



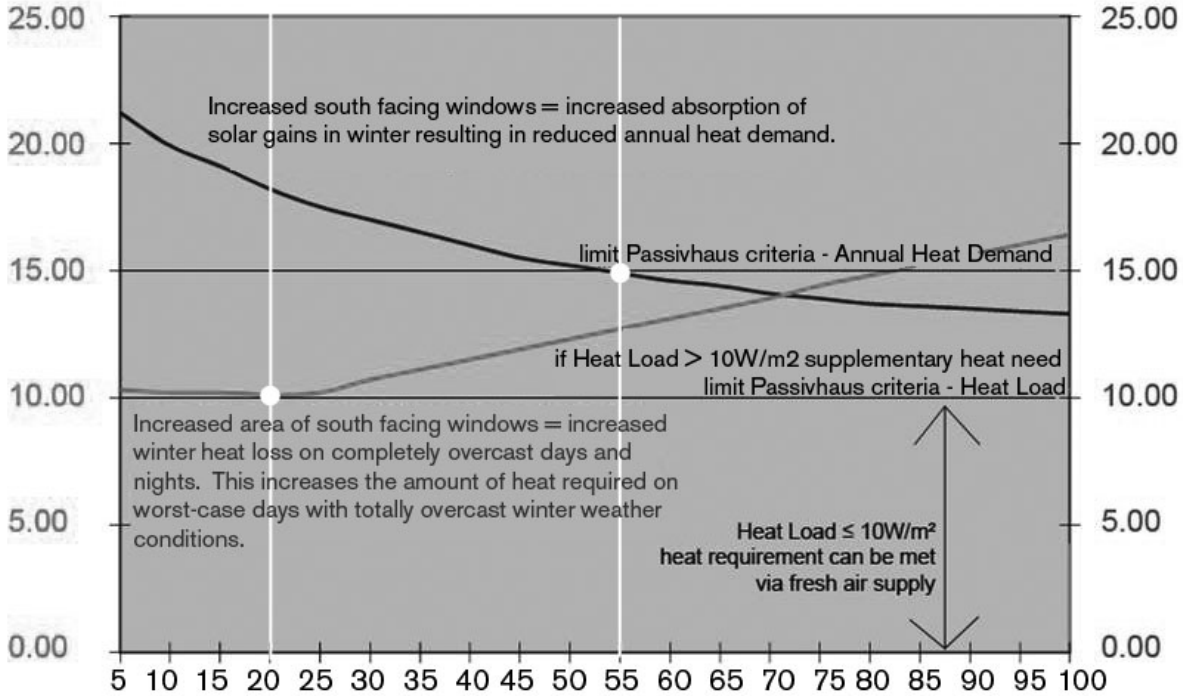
The Larch House
Ty Llarwyd

Informational text on the orange sign, including details about the house's design and sustainability features.



Heat Load
W/m²

Annual Heat Demand
kWh/(m²a)



Increased south facing windows = increased absorption of solar gains in winter resulting in reduced annual heat demand.

Increased area of south facing windows = increased winter heat loss on completely overcast days and nights. This increases the amount of heat required on worst-case days with totally overcast winter weather conditions.

Heat Load ≤ 10W/m²
heat requirement can be met
via fresh air supply

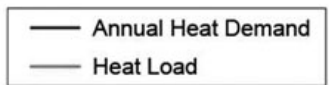
if Heat Load > 10W/m² supplementary heat need
limit Passivhaus criteria - Heat Load

limit Passivhaus criteria - Annual Heat Demand

Glazed percentage of south façade (%)

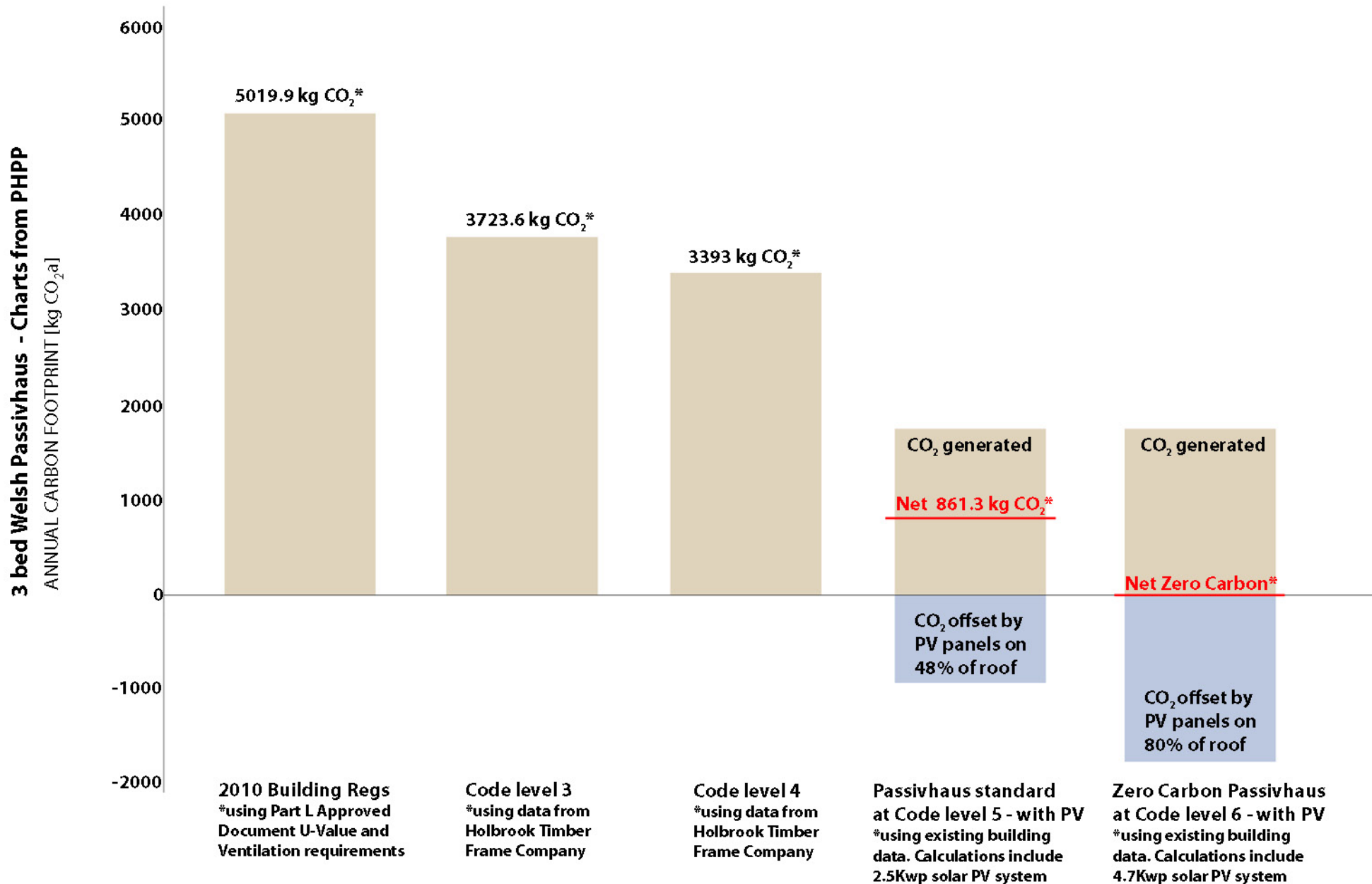
3.10m²
6.20m²
9.20m²
12.30m²
15.40m²
18.50m²
21.50m²
24.60m²
27.60m²
30.70m²
33.80m²
36.90m²
39.90m²
43.00m²
46.10m²
49.10m²
52.20m²
55.30m²
58.30m²
61.40m²

Glazed area of south façade



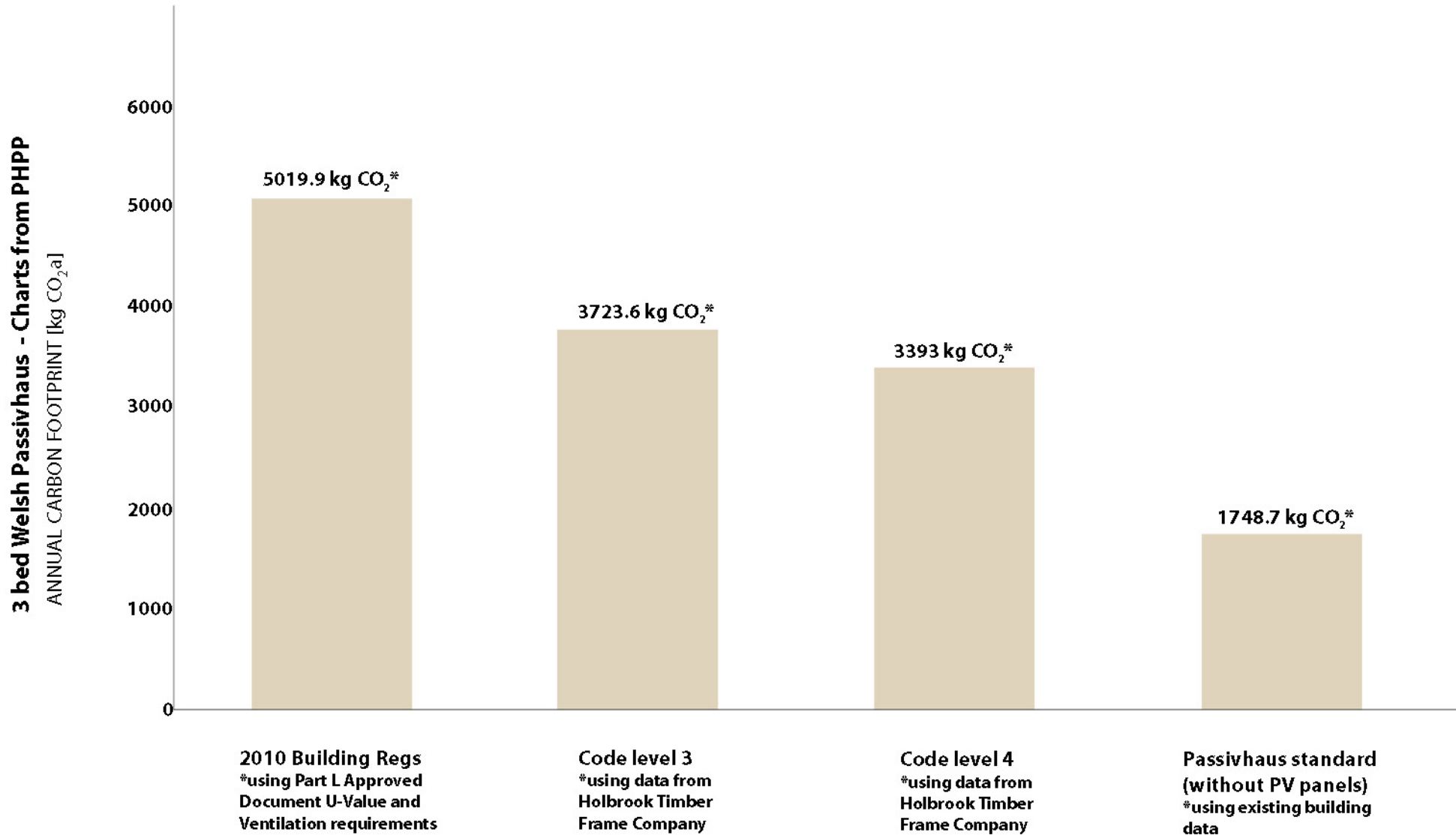
What is the carbon footprint of a Passivhaus with PV?

Annual carbon footprint comparison: 3 bed Welsh Passivhaus (87m²) at 2010 Building Regs, Code Level 3, Code Level 4, Passivhaus to Code level 5 and Zero Carbon Passivhaus (to Code level 6).



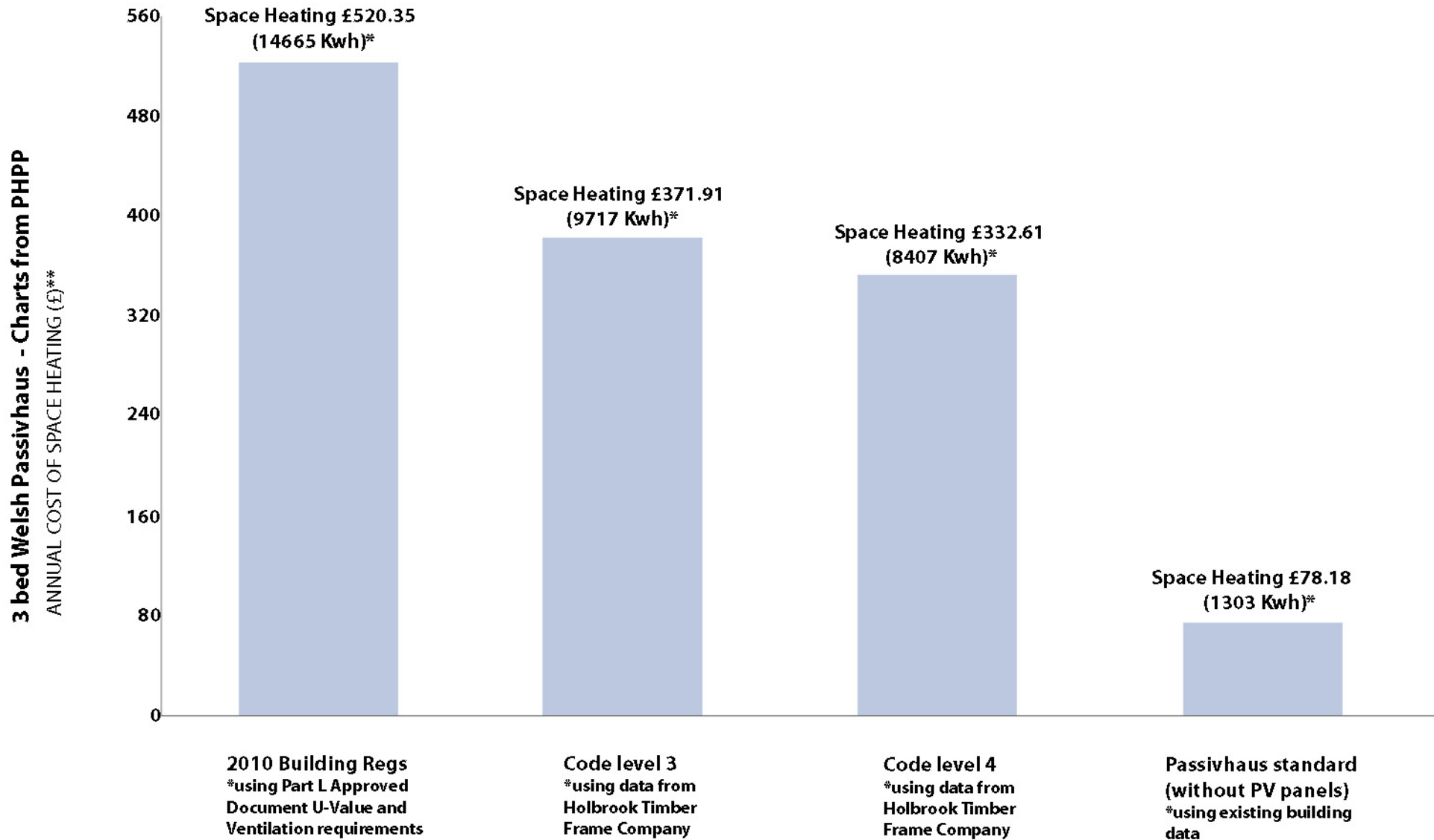
What is the carbon footprint of a Passivhaus?

Annual carbon footprint comparison: 3 bed Welsh Passivhaus (87m²) at 2010 Building Regs, Code Level 3, Code Level 4 and Passivhaus standards



How much does it cost to heat a Passivhaus?

Annual space heating cost comparison: 3 bed Welsh Passivhaus at 2010 Building Regs, Code Level 3, Code Level 4 and Passivhaus standards



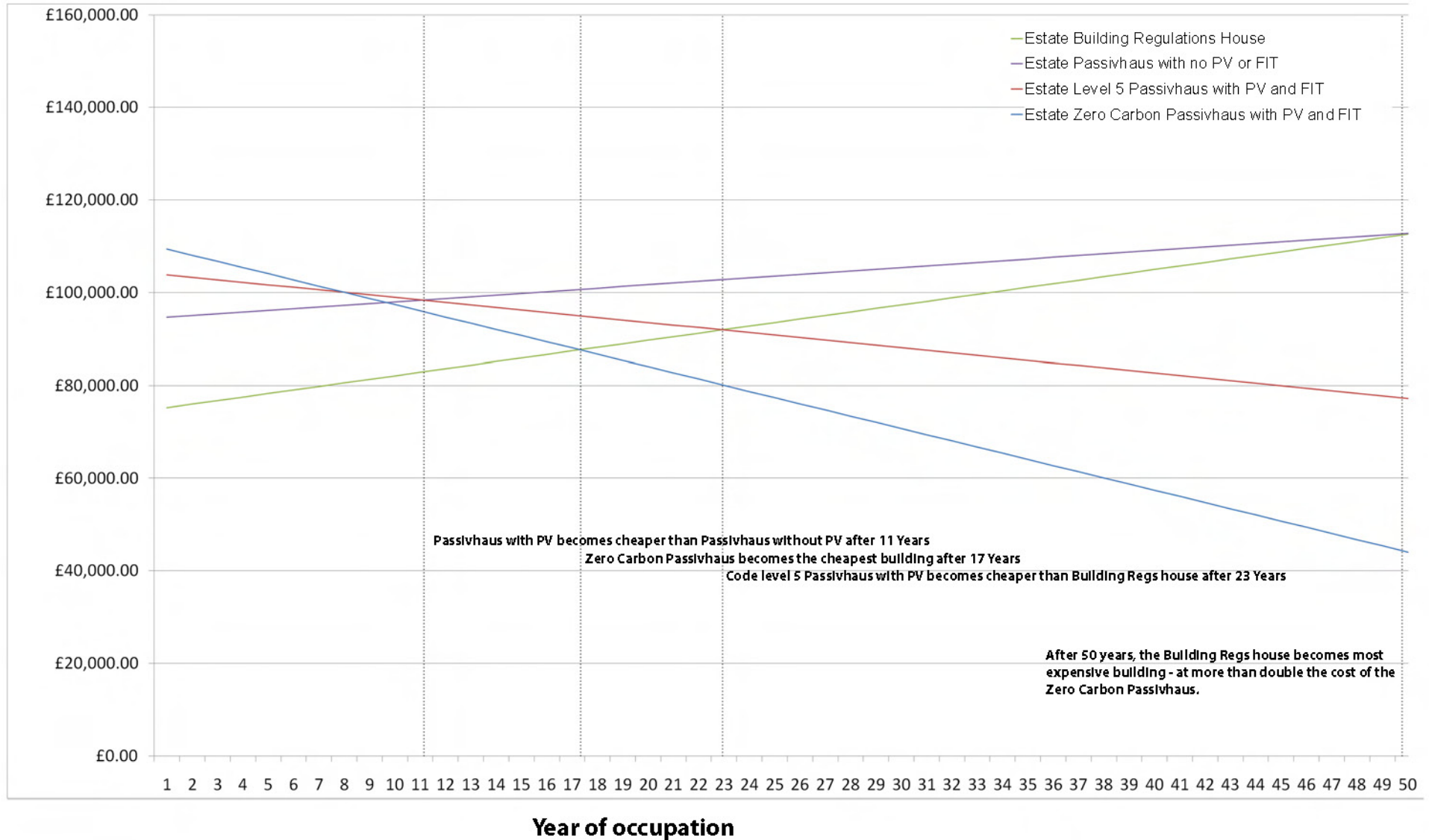
**Using gas unit calculation. Unit price taken from British Gas Website (6p for first 2680 Kwh -Tier1, and 3p thereafter - Tier 2)

What is the payback period for a Passivhaus?

Capital payback comparison: 3 bed Welsh Passivhaus (99m²) - Comparing: estate house at Building Regs standard, estate house at Passivhaus standard, and estate house at Passivhaus standard with 2.52Kwp photovoltaic system and associated Feed in Tariff payments (36.1p/Kwh + 3p/Kwh export bonus) and estate house at zero carbon Passivhaus standard with 4.7Kwp photovoltaic system and FIT as above.

Scenario: Energy prices remain at current level

3 bed Welsh Passivhaus - Charts from PHPP
Total Cost (Original build plus total running costs)

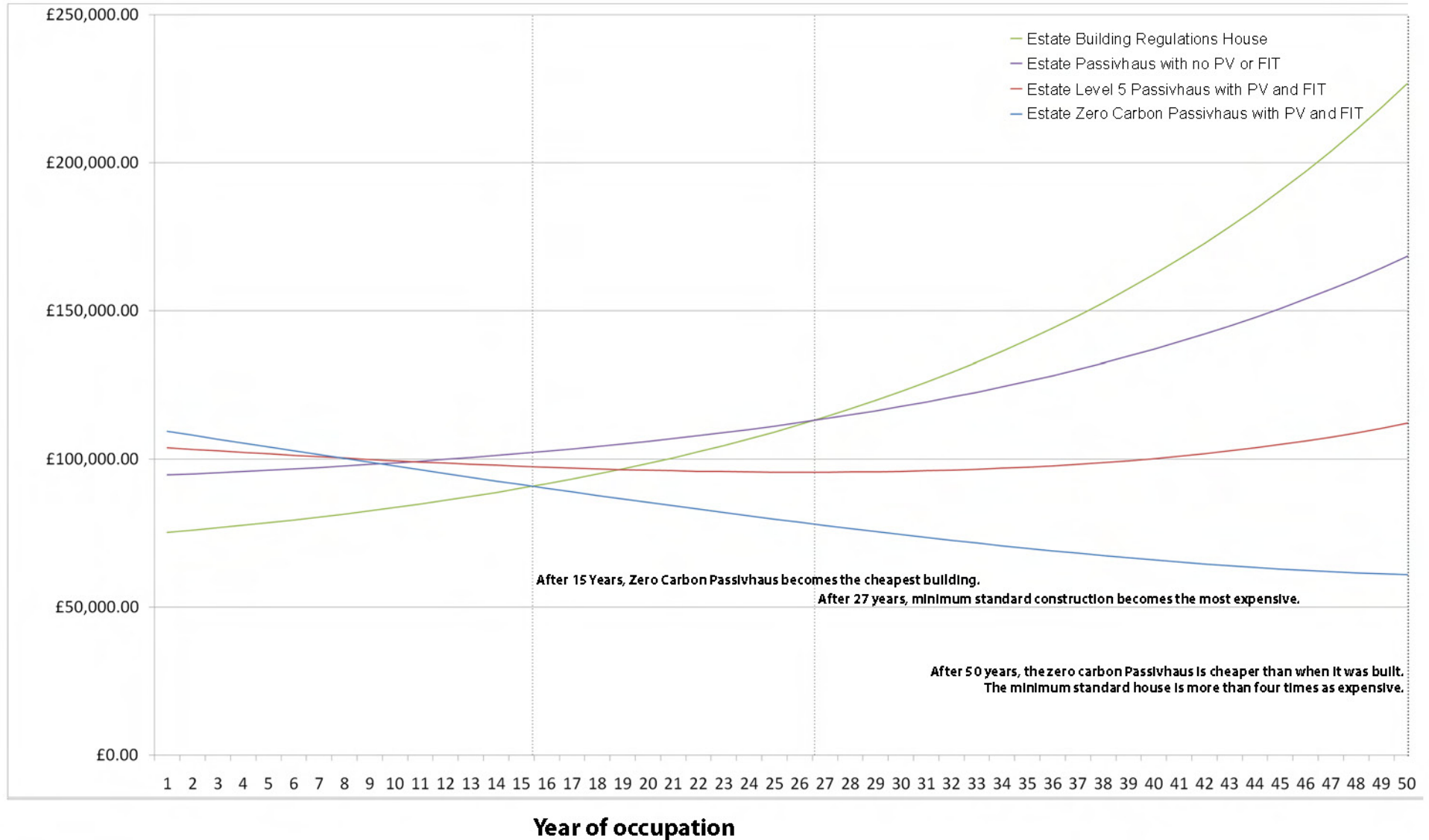


What is the payback period for a Passivhaus?

Capital payback comparison: 3 bed Welsh Passivhaus (99m²) - Comparing: estate house at Building Regs standard, estate house at Passivhaus standard, estate house at Passivhaus standard with 2.52Kwp photovoltaic system and associated Feed in Tariff payments (36.1p/Kwh + 3p/Kwh export bonus) and estate house at zero carbon Passivhaus standard with 4.7Kwp photovoltaic system and FIT as above.

Scenario: Energy prices rise by 5% each year

3 bed Welsh Passivhaus - Charts from PHPP
Total Cost (Original build plus total running costs)

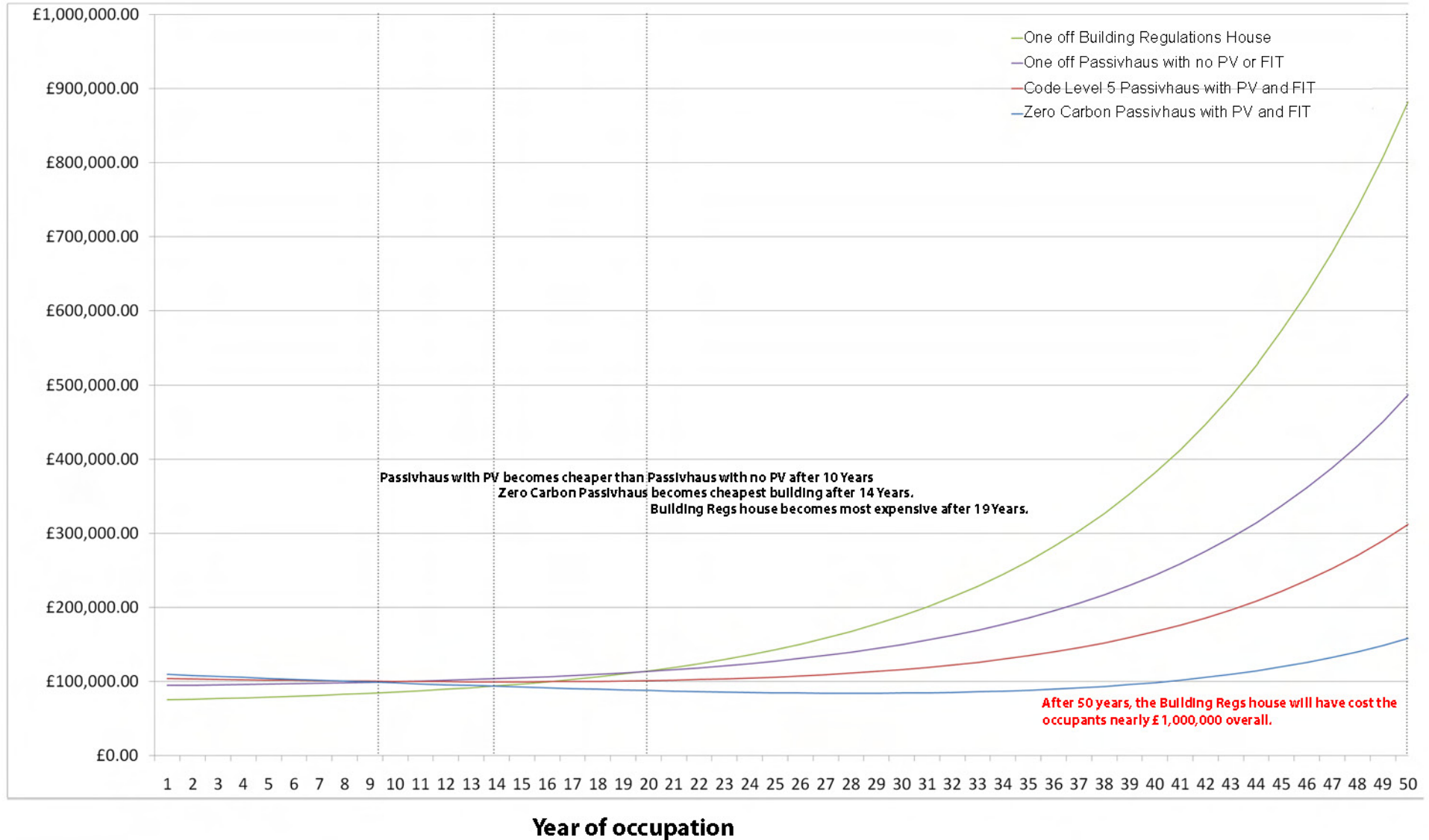


What is the payback period for a Passivhaus?

Capital payback comparison: 3 bed Welsh Passivhaus (99m²) - Comparing: estate house at Building Regs standard, estate house at Passivhaus standard, estate house at Passivhaus standard with 2.52Kwp photovoltaic system and associated Feed in Tariff payments (36.1p/Kwh + 3p/Kwh export bonus) and estate house at zero carbon Passivhaus standard with 4.7Kwp photovoltaic system and FIT as above.

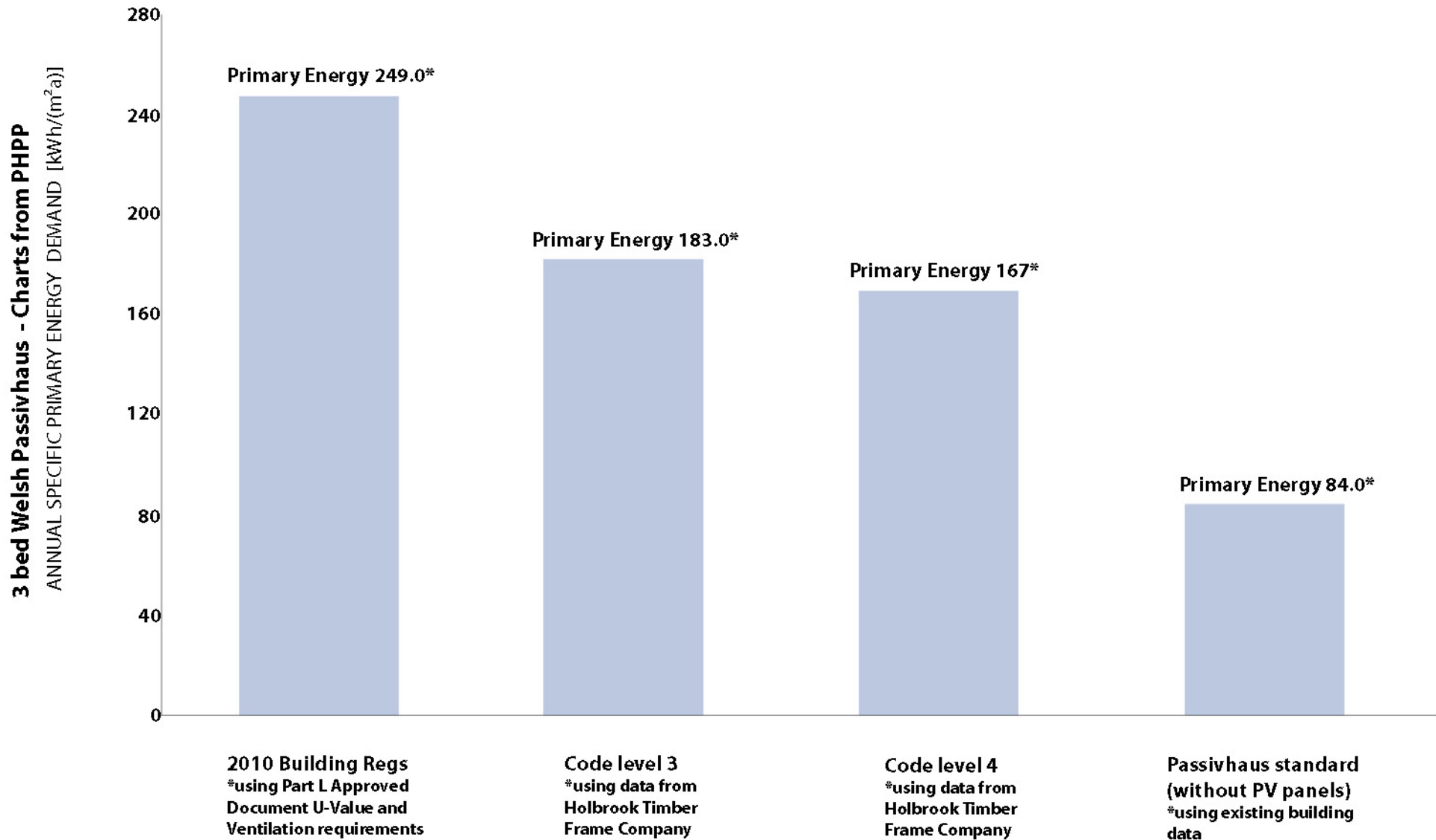
Scenario: Energy prices rise by 10% each year

3 bed Welsh Passivhaus - Charts from PHPP



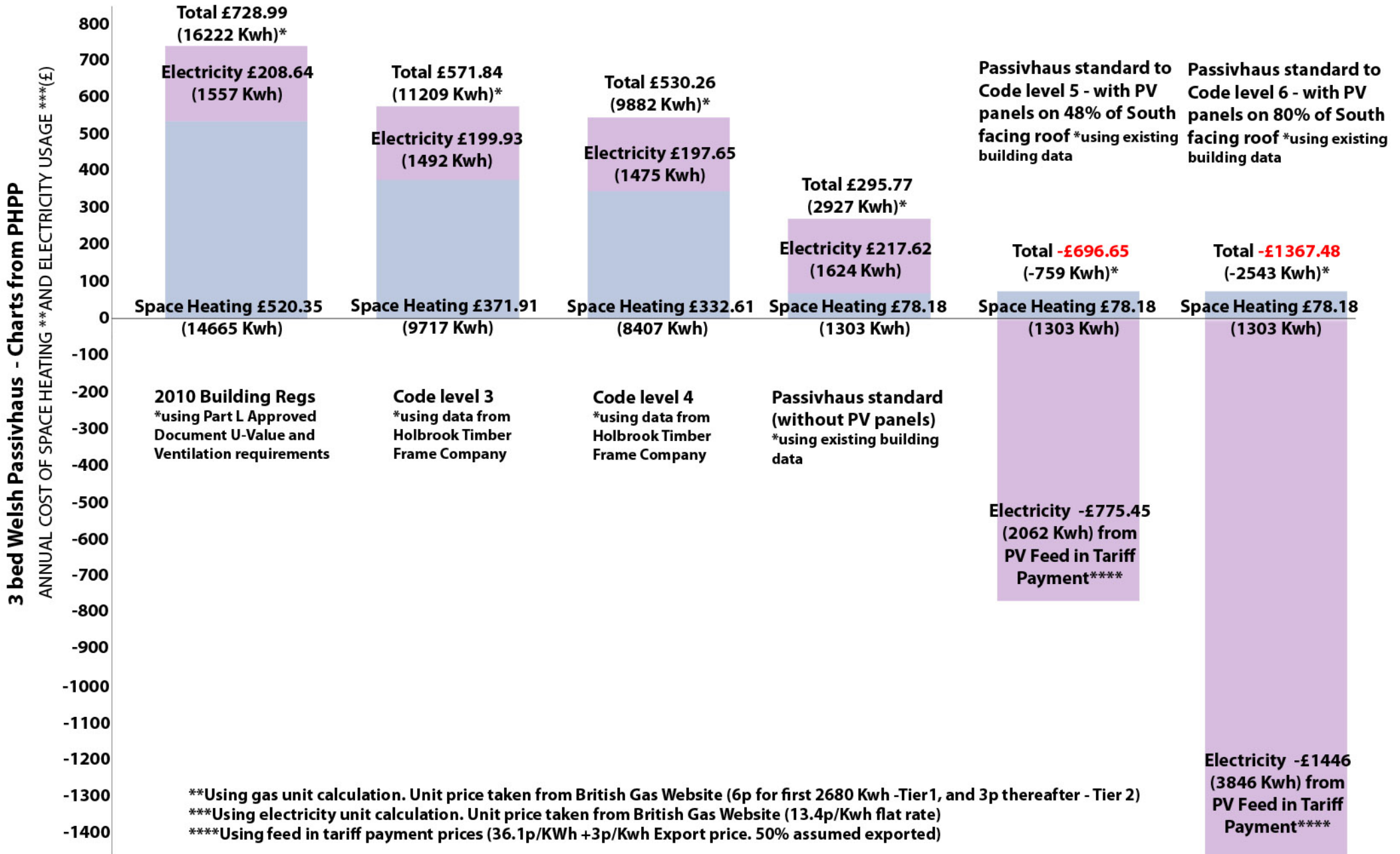
What is the primary energy demand of a Passivhaus?

Annual primary energy demand comparison: 3 bed Welsh Passivhaus at 2010 Building Regs, Code Level 3, Code Level 4 and Passivhaus standards



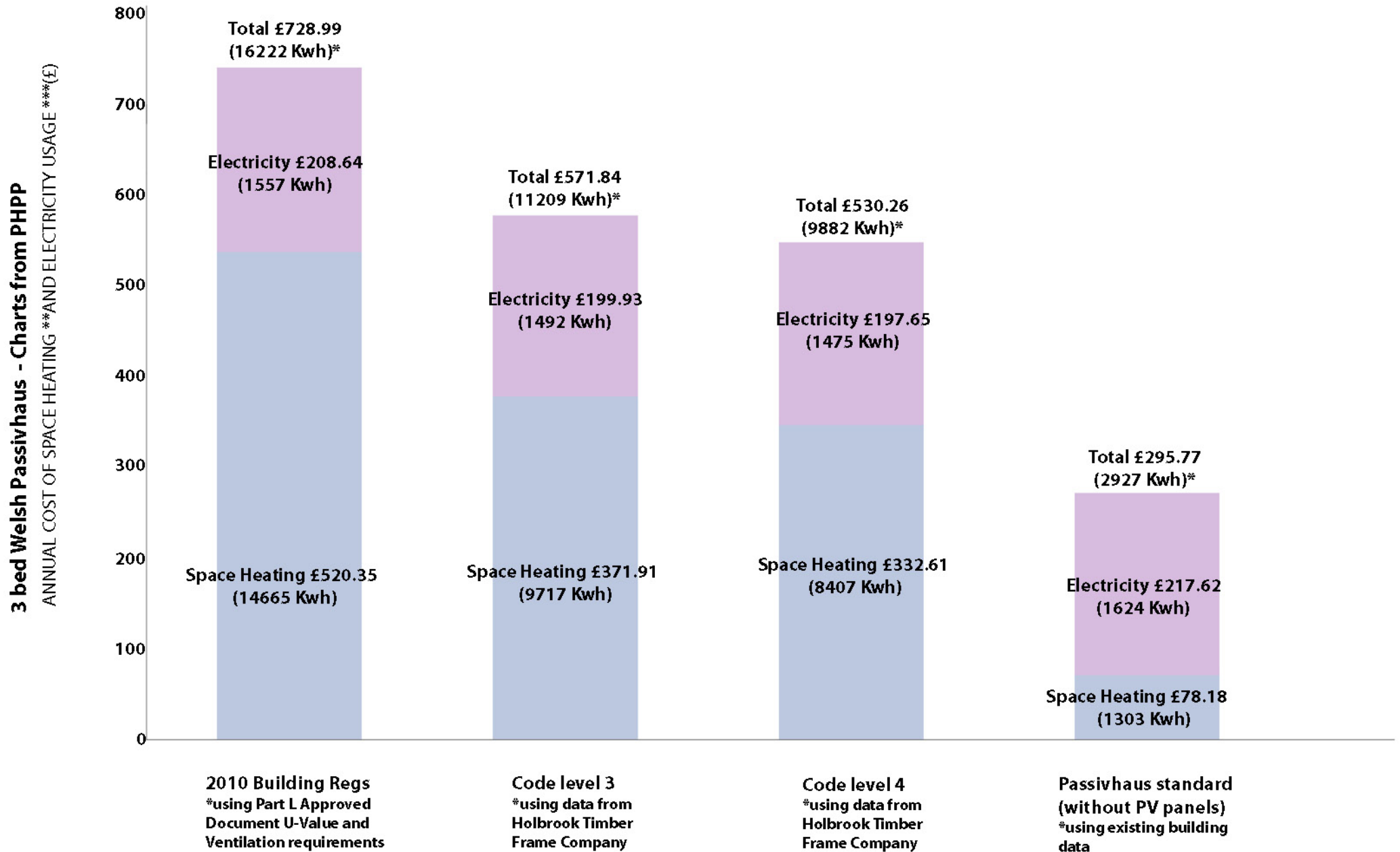
How much does it cost to run a Passivhaus with PV?

Annual energy cost comparison: 3 bed Welsh Passivhaus at 2010 Building Regs, Code Level 3, Code Level 4, Code level 5 Passivhaus and Zero Carbon Passivhaus



How much does it cost to run a Passivhaus?

Annual energy cost comparison: 3 bed Welsh Passivhaus at 2010 Building Regs, Code Level 3, Code Level 4 and Passivhaus standards



**Using gas unit calculation. Unit price taken from British Gas Website (6p for first 2680 Kwh -Tier1, and 3p thereafter - Tier 2)

***Using electricity unit calculation. Unit price taken from British Gas Website (13.4p/Kwh flat rate)