

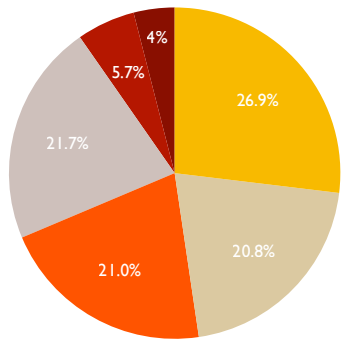
Having completed three phases of the 75 house development for the Stretham & Wilburton Community Land Trust, Haysom Ward Miller undertook a post-construction evaluation of the house types in order to communicate to the developer options to improve the energy performance of the house types prior to the start of design work for a fourth phase. The graph below describes option for the H-house type, which had achieved an Energy Performance Certificate (EPC) of B. These houses were built with Air Source Heat Pumps and higher levels of insulation and airtightness than Part-L compliance.

The analysis was done using the Passive House Planning Package (PHPP) energy analysis by Haysom Ward Miller who employ a member of staff who is a certified PHPP assessor. The units were calculated as Kilowatt-hour per square metre per annum (kWh/m²a) and the graph described measures which could be adopted to upgrade the energy performance to a target of Passivhaus equivalent (60kWh/m²a).

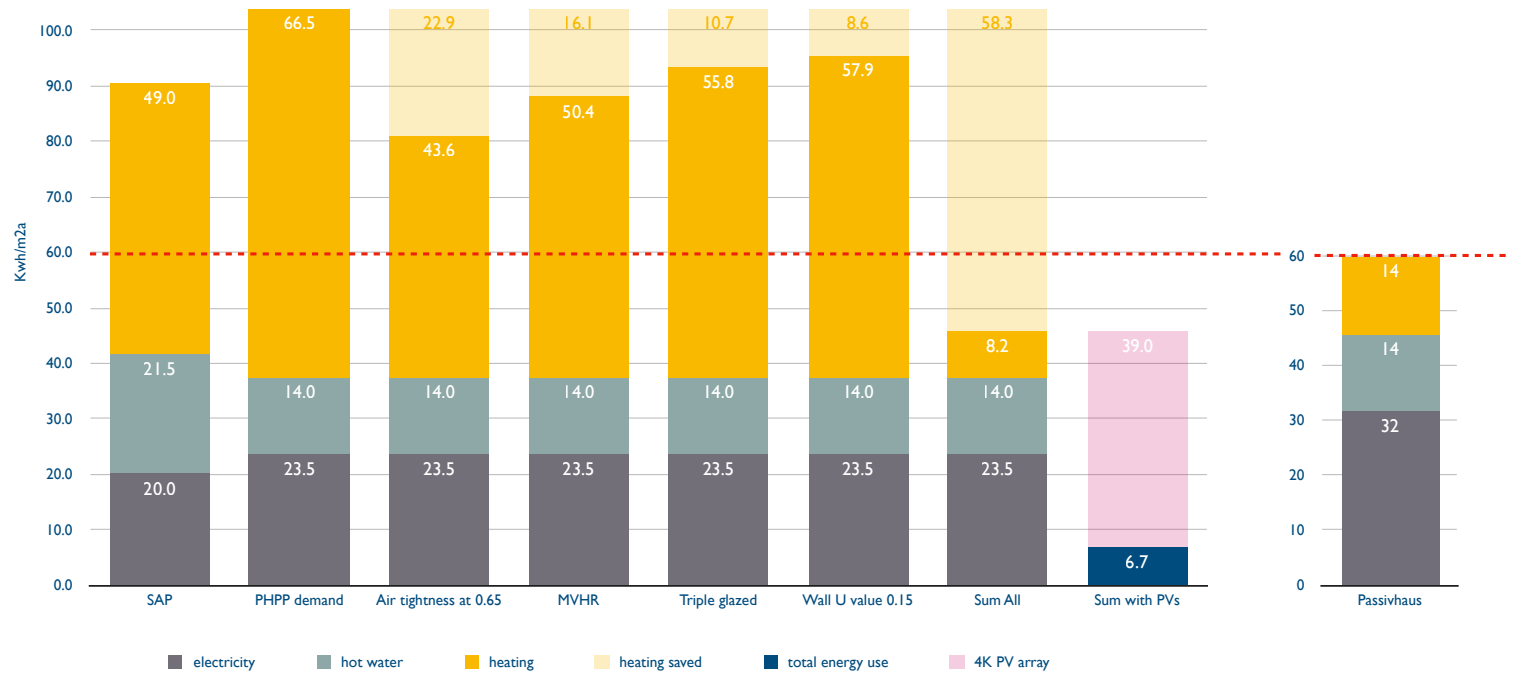
- The first column scores a typical as-built H-Type dwelling according to the SAP method of calculation which produced a score of 90kWh/m²a.
- The second column shows the energy performance according to the more accurate PHPP energy analysis, at 104kWh/m²a.
- We explored improvements which could be achieved by increasing the airtightness, adopting mechanically ventilated heat recovery (MVHR), triple glazing, and uncreased thermal performance of the external envelope. The analysis showed that these measures, if adopted, would increase the dwelling's energy performance to 45.7kWh/m²a. A 4kW array of photovoltaics on a south facing slope would offset the electricity use by 39kWh/m²a, bringing the house to within 6.7kWh/m²a of zero carbon.

Image: Type H house , Manor Farm, Stretham

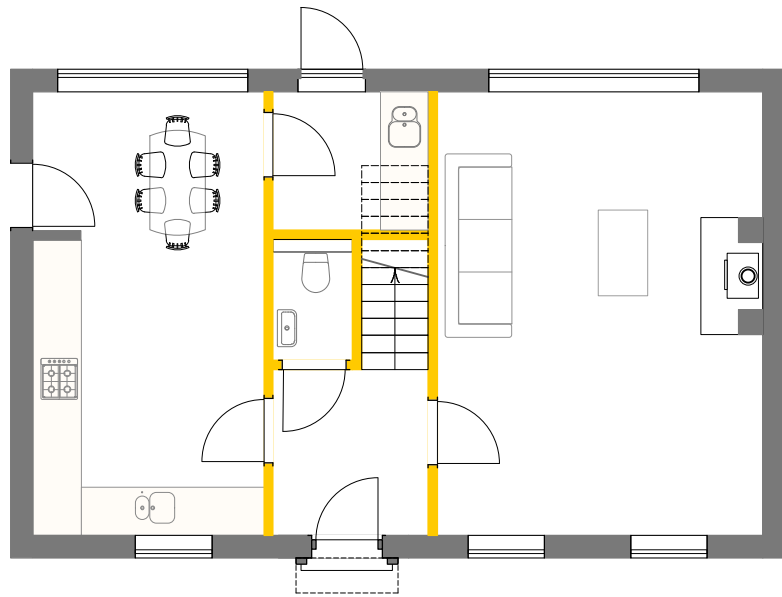
● windows ● ventilation ● infiltration ● walls ● roof ● ground



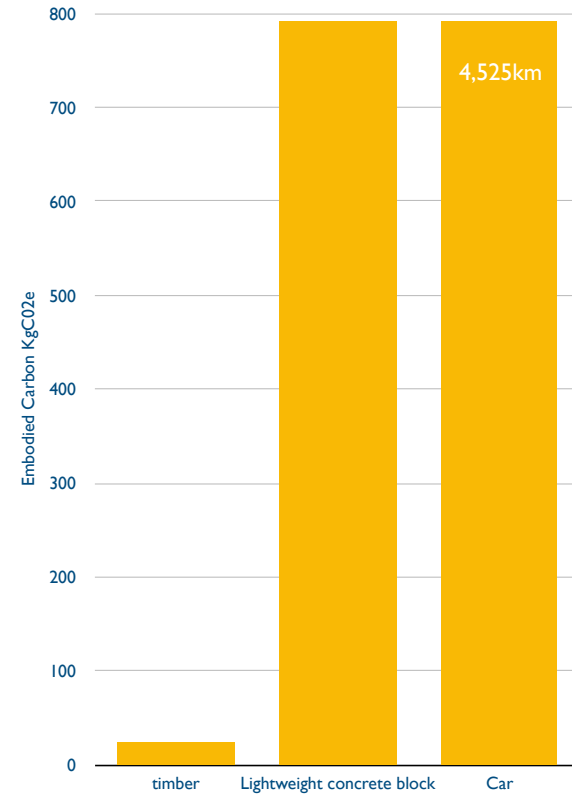
PHPP calculated Heat Loss



H Type Energy Analysis [Manor Farm]



Ground Floor Plan



H Type Embodied Carbon Analysis of Internal GF Partitions [Manor Farm]

