Convention 6.13
Identifying Indirectly Conditioned Zones

Convention 6.13 text

Where a zone is without any form of fixed conditioning equipment, but at least 50% of the surrounding envelope area including party walls, party floors and party ceilings is adjacent to directly conditioned space, (or for party envelopes is assumed to be adjacent to conditioned space), then it will be assumed to be indirectly conditioned.

The zone will be assigned the same HVAC as the adjacent spaces, or the larger proportion of adjacent spaces unless there is significant air transfer with a specific adjacent zone, for example through a frequently used doorway.

The energy assessor should provide suitable evidence to show that there is no fixed / direct conditioning equipment within the zone and that at least 50% of the surrounding area is conditioned, i.e. a floor plan and/or photos of the unconditioned zone.

A zone which has no fixed conditioning equipment but is being treated as "conditioned adjoining space" by applying assumed heating following convention 6.11 and appendix 10.07 is IS considered to be directly conditioned and does contribute to indirectly conditioning any adjacent zone.

Convention 6.13 changes

There are essentially two things changed in this convention in Issue 8.

1) Whether you include or exclude party walls has been reversed compared to Issue 7

2) Whether you treat assumed heating as directly conditioned space or not has been reversed compared to issue 7

The basic calculation principle has not changed at all however, so how you do the calculation of whether a space is indirectly conditioned or not has not changed.

Convention 6.13 explained

To be thinking about whether a space is indirectly conditioned it will need to be a space that is not directly conditioned. This convention does not apply to spaces that have fixed conditioning, and it does not apply to spaces which have assumed heating.

Do not make the mistake of confusing "assumed heating" with "indirect conditioning". They are not the same thing.

Assumed heating is where you treat a zone as being heated by fanned electric heaters because there is no fixed conditioning equipment, and it has an activity type for which heating is expected. Assumed heating is the application of conventions 6.11 and 10.07. A zone with assumed heating is considered to be "directly conditioned" zone.

Indirect conditioning is where you treat a zone as being conditioned by whatever conditions the space next to it because 50% or more of its envelopes are adjacent to conditioned space.

A **Proficiency** guidance document

In convention 6.13 direct conditioning (fixed conditioning equipment or assumed heating) can contribute to an adjacent zone being indirectly conditioned. Indirect conditioning does not. If a zone is indirectly conditioned, it does not then indirectly condition another zone. There is no knock on effect from one zone to another and then another.

Remember - **Only direct conditioning can indirectly condition**.

For a space with no fixed conditioning or assumed heating, if it is…

a) More than 50% surrounded by conditioned spaces, it will be indirectly conditioned*.

b) Exactly 50% surrounded by conditioned spaces, it will be indirectly conditioned*.

c) Less than 50% surrounded by conditioned spaces, it will be unconditioned.

In principle, you need to work out the total area of all your envelopes adjacent to directly conditioned space and the total area of all your envelopes not adjacent to directly conditioned space (i.e. adjacent to unconditioned and/or external and/or highly ventilated space and/or underground). Whichever there is most of determines whether the zone is indirectly conditioned or not.

In practice, you do not need to calculate what the actual areas of the envelopes are, you just need to be able to demonstrate that the total area of envelopes adjacent to conditioned space is more than or equal to 50% of the total envelopes or is less than 50% of the total envelopes.

Convention 6.13 made easy

If your zone has square corners and a flat ceiling, the total areas of the opposing envelopes will be the same. The total area of your North walls will be the same as the total area of your South walls. The total area of your East walls will be the same as the total area of your West walls. The total area of you floor will be the same as the total area of your ceiling**.

In many cases it is fairly obvious which adjacency is most prevalent. In many other cases it is clearly half and half. For the remaining cases, many of the envelopes can usually be matched against an equal and opposite other so cancel each other out. You only need to know the areas of the remaining ones.

For example, a North wall to directly conditioned opposite the same size South wall to external cancel each other out. A ground floor to underground opposite an internal ceiling to directly conditioned cancel each other out. If the East wall and West wall are also one to directly conditioned and one not, then you have 50% adjacency to directly conditioned and the zone is indirectly conditioned. If any opposing pairs do not cancel each other out then it is only those you need to know the areas of.

If you are using iSBEM you will already have your list of envelope sizes and adjacencies. (Ignoring the ones that cancel each other out) just add up the areas adjacent to directly conditioned and add up the rest. You can easily determine if it is indirectly conditioned or not at the point of creating the zone.

If you are using a third party interface to create the envelopes you can manually calculate all the relevant envelope areas (which seems like a lot of effort). Alternatively you can set the zones you are unsure of as unconditioned and run the calculation. Then look at the data reflection report for the relevant zone(s).

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Disregard opposing walls with opposing characteristics that cancel each other out (see below). Just add up the areas of the remaining ones adjacent to directly conditioned space and not adjacent to directly conditioned space. You have your answer without having to do any complicated calculations.

| Envelopes							
(Multiplier) Name	(1) Block 1 - Circ_S_3	(1) Block 1 - Circ_F_4	(1) Block 1 - Circ_P_5	(1) Block 1 - Circ_P_6	(1) Block 1 - Circ_P_7	(1) Block 1 - Circ_P_8	(1) Block 1 - Circ_W_9
Type	Floor or Ceiling	Floor or Ceiling	Wall	Wall	Wall	Wall	Wall
Area [m2]	3.0	3.0	7.6	0.0160	3.3	7.6	3.3
Orientation	Horizontal	Horizontal	North	West	West	South	East
Adjacent space	Underground	Conditioned	Conditioned	Unheated	Unheated	Unheated	Exterior
Construction name	01-Ground Floor-Solid-Pre	01-Int Floor/Ceiling Timb	02-Int Wall-Stud partitio	02-Int Wall-Stud partitio	01-Int Wall-Solid Brick/B	01-Int Wall-Solid Brick/B	01-Ext Wall-Cavity Pre 19

In the example above, you would not even need to do any adding up. Having disregarded the two pairs of envelopes that cancel each other out, it is pretty clear that the what you are left with is just a mix of unheated and exterior so the zone is not indirectly conditioned.

Be careful when you run the initial calculation if you have already set some other indirectly conditioned zone(s) with a HVAC system. Envelopes adjacent to them will show as adjacent to conditioned on the data reflection report. However, those envelopes must not be treated as adjacent to conditioned for the purpose of establishing indirect heating of another zone. If you have multiple zones which may be indirectly conditioned and any are adjacent to each other, it is best to set them all as unconditioned to run the initial check, then reset the ones that qualify as indirectly conditioned with the appropriate HVAC.

You should only need to do any calculation at all for either

a) square cornered flat ceiling zones that are very close to a 50% split, or

b) zones which do not have square corners and flat ceilings. (but only if there is not a clear balance one way or the other).

A typical scenario
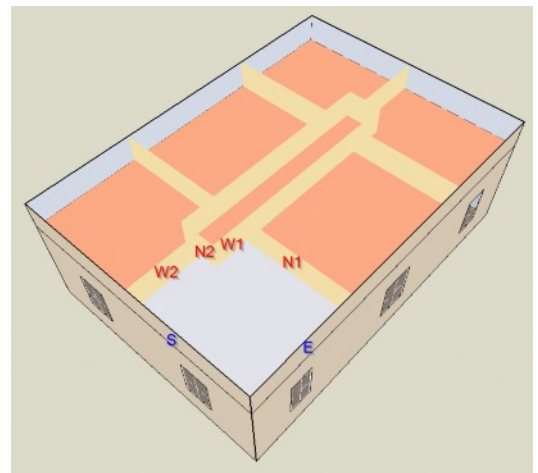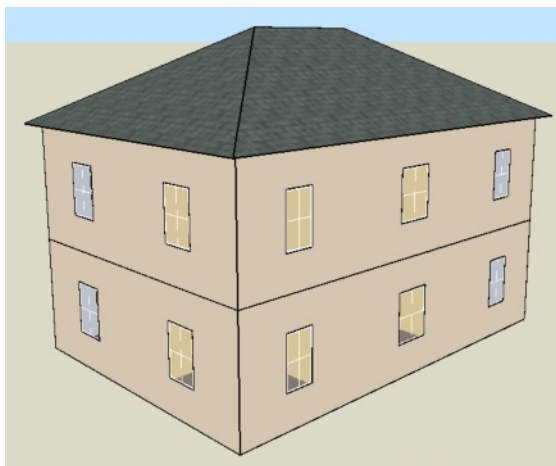
In the example above

The areas of N1 + N2 (adjacent to conditioned) are the same as the area of S (adjacent to exterior) and cancel each other out.

The areas of W1 + W2 (adjacent to conditioned) are the same as the area of E (adjacent to exterior) and cancel each other out.

The area of the floor is the same as the area of roof/ceiling envelope. Provided the zone below is conditioned they also cancel each other out. 50% of the envelopes are adjacent to conditioned and the zone is indirectly conditioned.

If any part of the zone(s) below is/are unconditioned, the roof and floor will not cancel each other out, adjacent to conditioned will be less than 50% and the zone will be treated as unconditioned.

Likewise, if any of the 3 zones next to the corner zone are unconditioned, less than 50% of the envelopes will be adjacent to conditioned and the zone will be treated as unconditioned.

If you want to check (or don't believe that N1 + N2 will be the same as S or W1 + W2 will be the same as E) just look at the data reflection report. The envelopes have been grouped together for you and you can easily see which pairs cancel each other out.

Envelopes						
(Multiplier) Name	(1) Block 2 - Zone 2_F_3	(1) Block 2 - Zone 2_R_4	(1) Block 2 - Zone 2_W_5	(1) Block 2 - Zone 2_P_7	(1) Block 2 - Zone 2_P_8	(1) Block 2 - Zone 2_W_9
Type	Floor or Ceiling	Pitched roof	Wall	Wall	Wall	Wall
Area [m2]	10.0	10.0	8.3	9.6	8.3	9.6
Orientation	Horizontal	Horizontal	East	North	West	South
Adjacent space	Conditioned	Exterior	Exterior	Conditioned	Conditioned	Exterior
Construction name	Unheated Floor	Project semi-exposed ceil	Ext Wall-Cavity 1980-85 R	Heavy Partition (Solid bl	Heavy Partition (Solid bl	Ext Wall-Cavity 1980-85 R

All of the above has been done without you needing to do any calculations.

Complying with convention 6.13 does not need to be difficult. In most cases you can simply use the basic principles of geometry as above, and if a calculation is necessary, let the software do the hard part for you.

Don't forget that plant rooms cannot be treated as heated, either directly or indirectly.

** Don't forget that if you have a pitched roof to your zone then
a) the roof area will be greater than the floor area so they do not cancel each other out
b) If the eaves height varies, opposite walls may not be the same size*

Disclaimer.

Hopefully this will provide some clarity and assist in applying convention 6.13 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 conversations between schemes about this topic 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.

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