I.S. 3218 :2013
Fire Detection & Alarm Systems

Overview of significant changes

Today's Programme

- Commencement
- Transition
- Competence & Qualifications
- System Certification
- System Design – Significant changes
- Installation/ Commissioning
- Service
- Residential

Commencement

- Published & in Effect
  - Dec 17th 2013
- I.S. 3218:2009
  - Revoked Dec 17th 2013
- Phase in period
  - None
  - Anticipated 1 Year not included
  - No applicable retrospectively

Transition

- Same as I.S.3218:1989 to 2009
- Existing FSC - Proceed as certified
  - List Variations 2009 vs 2013 on Certificates
  - Use 2013 Certificates
  - Update to 2013 where possible
- Installation/ Commissioning/Service
  - comply with 2013
- User Responsibilities
  - comply with 2013

Enforcement

- Fire officer requirement for warning to be included (and emphasised).
  - Appears 5 times through the document
  - Really aimed at certification parties

- Paraphrased as

  The issuing of false or misleading information is an offence under the Fire Services act 1981/ 2003 as per section 22 (6)(d)
  - It is a Criminal offence

Competence Requirements

- Design/ Install/ Commission/ Service/ verification
  - All providers “Shall” be Competent
  - All providers “Shall” be able to Demonstrate Competence
- User
  - Requirement to assess competence of providers

Designer - Qualifications

- Designer *Such as*:
  - Experienced Chartered Engineer
  - Experienced Professional Engineer
  - Other Competent Person
- Designer
  - "Shall" have experience in FDAS design
- BCAR & CEN TC4
  - May introduce new qualifications

System Certification

- Mandatory fixed layout for Certificates
  - Design
  - Installation
  - Commissioning
  - Service
  - Verification
- Additional information ?
  - Limited to Providers sequential reference number

System Design/ Layout

Significant Changes

Design – Alarm Devices & Circuits

- Two sounder circuits **within** building
- Auto silence of outside sounder
  - Reduced from 30 minutes to 15 minutes
- Max Sounder
  - 120 dB(A) reduced to 118 dB(A)
- Staff Alarms
  - Reference to HTM removed
  - Use of "Other codes" to be identified on certificates

Alarm Sound Levels

- Measure within 1 metre of wall
- Reduced sound levels – 60dB(A)
  - Corridors, Stairwells & Rooms < 25m²
- Rooms 25m² to 60m²
  - Sliding Scale 60dB(A) to 65 dB(A)
- Campus
  - Same Sound throughout site

Visual Alarm devices (VADs)

- Tech Doc M
  - VAD's Required for Disabled toilets
- I.S.3218 :Not mandatory - Risk Assess
  - Difficult to justify not including VAD's
- If use is determined for reasons of Disability
  - Must use EN54-23 product
    - Mandatory as of 1-1-2014

Manual Call Points

- At “All Exits” not “All Exits to Open Air”
  - Exit defined as point of “Safe Dispersal”
- On Defined Escape Routes
  - Not Designated Escape routes
- In each Refuge area
- Inside Storey Exit
- Reduced requirement in Stairwells
  - Possibly offset by requirement for Refuge
- Double Knock Prohibited

Point Detectors

- Smoke
  - Extension of height for Enhanced Sensitivity
  - Height limit not applicable to Lift Shafts
  - Wall mounting – L3 Adjoining rooms
    - conditional
- Carbon Monoxide (CO)
  - Use as Toxic Gas Sensor prohibited
- Flame detectors
  - Compliance with EN54-10 now referenced

Air Sampling - Height

Sampling configuration	Hole sensitivity	Mounting Height (m)
Standard EN 54-20	Normal sensitivity Same as point det	10.5
5 Class C holes or 2 Class B holes	Normal sensitivity Enhanced sensitivity	15
15 Class C holes or 5 Class B holes	Normal sensitivity Enhanced sensitivity	25
15 Class B holes	Normal sensitivity	40

Detector Locations - General

- Light wells <10% of ceiling surface area
  - No detection unless acting as a vent
- Store Rooms
  - "SHOULD" consider not "SHALL"
- Toilet Lobby: < 2m²
  - no detection
  - Previously 1m²
  - Conditional on "No Fire load" in the lobby

Design - Voids

- Clarified as meaning Horizontal voids
- >800mm Deep - Protection required for
  - Escape routes
  - All voids on L1
    - Unless **No Risk** and **All parties agree** and **Variation listed On Certificate**
- <800mm Deep
  - Risk assessment AND
  - No possibility of spread of smoke through voids

Video Smoke Detection

- Design to ensure full duration of emergency supply (battery) included
  - 24 Hour or 48 Hour duration
  - May impact use of Existing cameras as they are not normally supported by standby battery.

Design - General

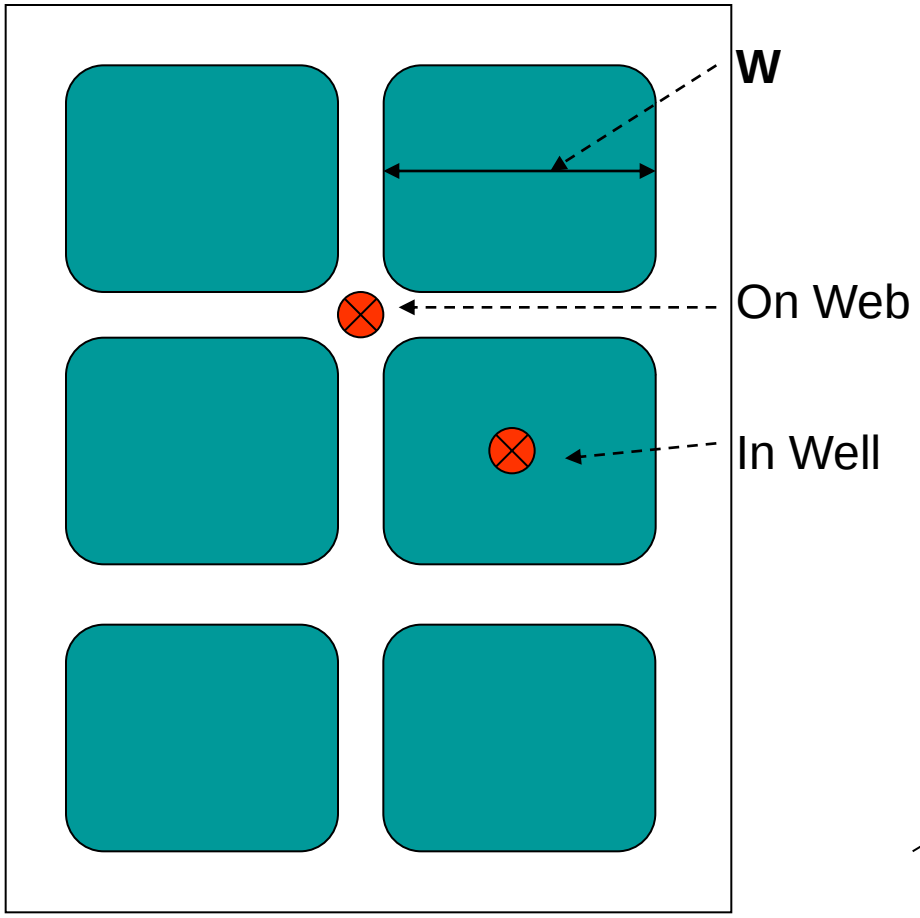
- Power supply units
  - Must be EN54-4 construction
- Linear Beam detector
  - limit of 100m range deleted
- Standby battery
  - Add 20% to calculated required capacity

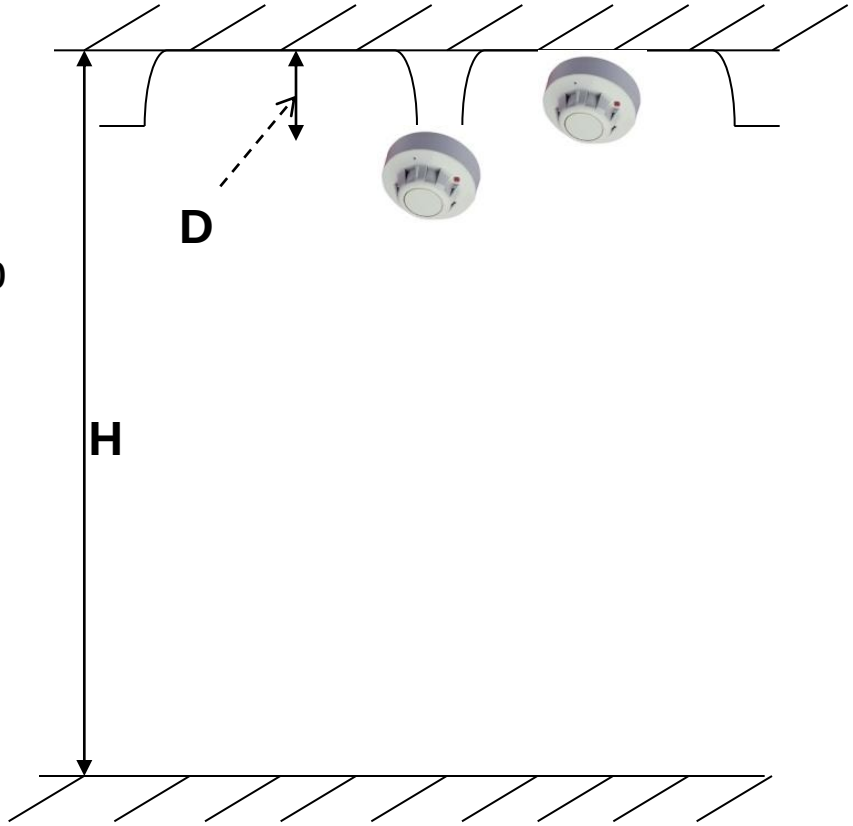
Honeycombs/ Coffers/Beams

- New Guidance – Flow chart 
  - Determines Maximum Spacing between Detectors
- Also guides Positioning
  - on Beam/ Web or In well/ On slab
- Based on
  - Slab to Slab Height (H) And
  - Depth of Well (D) And
  - Ratio : Width (W) to Depth (D) of Well

Honeycombs/Coffers - Position

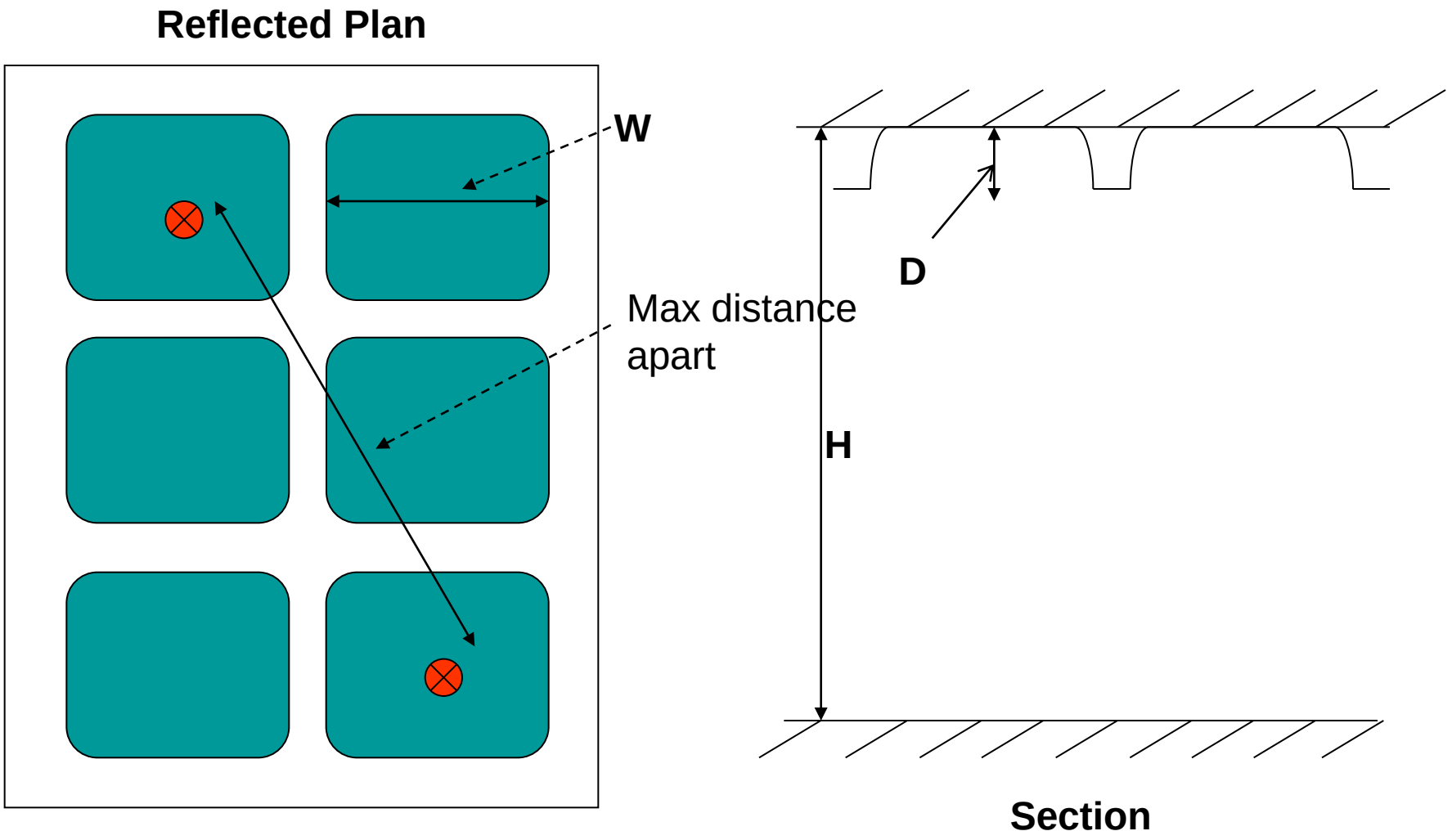
Reflected Plan



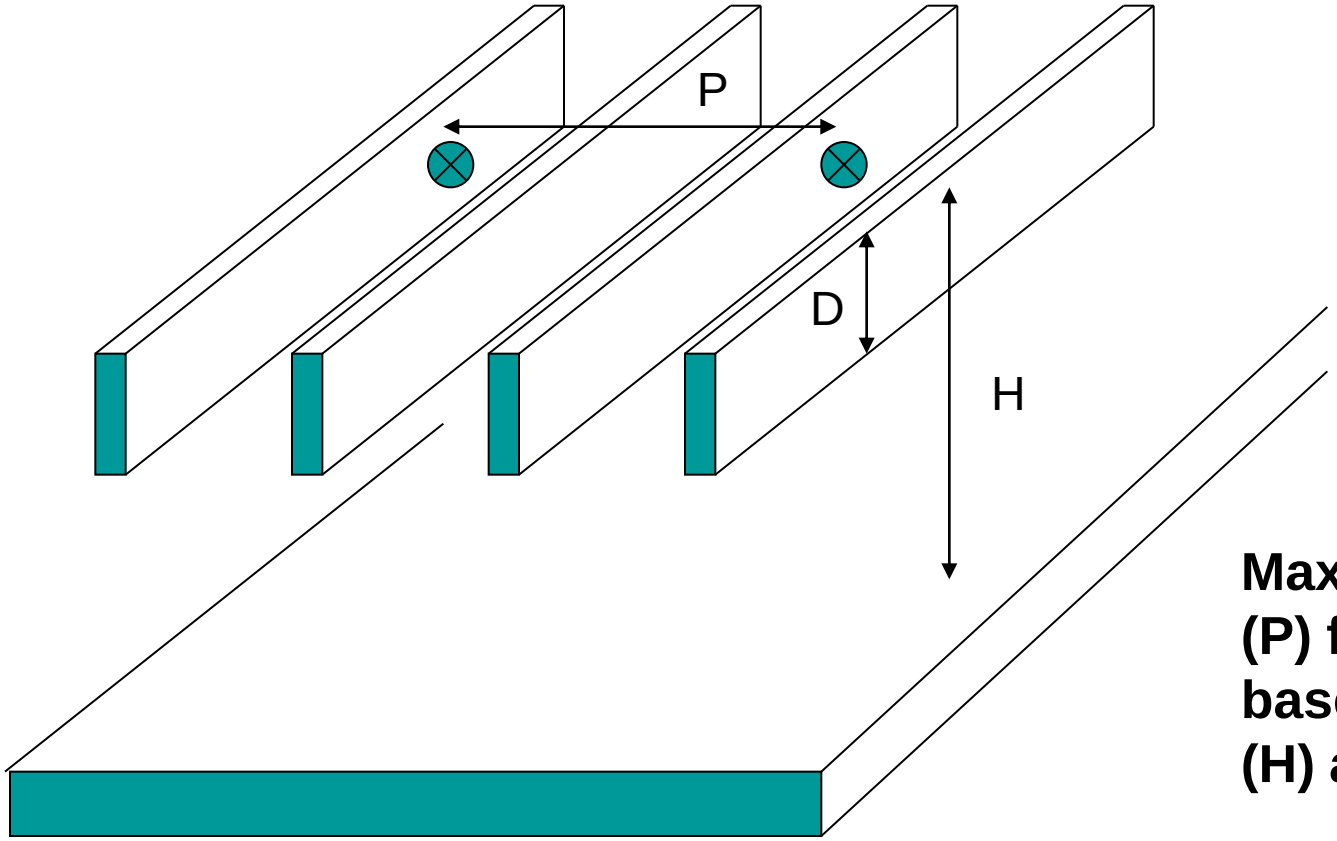


Section

Honeycombs/Coffers - Spacing



Closely Spaced Beams



Maximum spacing (P) from a Table based on Height (H) and Depth (D)

Design - C.I.E.

- Duplicate C.I.E. for Special Needs
  - Height consideration
- Primary Indication:
  - Detection Zone of Alarm
- Multi Occupancy
  - Local Panel per Occupancy
  - Interface to House CIE
  - “Zone Indication” on Main CIE per occupancy

Cables - Design/ Installation

- Confirmed Type of Cable
  - Corrigendum from 2009 included
- Cable Glands Required
  - Unless closed mechanical protection provided e.g. Conduit
- Cable Mounting options outlined
  - Top of Tray
  - In Screwed Steel conduit
  - Stainless steel ties

Installation/ Commissioning

- Few material changes
- 8.5.5 Parties involved in Commissioning
  - Now to include - Interfaced Equipment Supplier e.g. Lift, Vent etc.
- 8.5.11.2.2 Verification
  - Alteration from “Should” to “Shall” be carried out by a competent person

Servicing

- Frequency amended
- Only Annual requirements outlined
  - All Devices Once per Annum
  - Central equipment Four times per Annum
    - Interval : Min 2 Month Max 4 Month
  - Total Visual inspection on phased basis per annum
- Emphasis on Annual certificate
  - Will now show Central equipment test dates

Residential - Category

- Category LD1
  - Now to cover Attics/ Lofts
  - Remote Control for Test, Alarm Location & Silence
- Category LD2
  - < 4 Floors & < 200m² per floor
  - 1 Family or max 6 persons
  - Now to cover Bedrooms

Residential - Radio

- Grade D
  - Interconnection by Radio acceptable
  - Still needs Mains + Battery device
- Previously unprotected Dwellings
  - Includes Multi Occupancy & Houses
  - Radio with 10 year battery allowed
  - Interconnection required (as per Grade D)

Residential - Detector Location

- Coverage now specified
  - Smoke/CO Alarm unit: 100m²
  - Heat Alarm unit: 50m²
- Spacing – distance to detector
  - Habitable area : Max = 6m from Detector
  - Bedroom Door : Max = 3m from Detector

Residential - L3X System

- Interconnections
  - No interconnection of Residential alarm units to central L3X system
- L3X Sounder in Apt Hall can be omitted
  - If other L3X sounders in bedrooms achieve sound level

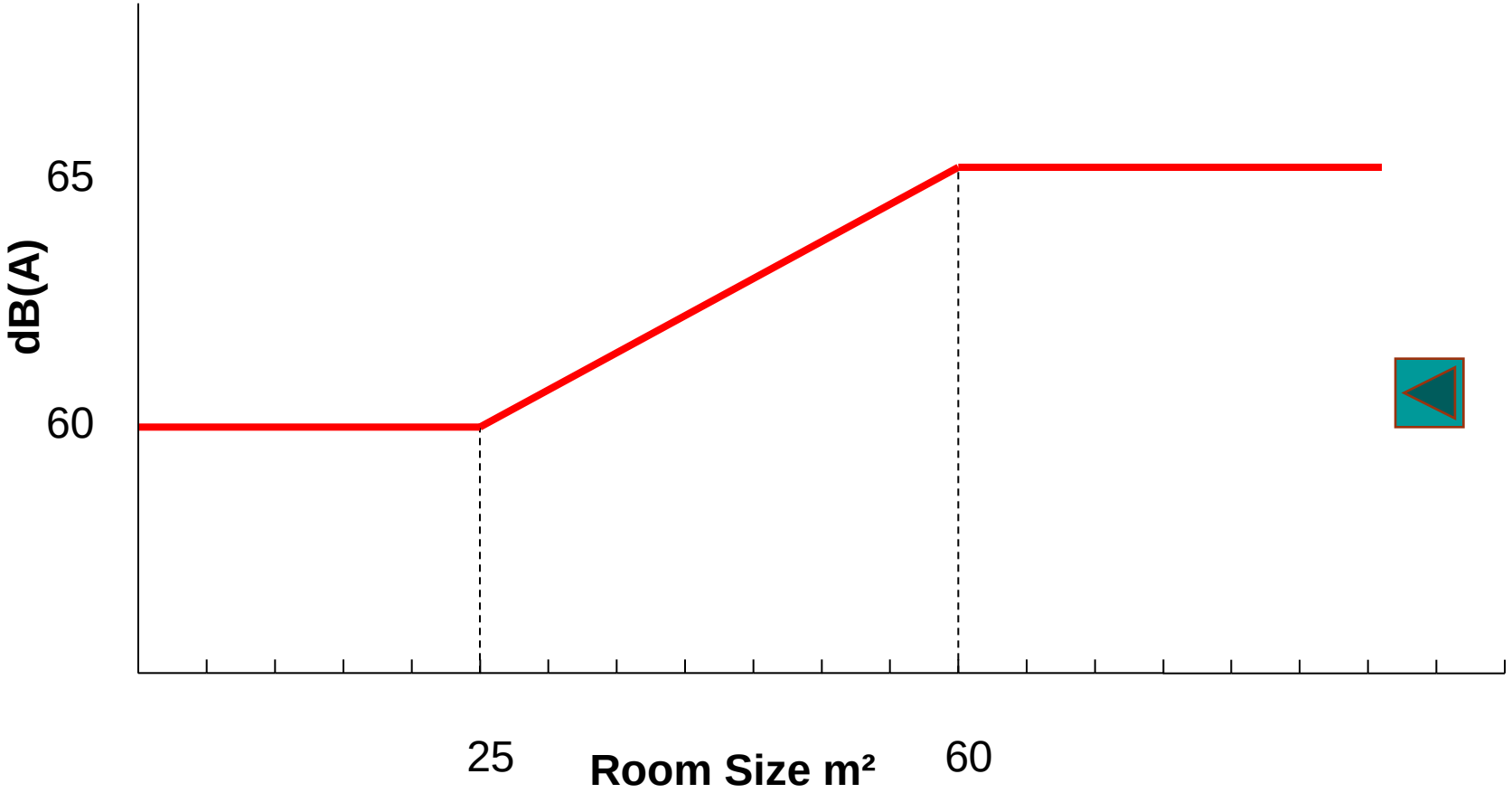
Questions

Support Slides/ Graphics

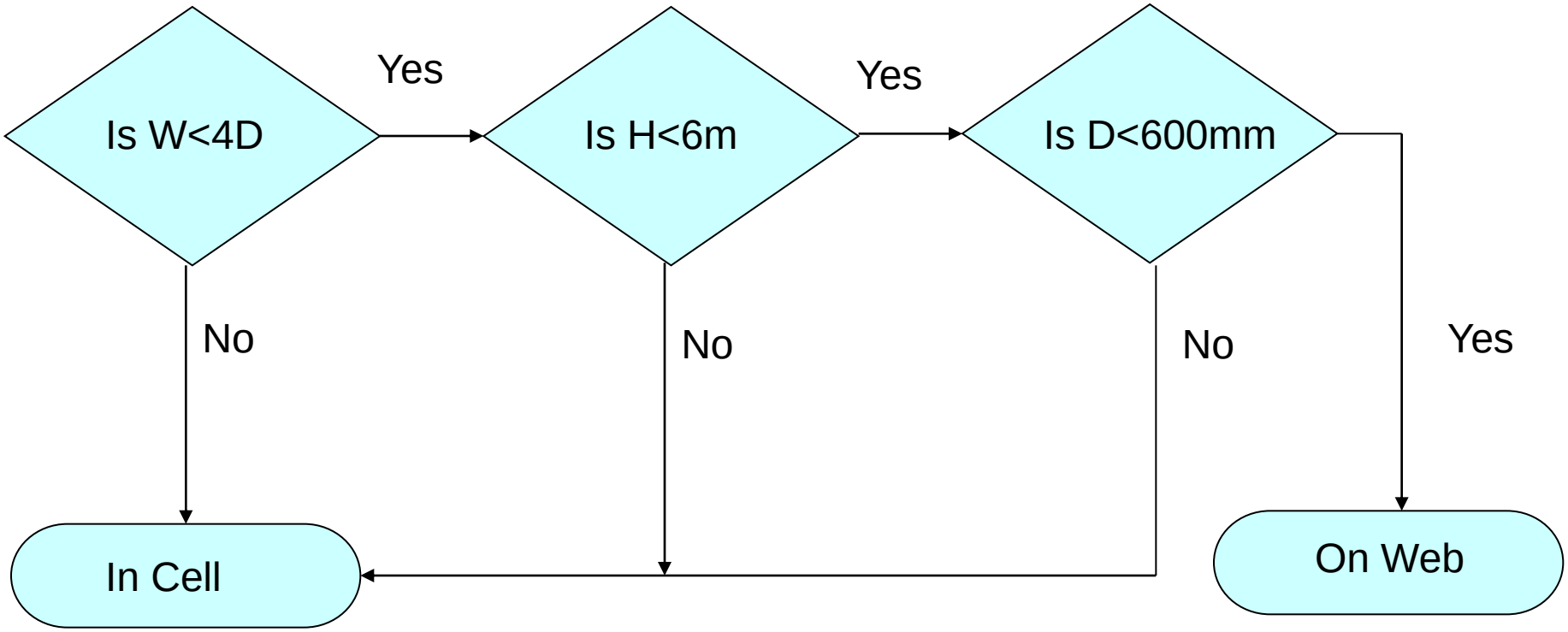
Definition

- Professional Engineer
  - Competent person who is a member of a Professional Body or Organisation which promotes and monitors skills-development in the design of FDAS systems, through certified training and Continuous Professional Development (CPD) programmes.

Rooms 25 – 60 m²



Flow Chart - example



Special needs – C.I.E. mounting height

Main C.I.E.

1.4 to 1.8 m

Duplicate C.I.E. or Repeater panel

0.9 to 1.2 m