



FOUNDATION



WALL



ROOF



WINDOW



AIRTIGHT



TIMBER FRAME

Est. 2002

The Build **Process**



Complete Energy Efficient **Timber Frame Solutions**

**Your MBC Foundation Slab and Timber Frame Home
is designed and ready for building**

A brief guide through what will happen and when to expect it to happen

In this guide

- ▶ **The Soil Survey/Investigation /Depth of Excavation**
- ▶ **Preparing Your Plot – Enabling Works**
- ▶ **Levels & Services**
- ▶ **Scaffolding**
- ▶ **Erecting your timber frame**
- ▶ **Insulation and Air Tightness**
- ▶ **First fix Plumbing & Electrics**



stage 1

The Soil Survey/Investigation

Key to what work needs to be done in preparing your site, comes from the results of a soil survey/investigation which you will have instructed as part of your early project plans. The soil investigation results help us when determining the final depth of your excavation. (See Depth of Excavation in Readiness for your MBC Foundation Slab).

Soil Investigation

The MBC insulated foundation system requires a soil investigation to be carried out to enable our engineer to design the insulated slab system. The soil investigation should be carried out by a registered soil testing company.

A soil investigation will normally require 3-4 bore hole soil samples to be taken from varying locations on the proposed site, including a bore hole within the footprint of the proposed build.

A basic soil report should determine the following 2 elements:

1. Soil type
2. Ground bearing capacity

Where a soil is found to be a clay, the soil report will also need to determine the following:

- The clay's Plasticity Index
- The clay's Volume Change Potential

The foundation engineer will also need a site layout plan with the proposed house plan clearly outlined together with:

- ▶ All trees type / species marked on the site
- ▶ Distance of trees from the proposed build, outlined and dimensioned
- ▶ Tree Trunk Diameter
- ▶ Tree height

Depth of excavation in readiness for your MBC Foundation Slab



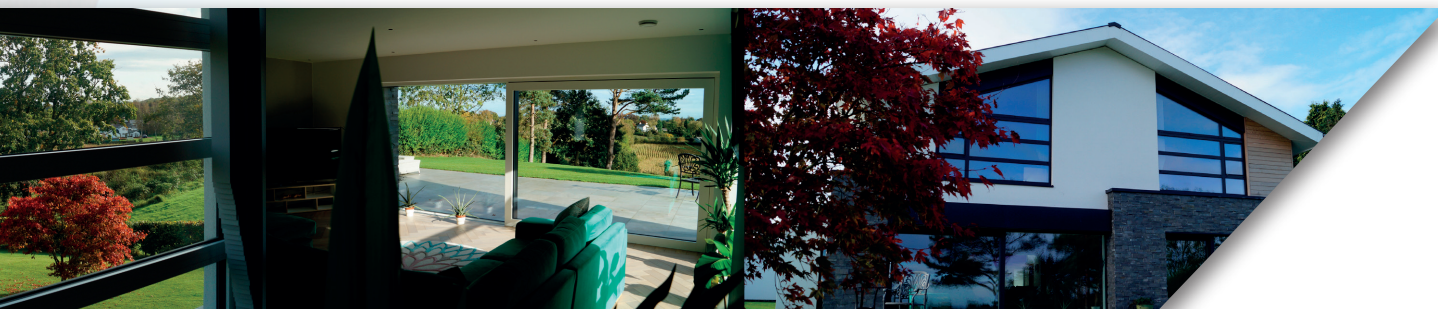
A common question is how deep do I have to go in preparation for the MBC Foundation Slab? The answer is governed mainly by 3 factors:

1. The results from your Soil Survey will go to the MBC Foundation Design Engineer who uses this information, as well as the loads generated by the timber frame, to design the final Insulated Raft Foundation.
2. Rules laid down in your Planning Consent which govern the eventual finished (ridge) height of your building, will also be a determining factor on the depth of your excavation.
3. The structural line and point loads of your specific timber frame.

To know exactly how deep to excavate, you need to have a finished Foundation Slab Design and an indication of the engineer's recommendations for "ground make up" beneath the slab. The absolute minimum depth of excavation for the MBC Foundation slab is: 500mm

The engineer may stipulate a requirement to install and compact an initial layer of hardcore stone. If needed, the precise depth of hardcore required will be confirmed to you, when the Foundation Design is completed.

In "difficult ground" situations it may be necessary for the foundation slab to sit on piles. Again, this approach will be determined as a result of the Soil Survey.



NB: While MBC will ensure that you have all of the necessary drawings, Engineer's Calculations and information to pass to the Building Control Officer - it is your responsibility to liaise with Building Control throughout your build project.

stage 2

Preparing your plot – Enabling works

Your plot needs to be ready for when we arrive to make a start on your Foundations for your MBC Timber Frame. Start by thinking about who your local contractor will be to prepare your plot. He'll need to excavate the initial dig for your foundation slab and make sure that your access to your new home is all sorted and under control. Excavation means "muck" - lots of it - you will need to think about how much excavated material stays on site and how much is "muck away".

Where does my work stop and MBC's start?

Building Control:

Prior to the commencement of any works on site it is good advice to get your Building Regulations application sorted, fees paid and know who the responsible officer is covering your project. Your building control officer will want to make his first inspection prior to the arrival of the MBC Insulated Foundation team, in order to check your excavation and that the prepared ground is in line with expectations from your soil survey.

For the Foundation Slab:

You just need to provide MBC with a level excavation at the correct depth all in readiness for MBC to arrive and start work on your Insulated Foundation. You'll have other things to sort too such as welfare facilities and skip(s) for waste removal etc - all of which are clearly detailed in your MBC contract document.

A note about Garage Slabs:

Garage slabs which are connected to the main house, or integrated within the house, need to be 100mm lower than the house slab. Therefore, excavations could need to be 100mm lower also.

NB: As part of your Insulated Foundation, MBC will supply and lay 150mm of hardcore. Any further requirement for "build up" is additional hardcore and is outside the remit of MBC works.



stage 3

Getting the slab built and levels

Levels:

It is the responsibility of your Groundworker to establish the correct level of your excavation and hardcore infill, considering the thickness of the MBC Foundation slab which will be built on the prepared ground. Prior to excavation, your groundworker will know the total thickness of the MBC slab and he will adjust his excavations accordingly. Hardcore must be fully compacted to the correct level.

Your foundation slab will take between 4 and 8 days to build. All materials and machinery / plant required for the build are delivered to your site in advance of work starting, normally on Day 1 of the Construction Schedule.

NB: Any land drains required for the perimeter of the Insulated Foundation are not supplied by MBC.

Stage 1: MBC installs final 150mm compacted hard core stone.

Stage 2: Materials delivered and 50mm blinding sand base applied to compacted hard core base in order to create level finish for the foundation slab to sit on. Service drains are then installed into hard core stone.

NB: Sand blinding is a levelling compound used to protect the underside of the Expanded Polystyrene (EPS) from the coarse stone layer beneath and in doing so provides a flat level surface off which to construct the Insulated Foundation.

Stage 3: The EPS base is carefully laid out accurately replicating the EXACT measurements of the Insulated Foundation Design prepared by MBC.

Stage 4: On top of the Damp Proof Membrane / Radon barrier (where applicable) Steel re-enforcement and insulation is applied to the main area of the Foundation Slab delivering the structural strength required to support your new home.

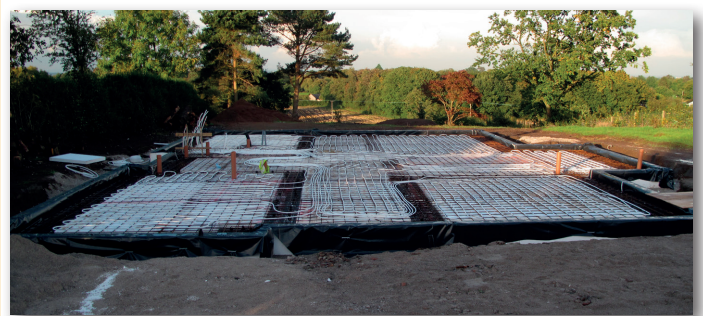
Stage 5: A final check and re-measure to be absolutely sure that everything is in place exactly where it needs to be prior to concrete pouring. This might also be the day when underfloor heating pipework is installed, prior to the concrete slab being poured.

Stage 6: The Insulated Foundation is completed with the concrete pour and power floating.

Services

When MBC build your Insulated Foundation they will install the necessary service pipework as "slab penetrations" usually from underneath the slab. The exact marker points of these service pipes will form part of the MBC Foundation Design Drawings. Your drain and services layout will need to be supplied to MBC by you or your architect / project manager. MBC will then overlay the drains and services layout with the Engineer's Foundation design and this will form the final plan which you will be asked to sign off, before MBC start work on the Foundation build.

MBC install all pipes and ducts to a distance of 1 metre from the edge of the foundation slab - leaving you and your groundwork contractor to connect onwards.



stage 4

Scaffolding & Erecting Your Timber Frame



Scaffolding

It is your responsibility to have all necessary access scaffolding in place prior to the arrival of your timber frame. MBC will provide you with a guide to what scaffolding is required for you to show to your scaffolding contractor. Aim to have your scaffolding erected and ready for use 2 days before the appointed MBC Frame Erection date. Always be sure that your scaffolding supply quote includes for ONE return to site during the timber frame construction phase. And if your home has high internal ceilings – only accessible by Scaffold tower, these will need to be organised as well, prior to the Timber Frame erection.

Erecting your timber frame

There's normally a minimum period of 1 week between the completion of the Insulated Foundation and the arrival of the MBC team to commence the timber frame erection. The period between completion of your foundation slab and the erection of your timber frame is flexible depending on your own build schedule, but generally a period of 1 week is needed to allow the concrete to cure.



The erection process of your timber frame will commence with the erection of the ground floor wall panels and continue on to the intermediate floor joists being installed. The first floor wall panels will then be erected, and finally the roof structure is erected.

Note: The erection process timescale for each project varies depending on the size and complexity of your specific build. MBC will outline the expected erection timescale to you for your build before commencing works on site.

Key Points:

It's best to get the newly erected timber frame building wind and weatherproof as quickly as reasonably possible so, important things to think about are:

- 1. Roof finishes:** When the MBC timber frame has been erected and the roof structure completed in readiness for roof finishes, it is preferable to have your chosen roofing contractors ready to start their work on site as soon as practical after the completion of the timber frame erection.
- 2. Windows and Doors:** Again, windows and doors are critical to working towards a weather tight building. Try to schedule the fitting of these as soon as you can after the completion of the timber frame erection process.
- 3. MVHR ducting:** This should be installed (1st fix only) as soon as possible but should not be fully connected to the MVHR unit.
- 4. Final finishes internally:** It is required for final finishes (internal) to the timber frame erection process to be left until the arrival of the air tightness team. These will be explained in more detail at the time of your post frame erection visit from MBC.

stage 5

Checking your timber frame and making ready for insulation and air tightness

Your MBC Timber Frame erection team will check your timber frame before they leave site.

It's important to note that 1st Fix works **SHOULD NOT** commence until **AFTER** the air tightness phase of works have been completed. However, MVHR ducting should be fitted and in place prior to Air Test works.

Insulation and Air Tightness

This is the time when MBC make sure that everything is ready for the final stage in the process - Air Tightness and Insulation.

Everybody's specification for insulation and airtightness differs slightly depending on their chosen wall system so there are no hard and fast rules. The order in which works are carried out is:

1. The Air Tightness materials are applied in order to prepare the building for an Air Test. This work will include sealing all windows and doors, following installation, on the inside of the frame.
2. The Air Test is carried out and Certificate issued.
3. Insulation is pumped.



Important: First fix Plumbing and Electrics

1st Fix Plumbing & Electrics **SHOULD NOT** commence until **AFTER** the air tightness test has been completed. However there are some exceptions:

- Soil Vent Pipes should be fitted.
- Stove Flue Pipe (if applicable) should be fitted.



- MVHR inlet and outlet ducting should be fitted and in place prior to Air Test works, **BUT NOT CONNECTED TO THE MVHR UNIT.**

MBC Timber Frame is a long established company that specialise in the production of super insulated, precision engineered, energy efficient timber frame and passive standard homes throughout the UK & Ireland. We are a registered Gold member of the Structural Timber Association and are quality accredited with an outstanding reputation.

At MBC our experience and continuous focus on quality, enables our team to satisfy the specific needs and requirements of each individual project, while at the same time provide outstanding service and support to our clients.



- ▶ Highest quality construction standards and methods
- ▶ Environmental compliance through the use of Eco-Friendly materials.
- ▶ Customer service, reliability, affordability and competitiveness in the market place.
- ▶ Craftsmanship and rigorous attention to detail.
- ▶ MBC also have a Passive standard foundation that can work with all of the MBC Timber Frame systems, this offers a huge benefit of the foundation and timber frame system coming from the same supplier.

Superb energy efficient passive homes - reduced energy costs
MBC also offer high performance windows & doors

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