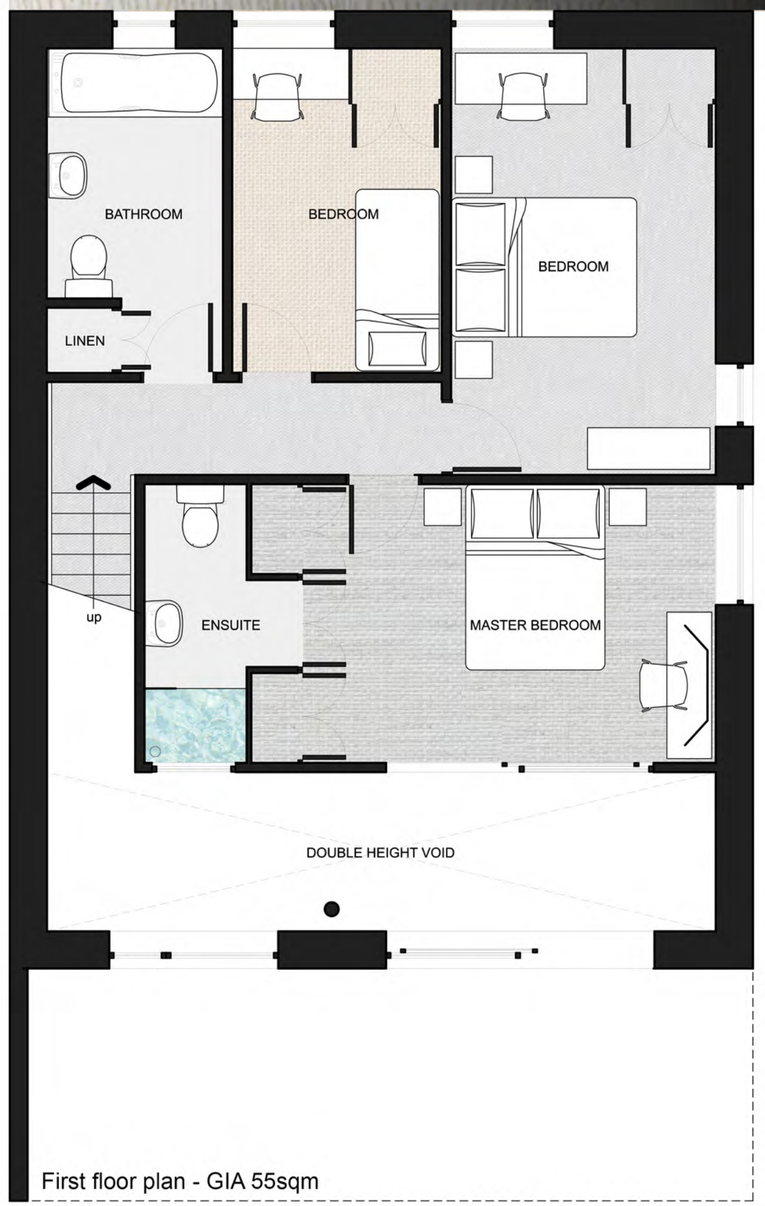
James Homer

The **hen-house** - a cost-effective, low energy, forever home at Graven Hill

Ground floor plan - GIA 68sqm

(above): section through the new house as proposed,



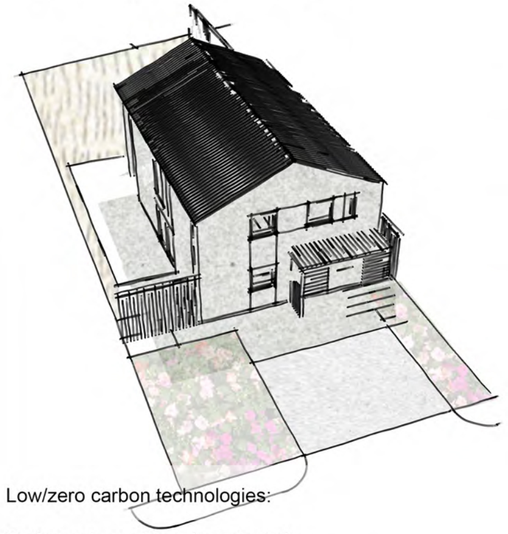
First floor plan - GIA 55sqm

The design takes an 'extreme fabric' approach to satisfying Fabric Energy Efficiency standards (target of 46 kWh/sqm/year) as follows:

SIP panels deliver a building envelope quickly and cost-effectively (U-value 0.11 W/sqm/K)

Ground floor (deliverd as Golden Brick) nom. 3 layers 100mm EPS (U-value 0.10 W/m2/K)

Air permeability target ≤1 m3/h/m2@50Pa



Low/zero carbon technologies:

Optimised passive solar orientation.
Air source heat pump, with underfloor heating
Nom. 3kWpeak photovoltaic array
Mechanical ventilation with heat recovery (MVHR)
low energy lighting / energy efficient appliances.

This approach makes it entirely realistic to deliver zero carbon dwellings that do not cost the earth.