TEACH Passiv

FACT SHEET No. 14

PHPP - Hitting the mark 1-5

This Fact Sheet gives a few methods of lowering the Space Heating Demand (kWh/(m2a)) via PHPP either to meet Passivhaus or to go beyond it. Firstly, it is important to go beyond simply looking at the Passivhaus verification value and analyse the incremental improvements that can be made in the **Heating** worksheet. Below you can see the exact **Annual Heating Demand Qh**. If you divide Qh by the Treated Floor Area you will obtain the EXACT Heating Demand relative to the Treated Floor Area.

Annual heating demand Q_H			Q_L - Q_G =	kWh/a: 2553	kWh/(m²a): 13
Limiting value	kWh/(m²a): 15		**Requirement met?**	(Yes/No): yes	

Therefore to improve this figure you could:

1. Simply design it bigger

If the Space Heating Demand relates to the Treated Floor Area then a bigger building will have a lower Heat Demand. Obviously costs will however also increase!

2. Use windows with a better g value

It's obvious that a better window will give better results but the g-value for the window is critical in improving your heating demand and is equally as important as the U-value. By using the same window but simply changing the glass can give dramatic improvements to lowering heat demand. Click HERE for more details and calculations.

3. Set the altitude correctly

Obtaining and setting the correct altitude in the Climate Worksheet will give dramatic differences in Heat Demand; the higher the altitude, the colder with resultant increase in Heat Demand. Obviously when setting this correctly it could result in a poorer result.

Weather station (altitude):	72.0	m
Building location (altitude):	49	m

4. Choose a Passivhaus Certified MHVR unit with high Heat Recovery Efficiency

MHVR units that are not tested and certified by the Passivhaus Institute incur a 12% penalty in PHPP, in addition selecting a unit with high **Heat recovery efficiency** will lower the Heating Demand further.

Ventilation units with heat recovery		
ID	Description	Heat recovery efficiency
	User defined area	%
01ud	Heat recovery unit	85%

5. By creating additional screening on the site

Dramatic improvements to Heating Demand can be made with additional screening around the site. Bear in mind that the High Screening coefficient (Ventilation Works sheet) is for a city centre or a forest - so you'll need a lot of trees!

Infiltration air change rate

Wind protection coefficients e and f		
Coefficient e for screening class	Several sides exposed	One side exposed
No screening	0.10	0.03
Moderate screening	0.07	0.02
High screening	0.04	0.01
Coefficient f	15	20

	For annual demand:	For heating load:
Wind protection coefficient, e	0.04	0.10

REGISTERED PRACTICE 2013 RIAI DESIGNER CERTIFIED PASSIVE HOUSE DESIGNER

TEACHPASSIV.COM IS AN INITIATIVE OF:

MARK STEPHENS ARCHITECTS

OFFICE
Rooskey
Foxford
Co. Mayo
Ireland

MOBILE
085 159 4084

TEL
094 92 57621

EMAIL
mdstephens@gmail.com

WEB
MarkStephensArchitects.com