



**BUILDSTORE**  
FOR SMART HOMEBUILDERS



**GUIDE**

# CONSTRUCTING YOUR SUBSTRUCTURE OR UNDER BUILDING

## UNDER BUILDING CONSTRUCTION

The standard form of underbuilding construction uses two skins of dense concrete blockwork for all external walls. This is built centrally off the foundation concrete to the ground floor, or damp proof course level otherwise known as DPC. If a facing brick is to be used for the external leaf it is usual for the outer leaf, of the blockwork to stop just below ground level with the inner leaf taken up to DPC level to support your chosen or specified flooring system.

Special foundation blocks are available which negate the need for a cavity to go up to ground level, but in most cases, the two skins of blockwork are built with a cavity that reflects the width of the intended superstructure walling. The two leaves are tied together with metal wall ties to provide structural integrity, and this is further increased by filling the cavity with lean mix concrete to ground level or at least 225mm below DPC. Care must be taken with backfilling trenches before this fill has been installed and allowed to go off.

## INTERNAL WALLS

Internal loadbearing partition walls are built as single skin walls, which are founded in just the same way as for the external walls, although the width of the concrete can sometimes be lessened. Where a suspended timber ground floor is to be employed, sleeper walls are built to provide interim support. These can be founded on normal strip foundations, but it is more usual for them to be built off a concrete slab known as oversite or solum.

The oversite is built on the levelled out and compacted ground within the building and it is thickened out beneath the dwarf or sleeper walls. These are built in 'honeycomb' fashion with air holes to allow a free flow of air within the void. Drains or services that pass through walls must be sleeved or allowed to pass freely through openings created by the use of concrete exit lintels. You will need to determine precise positions and levels of all of these.

## BASEMENTS

Basements need to be carefully thought out and designed by qualified engineers. There are various means of construction, including pre-formed concrete, poured concrete, blockwork and hollow Styrofoam blocks filled with concrete. These need to be reinforced and integrated with any flooring system. All basements must be tanked or waterproofed, and once again, there are various methods. Most involve the application or building in of a waterproof membrane, but others employ a sump and pump system, which channels moisture harmlessly away.

## VENTILATION

All suspended ground flooring systems must be ventilated. With timber flooring systems employing a concrete solum, this is provided by means of air bricks built at intervals and sleeved through the external cavity wall. Beam and block or suspended concrete systems, allow the oversite to remain as compacted subsoil, and cranked ventilators are used. This allows the free passage of air without letting light in, thus prohibiting any vegetable growth.

