

loor plans













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ant

Ek

CONSUI

ssivhaus Plus

nuch energy is produced as is umed' (Passivhaus Trust website)

C econekt

MUNSTER

span

nZEB

Housing in oceanic climate: Primary energy - 50-65kWh/m²/yr Renewable energy – 35kWhr/m²/yr

Bristol PH Plus Primary energy – 116 kWh/m²/yr Renewable energy –45 kWhr/m²/yr

So does PH+ meet nZEB?

It depends on the Primary Energy factors

Performance

9.1913

span.

erformance

- al values (based on October): tal elec: 11kWh/d
- lar: 14 kWh/d
- werwall: 6 kWh/d
- port: 1.8 kWh/d
- port: 4.4 kWh/d
- tal annual electrical energy
- essimate = October x 12 ~
- kWh/yr/m²
- PP 19 kWh/m²/yr
- ating energy 60-75kWh?
- PP 55 kWh
- °C set point

span.

ore data needed

MUNSTER JOINERY

ukpassivhaus conference 2018

H, F

Performance

SPF	
Sep	3.9
Oct	3.3
Nov	3.6
PHPP	3.99

Zero Carbon or Zero Energy?

UK GHG

0.304

0.204

1.49

Inventory

BEIS Projections used in SAP10

Electricity

Natural gas

Ratio

span

SAP 2012

0.519

0.216

2.40

Conclusions

- Passivhaus Plus requires large PV array (or equivalent)
- Heat pumps now significantly outperform other heating in terms of CO₂e and PER, due to near parity of gas and electric CO₂e and PER
- CO₂ heat pumps (Eco-cute) effective where DHW demand is large proportion QUHZ is the only one on UK market?
- Passivhaus Plus meets nZEB (?) as well as zero carbon
- Benefits of batteries clear in terms of reduced import, but short term storage benefits not currently recognised by Passivhaus (discuss!)

Thank you

