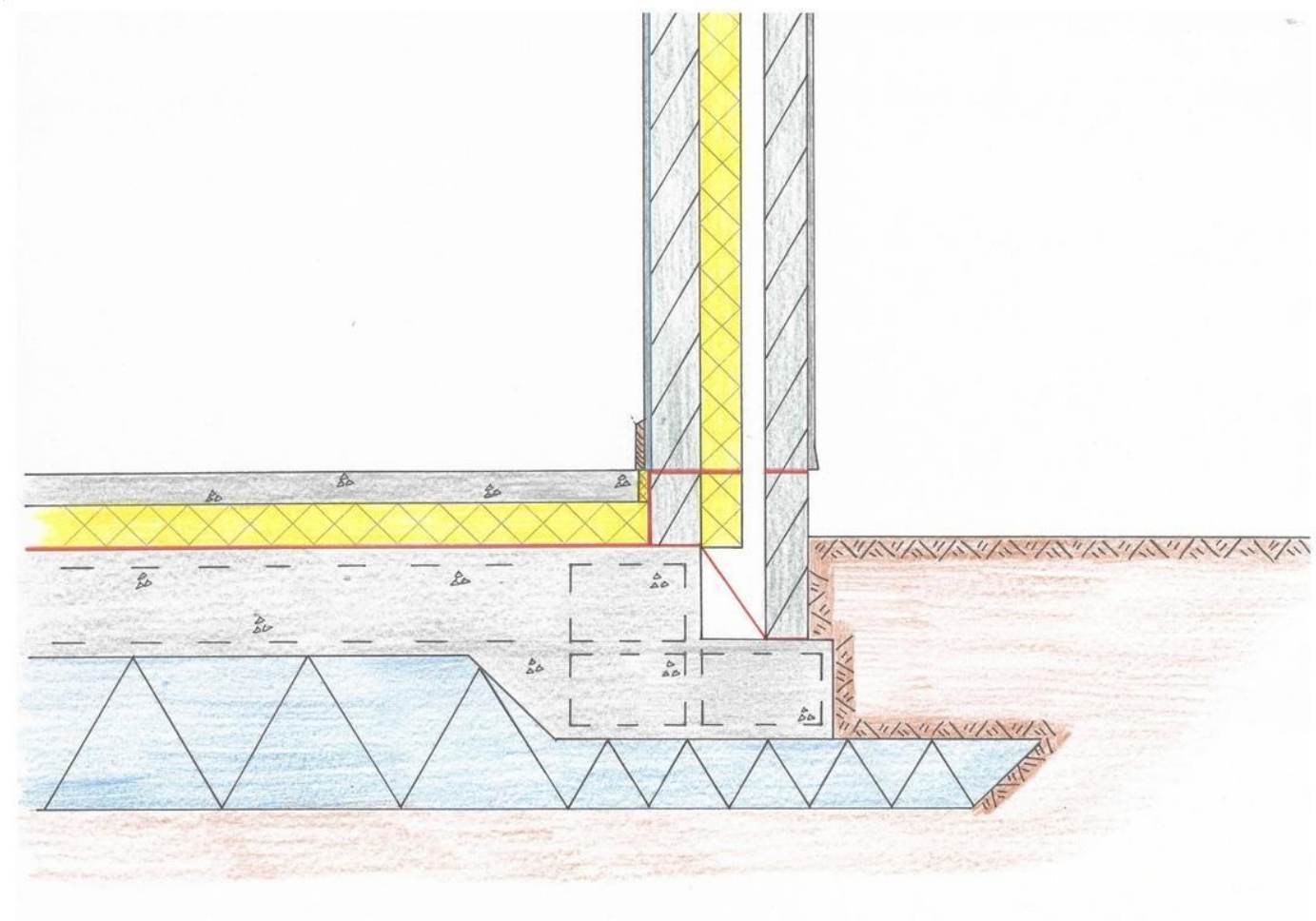
Construction Studies

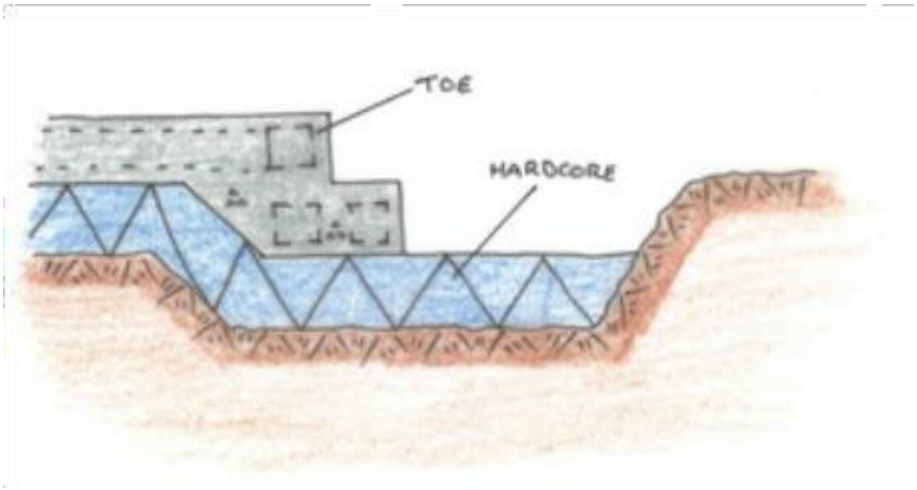
Substructure

Raft Foundation



The concrete raft is supported on a compacted hardcore base which extends out past the edge of the raft.

The edge of the raft is stepped, creating a toe, which allows the outer leaf of the wall to continue belowground level.

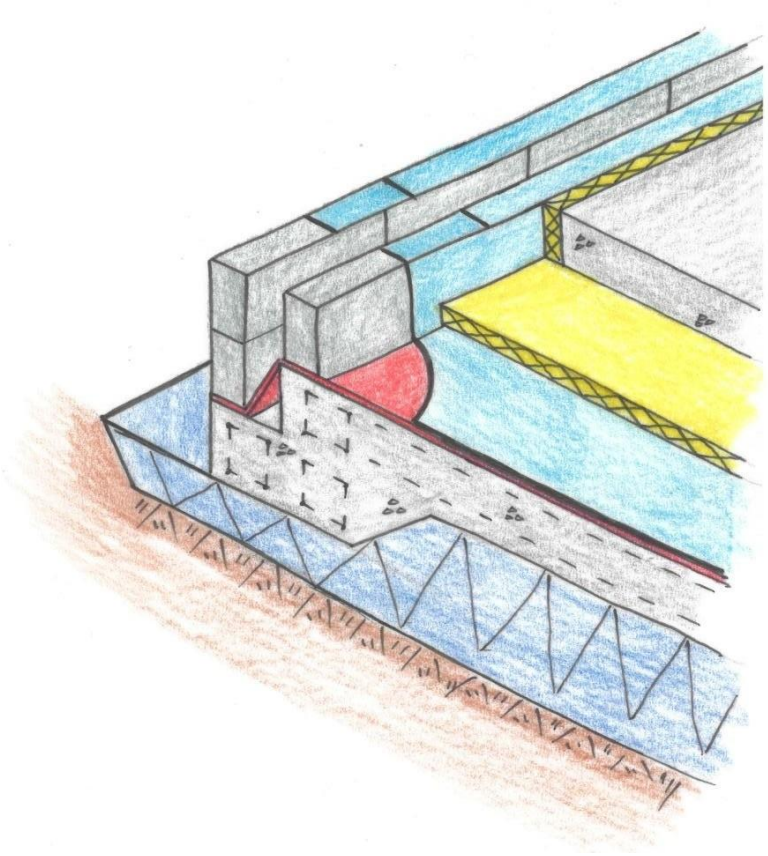


It is vital that the concrete slab is strengthened by the use of steel reinforcement.

A radon barrier is installed to form a continuous seal on the entire footprint of the house.

A Damp Proof Course is installed in order to repel any rising moisture. It is vital that the DPC is carried up into the blockwork to form a water tight seal over the entire floor area.

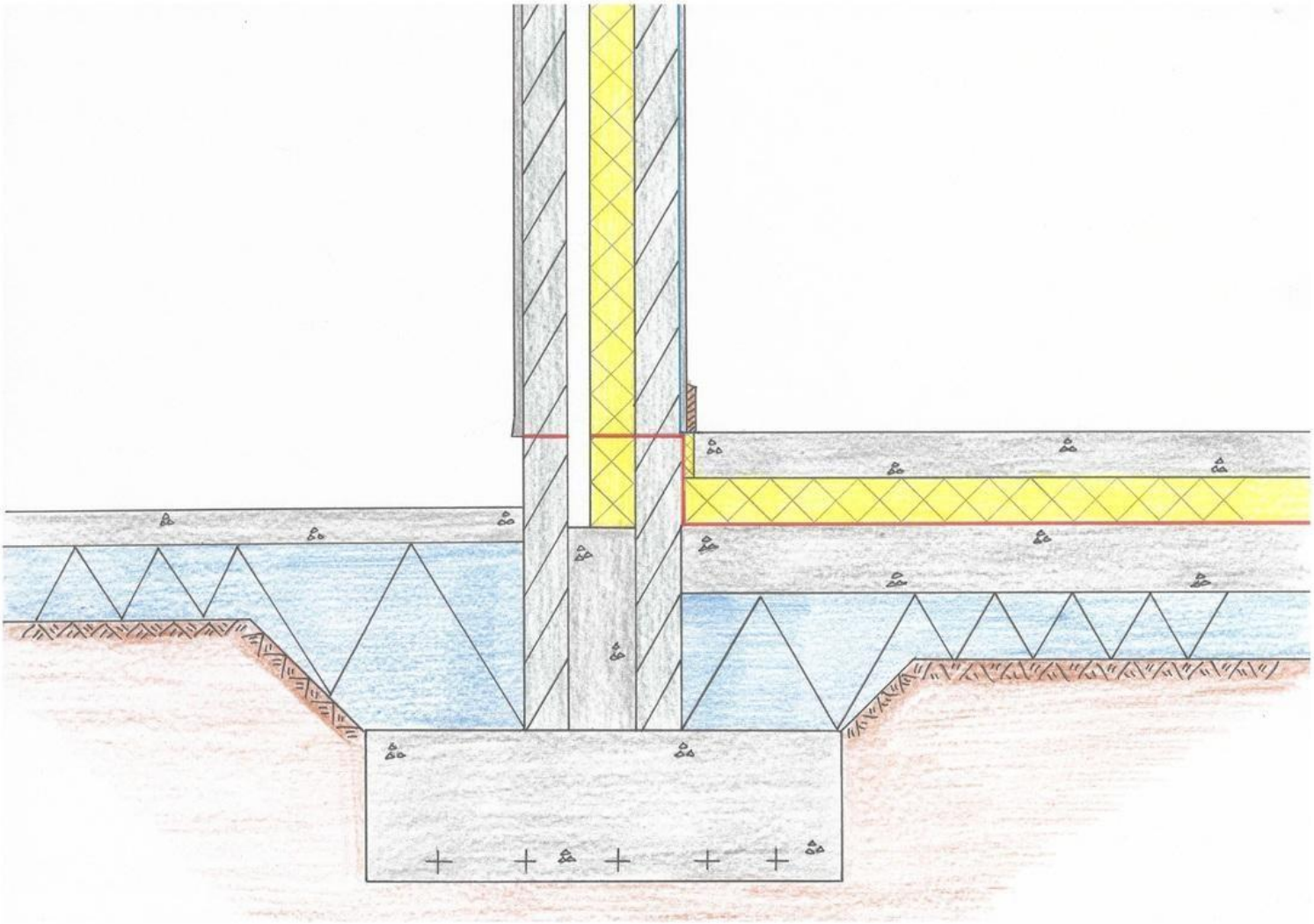
The DPC must run through the blockwork at a minimum of 150mm above finished ground level.



100mm of rigid insulation is installed below the finished floor to ensure that there is no heat lost through the foundation.

75mm concrete screed then provides the finished floor.

Strip Foundation

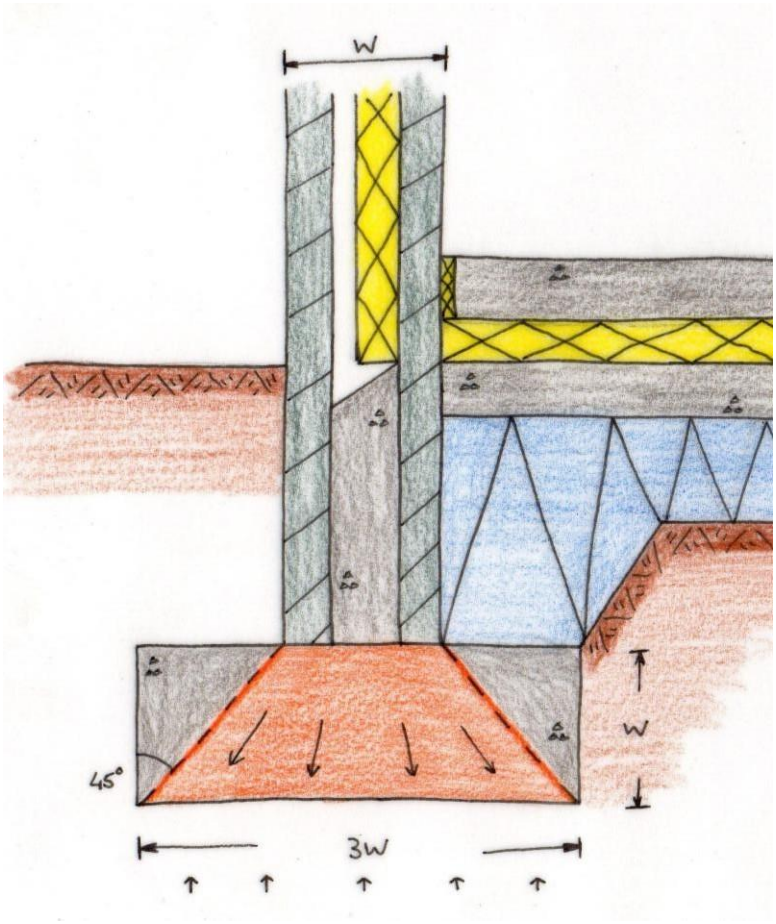


The size and position of a concrete strip foundation is directly related to the overall width of the wall.

The principle design features of a strip foundation are based on the fact that the load is transmitted at 45 degrees from the base of the wall to the soil.

The depth of a strip foundation must be equal to or greater than the overall width of the wall.

The width of the foundation must be three times the width of the supported wall.



It is vital that the strip foundation is strengthened through the inclusion of steel reinforcement.

A compacted hardcore base of minimum 150mm is installed to form a platform for the subfloor and the subsequent loads of the dwelling.

The 150mm concrete subfloor is poured on the hardcore in order to provide a strong, smooth platform for the insulation.

A radon barrier is installed to form a continuous seal on the entire footprint of the house.

A Damp Proof Course is installed in order to repel any rising moisture. It is vital that the DPC is carried up into the blockwork to form a water tight seal over the entire floor area.

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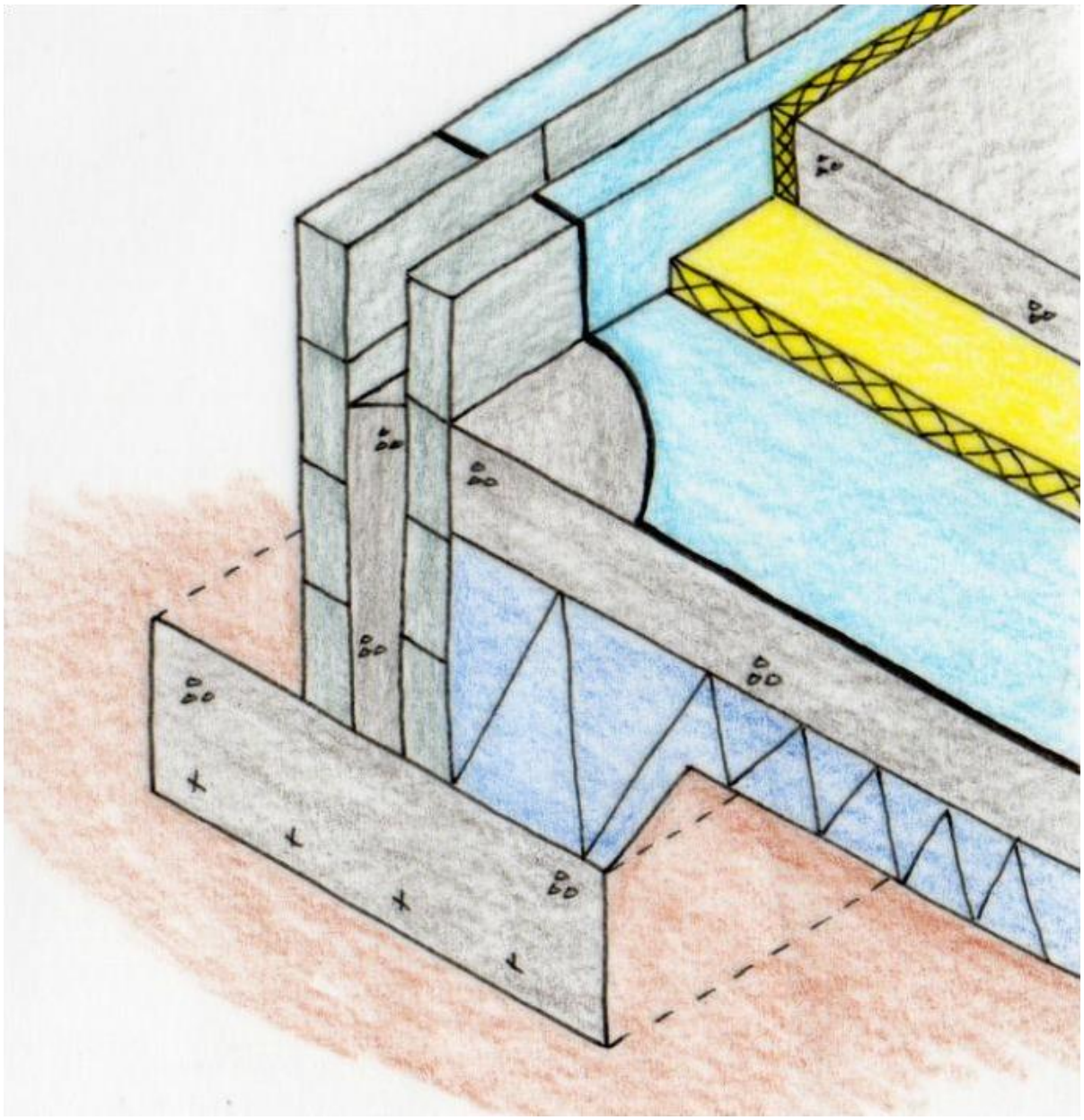
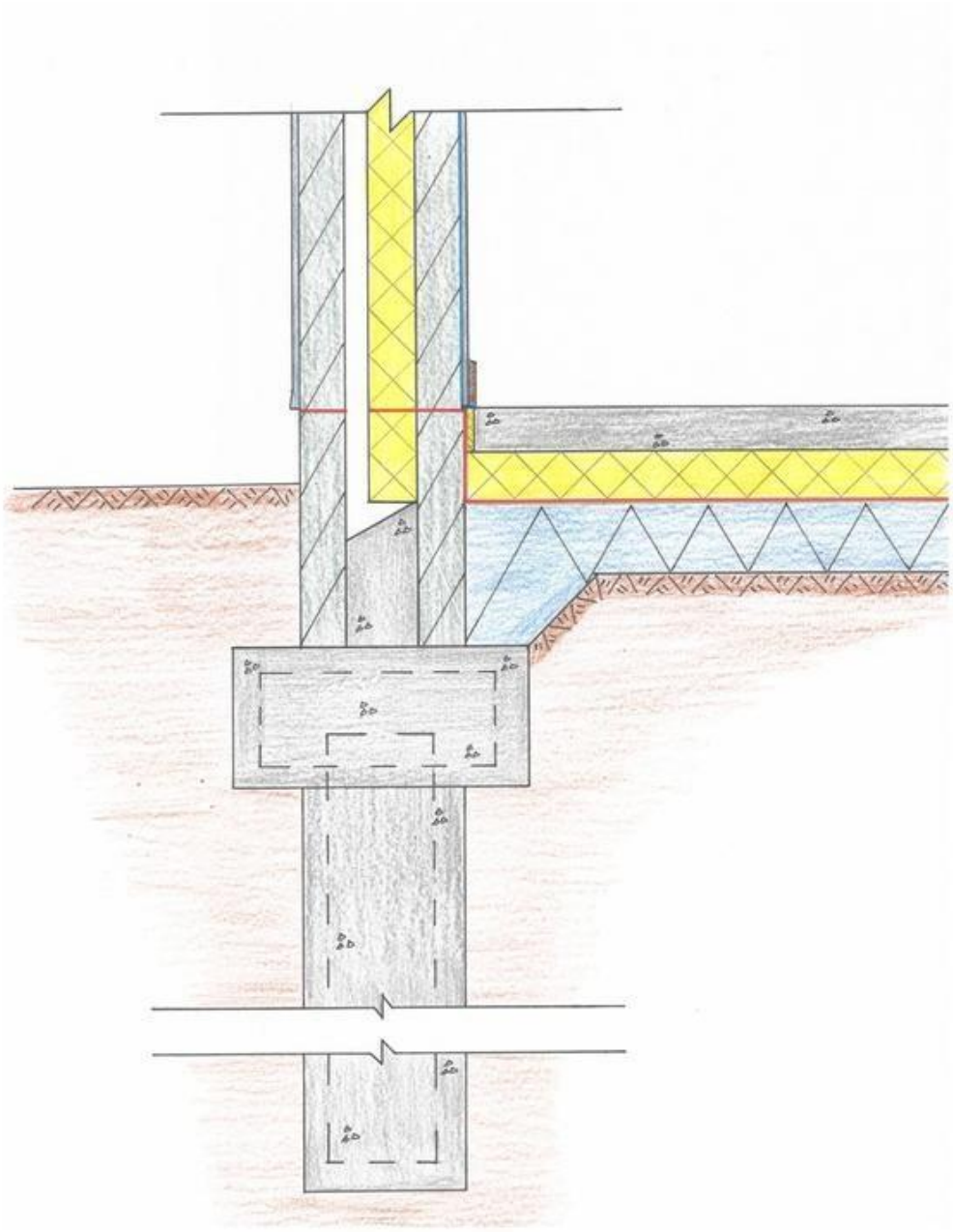


100mm of rigid insulation is installed below the finished floor to ensure that there is no heat lost through the foundation.

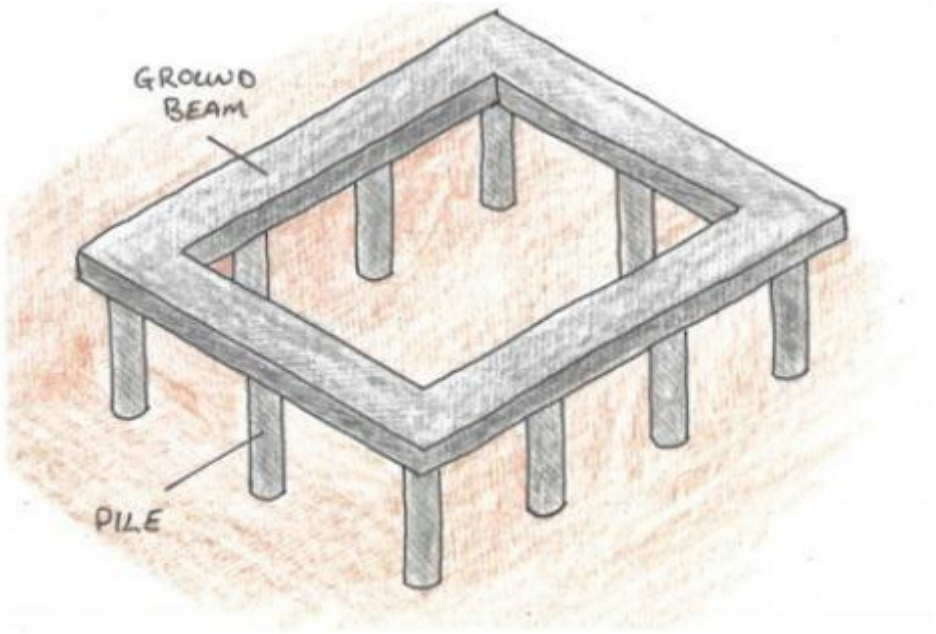
75mm concrete screed then provides the finished floor.

Piled Foundation

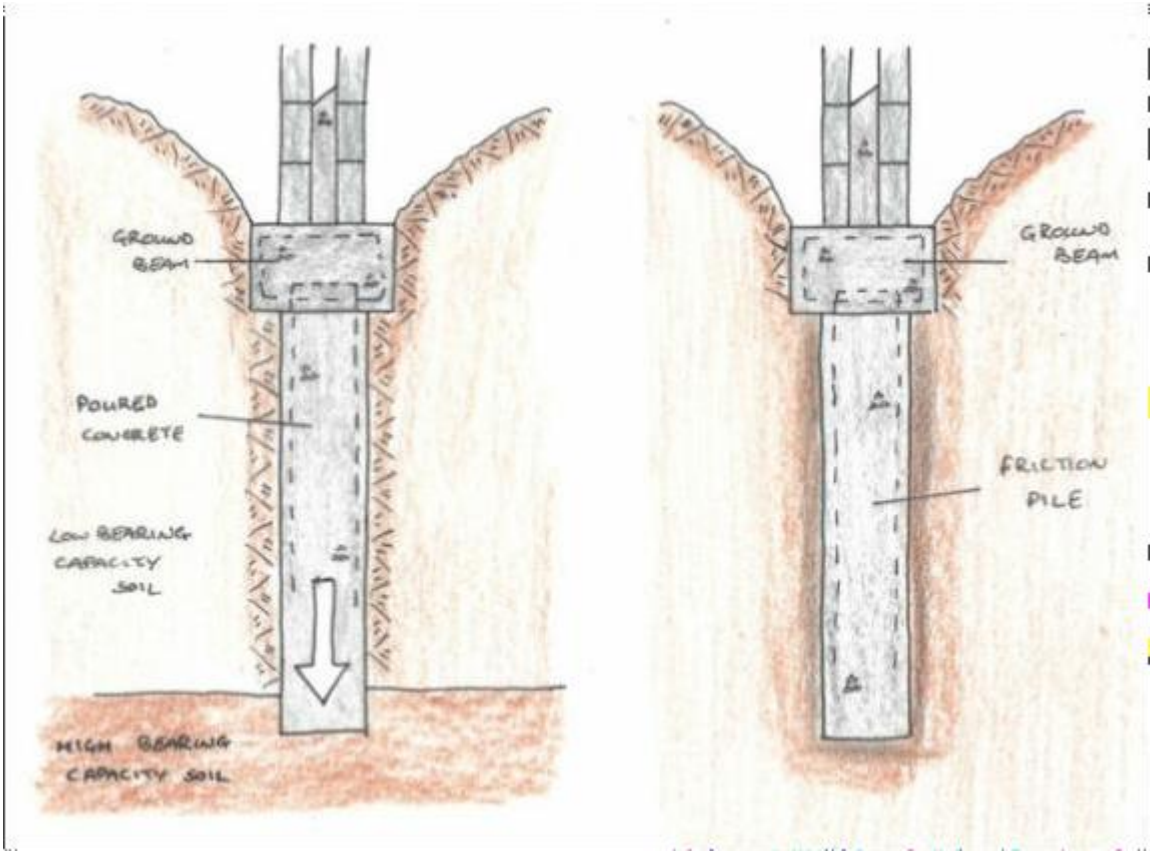


A pile is a column of concrete that extends downward deep into the soil.

Piled foundations consist of a number of piles connected by a ring of concrete called a ground beam. This is similar to a strip foundation but not as wide.



One method of construction is to drive precast piles into the soil using specialised percussion drivers. The other method requires the drilling of a pile hole in the soil, which is then poured with concrete and reinforced with steel.



Once the piles are complete, the ground beam can be created. This is the surface of which the walls of the dwelling can be built.

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The 150mm concrete subfloor is poured on the hardcore in order to provide a strong, smooth platform for the insulation.

A radon barrier is installed to form a continuous seal on the entire footprint of the house.

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