The Superstructure TIPS

The superstructure is the construction above the basement or foundation. It consists of a framework, upper floors, roof, stairs, external walls, windows, doors, etc. Superstructure excludes the substructure, finishes and fittings, furniture and services. The superstructure framework includes the load bearing elements and consists of the main floor and roof beams, ties and roof trusses of framed buildings; casing to stanchions and beams for structural or protective purposes.

Before any work commences on the superstructure, the service providers should be arranged for the connection of water, gas and electricity. It is necessary to schedule the connection earlier to ensure the services will be ready to use at later stages of the build process.

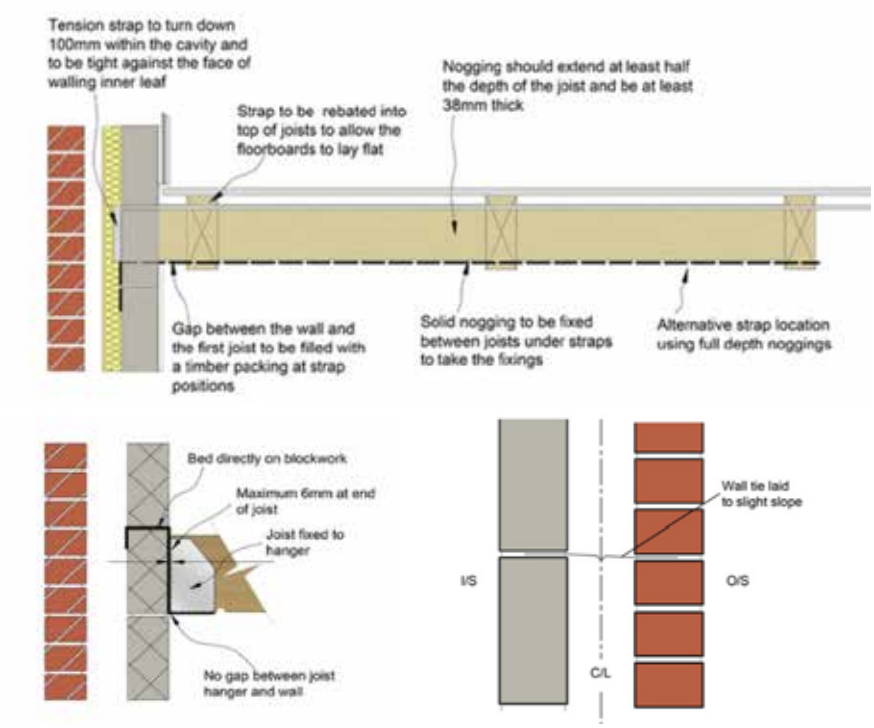
Depending on the type of the superstructure different specialists will be required. For traditional and most common brick and block superstructure, the bricklayers will be needed, while for timber construction the timber frame manufacturers and general builders or erectors. Timber frame structure also requires scaffolders to accommodate for erectors needs during the installation of the external skin by lowering and opening or closing and increasing the open horseshoe scaffold, which is different than in the case of brick and block works.

Brick and Block superstructure frame

The masonry walls should be built in compliance with the Approved Document A.

Before commencing works, it is recommended to load bricks and blocks conveniently around the wall in stacks no more than 1 meter high at 1.5m intervals and approximately 1m from the wall. Often the OSB or ply is positioned between stacks for bricklayers to put their mortar.

Bricklayers should position the profiles and string lines and start from building up walls corners. In the next step, the string lines should run between corners and block courses should be infilled there. This method allows checking for correct level-horizontal and upright. After the laid course of four blocks, the check for levels is recommended. Wall ties will be required, and door or window openings will have to be made.



Illustrations Source: LABC Warranty Technical Manual

Walls should be restraint at floors, ceilings and verges what can be done with the restraint straps, or joists hangers. Wall ties are essential for the stability of masonry walls. Only stainless steel wall ties should be used and should be long enough to overlap on each leaf of masonry.

Vertical movement joints should be installed to the outer leaf of masonry to allow for movement. For concrete clockwork walls such joints should be positioned every 6m and should have 10mm thickness. Movement joints will absorb the expansion and contraction of construction materials, any vibration or movement due to ground settlement, etc.

The first level of blocks is approximately 8 block courses high. If there will be a first floor building the timber profiles or joinery is required. Also, the cavity wall insulation in the form of rigid foam or mineral wool is laid. In case of timber first floor, the carpenters have to install all joists and beams using hangers built into the external walls. For light loading the joists should be covered with scaffold boards or external ply shuttering screwed to the joists. Following works include the bricklaying for another floor, positioning lintels where required and fixing restraint straps, trusses and rafters.

Disclaimer
This is the introductory content only. Please refer to Building Regulations for detailed information.

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GUIDE TO LAYING BRICKS AND BLOCKS

CONSTRUCTION OF WALLS	
Set out walls using securely marked profiles with reference lines and datum levels.	
Check wall lengths for squareness.	
Cross check against diagonal measurements from Architect plans.	
Ensure correct and even bonding occurs at openings.	
Build rises of no more than 1.5m per day.	
Build both leaves of a cavity wall at the same time.	
For rendered or plastered walls provide raked out joints of 15mm deep.	

LAYING BRICKS AND BLOCKS	
Bricks and blocks should be laid level (please refer to article for more details).	
Use a regular bond with a nominal 10mm horizontal bed joint (unless otherwise specified by the designer).	
Fill cross joints.	
Install perpend joints with minimum width of 7mm and fully bed into the mortar.	
Ensure perpends are vertically aligned as the work proceeds.	
Lay 'frog' bricks with 'uppermost frog' filled with mortar.	
Lay hollow blocks on shell bedding with the vertical joints filled.	
Ensure a consistent bond, especially at corners.	
Set each wall tie a minimum of 50mm into both masonry leaves.	
Keep the cavity and or insulation clear of any mortar droppings.	

Source: LABC Warranty Technical Manual