ABBEY PYNFORD

CASE STUDY

Passive Homes

Living Space Homes Ltd

HOUSEDECK

Name: Passive Homes

Location: Ware, Hertfordshire

Value: £53,000

Site size: 4 units / 210m²

Duration: 2 weeks

Client: Living Space Homes

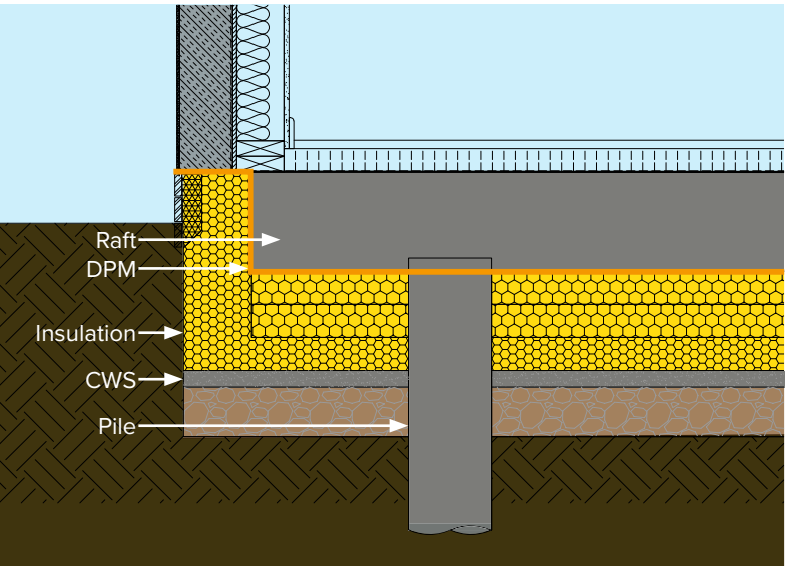
This passive housing project is set on an existing residential site, re-developing the plot from one home into four semi-detached houses.

Housedeck for Passive Design

Due to the Passive scheme, the foundations needed to meet the thermal performance required to maintain these properties. This was achieved in two ways: one, using the slab as a heat sink, and two allowing substantial insulation to be installed under the slab.

Heat Sink

Using foundations as a heat sink requires a slab design, ruling out traditional piled foundations as an option. As Housedeck is a foundation and ground floor solution it was a good fit for this project. We increased the thickness of the slab to 300mm, allowing significant heat retention for the homes above.



Concrete Working Surface (CWS) for piling rigs

Working with Under Slab Insulation & DMP

An important feature of heat sink foundations in the insulation is installed under the slab, instead of on top, as is traditional. Due to Housedeck's slim design, this allowed for the 300mm thick insulation with minimal excavation. This design also allowed a continuous DPM to be laid neatly under the slab and edges, installed and guaranteed by a specialist.

Eco Concrete & Sustainability

Not only did Housedeck's flexible system allow our engineers to adapt the design to work with the insulation and DPM seamlessly, it also has other credentials that support the sustainable aims of this project.

Due to the reduced excavation, Housedeck uses less concrete and steel and sends less spoil to landfill. This combined reduces the plant and vehicle movement substantially, minimising emissions.

Although Housedeck already requires less concrete than traditional foundations, we also reduced the cement use further but using our Eco Concrete. Developed and trailed with Hanson, it reduces the carbon impact by 50% compared to a standard concrete mix.

Sloping Site

Another factor that was considered for the project was the slope at the back of the site. Favourably, as the client opted for Housedeck this was not an issue. A traditional piled beam foundation would have caused significant design challenges, primarily the amount of excavation required for the beams and insulation, while achieving the desired finished floor level. It would also have required an unnecessarily complex design detail to isolate the below slab DMP effectively. However, by using Housedeck we

Insulation and DMP installed over piles, drainage and services

Rebar installed, ready for concrete pour

Fore: Concrete pour
Back: Installation of steel bars

were able to mitigate these issues and meet the structural demands of the site and superstructure.

‘Abbey have come in and designed and constructed our piled insulated slab, working in conjunction with our guys who did the under slab insulation after the piles had been sunk. It was a first eco build for us and the footings couldn’t have gone better. Great work.’

Craig Scudder, Director, Living Space Homes

Get in touch to discuss your project requirements:

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