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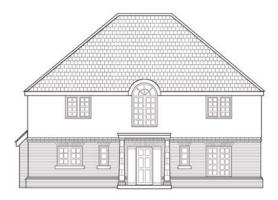
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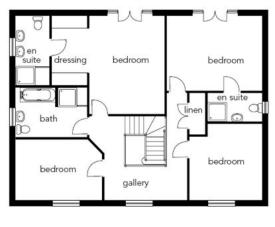
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# **Foundations Cost Guide**

## Our Benchmark House

The floorplan for the house costed within this series measures up at 227m<sup>2</sup> — much larger than the average family home. Four bedrooms on the smaller first floor share three bathrooms. Downstairs, the living spaces flow easily onto one another, with an open plan family kitchen being the hub of home life.







Before costing up for the foundations, it is important to set aside £670 + VAT for a soil investigation and engineer's report. This is essential for any successful project because it helps to determine the type of foundations that will be required. Most sites will be fine with 'normal' foundations. These will consist of a trench 600mm wide and 1200mm deep with either 225mm of concrete in the bottom and two leaves of blockwork up to damp-proof course (DPC) (strip) or else, concrete poured to within 200mm of the top of the trench with just one or two courses of blockwork to DPC (trenchfill).

But to simply assume that this is going to be the case is a mistake because once work has commenced it is much more difficult to change tack. Where bad ground dictates, an alternative foundation type will usually be available, but is likely to cost more.

Groundworking companies that work on a supply-and-fix basis, providing all of the necessary plant, do exist, but they are fairly expensive and tend to concentrate their work on the larger sites. Most self-builders choose to work with a groundworking company on a labour-only basis.

The costs on these pages are based on a house of 227m<sup>2</sup> with a budget of around £200,000.

### The Costs

#### Preliminaries

A site hut or container will already have been on site, positioned so as not to interfere with the work. The costs prior to commencement of work have already been accounted for but now the remaining time of hire will be costed in.

Toilet facilities are not mandatory but they are certainly advisable and the toilet should be sited to be clear of the works, yet accessible for cleaning and emptying.

| Subtotal  | £1,631.76 |
|---|-----------|
| VAT @ 20% (not recoverable)                     | £111.96   |
| Mobile chemical toilet - 20 weeks hire @ £27.99 | £559.80   |
| VAT @ 20% (not recoverable)                     | £160.00   |
| 20 weeks hire of container @ £40 per week       | £800.00   |

# Site set-out

The groundworkers may do this but it is often advisable to get a professional in to make sure that the house is sited

correctly. The house should be set out on the ground and then set back to profile, approximately 5m from the building so that they are not interfered with during the dig.

| 2 bundles of pegs/ string/ packet of nails/<br>bag of lime | £80.20  |
|--|---------|
| VAT @ 20%  | £16.04  |
| Surveyor   | £350.00 |
| VAT @ 20% (not recoverable)                                | £70.00  |
| Subtotal   | £516.24 |

#### Site strip

All vegetable soil has to be removed from the oversite of the house and it's usual to extend this for at least 1m beyond the walls to allow for eventual pathways etc. Thought needs to be given as to where to store it without interfering with subsequent works. Topsoil will bulk up by around 20% and then shrink back down in the heap, so don't be too frightened of storing more as it's expensive to buy back at a later date. Nevertheless, some will probably have to go. Strip topsoil 200mm deep over 163m², lay aside 50% and send the rest away.

| Subtotal                                       | £2,324.16 |
|--|-----------|
| VAT @ 20% (not recoverable)                    | £80.00    |
| 2 loads away @ £200 per load                   | £400.00   |
| VAT @ 20% (not recoverable)                    | £160.00   |
| Digger hire @ £200 per day, 4 days             | £800.00   |
| Ganger plus labourer @ £27.63 per hour, 4 days | £884.16   |

#### Excavations

All cavity walls should have a trench width of 600mm and a depth of 1,200mm. Single-skin partition and load-bearing walls can sometimes be reduced to a width of 450mm but the business of changing buckets on a busy site often means that this is foregone. Spoil will almost certainly have to be removed in its entirety but if there is sufficient space on site to store it and levels are going to be made up, savings on 'muck away' can be made. Excavate 45m³ spoil.

| Ganger plus labourer @ £27.63 per hour, 4 days | £884.16    |
|--|------------|
| Digger hire @ £200 per day, 4 days             | £800.00    |
| VAT @ 20% (not recoverable)                    | £160.00    |
| 6 loads away @ £200 per load                   | £1,200.000 |
| VAT @ 20% (not recoverable)                    | £240.00    |
| Subtotal                                       | £3,284.16  |

#### Concrete foundations:

More and more sites now utilise a trenchfill foundation where the concrete is poured to within 200mm of the top of the trench with just one or two courses of blockwork to DPC. This method gets you out of the ground in one day and away from dependence on the weather or hostage to shifting trench sides. The use of a pump, whilst expensive, means that the concrete can also be placed in one day, cutting down on time and labour. It is assumed that the ground workers have their own laser level to determine concrete height in relation to blockwork and DPC level.

| Ganger plus 2 labourers @ £39.63 per hour, 1 day | £317.04   |
|--|-----------|
| Concrete pump @ £480 per day                     | £480.00   |
| VAT @ 20% (not recoverable)                      | £96.00    |
| 36 cubic metres concrete @ £70.41/m³             | £2,534.82 |
| VAT @ 20%  | £506.96   |
| Subtotal   | £3,934.82 |

#### Foundation walls to dpc

Foundation walls below DPC are usually constructed with two skins of solid concrete blockwork with the cavity filled with concrete to 150mm below DPC. Unless you choose to mix this cavity fill by hand on site, a delivery of a part load of ready-mixed concrete will attract a higher price. The cement mixer will have to be hired at this point and will stay for the duration of the job, so it is costed in at this point for a 20-week duration.

The blockwork on the external skin stops at just below ground level so that bricks are shown between ground and DPC. The few bricks that are required will be taken off the stack of bricks for the main superstructure in order to take advantage of full load prices. These below DPC bricks are often left until after oversite to avoid them being damaged but are costed in at this point. Twin-skin solid internal walls require wider blocks in the foundation.

| 26m², 100mm solid concrete blocks @<br>£5.95/m²                     | £154.70    |
|---|------------|
| VAT @ 20%   | £30.94     |
| 5m², 215mm solid concrete blocks @<br>£17.63/m²                     | £88.15     |
| VAT @ 20%   | £17.63     |
| 1,200 bricks @ £350/1,000   | £420.00    |
| VAT @ 20%   | £84.00     |
| 3 x ton bags of sand @ £32 each                                     | £96.00     |
| VAT @ 20%   | £19.20     |
| 22 bags ordinary Portland cement @ £2.90 each                       | £63.80     |
| VAT @ 20%   | £12.76     |
| Mortar add mixture, 3 x 5 ltr. @ £4.16 each                         | £12.48     |
| VAT @ 20%   | £2.50      |
| 112mm polythene dpc, 2 x 30 metre rolls @ £3.33 each                | £6.66      |
| VAT @ 20%   | £1.33      |
| Labour for 100mm blockwork, 25m² @ £13.50/m²                        | £337.50    |
| Labour for 215mm blockwork, 4m <sup>2</sup> @ £21.50/m <sup>2</sup> | £86.00     |
| Cavity-fill concrete, 2m³ @ £105.62/m³                              | £211.23    |
| VAT @ 20%   | £42.25     |
| Ganger & labourer, half day @ £27.63 per hour                       | £110.52    |
| Diesel 5/3.5 mixer @ £25/wk for 20 weeks                            | £500.00    |
| VAT @ 20%   | £100.00    |
| Subtotal  | £2,397.65  |
| Foundation Total  | £14,088.79 |
| (of which recoverable VAT)  | £833.61    |
|   |            |

# Special Foundations

The presence of trees with heavy clay may require deeper trenchfill foundations with the sides lined with compressible material. This will add between £5,000 and £7,000 to the cost of the foundations. If a tree's influence is deeper than 2.5m or the ground is inherently unstable, a piled and ringbeam foundation will be necessary and add between £7,000 and £12,000. A reinforced concrete raft foundation, dealing with below-ground geological conditions, will add between £5,000 and £7,000.

#### **How to Reduce These Costs:**

- Learning how to set out the site yourself which is basically a knowledge of the Pythagorean theory will save the surveyor's costs.
- · Keeping spoil on site for eventual landscaping will save considerably on 'muck away'.

All prices correct at time of writing, November 2011

Special thanks to Estimators Limited (<u>estimators-online.com</u> 0161 286 8601) and Design & Materials Limited (<u>designandmaterials.uk.com</u> 0845 404 0400) for their help in the preparation of this series of articles.

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Anonymous



This is an well informed article. I have built alot of foundations and most of this information will apply. Have to say blockwork in the picture is not the best standard David Hughes



The article says that it is important to get a soil investigation and engineer's report.

We are buying a 50-year-old house with normal foundations, demolishing it, removing the foundations, then building a larger house on the plot. Would you still recommend getting a soil investigation and engineer's report?

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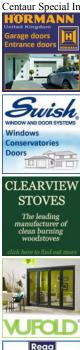
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