

# EPS Core Panel Construction

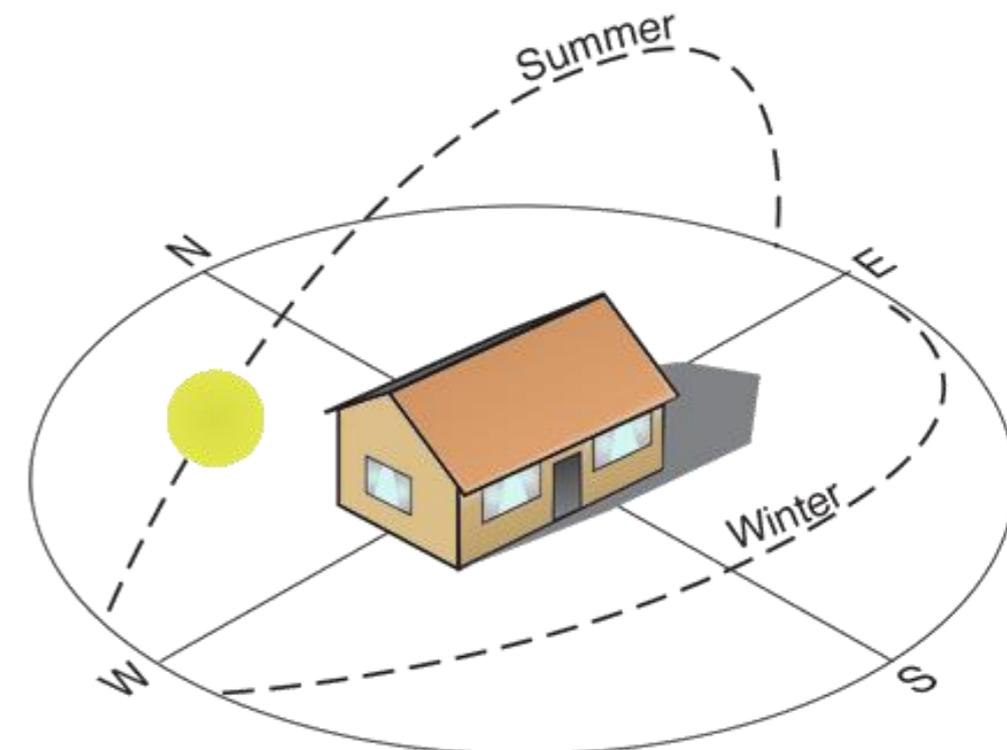
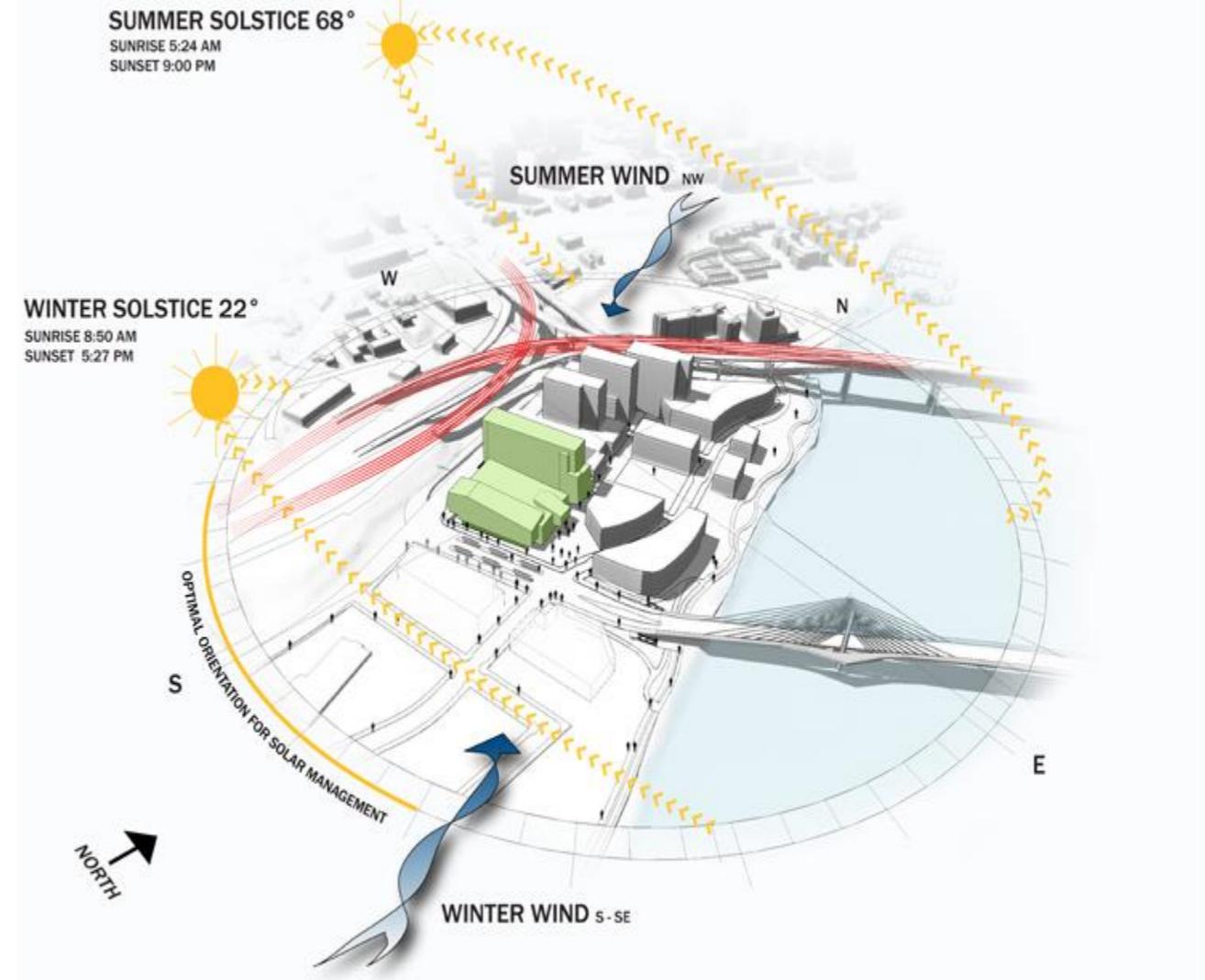
Expanded Polystyrene Panel  
**QUIKBUILD CONSTRUCTION SYSTEM**

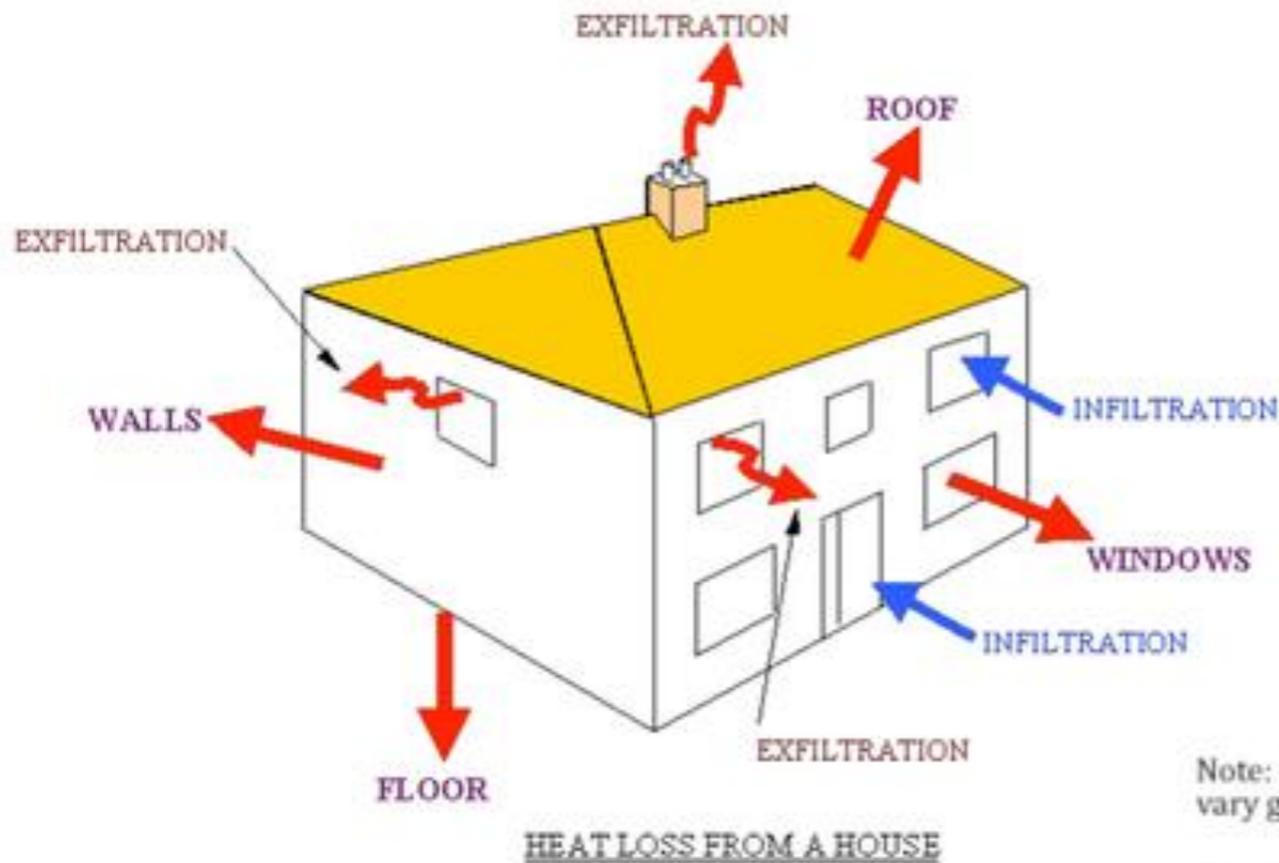


# THERMAL COMFORT

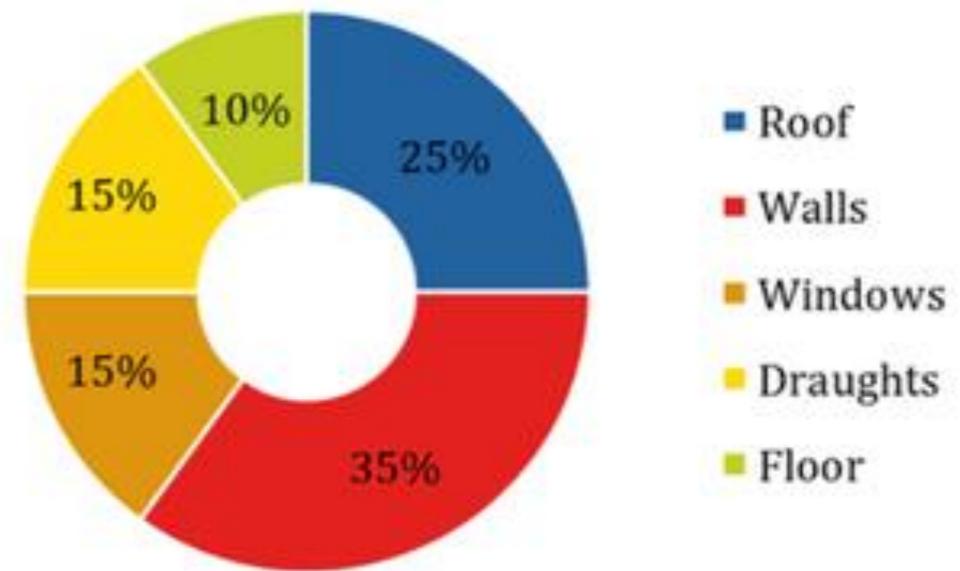
# PARAMETERS FOR THERMAL COMFORT

- Design as per Climate
- Orientation of the building
- Sustainable building design
- Natural Ventilation
- Natural lighting
- Shading
- Materials
- Landscaping
- Water body
- Use of Renewable sources of energy





Typical Home Heat Loss: share of total



Note: Represents heat loss from the building envelope of an average home. This may vary greatly depending on the homes design and construction.

Sources: DOE, DEFRA, various



**QUIKBUILD – A SOLUTION TO THE ABOVE NEEDS.**

## Materials

### REDUCING HEAT INGRESS THROUGH WALL

The choice of materials must optimize between the insulation provided & the embodied energy of the material based on its local availability.

#### R-value calculation example:

Wall assembly 5: 300mm thk. stone wall + 70mm air cavity + 115mm brick Wall + 12mm plaster one side

Material	Resistance: R-value (m <sup>2</sup> .K/W)
Outside air film	0.04
300mm thk. stone	0.08
70mm air cavity	0.18
115mm thk. brick wall	0.19
12mm plaster	0.02
Inside air film	0.13

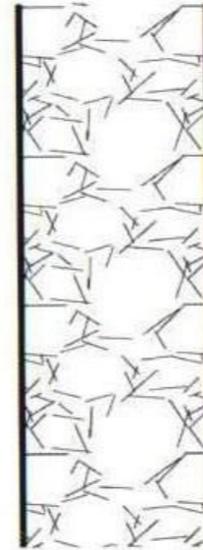
R value of the wall assembly =  
Sum of the component R-values =  
**0.64 m<sup>2</sup>.K/W**

**ECBC recommended R value for wall assembly= 2.27 m<sup>2</sup>.K/W**

Add-on insulation should be judiciously used especially in the case of non-conditioned buildings with cost constraints and need to keep embodied energy low.

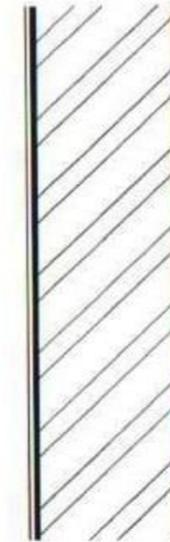
#### WALL ASSEMBLY 1

300mm thk. stone wall + 12mm plaster one side  
EE= 644 MJ / m<sup>2</sup>  
R value= 0.27 m<sup>2</sup>.K/W



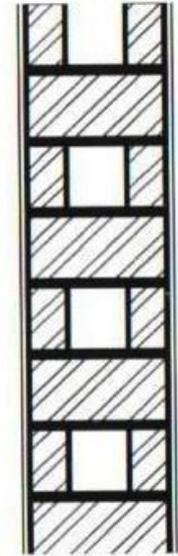
#### WALL ASSEMBLY 2

230mm thk. brick wall + 12mm plaster both sides  
EE= 711 MJ / m<sup>2</sup>  
R value= 0.59 m<sup>2</sup>.K/W



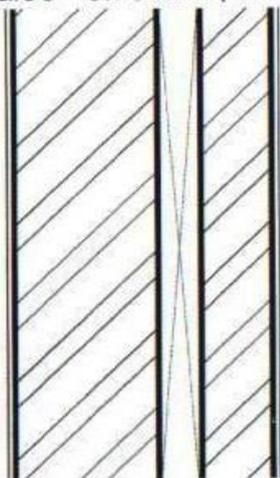
#### WALL ASSEMBLY 3

230mm thk. brick wall in rat-trap bond + 12mm plaster both sides  
EE= 365 MJ / m<sup>2</sup>  
R value= 0.70 m<sup>2</sup>.K/W



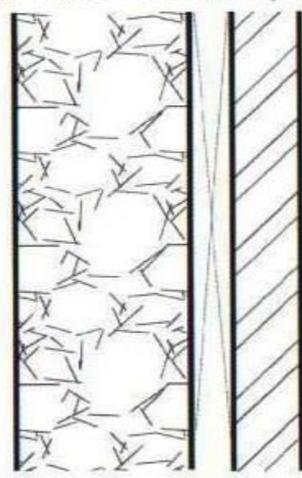
#### WALL ASSEMBLY 4

230mm bk.wall + 70mm air cavity + 115mm brick Wall+ 12mm plaster both sides  
EE= 1052 MJ / m<sup>2</sup>  
R value= 0.95 m<sup>2</sup>.K/W



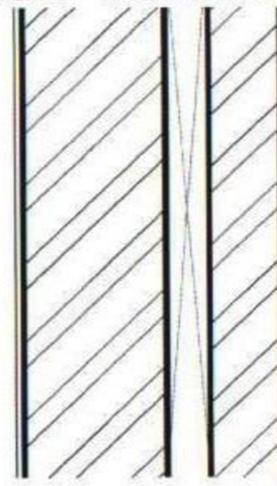
#### WALL ASSEMBLY 5

300mm stone wall + 70mm air cavity + 115mm brick Wall + 12mm plaster one side  
EE= 986 MJ / m<sup>2</sup>  
R value= 0.64 m<sup>2</sup>.K/W



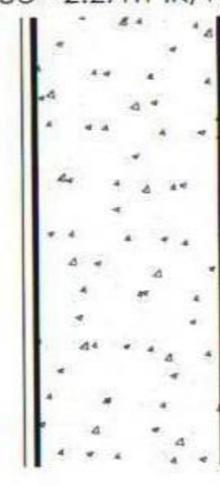
#### WALL ASSEMBLY 6

230mm FAL G + 70mm air cavity + 115mm FAL G + 12mm plaster  
EE= 318 MJ / m<sup>2</sup>  
R value= 1.80 m<sup>2</sup>.K/W



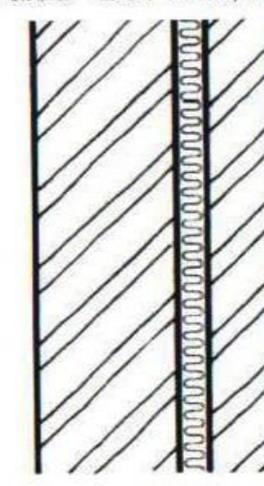
#### WALL ASSEMBLY 7

20mm stone cladding+ 300mm AAC + 12mm plaster  
EE= 272 MJ / m<sup>2</sup>  
R value= 2.27m<sup>2</sup>.K/W



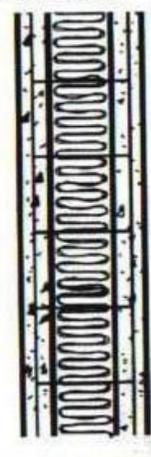
#### WALL ASSEMBLY 8

230mm bk.wall + 50mm XPS + 115mm bk. Wall + 12mm plaster both sides  
EE= 1194 MJ / m<sup>2</sup>  
R value= 2.51 m<sup>2</sup>.K/W



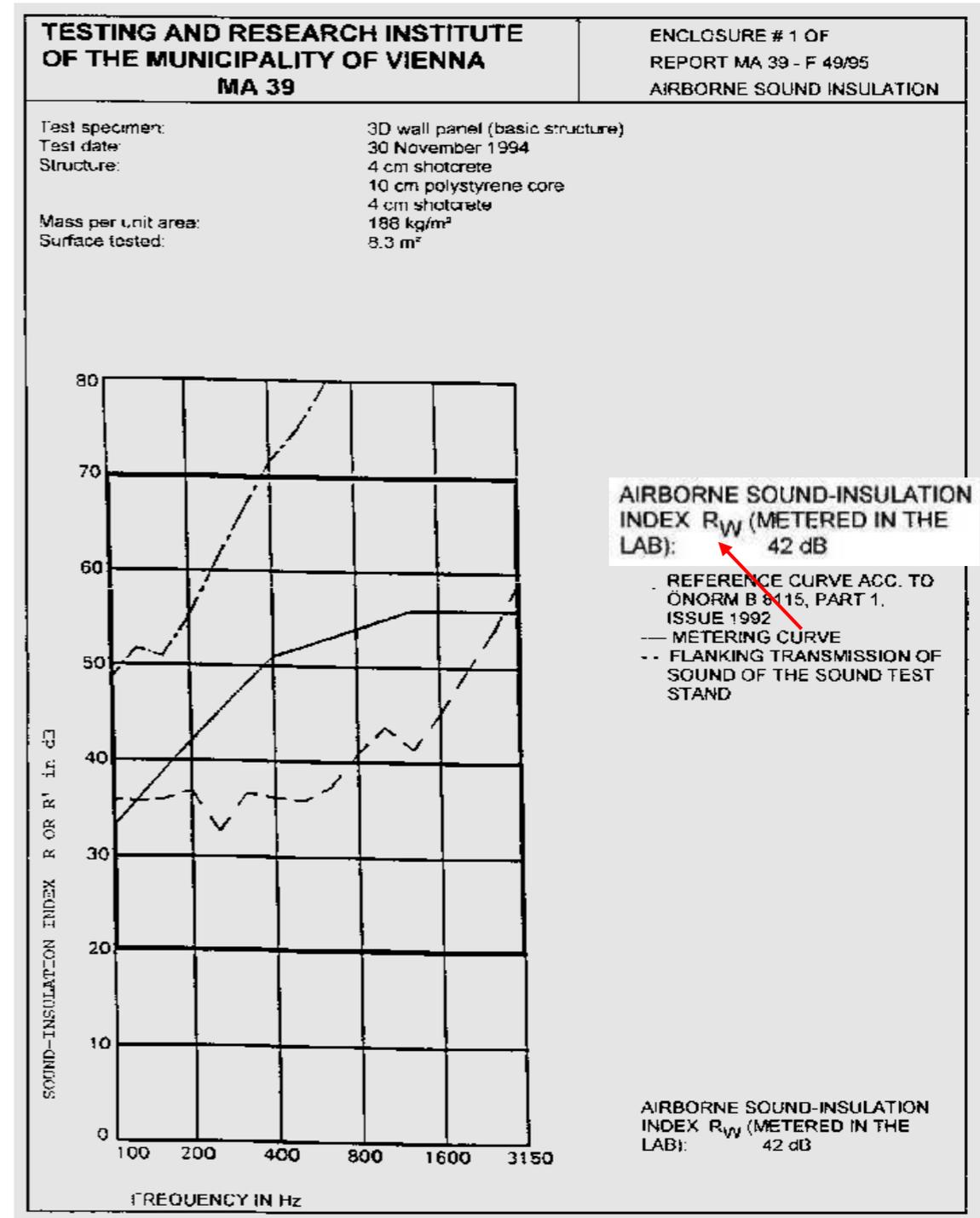
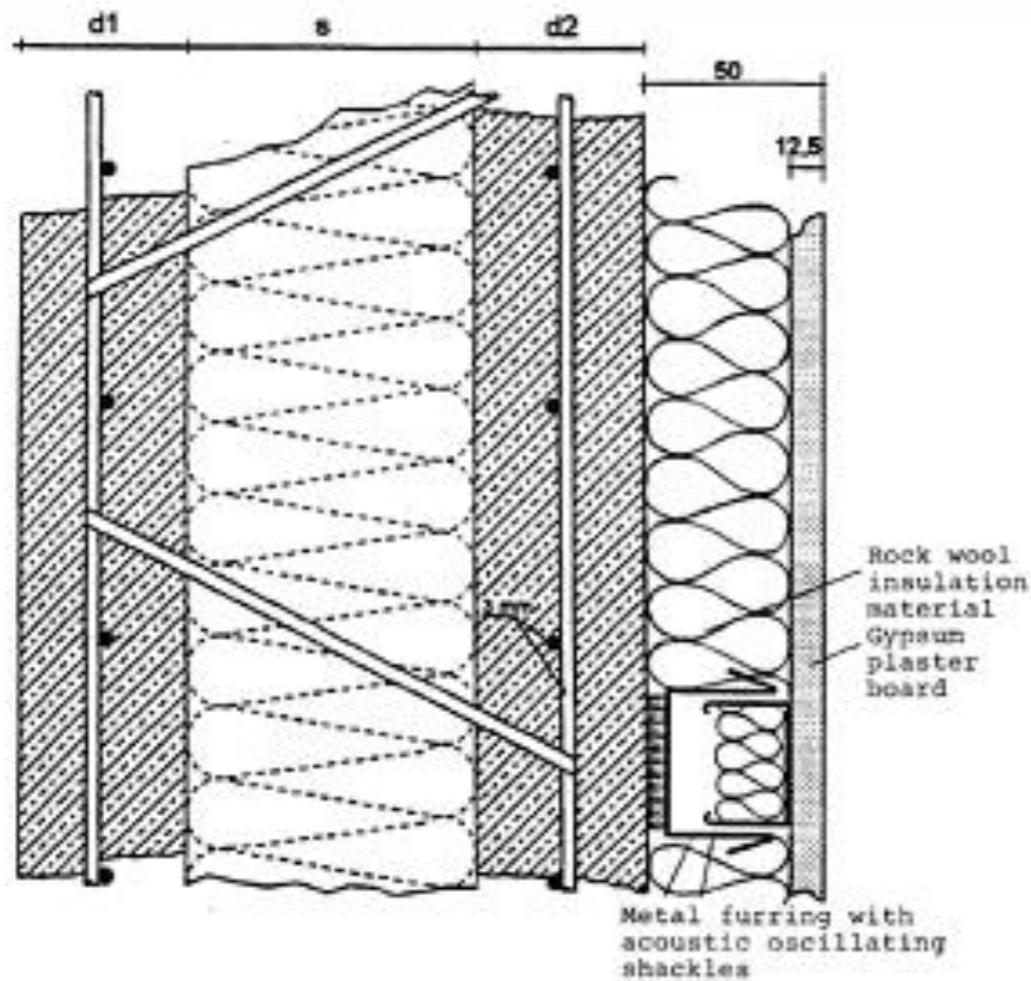
#### WALL ASSEMBLY 9

3D Eco wall: 50mm shotcrete + 100mm EPS + 50mm shotcrete (reinforced with wiremesh)  
EE= 470 MJ / m<sup>2</sup>  
R value= 3.00 m<sup>2</sup>.K/W



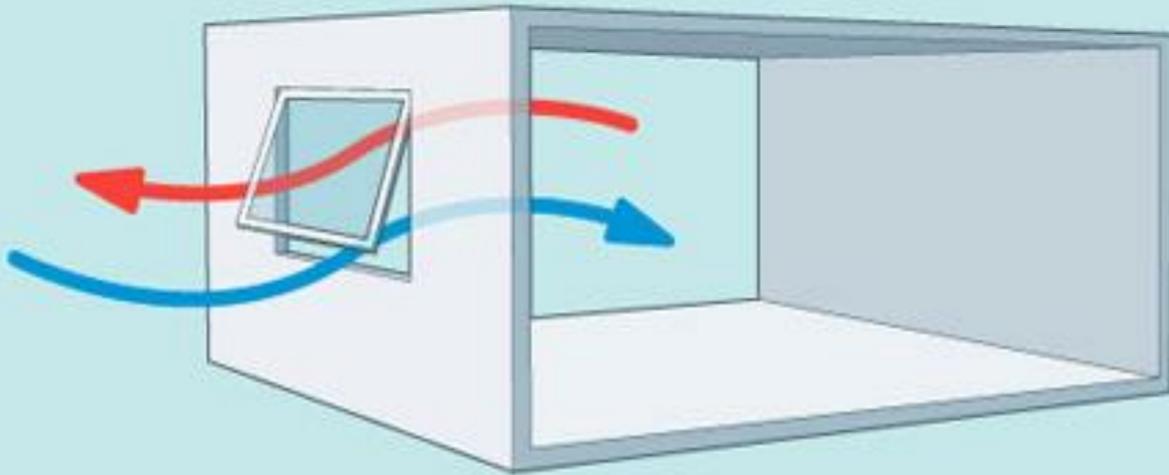
# SOUND INSUALTION

- Average sound reduction:  
 $R = 46-50$  dB
- combined with dry walls:  
 $R = 58-61$  dB

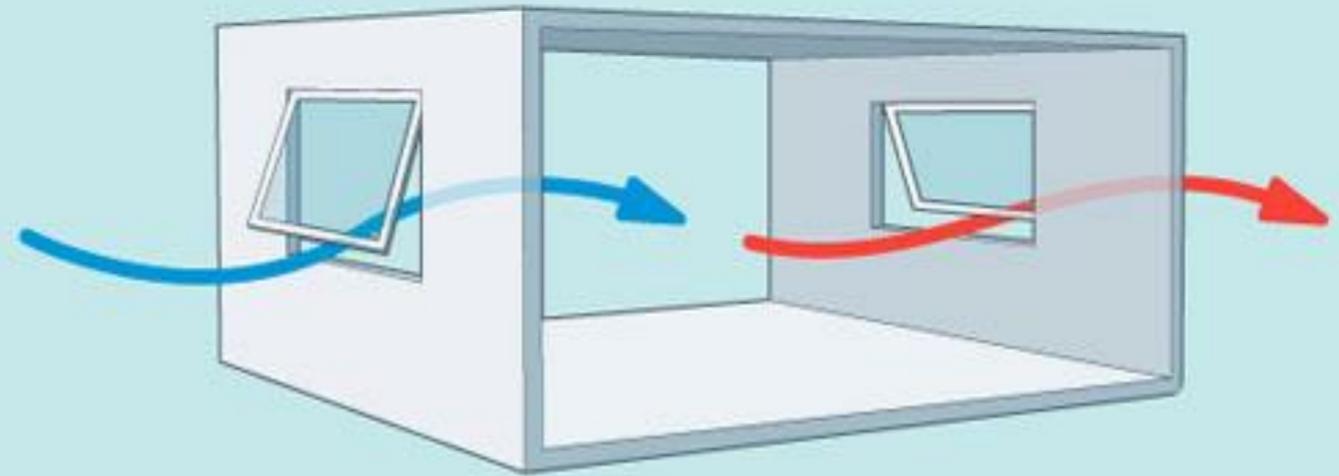


**QUIKBUILD – A SOLUTION TO THE ABOVE NEEDS.**

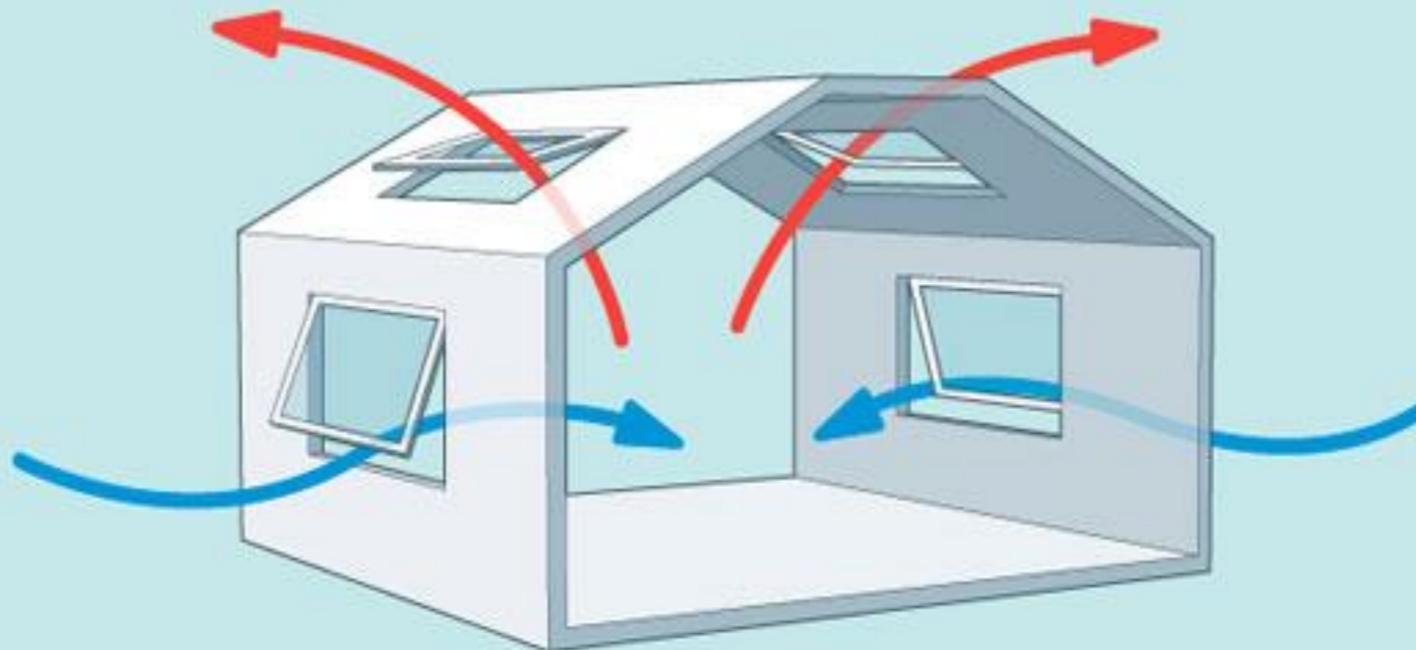
## SINGLE SIDED VENTILATION



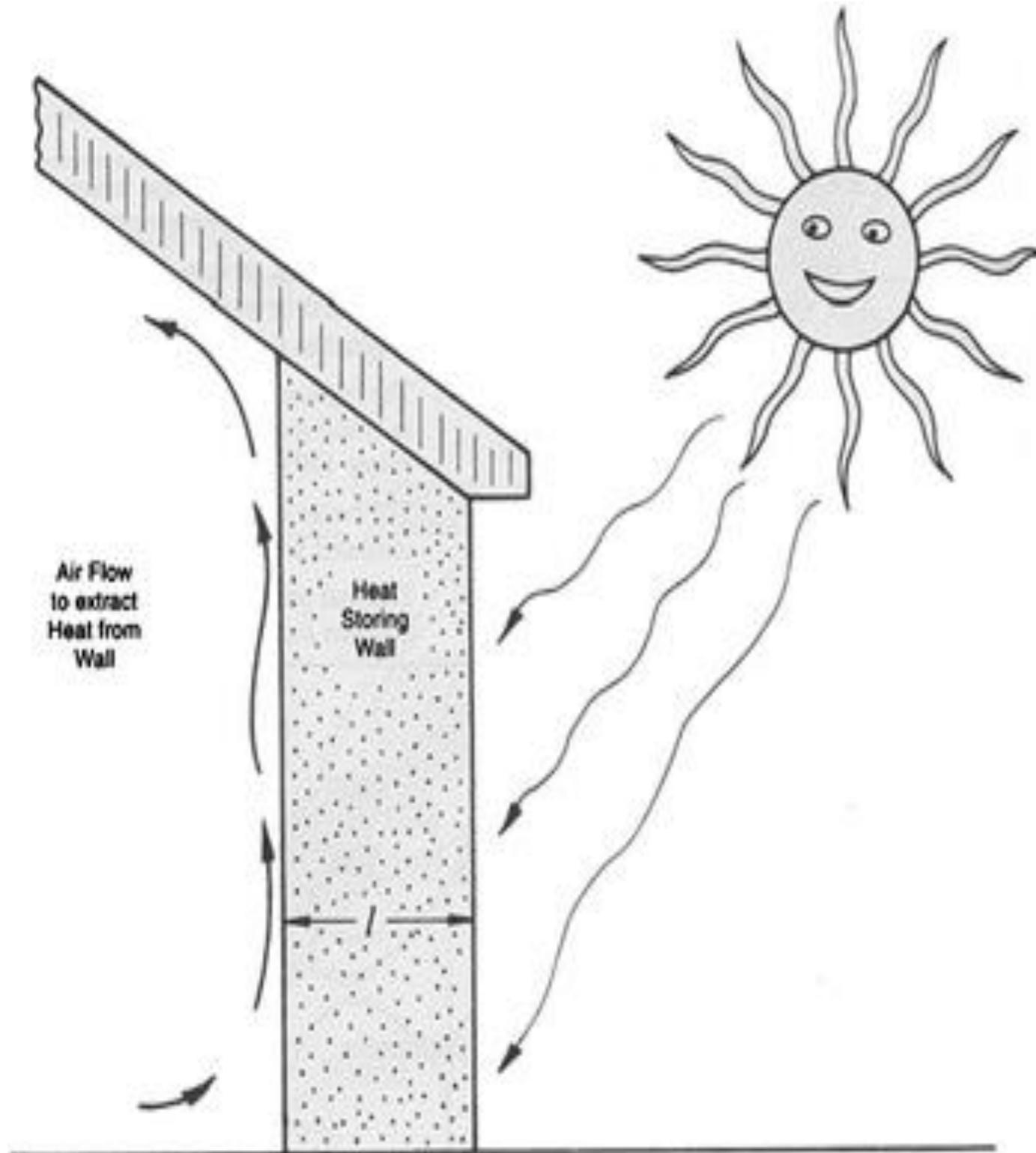
## CROSS VENTILATION



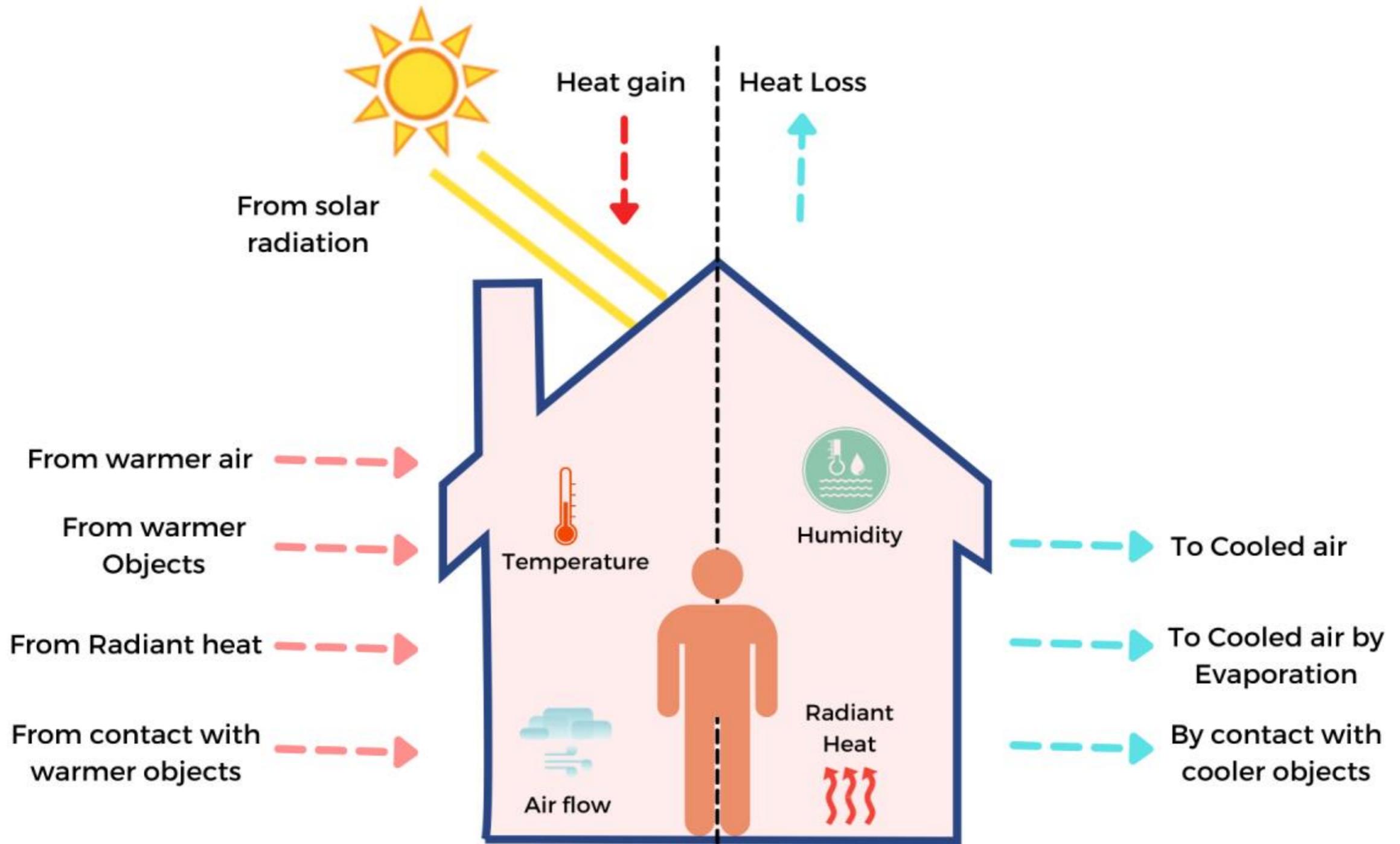
## STACK VENTILATION



# EXTERNAL WALLS



# CASE 1



# CASE 1



# CASE 1



# CASE 2



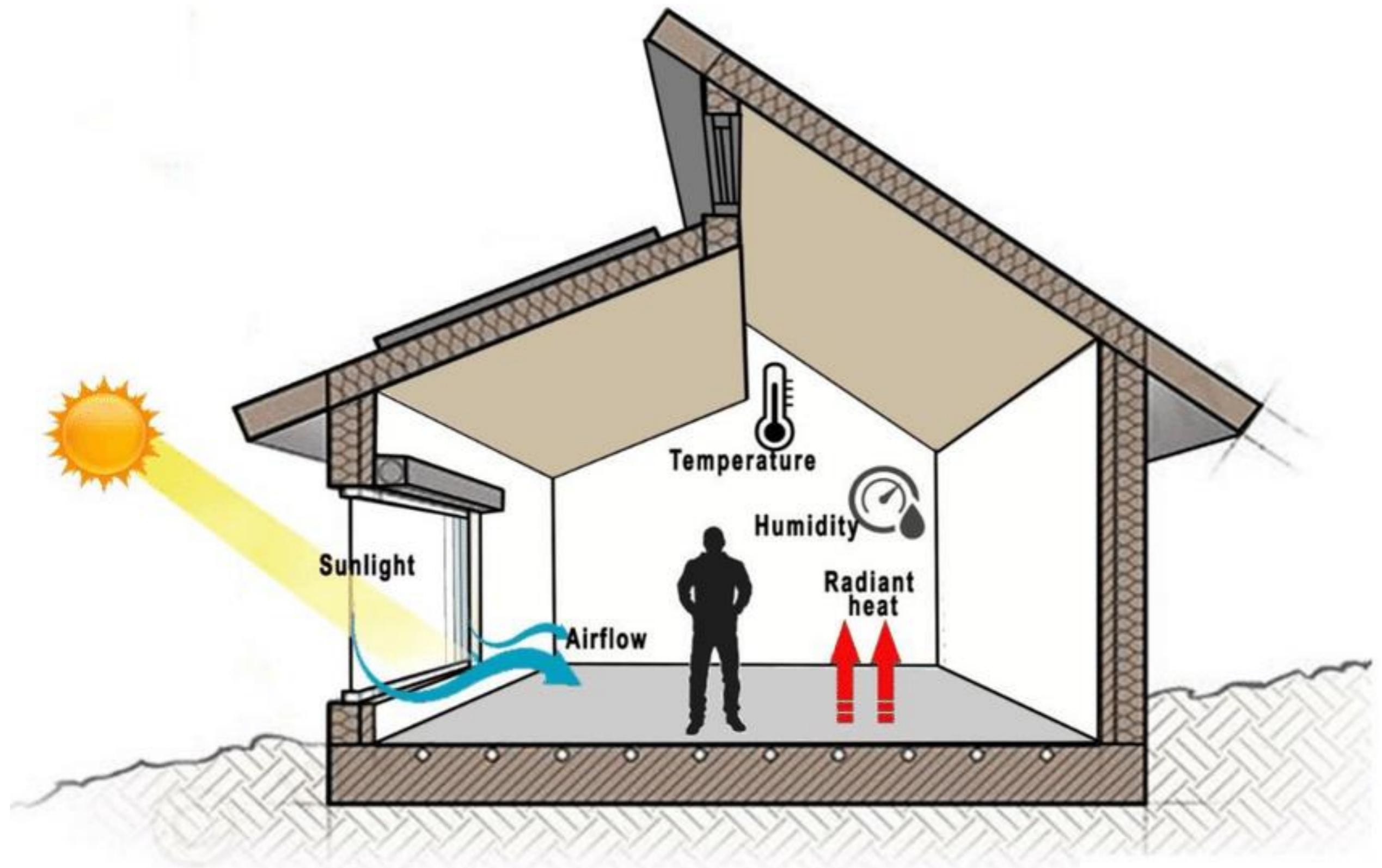
# CASE 2



# CASE 2



# CASE 3



# CASE 3



# CASE 3

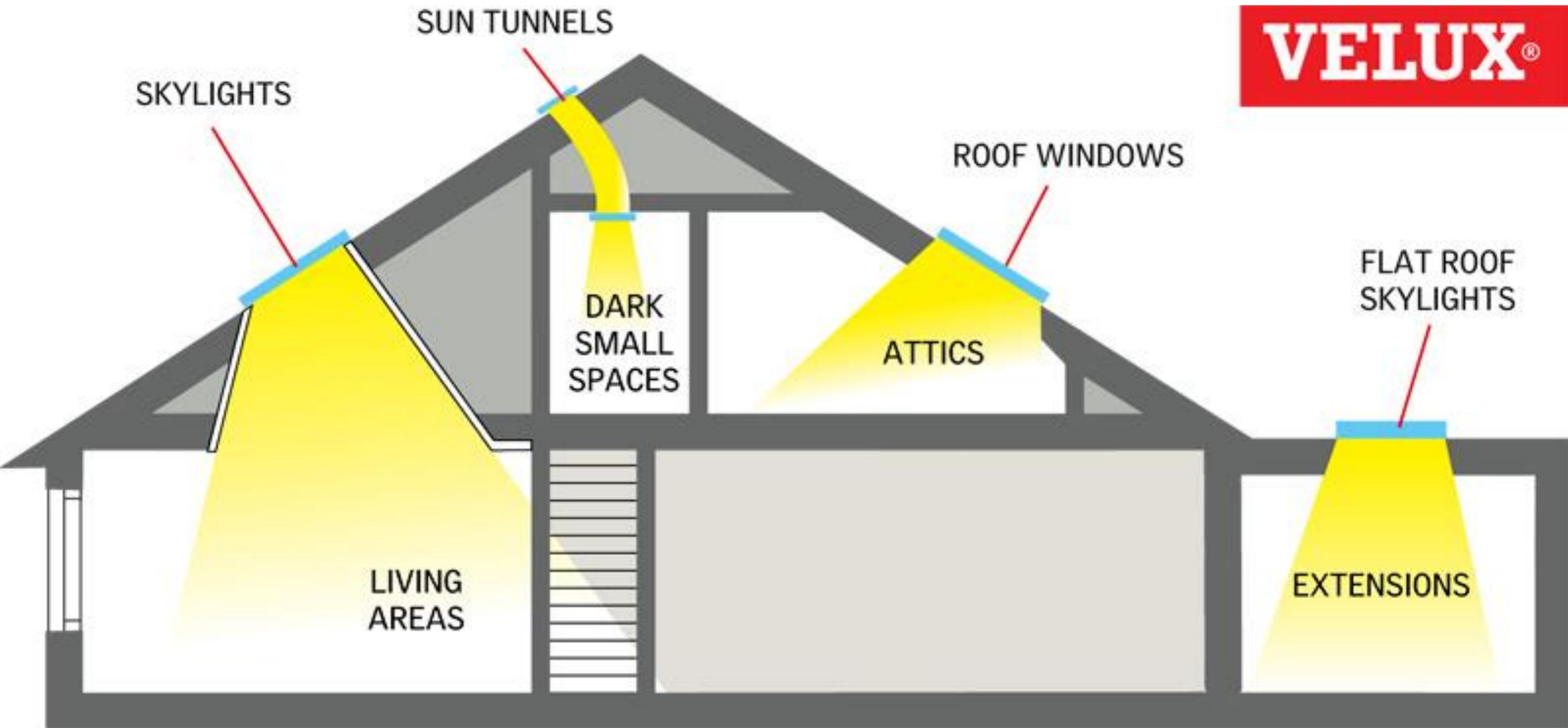


# CASE 4

## VELUX – letting light in – without the heat



# CASE 4



# CASE 4



# CASE 4



# CASE 4



# OTHERS



# OTHERS





# OTHERS



**BEARDSSELL LTD  
QUIKBUILD CONSTRUCTION AWARDED  
'PLATINUM' GREEN CERTIFICATION BY IGBC**



## Indian Green Building Council (IGBC)

*hereby certifies that*

### Quik Build Demo Farmhouse

Hyderabad

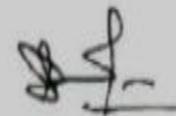
*has successfully achieved the Green Building Standards required for  
the following level of certification under the IGBC Green Homes Rating System*

### IGBC Green Homes Platinum

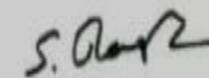
August 2014



Sharukh Mistry  
Chairman, IGBC Green Homes Rating



Dr Prem C Jain  
Chairman, IGBC



S Raghupathy  
Executive Director, CII-Godrej GBC

***THANK YOU***

***LET'S OPEN THE DOOR TO A GREEN WORLD***

***PRESENTED BY***

***SHAIK MAHAMMAD YOUSUF***

***EMAIL: YOUSUF@BEARDSELL.CO.IN***

***CONT: 09490210301***