

Convention 4.08 Modelling a Zone within a Zone

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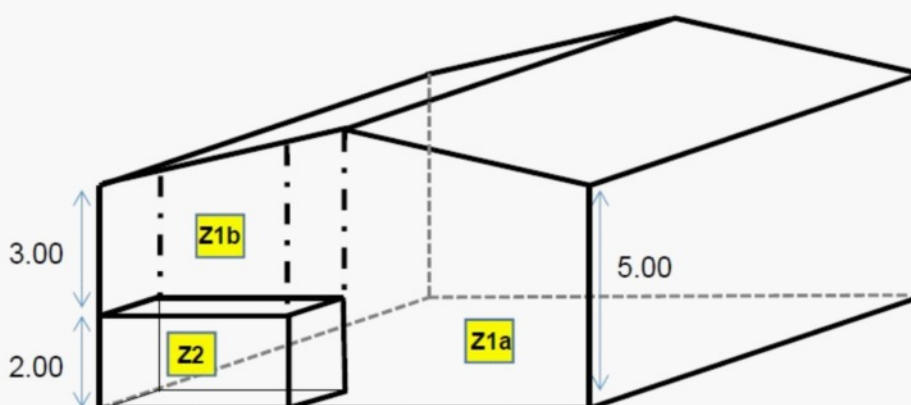
Notes to Support Diagram Below

Z1a – Full height part of the outer zone – Height = 5.00m

Z1b – Part of the outer zone extending over the inner zone - Height = 3.00m

Z2 – Inner zone – Height = 2.00m

The floor of Z1b is only included in the floor area of the EPC if it has permanent access and is a usable floor area but it must always be modelled as an envelope.



Convention Text

This convention applies where a separate zone (Zone 2) enclosed by walls, doors, ceilings and/or windows, exists within the envelope of a larger space or building (Zone 1), at least one of the boundary walls of Zone 1 forms the boundary wall to Zone 2 (and there is a view of the walls of Zone 1 where it extends above Zone 2). A typical scenario would be where there is an office or toilet block (Zone 2) in the corner of an industrial unit or warehouse (Zone 1).

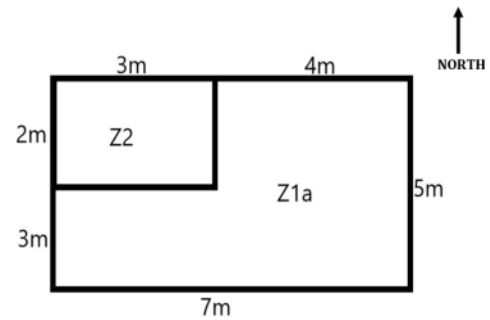
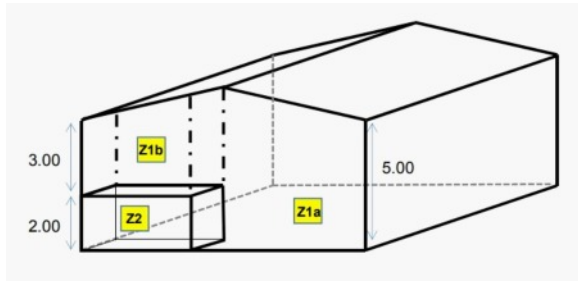
The floor envelope of Z1b must be entered to take account of the heat transfer and thermal mass. However, it must only be included as floor area on the EPC if it has permanent fixed access and it is a useable floor space in accordance with the definition of GIA from RICS Code of measuring practice.

For the purposes of modelling this scenario in SBEM.

If the space above Zone 2 is accessible floor area, Zone 1a and Zone 1b are entered as two separate zones which can have different properties if applicable.

If the space above Zone 2 is not accessible floor area Zone 1a and Zone 1b are entered as a single zone and will have the same properties. The floor area of Zone 1b is not to be included in the zone area. (The method of achieving this will vary depending upon the approved software used).

Worked example



The **wall envelopes** for Zone 1 (Z1a and Z1b combined) should be entered as follows:

$$N \text{ (External)} = (4\text{m} * 5\text{m}) + (3\text{m} * 3\text{m}) = 29\text{m}^2$$

$$N \text{ (Internal)} = (2\text{m} * 3\text{m}) = 6\text{m}^2$$

$$E = (5\text{m} * 5\text{m}) = 25\text{m}^2 + \text{Area of gable}$$

$$S = (7\text{m} * 5\text{m}) = 35\text{m}^2$$

$$W \text{ (External)} = (3\text{m} * 5\text{m}) + (2\text{m} * 3\text{m}) = 21\text{m}^2 + \text{Area of gable}$$

$$W \text{ (Internal)} = (2\text{m} * 2\text{m}) = 4\text{m}^2$$

The envelope inputs for N and W must include the wall space above Z2 (see diagram 1 above Z1b).

The envelope inputs for E and W must also include the area of the gable if the roof is pitched as in this example.

The **roof and floor envelopes** for Zone 1 (Z1a and Z1b combined) should be entered as follows:

R = The actual area of the roof which...

- for a flat roof will be $(5\text{m} * 7\text{m}) = 35\text{m}^2$ but

- for a pitched roof as in the example, will be greater than 35m^2

$$F \text{ (To underground)} = (4\text{m} * 5\text{m}) + (3\text{m} * 3\text{m}) = 29\text{m}^2$$

$$F \text{ (Internal)} = (3\text{m} * 2\text{m}) = 6\text{m}^2$$

A ground floor envelope will be entered for the ground floor area of Z1a - 29m^2 . An internal Floor/Ceiling envelope (the other side of the ceiling envelope of Z2) is then entered for the floor of Z1b as 6m^2 . This will be entered with an adjacency determined by the conditioning in Z2.

Floor Envelope Z1a

Floor	Ground floor	G Underground	29
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Floor Envelope Z1b

Floor	Internal floors and ceilings	G Conditioned adjoining spe	6
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There are always two floor envelopes but the area entered as the zone area is only the accessible floor area. In this example:

a) If the space above the inner zone is accessible, the zone area would be entered as 35m^2

b) If the space above the inner zone is NOT accessible, the zone area would be entered as 29m^2 .

Important note

If Z1b (the space above the inner zone) is NOT accessible floor you must treat the whole of Zone 1 i.e. Z1a and Z1b as a single zone as above. This is because Z1b has a zero usable floor area, and you cannot have a zone with zero area.

If Z1b (the space above the inner zone) IS accessible floor, the convention indicates you treat Z1a and Z1b as separate zones. However, if they have the same characteristics it may be appropriate to then follow SBEM guidance to merge contiguous zones with the same characteristics into a single zone. (In many cases it will make no difference which you choose but SBEM will possibly handle daylighting and solar gain slightly more appropriately if you combine them as a single zone).

Background

This document is based on the Stroma Certification Technical Bulletin on this subject.

In March 2023 Proficiency identified to Stroma that there were some inconsistencies in the technical bulletin, and an error in respect of the indicated areas of the pitched roof and gable ends. With the merger between Stroma Certification and Elmhurst Energy already underway, it was not going to be practical for Stroma to get an updated technical bulletin released.

It was therefore agreed that Proficiency would issue an updated version to assist our Stroma accredited members (and any non-members wishing to use it) with better understanding the convention over the merger period. Once the merger has been completed, Elmhurst published guidance will become applicable to members of the combined scheme and the incorrect Stroma guidance will become obsolete.

This guidance document is therefore intended primarily to improve clarity for Stroma members ahead of their transfer into the Elmhurst scheme at which point this document should no longer be needed. However, as this document is also believed to be fully consistent with Elmhurst guidance on convention 4.08 and with the convention itself then it should:

- a) Assist in ensuring Stroma members already understand the convention in the same way as Elmhurst members when they come together.
- b) Remain a suitable additional guidance document for members of any scheme for as long as convention 4.08 continues to apply as currently included in Issue 8 of the non-domestic EPC conventions.

Disclaimer.

Hopefully this will provide some clarity and assist in applying convention 4.08 as published in Issue 8 of the non-domestic EPC conventions.

Ultimately the arbiters of your approach are your accreditation scheme, and their decision is the final one. The above does not override any guidance or instruction you are given by your scheme. However, we have been actively involved in the writing of this convention so believe the above should be consistent with the advice you get from any of them.

Should you receive guidance from a scheme which contradicts the guidance above, please let us know. In that instance we can explore the reasons and either update this guidance or challenge the scheme to justify or correct theirs.

This guidance is believed to be correct at the date of writing but may not remain correct should conventions or cross scheme guidance be altered.