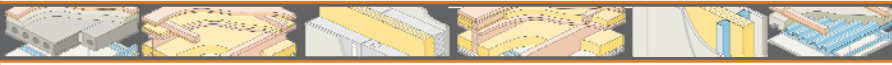



Slide 1

CIAT – Module 11
Additional guidance




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Welcome to the last module 11 – Additional guidance. This is the last module in the course.

Additional notes:

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Slide 2



Module Contents

This module will cover the following topics:

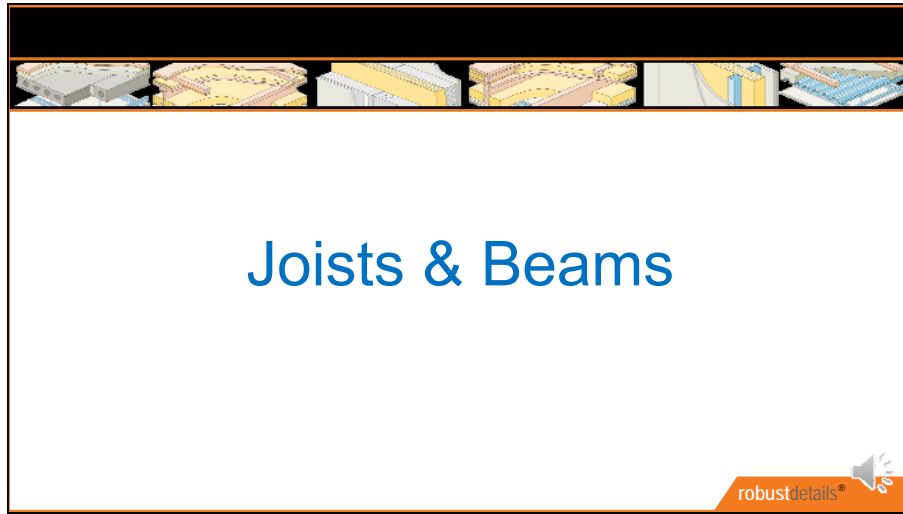
- Floors mounted on steel beams and boxing of beams
- Building timber joists into walls
- Service penetrations into walls
- Flues
- Room in roof situations



This Module will cover the following topics

Additional notes:

Slide 3




The testing will also set the extent of services integration
So if structures had been tested with services in place, and they still work acoustically, then
this can be included in the spec.

Additional notes:

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Slide 4

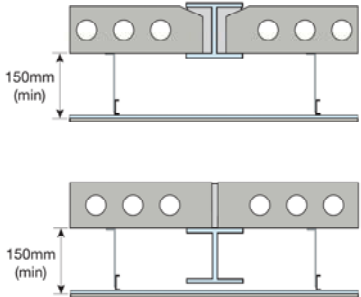
Steel Beams




Steel Support: No Additional Treatments

Most precast floors allow 100mm void with 200mm plank

But where steels are included, void must be min. 150mm regardless of plank thickness



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Sometimes, steel beams need to be introduced to give a mid-span support to concrete floors. The diagrams in the Handbook show planks, but this applies just the same to beam & block.

As a rule, the plank + ceiling void = 300mm, so 150 plank has 150 void; 200 plank has 100 void

Where steels are incorporated with no additional treatment, a larger 150mm ceiling void must be used, even with a 200mm plank, to allow the sound energy to dissipate.


And as with every other joint in the planks, these voids must be fully grouted.

Additional notes:

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Slide 5

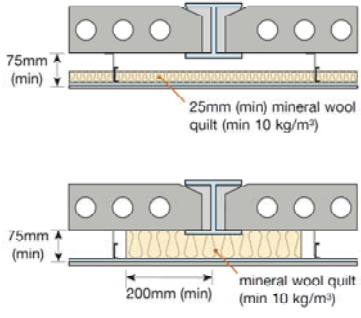
Steel Beams



Steel Support: With Additional Treatments

Most precast floors must have min. 100mm void

But where Robust Detail allows, min. 75mm void can be used, provided it is insulated



75mm (min)

25mm (min) mineral wool quilt (min 10 kg/m²)

75mm (min)

200mm (min) mineral wool quilt (min 10 kg/m²)

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If the ceiling height is limited, a smaller void can be accommodated... but with the aid of additional treatments – and only where the Robust Detail allows.

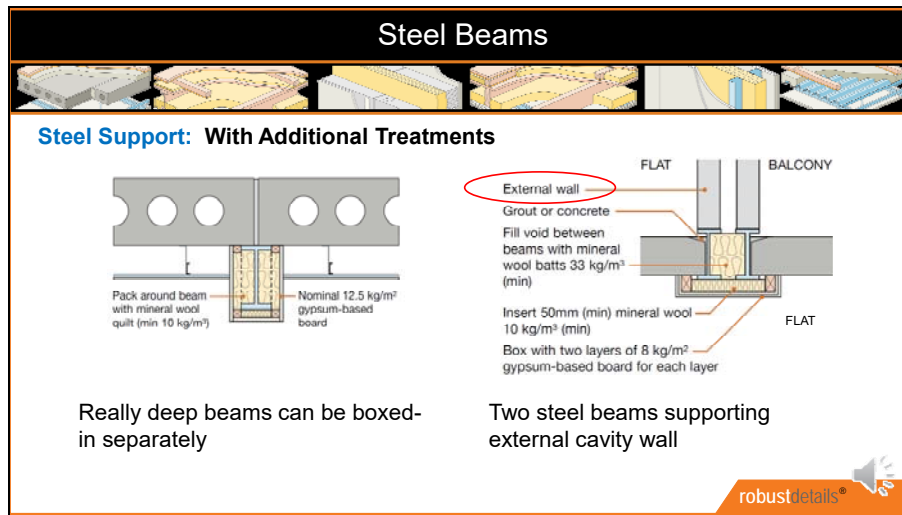
So either 25mm of insulation to the whole ceiling area where the beam appears; or full-thickness insulation locally to the beam

But of course if the Robust Detail shows that there has to be a min.100 void, it doesn't mean you can introduce a steel and insulation, and reduce it to 75 – E-FC-1 incidentally allows voids down to 65mm

Additional notes:

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Slide 6



If you have a really deep beam, then it is possible for it extend through the ceiling line, but it must be packed with mineral wool and be boxed-in with heavy board. And it is advisable that the framing does not touch the beam.

Then finally, where the floor continues out to form a balcony, the flanking path from flat-flat has to be protected. There is no requirement under E1 to guard against noise from the outside, but it is good practice to mitigate against impact noise from the balcony.


And just to emphasise, this is an external wall... separating walls cannot be built off steels!!

Additional notes:

A rectangular box containing ten horizontal lines for taking notes.



Slide 7

Joists



Joists and Beams: Can be built in...

- Blocks are taken into the steel beam.
- All voids around the beam ends are filled with mortar or flexible sealant.
- Only beam ends can be built in. Steel columns built into masonry separating walls are not permitted.
- **This only applies to masonry.**



The ends of these solid steel beams, so not RHS, can be built in provided
Blocks extend right into the beam – so please, no squirty foam
And all joints are fully sealed.

As just mentioned only beam ends can be built-in. Columns remove a lot of mass from the wall and change the acoustic stiffness – which can lead to poor performance.


The other point to note is Steel is not allowed anywhere near timber Robust Details – if additional support is needed, you could perhaps look at composite timber components.

Additional notes:

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Slide 8


Joists



Joists and Beams: Can be built in...

- Mortar joints around each joist perimeter are recessed.
- Joint is carefully pointed with silicone sealant.
- Alternatively, proprietary joist caps/ends designed to satisfy the air leakage requirements of Approved Document L1 may be used.



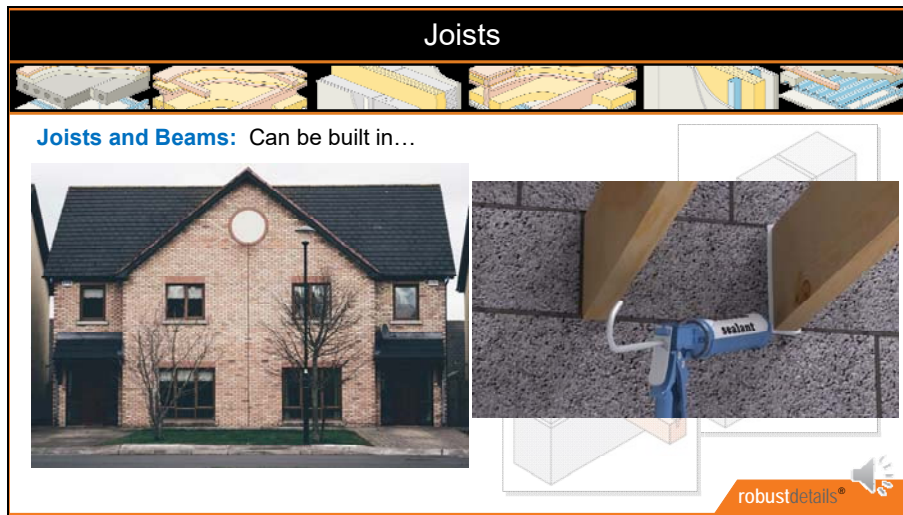
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As shown in Appendix A1, it is possible to also build joists into **cavity** masonry walls – but to ensure they don't create a flanking path through the wall [read slide]
This animation from our website that shows I-Joists with packers at the end, and Metal web joists having solid ends can be fully built in in the same way.

Additional notes:

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Slide 9

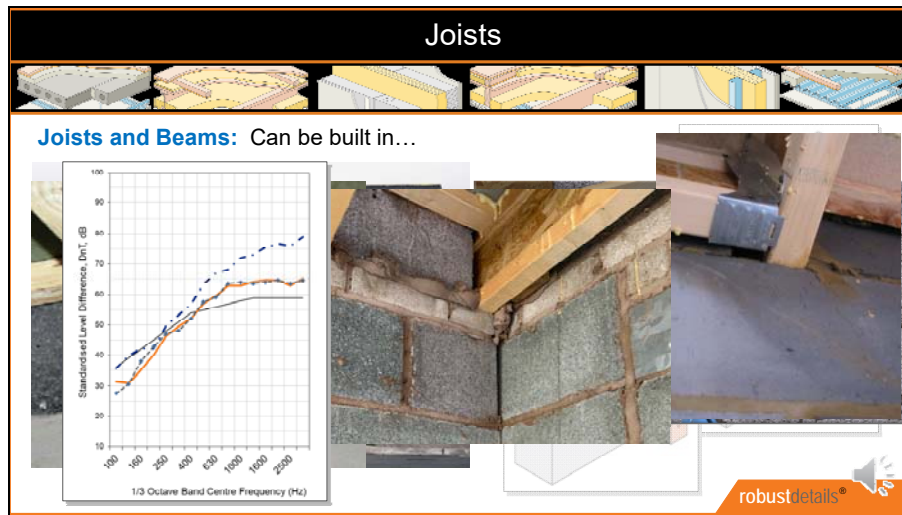


If the separating wall is inline with the ridge, then the mono-pitch trusses either side can have extended top and bottom cords, and they can be built in as well – vertical members cannot be built-in; and you can't include wall-plates.

Additional notes:

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Slide 10

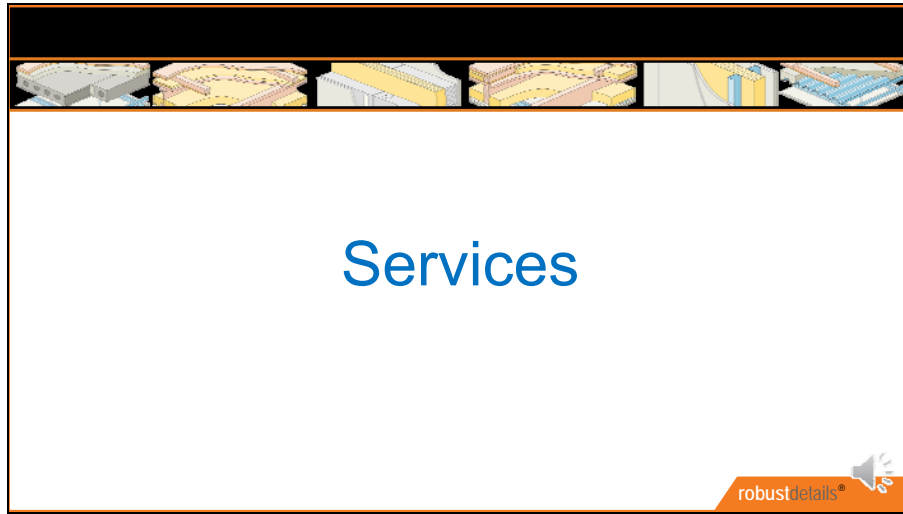


When building in to the correct Robust Details guidance, some builders are very able and willing to do this...
Others not so.
Where gaps are left, high frequency noise can creep through – as we can see when this scenario is tested... there is a marked drop off at the top of the frequency range compared to a wall that's finished correctly.

Additional notes:

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Slide 11




The testing will also set the extent of services integration
So if structures had been tested with services in place, and they still work acoustically, then
this can be included in the spec.

Additional notes:

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Slide 12

Services



How the services are installed can affect the acoustic performance

- **Specific Guidance** is given in each **Robust Detail specification**
- **Additional Guidance** is given in **Appendix A1**



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This can be critical to the acoustic performance, so there is Detail-specific guidance in the DO box on p.1 of each of the Details, as well as in the relevant diagrams through the Detail; And there's a whole load of additional information in the Appendix A1 – which is more generic, and can apply to any of the Details.

Additional notes:

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Slide 13


Services in Walls



Masonry walls

Most of the 31 masonry wall types allow **Chasing** for services...

- Keep any chases for services to a minimum
- Stagger to avoid being directly back to back
- Fill well with mortar
- Keep cappings away from the gypsum board

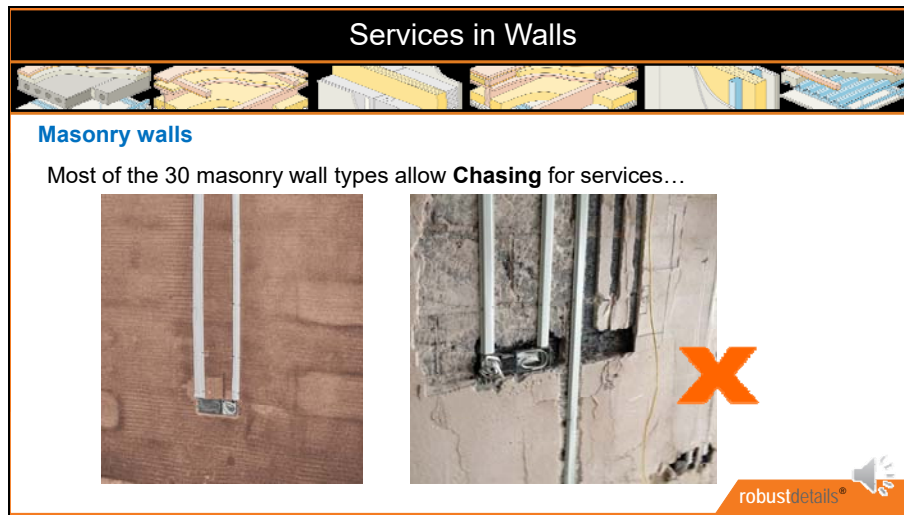
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So for those that CAN accommodate chasing...
Also other regs and standards dealing with depths of chases from a structural standpoint.

Additional notes:

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Slide 14



So here's a nice example of back-boxes being chased in to the wall to keep chasing to a minimum

And talking of keeping chases to a minimum...


– just need to make sure cappings don't touch the back of the gypsum board – which is unlikely to happen in the second example.

Additional notes:

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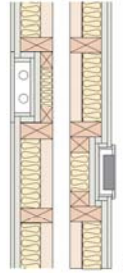
Slide 15

Services in Walls




Light Frame walls

All of these wall types allow services within the wall leaf...
... although **cab**le runs and **pip**ed service provisions will vary



Stagger services on each side of wall such that they are not positioned in back-to-back bays

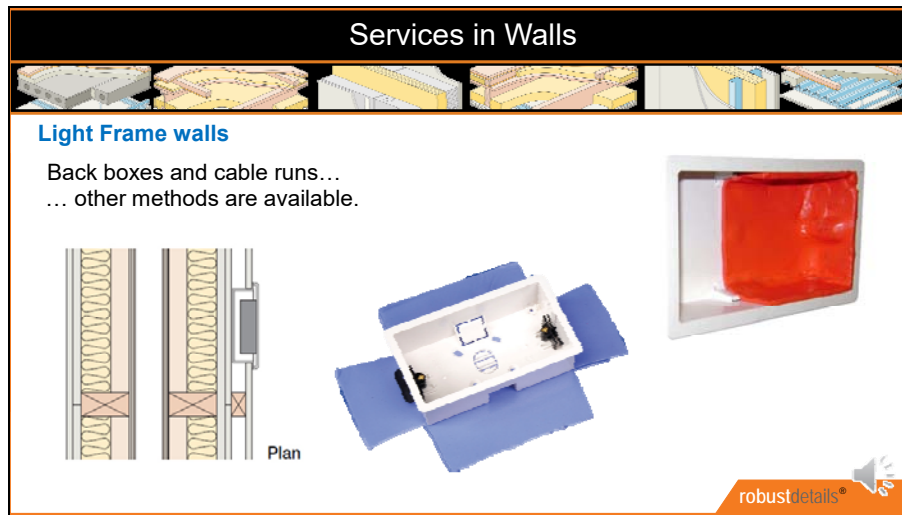
Provide two or more layers of gypsum-based board (total nominal mass per unit area as the main linings)

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Now moving onto light frame walls – so timber and light steel frame
Regardless of it being electrical or piped services, ensure ...
... piped services need boxing full height – whereas back box only localized boxing

Additional notes:

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Now focussing on the electrics...

Creating the double boarding around a back-box is not the easiest, so you could consider


- Service zones – keeps primary lining intact for sound and fire - recommended in kitchens etc
- Putty pads and other proprietary enclosures – but not all the same, must be able to provide letter saying we've assessed

Additional notes:

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Slide 17

Services in Walls




Masonry walls

Integral Flue Blocks

Integral flue blocks can be fitted to walls that have:

- Aggregate blocks
- Dry-line finish
- Empty or partial-fill cavity or one with **generic** full-fill
(except E-WM-12 and E-WM-19)

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So we'll start off with separating walls – and perhaps the biggest of the services: Flues and Chimneys.

By integral flue blocks, we mean those concrete blocks that replace the standard blocks in the wall leafs.


As a rule, they can be fitted in walls that have ...

Additional notes:

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Slide 18

Services in Walls

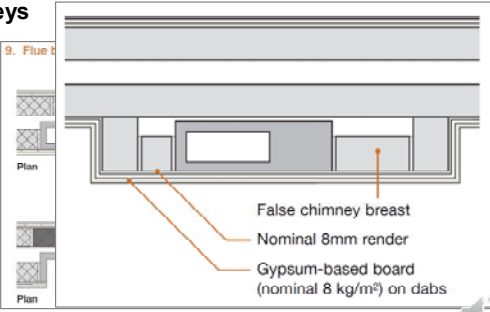


Masonry walls

Integral Flue Blocks and Chimneys

... or more simply:

- if there's a diagram in the Detail
- otherwise refer to Appendix A1



9. Flue t

Plan

Plan

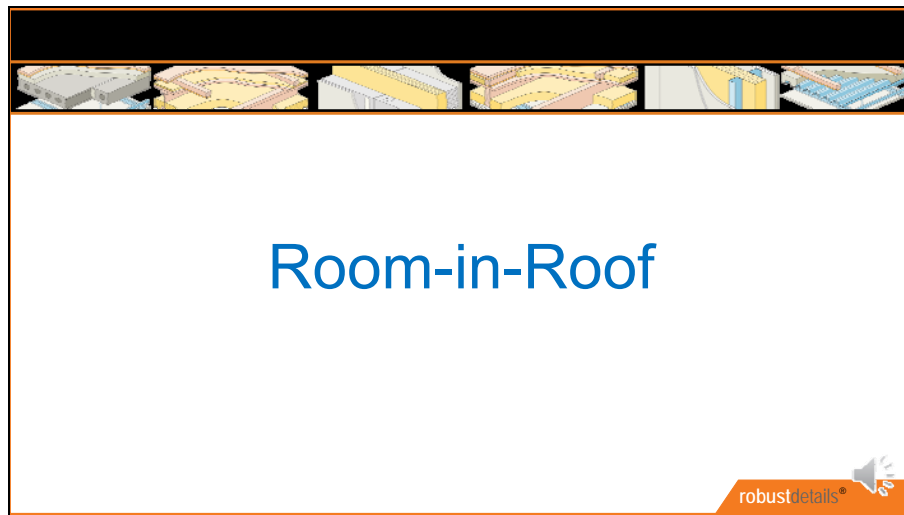
False chimney breast
Nominal 8mm render
Gypsum-based board
(nominal 8 kg/m²) on dabs

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But you don't have to remember all that... The simple way is if there's a diagram in the wall Detail, then you can do it.
If the wall can't take integral flue blocks, then there is guidance in Appendix A1 – but as you can see, this involves a false chimney breast (for the FULL height of wall), which must be provided with dry-lining, which can be in addition to a wet plaster finish if this is specified on the chosen wall.

Additional notes:

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Lastly lets looks at the roof-in-roof additional guidance

Additional notes:

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Slide 20

Room-in-Roof



The roof space can have a couple of purposes:

- **Non Room-in-Roof** – or loft space
- **Room-in-Roof** – where accommodation is provided in the pitched roof area



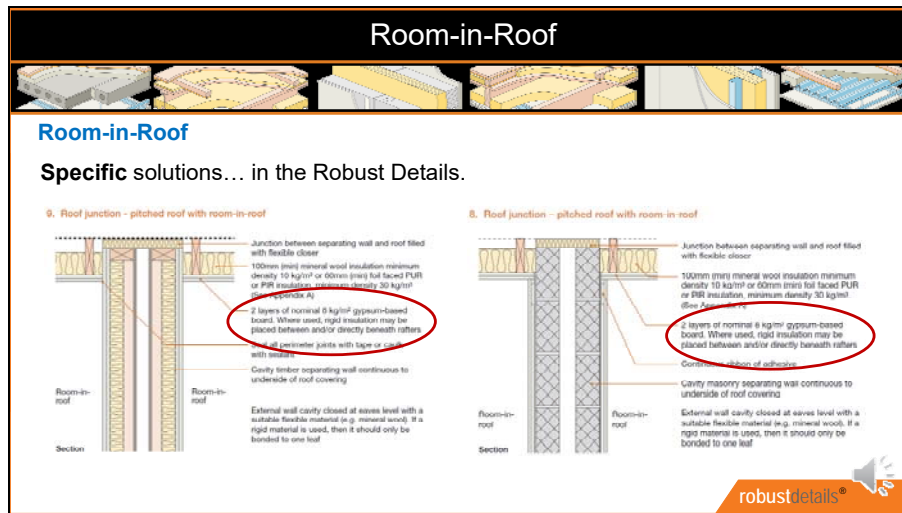
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The roof space can have a couple of purposes

The 2 main scenarios – are Non-room-in-roof and room-in-roof and both are dealt with differently in Robust Details terms.

Additional notes:

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Lets look at Rooms-in-Roof first

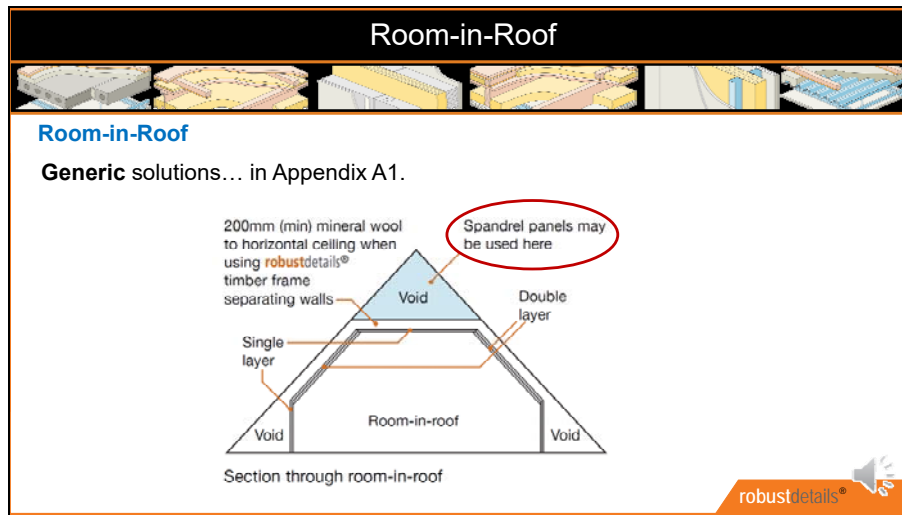
This is where there is a continuation of the separating wall through out the build – and specification is continuous.

So that’s insulation all the way up, and no use of lighter weight blocks – if aircrete blocks wanted, then build aircrete wall

Note, where there is a minimal void above ceiling board (for example sloping ceilings section), 2 layers of gypsum-based board is required.

Additional notes:

A large rectangular box containing ten horizontal lines for taking notes.



Additional guidance in Appendix A1 on lining requirements – for rooms directly against the separating wall

Also note that although generic spandrels can't be used for the wall, they can be used but above the RIR element

Voids will help to dissipate the sound, so these only need 1 layer as a minimum

Additional notes:

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Slide 23

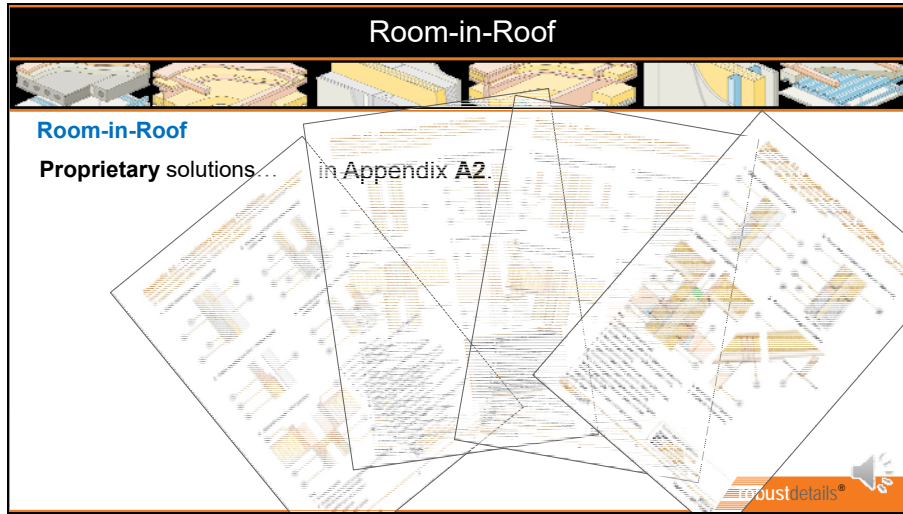


As just mentioned, the generic spandrels can't be used for room-in-roof, so if you want to take over with a lighter structure, in Appendix A2 we have
Proprietary solutions are available to fit timber spandrels on top of masonry walls – however, these have roof cassettes rather than using roof trusses.

Additional notes:

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Slide 24




Each of these has its own requirements and method of installation
So make sure you refer to the appropriate page in the Appendix; and refer to the manufacturer's guidance.

Additional notes:

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Room-in-Roof




Room-in-Roof
Proprietary solutions...

- **Not all separating walls** are approved to use the proprietary systems
- **Refer to Table 6a in Introduction** to check compatibility

Introduction

Table 6a (continued) – Robust Detail separating walls which can be used together with the proprietary flanking constructions contained in Appendix A2

	SmartRoof system	Ringspan TDx	Protekspan ProPeak 60	Wall Cap RD42	RoofSpace I-Roof	Space4 system	Smart Mine Signa Panel	Lightweight external cladding systems
Timber walls	E-WT-1	✓	✓	✓	✓	✓	✓	✓
	E-WT-2	✓	✓	✓	✓	✓	✓	✓
	E-WT-3	✓			✓			
	E-WT-4	✓		✓	✓			
Steel walls	E-WS-1				✓			
	E-WS-2							
	E-WS-3							
	E-WS-4			✓				
	E-WS-5							

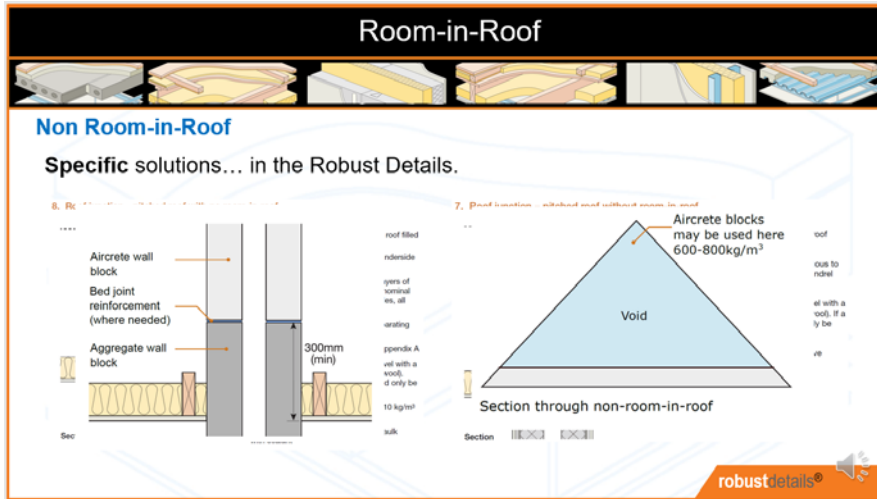
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The other thing to remember is...

So as we can see in this table, you need to ensure that the right system is selected for the wall that's being built;

Or you select the right wall to match the RIR system you want to use.

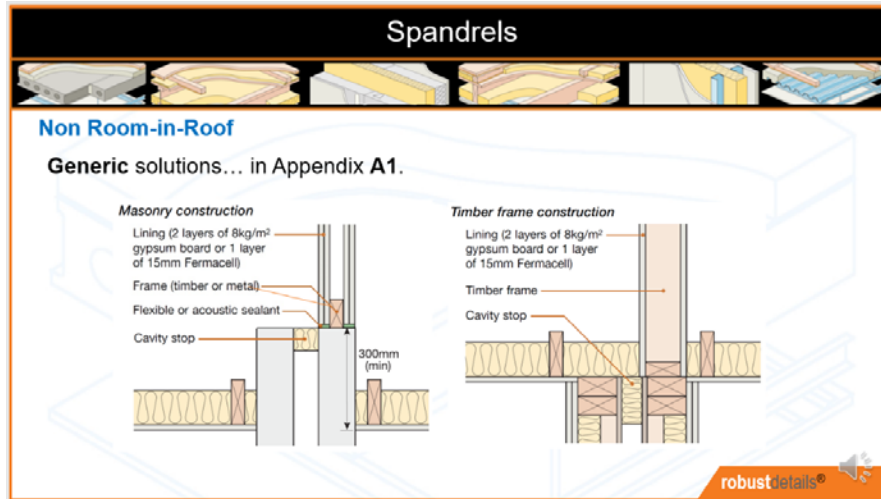
Additional notes:



Moving onto non room-in-roof, these are what you might see in the Details themselves
Note lack of insulation, as replaced by ceiling insulation – same with render missing from masonry. It is possible to alter the Blockwork within the roof area, but this must start a minimum of 300mm above the ceiling level as seen here (click) and aircrete blocks need to have a density between 600-800kg/m³
The separating wall within the non room-in-roof does other generic options as seen in our Appendices.

Additional notes:

A large rectangular box containing ten horizontal lines for taking notes.



So let's look at these generic solutions in Appendix A1.

We have the options to utilise spandrel panels shown here for use with both timber and masonry walls, but the same can be applied for use on steel frame walls as well. It's worth noting that a single layer of Fermacell can be used as an alternative to two layers of gypsum board.

The single spandrel is okay for simple layouts but more complex layouts, such as but flats, might require twin leaf approach (click) but always ensure the spandrel must not bridge the cavity.

Additional notes:

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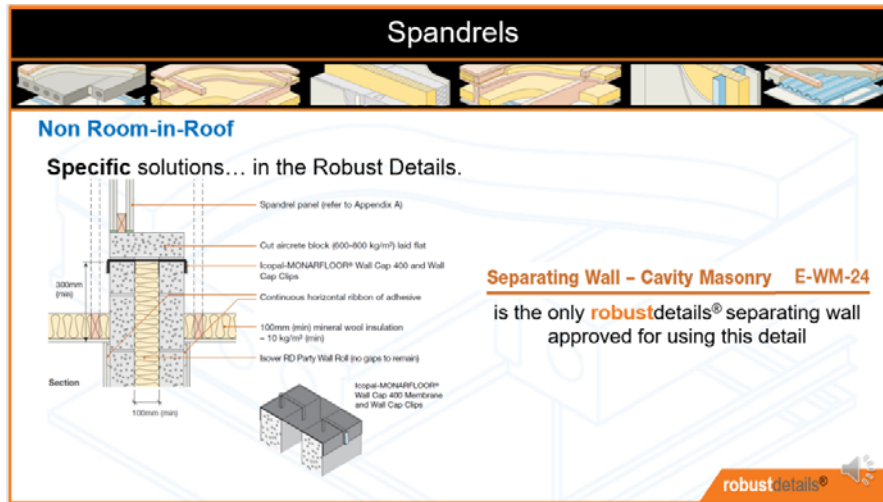


Blocks laid flat at the top of the wall does seem to be quite common practice

Possibly good for fire-stopping and for allowing spandrel to be positioned, but not good for sound, as it connects wall leaves together

Additional notes:

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And because of this we have one wall type that has been approved with block laid flat but it must have the Icopal-MONARFLOOR Wall Cap, which then reinstates the isolation.

E-WM-34 is the only wall approved using this details so no other wall type can use this method.


By utilising this detail, it allows a single spandrel which are generic solutions.

Additional notes:

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Slide 30

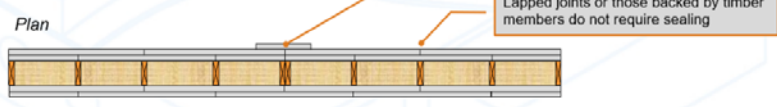
Spandrels



Non Room-in-Roof

Generic solutions... in Appendix A1.

Plan



- These are minimum requirements for robustdetails®
- You should also reference other Regulations and Standards such as Part B (Fire) and the guidance from NHBC publications

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There are instances where spandrel panels are delivered to site in parts for easier transportation, normally supplied in 2 halves. In Appendix A1 we say lapped joints or those backed by timber members do not require sealing


However, straight joints represent a weakness, so these should be treated with sealant or gypsum board cover strips

Alternatively, spandrels could be boarded like this


Read remainder of slide

Additional notes:

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Summary Test – Module 11
Quick Review of Key Points




Now for a quick TEST to recap on Module 11

Additional notes:


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Slide 32

Summary Test – Module 11



No.	Question
1	Whereabouts in the Robust Details Handbook would you find additional guidance?
2	If a steel is used to provide support for the PCC floor, are additional treatments needed if there is a ceiling void of 150mm? And why?
3	If a steel extends past the depth of the ceiling void, what should the steel be placed in?
4	What additional treatments are needed for a steel beam in a Timber Frame wall?
5	True or false: separating wall can have a monotruss roof with extended top and bottom cords built in, provided they are mounted on a timber wall plate?
6	If services are needed on both sides of a separating wall, what is the best practice to ensure you limit the transfer of sound?
7	What 2 ways can you install electrical back boxes within timber frame walls?
8	What proprietary products could be used in place of the need for 2 layers of gypsum-based boards around electrical back boxes?
9	How do you know if integral Flue blocks can be installed in a Robust Detail wall?
10	Can generic (Appendix A1) spandrel panels be used on separating walls where there is a Room-in-roof ?
11	How many layers of Gypsum-based board should be used on the sloping ceiling part of a room-in-roof that is against the separating wall?



Here are the questions – you may wish to PAUSE the recording and test yourself against these questions.

Once you have answered all of them – the next slide provides the answers.
In 10 seconds the slide will change so press pause now if you want to test yourself first.

Thank you for following Module 11.


(Hold for 10 seconds) then move to next slide

Additional notes:



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Slide 33

Summary Test – Answers



No.	Answer
1	Appendices.
2	No because additional treatment of insulation is only required where the ceiling void is less than 150mm.
3	Heavy gypsum based board boxing filled with mineral wool
4	None - Steel should not be used in timber frame so a composite timber alternative should be considered instead
5	False - the trusses must be built in exactly the same way as joists. Wall plates cannot be included.
6	Avoid where possible, Stagger the services, fill well with mortar and don't let any capping/ conduit contact the gypsum-based board.
7	Built into the wall or within a secondary service void.
8	Putty Pads - but these must have tested to Appendix H in the Robust Details Handbook.
9	The detail will show this - if no, refer to Appendix A1.
10	No, you can only use them between loft spaces.
11	2 because there is a minimal void behind the board.

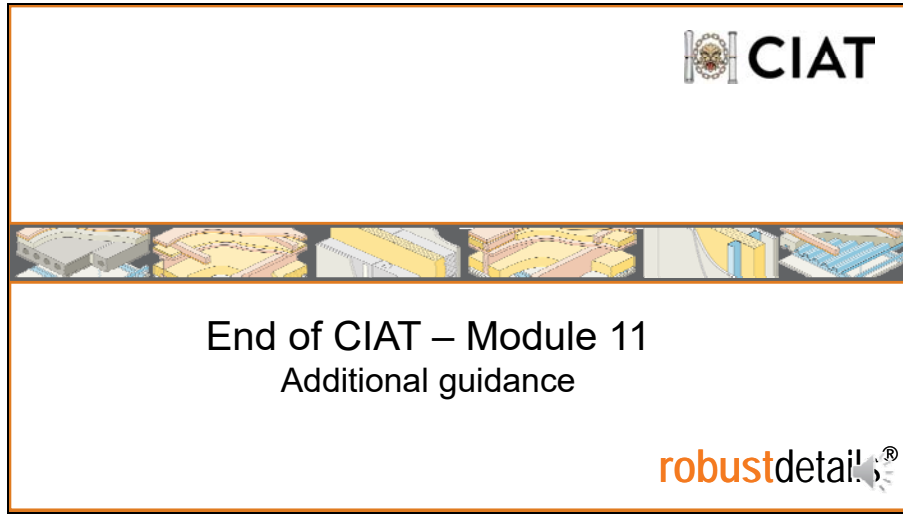
 

Here are the answer to Module 11's quick test.
How did you do?

Thank you for following Module 11

Additional notes:

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This is the end of Module 11 – Additional guidance and the end of the short course.

Additional notes:

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