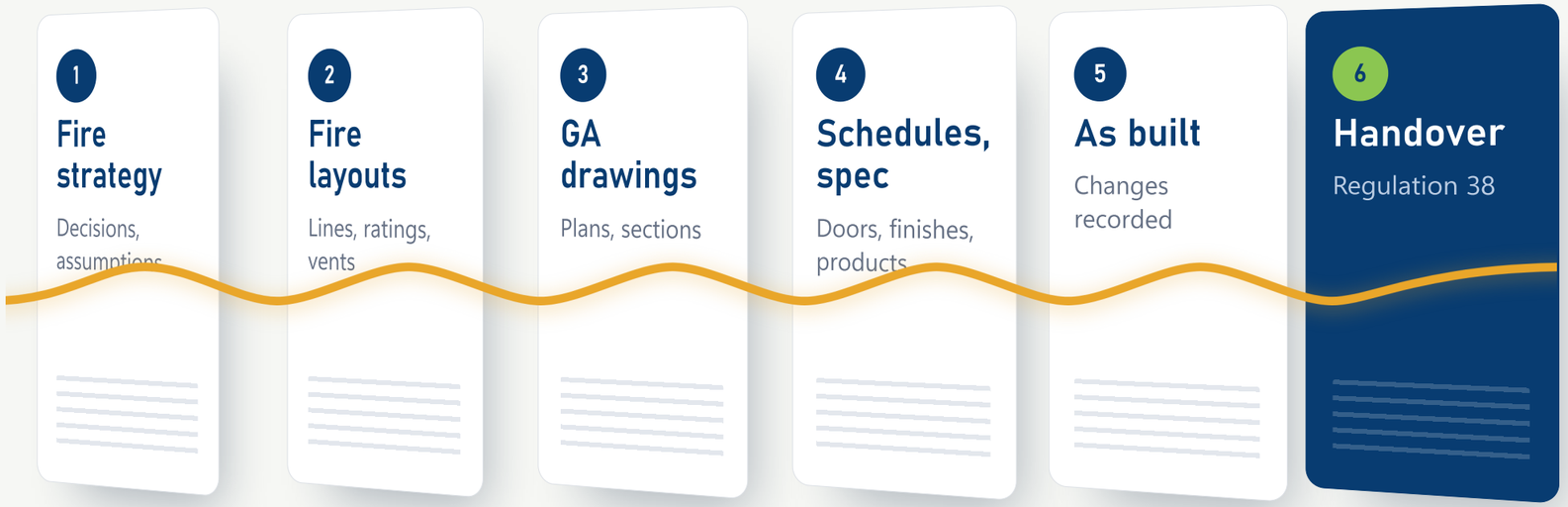
Stair door | Corridor vent | Riser enclosure



MISMATCH The schedule dropped the S. Without smoke seals it is not E 30 S_a or FD 30 S.

ADB Table C1 4a | ADB C2

The same decisions, all the way to handover



Building Control

Expect questions wherever the documents disagree.

Good practice

Higher-risk buildings

Fire and emergency file, change control plan.

SI 2023/909 Sch 1; regs 18 to 21

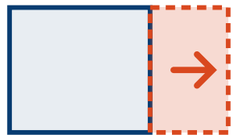
Regulation 38

As-built fire plans come from these drawings.

Reg 38; ADB 17.4, 17.5

KNOWLEDGE CHECK

Six questions



QUESTION 2 OF 6

The top storey floor of a block of flats is at 17.5 m. Which is true under ADB?

A. A second stair is needed

B. Sprinklers are not needed below 18 m

C. The external wall surface must be A2-s1, d0 or better

D. Regulation 7(2) applies to all the wall materials

Answer C. Above 11 m: A2-s1, d0 surface (Table 10.1) and sprinklers (7.4). A second stair (3.30b) and regulation 7(2) (10.14) start at 18 m.

Previous | Next question

ROOM SCORE

0/6

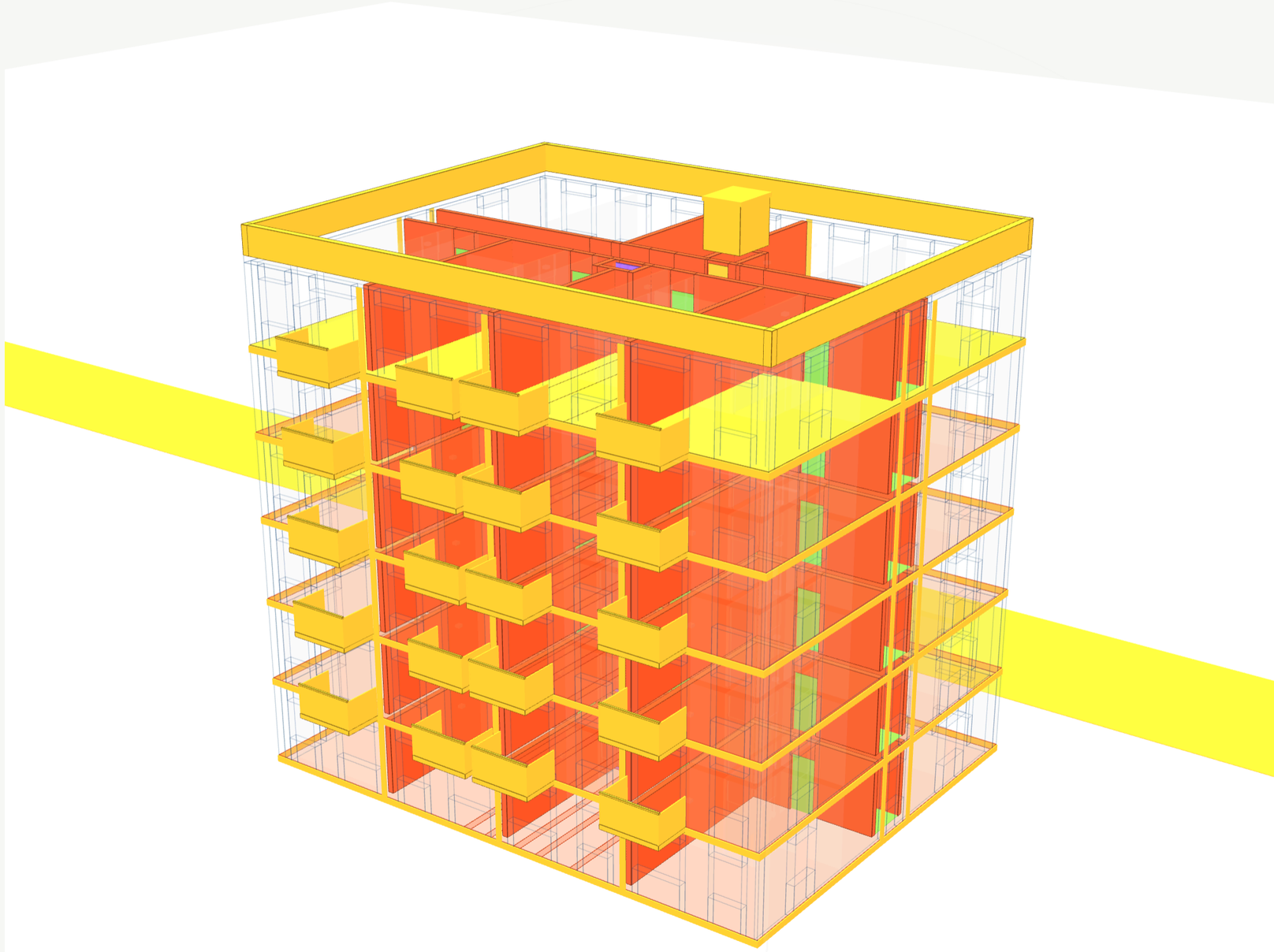
1 answered

TAKE AWAY

Before you issue a drawing

10 of 10

- [x] Basis stated: guidance, edition, height, evacuation
  Fire drawing notes
- [x] Every compartment line, with its period
  REI or EI
- [x] Door schedule: E, S[a], closer, sign, hold-open
  ADB Table C1, C5, C11
- [x] Cavity barriers and fire-stopping at every junction
  ADB Sections 8 and 9
- [x] Worst travel distance dimensioned, rechecked
  ADB Table 3.1
- [x] Smoke vents: type, free area, how they open
  ADB 3.53 to 3.57, D5
- [x] Lining and external wall classes scheduled
  ADB Table 4.1, Table 10.1
- [x] Fire service access, fire main inlet, distances on the site plan
  ADB 13.2, 13.5, 14.3
- [x] Changes sent back to the fire engineer, recorded
  Reg 11K
- [x] Strategy, drawings, schedules and spec agree
  Good practice



KEY TAKEAWAYS

Five things to take back to the studio

01

Read for decisions

Every section becomes something on a drawing.

02

Letters matter

A wrong letter is a wrong product.

03

Draw it, don’t refer to it

"See fire strategy" is where decisions are lost.

04

Layout changes are fire changes

Stairs, corridors, flats, facades, risers.

05

One fact, one value

Every document agrees, to handover.

THANK YOU

Questions?

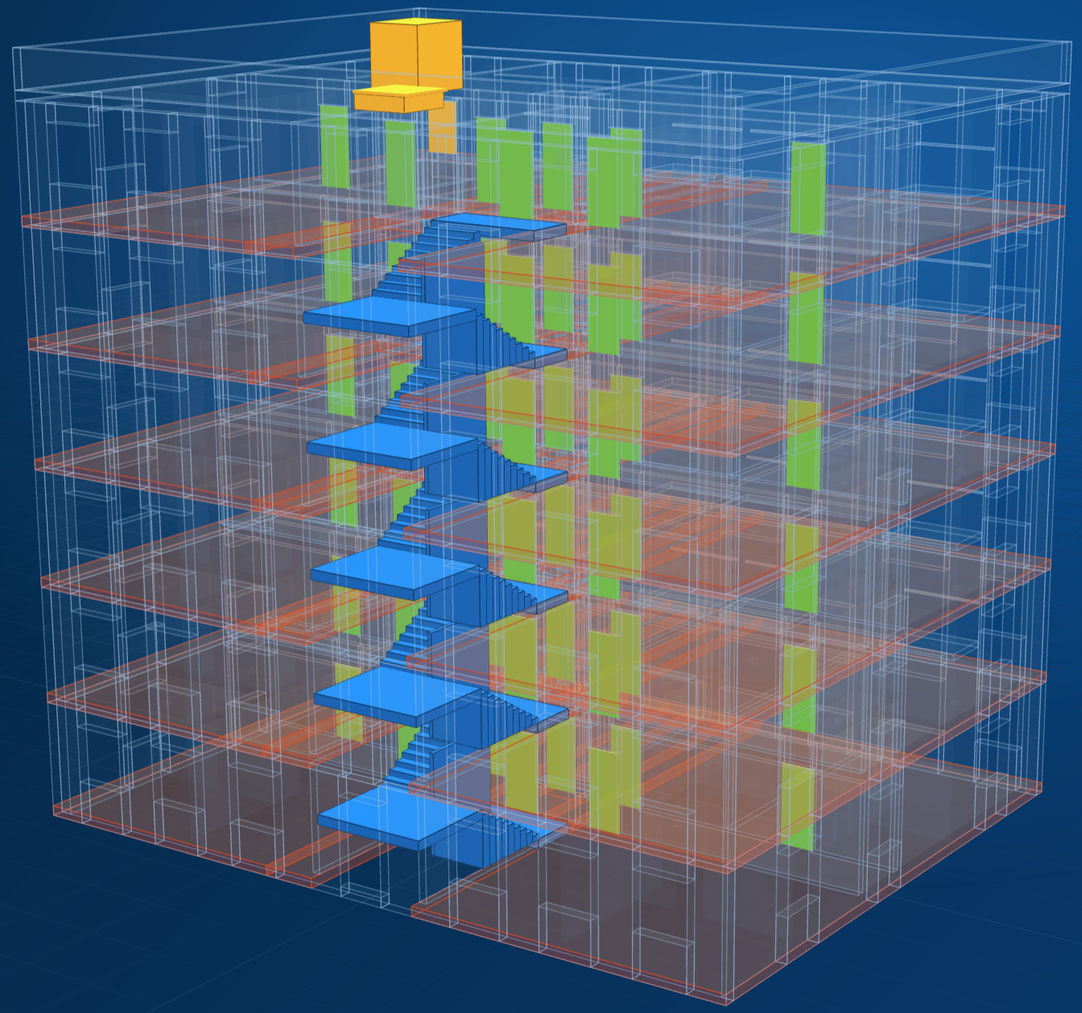
A strategy that needs translating onto the drawings, or a design change that needs checking: we are happy to talk it through.

Julio Kosta, Fire Engineer

Dexmah, 9 Greyfriars Road, Reading, RG1 1NU

0333 305 6668

info@dexmah.com



SOURCES

References

Approved Document B Volume 1: Dwellings, 2019 edition incorporating the 2020, 2022, 2025 and 2026 amendments (2026 amendments in effect from 30 September 2026): Section 3 (3.18, 3.27, 3.30, 3.32, 3.38, 3.39, 3.41, 3.53 to 3.57, Table 3.1, Diagram 3.2); Section 4 (Table 4.1); Section 7 (7.4, 7.5); Section 8 (8.2 to 8.8); Section 9 (9.24 to 9.27); Section 10 (10.10, 10.14, Table 10.1); Section 17; Appendix B (B6, B7, B18, B22, Table B1); Appendix C (C1 to C12, Table C1); Appendix D (D3, D5, Diagram D6, Diagram D7).

Amendments to Approved Document B, published September 2024, taking effect 2 September 2029: removal of national classes for fire resistance.

BS 9991:2024, Fire safety in the design, management and use of residential buildings. Code of practice. Clause 0.8; Annex F, F.5.2.

Building Regulations 2010, SI 2010/2214, regulations 2B(p), 11K and 38, as amended by SI 2023/911.

Building (Higher-Risk Buildings Procedures) (England) Regulations 2023, SI 2023/909, regulations 18 to 21 and Schedule 1.

Higher-Risk Buildings (Descriptions and Supplementary Provisions) Regulations 2023, SI 2023/275.

Regulation 38 Fire Safety Information for Architectural Designers, Dexmah CPD for GBS Architects, 15 October 2026.

The example building, its drawings, doorset and smoke visuals are fictional and illustrative, made for teaching.