

THE **COSTS** OF **BUILDING** **A HOUSE**

a **comprehensive guide**
to estimating costs for
self-builders and small
developers



Homebuilding
& RENOVATING
PREMIUM



The Costs of Building a House
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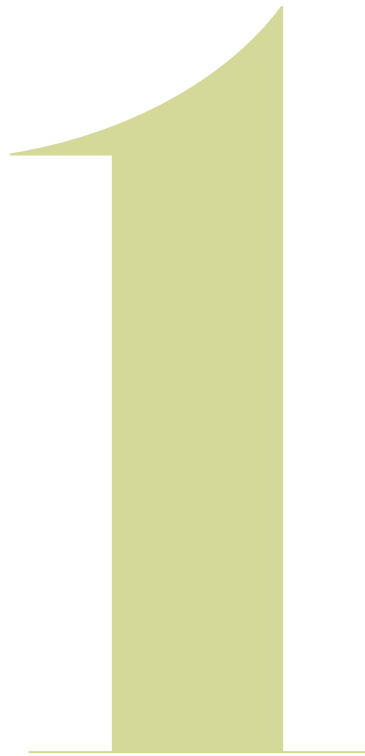
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Welcome & Summary

1.1 What this Guide Does

1.2 How to Use It

1.1 What This Guide Does

The essential guide to estimating build costs for self-builders and smaller housebuilders

10,000s of people in Britain set out to build houses each year, either for themselves to live in or to sell on speculatively. Unlike the larger housebuilding companies that still dominate the UK housing market, these individuals rarely have, at least at first, much idea of how much the venture is going to cost them.

There are a range of services available to self-builders and small developers that profess to estimate costs but they can often be expensive to engage with (in the case of Quantity Surveyors or the more sophisticated estimating software packages) or, in the case of some online calculators, too general.

This comprehensive guide attempts to bridge that gap, and provide the individual housebuilder with all the information necessary to go on and make a comprehensive estimate of how much their own project might cost and, perhaps even more importantly, how that cost is structured, enabling you to work out where the money goes.

It has been compiled by the team at *Homebuilding & Renovating*, a go-to source for individual housebuilders over three decades. We are self-builders, and we attempt to make the information that is usually only accessible to commercial housebuilders open to the novice housebuilder. Our contributors are experts in their field and the information in the pages that follow is based on their experience, and backed up by data sourced from Estimators Ltd (www.estimators-online.com, the UK's leading provider of estimating services to the building industry) and the Build Cost Information Service, part of the Royal Institute of Chartered Surveyors.

1.2 How to Use It

Different levels of detail for different needs

The guide is split into four distinct sections:

Build Cost Survey

Based on our renowned calculator tables, we explore the constituent elements of a build cost and why they vary. This is where you'll be able to explore the details of costs but also come up with a rough estimation based on your own project.



Hidden Costs

There is much more to the cost element of development than simply construction. We outline the areas to account for and how much to budget.

Build Costs Step by Step

In the most detailed part of the guide, we breakdown the build costs for a benchmark house - down to the last screw. You'll be able to find cost guides for everything from laying foundations to fitting insulation and much more besides.

How to Save on Your Build Costs

A guide to minimising costs at every level - and how to design 'value' into the project from the very start.

Feedback

We're confident that this unique guide will be a huge resource for anyone looking to build an individual house. We'd like to know your experience and feedback so we can continue to improve it. Please email us at homebuilding@centaurmedia.com



Estimating Your Build Cost

2.1 The Build Cost Table & How to Use It

2.2 Factors Affecting Build Costs

2.3 How Your Own Involvement Affects Costs

2.4 How Your Specification Affects Costs



2.1 The Build Cost Table

Our starting point for estimating build costs

Until you have a full specification and a build route planned, it's impossible to produce a detailed, fixed price for your house. However, Homebuilding & Renovating has been adjusting industry-standard Build Cost Information Service (BCIS, a part of RICS) for many years and the following table can be used to come up with a fairly accurate starting point for those looking to estimate the costs of building a house.

		BUILD ROUTE A (DIY + Subbies)			BUILD ROUTE B (Subbies)			BUILD ROUTE C (Builder/Subbies)			BUILD ROUTE D (Main Contractor)		
		Standard	Good	Excellent	Standard	Good	Excellent	Standard	Good	Excellent	Standard	Good	Excellent
SINGLE STOREY													
>90m ²	Greater London	1122	1298	1561	1188	1374	1652	1254	1450	1744	1320	1527	1836
	South-East	984	1138	1369	1041	1205	1450	1099	1272	1530	1157	1339	1611
	NW, SW, East & Scotland	895	1036	1245	947	1097	1319	1000	1158	1392	1052	1219	1465
	Mids, Yorks, NE & Wales	856	990	1191	906	1049	1261	956	1107	1331	1006	1165	1401
91-160m ²	Greater London	1027	1247	1620	1087	1320	1715	1148	1393	1810	1208	1466	1906
	South-East	901	1093	1420	954	1157	1504	1007	1221	1587	1060	1286	1671
	NW, SW, East & Scotland	820	995	1293	868	1053	1369	916	1112	1445	965	1170	1522
	Mids, Yorks, NE & Wales	784	951	1236	830	1007	1309	876	1063	1382	923	1119	1455
161m ² +	Greater London	915	1200	1505	968	1270	1593	1022	1341	1682	1076	1411	1771
	South-East	802	1052	1320	849	1113	1398	896	1175	1475	944	1237	1553
	NW, SW, East & Scotland	730	957	1202	773	1013	1273	815	1069	1343	858	1126	1414
	Mids, Yorks, NE & Wales	697	916	1148	738	970	1216	779	1023	1284	820	1077	1351
TWO STOREY													
90-130m ²	Greater London	1079	1249	1534	1143	1322	1624	1206	1396	1714	1270	1469	1805
	South-East	947	1095	1346	1003	1159	1425	1058	1224	1504	1114	1288	1583
	NW, SW, East & Scotland	861	997	1225	912	1056	1297	962	1114	1370	1013	1173	1414
	Mids, Yorks, NE & Wales	823	954	1171	872	1010	1240	920	1066	1309	968	1122	1351
131-220m ²	Greater London	909	1101	1396	962	1165	1478	1016	1230	1560	1069	1295	1642
	South-East	798	966	1224	845	1023	1296	891	1079	1368	938	1136	1440
	NW, SW, East & Scotland	725	879	1114	768	931	1179	811	982	1245	853	1034	1311
	Mids, Yorks, NE & Wales	823	840	1065	735	889	1128	776	939	1190	816	988	1253
221m ² +	Greater London	839	1074	1348	888	1137	1427	937	1200	1506	987	1263	1586
	South-East	736	941	1183	780	997	1253	823	1052	1322	866	1107	1392
	NW, SW, East & Scotland	669	857	1076	709	907	1139	748	957	1203	788	1008	1266
	Mids, Yorks, NE & Wales	641	819	1029	678	867	1090	716	915	1150	754	963	1211

How to use the table

As you can see, the variables are location, build route, and specification. The cost/m² price that you come up with can then be adjusted as you formulate your specification, which is dealt with later in this chapter.



Your Build Route

Your level of involvement in the project will influence the build costs. For simplicity, the four most common build routes have been identified below.

Build Route A: Building on a largely DIY basis, substituting around 30% of labour costs with DIY, and employing help with the rest of the building work. Materials purchased directly.

Build Route B: Building using tradespeople hired directly. Minimal DIY involvement. Most materials purchased directly.

Build Route C: Building using a main contractor or package supplier to complete the structure to a weathertight stage, with the remaining work being undertaken by subcontractors with most materials purchased by self-builder direct from suppliers.

Build Route D: Building using a main contractor. Building in this way requires the least involvement from the self-builder.

Build Quality

The standard of specification that you choose will have an enormous influence on your build cost. For estimating purposes, three general categories of quality have been identified:

Standard: This represents a basic build quality equivalent to that offered by most speculative developers. Cavity walls: facing bricks (£250/1,000 or £45/m² laid), insulation, and 100mm blockwork; concrete interlocking tiles (£28/m² laid); standard softwood joinery; studwork partitions; contract kitchen; basic sanitaryware; and radiator central heating.

Good: This is equivalent to that offered by quality developers. Cavity walls: facing bricks (£450/1,000 or £56/m² laid), insulation, and 100mm blockwork; clay machine-made tiles (£36/m² laid); high-end off-the-shelf softwood joinery; blockwork partition walls; top-of-the-range contract quality kitchen; quality sanitaryware; and underfloor heating (UFH) downstairs.

Excellent: A very high standard. Cavity walls: bricks (£650/1,000 or £67/m²



laid), insulation, and 100mm blockwork; plain clay tiles (£45/m² laid); hardwood joinery; blockwork partitions; bespoke kitchen; quality sanitaryware; UFH.

Area Measurement

Costs referred to in this guide are based on gross internal floor area, which is the floor area of the house over all storeys not taking into account the external perimeter walls, but leaving in the internal partitions. It remains the most common form of measuring houses. The more complex net internal floor area concerns itself primarily with totally useable space, so subtracts things like internal walls, stairwells and so on from the gross internal area.

Use Our Online Calculator

Homebuilding & Renovating has developed an online, interactive version of this calculator at homebuilding.co.uk/calculator, which is updated every month to allow for the indexed information based on building materials and labour inflation. The figures and adjustments that follow can be related to the result you receive online.



2.2 Factors Affecting Build Costs

Why do build costs vary from project to project?

Size

The bigger the house, the more it will cost to build, but there can be some economies of scale achieved that reduce the average cost/m² for larger houses, making a carefully designed large house better value.

The savings are primarily in the cost of building the superstructure, especially the foundations, walls and roof. The cost/m² of gross floor area for external walling elements decreases as the wall/floor ratio decreases. Other one-off unit costs for items such as service connections, staircase, kitchen and boiler are spread out further on a larger house. To maximise efficiency, the design needs to be kept simple and avoid unusually large spans for floor joists/beams, rafters etc.

Plan, Shape & Layout

Complexity of design is one of the biggest factors affecting build costs. The simplest and most cost-effective floorplan is square. Compared to a square plan, a rectangular plan requires more wall for the same floor area, thus increasing costs. The longer and narrower the floorplan, the less efficient it is to build.

Building straight walls is cheaper than building corners, which slows down the build process — adding to labour costs. Consequently, the more angles introduced into a floorplan, the greater the cost, so a simple design with few corners is cheaper to construct.

Angles other than 90° right angles are even more time consuming to set out and build and so will increase costs further. Curved walls are among the most expensive to build of all. See Part 5 for more information on reducing costs.

Number of Storeys

Two of the largest fixed costs in constructing a house are the groundworks/ foundations/ slab and the roof. The specification and cost for a set footprint and roof layout will not vary whether the design is single storey, two storey, or three storey, yet the overall area of the design will increase dramatically — spreading out the cost. Multiple storeys also make better use of land — the most expensive element of all.

The average cost/m² for a bungalow is therefore greater than for a two storey house with the same footprint (all other things being equal), whilst a three storey design, or a two-and-a-half storey design using the roof space, will be even better value for money in terms of lower average cost/m².



If you want to get the maximum development return on a site, it often pays to build as many storeys as possible.

Basements

The cost of constructing a basement largely depends upon the digging out and removing spoil. This cost – and the cost of waterproofing the structure – is mitigated to some extent by the fact that fewer windows are usually used than for above-ground storeys, and there is no external wall cladding (e.g. brick or stone).

As ever, the quality of fixtures and fittings will be a major factor in the final cost. For the purposes of producing a budget figure for your basement, measure the gross internal floor area and use the same costs/m² as for above-ground space.

There are instances where a basement makes better sense — for instance where ground conditions require very deep foundations. The cost of going down just a little further and excavating between the footings may not be that much greater. On a sloping site where the basement will only be partly below ground, it can make better use of the site than cutting or filling the slope to create a level area to build on.

The water table and ground conditions are another factor that will affect costs. If the sides of the excavation are likely to collapse, for instance in sand, and this will affect neighbouring structures, it may be necessary to create a retaining structure around the basement using concrete piling, and this will add considerably to costs.

There is little variance in costs between basement wall and waterproofing types (e.g. textured membranes or waterproof renders).

2.3 How Your Own Involvement Affects Costs

The way you procure your project will impact on what it costs

Project Management

The average build costs are based on the cost of using a main contractor to manage the whole build. They will co-ordinate the trades, materials, plant, tools and scaffold, liaise with the architectural designer, co-ordinate the statutory inspections for Building Regulations and warranty, and take legal responsibility for the site. If you take on this role by hiring subcontract labour directly, providing materials and facilities as required, you can reduce the build cost by 10-15% depending on how efficiently you manage the project.



DIY Labour

If you decide to substitute some or all of the labour costs with your own DIY labour, you can reduce the average build cost substantially. You can undertake almost every aspect of the building work for which you have the time and skill to complete competently, with the exception of connecting gas appliances.

Approximately 35% of the total cost of building a house is labour, so if you do all of the work yourself you could reduce the costs by a third, as in the process you would also be taking on the role of project manager, saving 10-15% on the remaining materials costs.

In practice, very few self-builders do everything themselves, although there are a few exceptions, who often take several years in the process. Most DIY self-builders leave the more skilled trades to the professionals, especially those that require a good finish such as brickwork, plastering, rendering and ground-work/excavation. Trades more easily undertaken by the DIY self-builder include carpentry, fitting insulation, roof tiling, general labouring, assisting plumbers and electricians on second fix, decorating, floor laying, tiling and landscaping. Typical savings for a DIY self-builder doing roughly 25-30% of all the work amount to 20-25% of the total cost compared to using a contractor.

Contract Administration

On larger projects a professional such as an architect, surveyor or engineer is usually retained to put the project out to tender, appoint the contractor and administer the contract through to completion. The fee for this is typically 3-5% of the total contract value (construction cost). If you take on this role yourself you can save this fee (which isn't included in our base figures).



2.4 How Your Specification Affects Costs

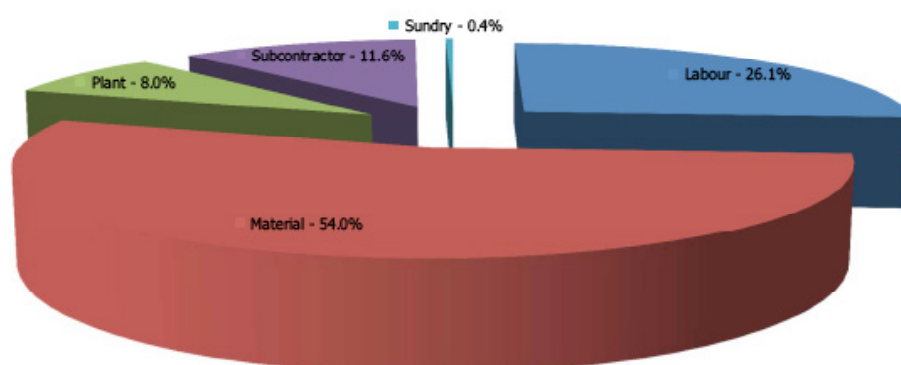
Material choices can triple the cost of a project

The HB&R Build Cost Table shows three levels of quality: Standard, Good and Excellent. Although the cost of many of the construction elements such as the foundations do not vary based on quality, the cost of external facings, joinery, flooring, fittings – and renewables – can potentially double the cost of building the same house compared to a standard specification. For purposes of illustration, we have provided ‘live’ costs for a 220m² house based on £1,000/m² build costs (figures shown in italics and include labour, ignoring VAT).

Brick

Brick typically represents around 5% (£11,000) of the cost of building a house based on stock bricks costing £350/1,000. Upgrading to character bricks at £850-950/1,000 can more than double the cost of this element (to £20,460) by the time additional labour is taken into account to lay the irregular-shaped bricks, especially if they are laid in a traditional bond such as Flemish. Additional costs can be incurred with detailing, such as brick arches.

BREAKDOWN OF COST BY RESOURCE TYPE



Over half of the costs of a typical self-build project go on materials — which means, given their huge variety of costs, that specification has the biggest impact of all. Main labour costs take up over a quarter, while those subcontractors employed on a supply and fix basis – such as electricians and plumbers – account for over a tenth.



Stone

Natural stone is a more expensive cladding choice than stock bricks. Using cropped coursed stone blocks to form an independent outer leaf of a cavity wall (with a blockwork or timber frame inner leaf) works out at a very similar cost to handmade brick. Using reconstituted stone costs much the same for labour but slightly reduces materials costs. Building using traditional random stonework is slower and although the materials cost is similar, the labour cost is higher, making it more expensive — used at a depth of 250mm against full-fill cavity insulation and waterproofed blockwork (if acceptable to Building Control in your area) is the most cost-effective option. Building against a backing block to form a cavity, with an inner leaf of blockwork or timber frame, will add around £20/m².

Render

Sand and cement render on blockwork is one of the cheapest options, especially if it is self-coloured using white cement and local sand, so it does not require painting (which typically costs around £10/m² or £2,200).

Adding lime will make the render more forgiving but will marginally increase costs. Modern polymer renders are more flexible but add more to materials costs.

Timber

Painted softwood shiplap can prove a cost-effective choice, especially on a timber frame structure, where no backing block is required. Dense timbers such as oak, western redcedar and sweet chestnut, and also heat-treated softwood such as larch, are good choices and comparable in cost to using a good-quality brick.

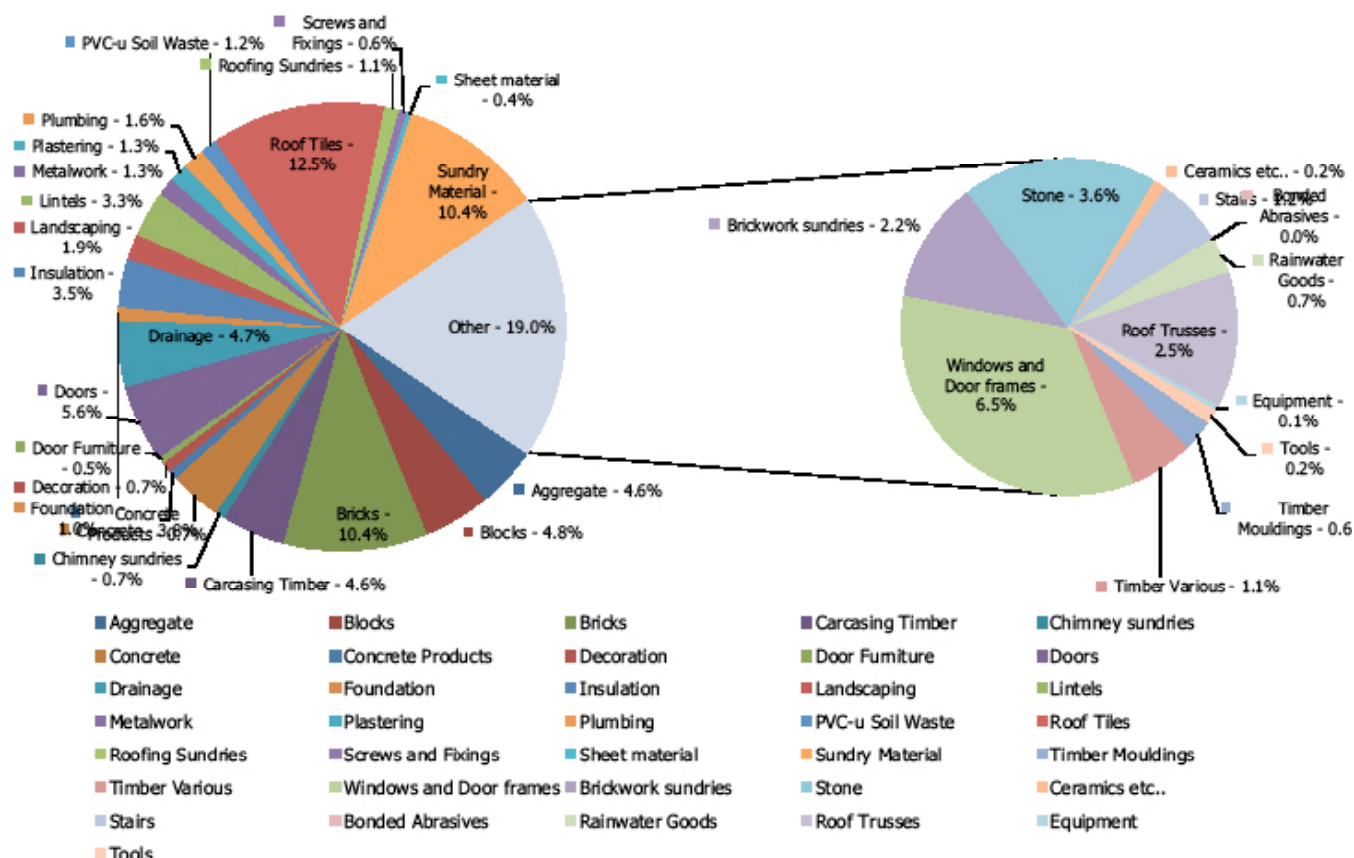
Construction System

The load-bearing structural walls of a house typically represent around 13-15% of the total build cost (£30,000) based on using concrete blockwork for the external walls and ground floor partitions, with timber partitions on the first floor. The cost of switching to a different construction system, such as an ecological timber frame with 140mm studs width, is surprisingly small across the whole house. Even if the frame costs 10% more than using blockwork, the overall impact on the cost of the house is only 10% of 15% — around 1.5% (£3,000).

The same applies to switching to structural insulated panels (SIPs) or insulated



BREAKDOWN OF COST BY MATERIAL TYPE



This chart shows the proportion of the total build budget accounted for by each material type (labour is not included). Of the total spend, the key exterior facings – bricks and roof tiles – account for almost a quarter of all costs.

concrete formwork (ICF), which manufacturers claim to be between 5-20% more expensive than blockwork, adding 1-3% (£6,000) to overall construction costs, but bringing benefits in terms of faster build speed and superior levels of airtightness.

Building using oak frame construction is perhaps as much as 40-50% more expensive than using blockwork. Overall this is likely to add 6-7% (£15,000) to total construction costs.

Roof

Roof costs are made up of the structure, insulation, felt and battens, roof covering and flashings/detailing. The cheapest option is to build a simple rectangular-format low-pitched roof using manufactured trusses. The low pitch means the rafter lengths are shorter, using less timber, and the manufactured trusses use a web of thinner timbers, again reducing materials costs. This is what most speculative developers use.

The more complex the roof shape, the more likely it will have to be cut on site, using more labour and timber than factory-made trusses, thus adding to costs and taking longer to construct. It will also require an engineer to check the design and produce calculations for Building Regulations purposes, for which there will be a fee that would otherwise be covered by the truss manufacturer. More complex roof designs may require structural steelwork, too.

The steeper the roof gets, the more expensive the roof will be to construct. As a rule of thumb, increasing the roof pitch by 5% will double the cost of the roof, while increasing it by 10% will triple it.

The design of the roof structure will change if the roof space is to be used for accommodation, utilising either factory-made attic trusses, or a traditional cut roof built on site. Both options will increase the costs of the roof structure, but this will be mitigated by the additional space created. Accommodation in the roof space generally costs around 60-70% of the average cost/m² for the rest of the property.

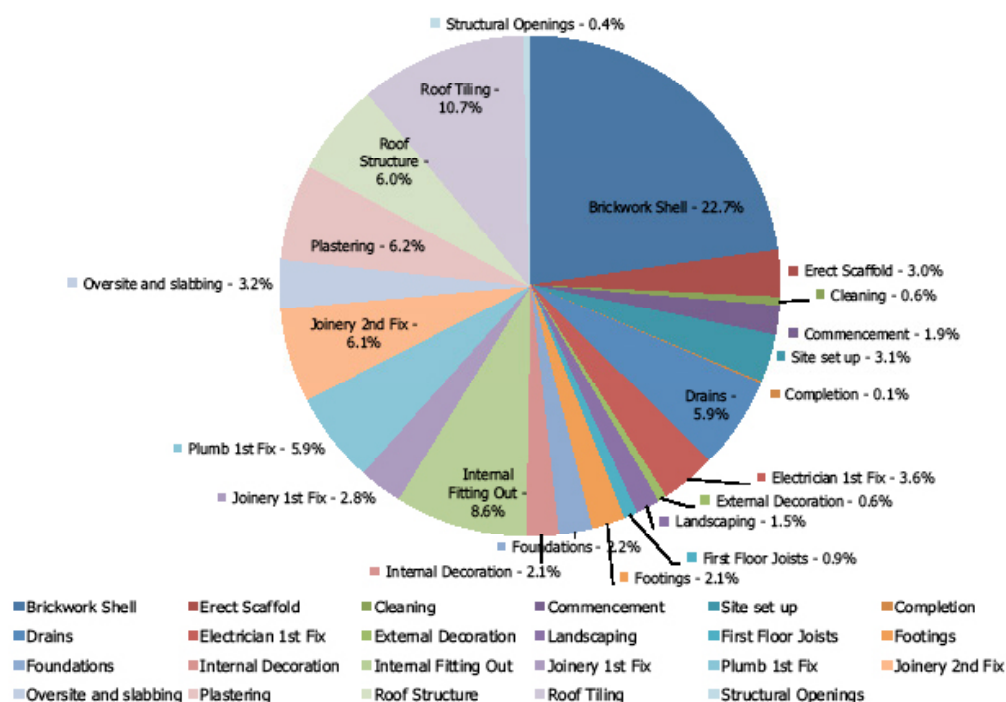
Roof Covering

Developers favour large-format concrete interlocking tiles with a coverage as low as 8-10 tiles/m², keeping labour and materials costs down. Most self-builders choose to use more attractive, smaller-format tiles made from natural materials such as clay or slate. Unfortunately, however, smaller tile formats will increase labour and material costs.

If you plan to use a roofing material other than that allowed for in the average costs (£20/m² Standard, £40/m² Good, £80/m² Excellent) you need to add an allowance for the net difference in cost. If you decide to go for decorative details to the ridges or verges, or to use very irregular handmade tiles, this will add to the cost of labour and materials.



BREAKDOWN OF COST BY BUILD PHASE



Swallowing up costs The chart above shows how each part of the build process accounts for its share of the total build budget. Some 15% is spent getting the house out of the ground; another 45% or so getting the building weathertight. The remaining third of the budget is taken up with internal work.

Service connections

If your plot is not connected to mains services, allow £10,000 for connection to water, sewers, electricity, telephone and gas. If the site does not have access to mains gas, you will need to budget an extra £2,000-2,500 — more for renewables.

If there is no mains sewer, you will need to budget for an off-mains alternative (in place of a mains drainage connection for which you can deduct £2,500). As a budget figure, allow £2,500-3,500 for a small family and £3,500-5,500 for a larger household.

Foundations & Floor Structure

Unlike most costs, which vary according to the quality and size of house you are building, foundation costs/m² are likely to be more or less the same whatever you build. However, it is one of the few aspects of housebuilding that you cannot accurately predict until you actually start digging.



ADJUSTMENTS FOR CLADDING TYPE

To adjust for alternative external materials, first work out the external wall area of your design. You can measure the external wall area from your scale plans, deducting windows and doorways, or for a rough idea use a ratio of external wall area to gross internal floor area of 1:1 for a house or 1.2:1 for a bungalow. You then need to substitute the allowance for brickwork per square metre of external wall for your chosen specification (Standard, Good, Excellent), with the cost of the alternative material. You can also make adjustments for alternative blocks or insulation by adjusting from the standard medium-density concrete blocks (£19/m²) and 100mm full-fill mineral wool insulation (£7.50/m²) and forming a clear cavity (£1.50/m²).

BLOCKWORK

Material	Cost per face metre
100mm aircrete blocks	£18/m ²
100mm high-strength aircrete blocks	£22/m ²
100mm medium density blocks	£19/m ²
100mm dense blocks	£20/m ²
100mm 7 Newton blocks	£22.50/m ²

CAVITY WALL INSULATION

Material	Cost per face metre
Mineral wool batts 50mm	£5.50/m ²
Mineral wool batts 75mm	£6.50/m ²
Mineral wool batts 100mm	£7.50/m ²
Polystyrene slab 50mm	£5.50/m ²
Polystyrene slab 75mm	£6.50/m ²
Polystyrene slab 100mm	£7.50/m ²
Urethane rigid foil-faced board 50mm	£8.50/m ²
Urethane rigid foil-faced board 75mm	£10.50/m ²
Urethane rigid foil-faced board 100mm	£12.50/m ²

BRICKWORK

Material	Cost per face metre
Commons (£240/1,000)	£37/m ²
Standard-quality bricks (£350/1,000)	£50/m ²
Good-quality bricks (£450/1,000)	£56/m ²
Excellent-quality bricks (£550/1,000)	£62/m ²
Handmade bricks (£750/1,000)	£84/m ²
Second-hand bricks (£900/1,000)	£93/m ²
Flemish bond using snap headers rather than stretcher bond	+£3/m ²

STONE

Material	Cost per face metre
Random rubblestone limestone 150mm (£45/m ²)	£89/m ²
Ashlar smooth limestone 100mm (£110/m ²)	£154/m ²
Reconstituted stone blocks random coursed	£58/m ²
Reconstituted ashlar blocks	£61/m ²
Reclaimed limestone (£90/m ²)	£134/m ²
Yorkshire gritstone (£58/m ²)	£103/m ²

TILE HANGING

Material	Cost per face metre
Hung plain clay tiles £420/1,000	£56/m ²
Hung slate (£36/m ²)	£49/m ²

RENDER ON BLOCK

Material	Cost per face metre
13mm two coat sand & cement render	£18/m ²
19mm cement/lime/sand render	£20/m ²
19mm lime render reinforced with fibre	£38/m ²
15mm Sto render (two coat self-coloured, crack resistant)	£41/m ²
18mm K-Rend (two coat self-coloured, crack resistant)	£60/m ²
18mm pebbledash	£18/m ²

TIMBER CLADDING

Material	Cost per face metre
Timbers not requiring treatment:	
Western redcedar (18mm x 125mm)	£38/m ²
European larch (21mm x 135mm)	£32/m ²
Douglas fir (19mm x 125mm)	£35/m ²
European oak (19mm x 125mm)	£46/m ²
Timber shingles	£38/m ²

Treated timbers:	
European redwood heat treated (25mm x 125mm)	£28/m ²
Lodgepole pine preserved and painted (16mm x 125mm)	£32/m ²
Whitewood stained, preserved and painted (19mm x 120mm)	£23/m ²

ARTIFICIAL SIDING

Material	Cost per face metre
Shiplap in PVCu (100mm profile)	£66/m ²
Shiplap in cement board	£68/m ²

DETAILS

	Cost (each)
Reconstituted stone window head (215 x 125mm section)	£50-60
Reconstituted stone window cill (150mm x 140mm)	£50-60
Reconstituted stone window surround single light	£200
Reconstituted stone window surround three light	£450
Reconstituted stone door surround 125mm	£410
Natural stone door surround	£5-6,000+
Preformed gauged brick arches (3 brick courses x 100mm)	£200

Unlike almost every other aspect of your build, where you are in control of the specification, it is the local authority Building Control surveyor (or licenced inspector) who will ultimately decide the foundation solution that is acceptable for your site. If the ground conditions demand an engineered foundation solution, such as a raft, piles and reinforced ringbeam, or a reinforced slab, allow an additional £10,000 in your budget.

Variables that will influence your costs will be the proximity of your site to the nearest ready-mix concrete plant, and the nearest tip for removing spoil (known as muck away).

Building on a sloping site will also increase costs due to the work involved in cutting and filling the site to create level terraces, landscaping work to create retaining walls for drives and paths, and the additional cost of complicated designs. As a general rule, each 1° of slope from level on the site will increase your build costs by £1,500 (according to Brinkley's Slope Law proposed by Mark Brinkley, author and HB&R Contributing Editor).

Upper Floors

The standard specification for first floors is to use softwood joists covered with flooring grade chipboard; the cost of which is £16-19/m² (approximately £3,200-3,800). If you opt to use engineered joists such as I-beams or beams with a steel web such as Posi-joist, this will add to your costs by £2-3/m² (£4-600) but the more regular dimensions and improved stability can help avoid squeaky floors. If you are building a masonry or concrete (ICF) house, you could opt for a concrete first floor structure, using either pre-stressed concrete beams infilled with concrete blocks or large-format concrete floor panels. This offers superb strength and acoustic separation, and allows you to have masonry first floor walls throughout. This specification will add to your costs by £8-12/m² (£8-1,200).

Internal Partitions

There is little cost difference between blockwork and timber frame internal partition walls.

Ceiling Heights

Developers looking to keep down costs work with a standard ceiling height of 2.4m. Changing the ceiling height adjusts the average cost/m² for that storey by approximately 1.6% for each extra 100mm (meaning a 2.7m ceiling height on the ground floor adds £4,800 to the total costs).



Wall & Ceiling Finishes

Costs are similar for both wall finish options (wet plaster or dry-lined). The standard specification assumes emulsion paint throughout, with minimal tiling to kitchen and bathrooms at £64/m² (£14,080). The good specification includes more tiling in the kitchen and bathrooms and wallpaper in the living room at £80/m² (£17,600). The excellent specification also includes wallpaper to the bedrooms at £96/m² (£21,200).

Ceilings are usually covered with plasterboard and finished with a two-coat skim of fine gypsum plaster and emulsion paint at £17-20/m² (£3,700). If you decide to add decorative coving, ceiling roses or other decorative plasterwork, you will need to allow for extra.

Stairs

The main staircase is an opportunity to add individuality to a property and to make an architectural statement, and if this is your plan then you need to make an additional allowance for this above the staircase allowance included in these build costs.

The standard specification solution is a softwood staircase consisting of two straight flights linked by a half-landing, with a softwood balustrade, painted or stained, at a cost of around £1,250.

The good specification includes a single straight flight in painted softwood at around £1,500, whilst the excellent specification allows for a straight flight

ADJUSTING FOR ROOF COVER

Roofing Type **Cost per m2 roof area**

TILES

Plain clay tiles (machine made)	
265mm x 165mm	£54/m ²
Plain clay tiles (handmade)	
265 x 165mm	£80/m ²
Plain concrete tiles 267mm x 165mm	
	£57/m ²
Pantiles clay 343mm x 280mm	£32/m ²
Pantiles concrete	
381mm x 229mm (Norfolk)	£27/m ²
Concrete interlocking tiles	
287mm x 230mm	£23/m ²
Concrete interlocking tiles	
420mm x 330mm	£20/m ²
Stonewold concrete interlocking tiles	
430mm x 380mm	£29/m ²

SLATES

Spanish blue slates 400mm x 250mm	
	£39/m ²
Spanish blue slates 500mm x 250mm	
	£38/m ²
Spanish blue slates 600mm x 250mm	
	£35/m ²
Fibre-cement reconstituted slate	
500mm x 250mm	£37/m ²
Fibre-cement reconstituted slate	
600mm x 300mm	£41/m ²
Welsh blue slate 400 x 250mm	£55/m ²
Welsh blue slate 500 x 250mm	£66/m ²
Welsh blue slate 500 x 300mm	£62/m ²
Welsh blue slate 600 x 300mm	£79/m ²
Westmoreland blue/green slate	
457mm x 229mm	£149/m ²

STONE

Reconstituted sandstone slates	
(Hardrow) 457mm x 305mm	£47/m ²
Reconstituted limestone slates	
(random coursed)	£60/m ²
New limestone	£120/m ²
Reconstituted Pennine slate	
(large format)	£60/m ²

THATCH

Water reed (Devon and	
East Anglia area)	£210/m ²
Wheat reed (Devon area)	£190/m ²
Long straw (East Anglia)	£170/m ²

ECO ROOFING

Sedum roof	£130-160/m ²
Turf roof	£110-140/m ²

FLAT ROOFING

Bitumen felt 20mm	£14/m ²
Ruberoid Superflex	£19/m ²
Single-ply plastic 1.2mm	£16/m ²
Sarnafil polymeric single ply 1.2mm	£28/m ²



in hardwood, with hardwood balustrade at around £2,150. Obviously these costs are removed if you're building a bungalow.

Chimneys

Many modern houses do not include a chimney — especially those built by speculative developers, largely because of the cost, which starts at £6,100 for a standard specification. Many ecological houses also forgo a traditional open flue chimney in favour of a woodburning stove and stainless steel flue, at an installed cost of around £1,650–2,500. The standard specification has an allowance of £6,600 for the fireplace and flue; the good specification has an allowance of £8,300, and the excellent £11,300.

Windows & External Doors

External joinery is another feature that self-builders place a great deal of value on, and consequently tend to invest in quite heavily. The standard specification house has off-the-shelf painted softwood casement windows and external doors, with double-glazed units and factory-fitted aluminium ironmongery at a cost of £60–86/m² (£13–19,000). The good specification includes high-performance, off-the-shelf painted softwood casement windows and external doors at £81–107/m² (£17–23,500). The excellent specification includes double-glazed aluminium frames in hardwood surrounds and a hardwood panelled front door and good-quality ironmongery at £121–146/m² (£26–32,000).

If you want to go for bespoke windows, then get a quote from a joinery supplier and substitute their price for the allowance/m² (joinery allowance for your chosen specification multiplied by your gross internal floor area).

Internal Doors

This is another area where many self-builders choose to make an upgrade from a standard specification. The standard specification includes hardboard-faced hollow-core flush doors in softwood frames, hung and decorated at around £250 per door (£4,000 based on 16 doors) including all ironmongery. The good specification includes slightly better hollow-core flush doors in softwood frames, hung and decorated at around £350 each (£5,600). The excellent specification includes hardwood veneered solid-core doors in softwood frames, hung and decorated with quality ironmongery at around £450 each (£7,200). If you plan to put in more expensive doors, you will need to account for this.



Kitchen Fittings

The excellent quality specification price includes an allowance for a quality kitchen from a mid-market supplier with timber worktops. The good quality specification includes top-of-the-range units from a contract supplier such as Howdens or Magnet with timber worktops. The standard specification includes standard MFC units with a laminate worktop, contract quality from a merchant or DIY shed.

If you are going for a top-of-the-range designer kitchen then get a price from your supplier, including fitting, and substitute this for the kitchen allowance per square metre.

Bathrooms

Plumbing costs are much the same regardless of the specification you choose, but the cost of sanitaryware and brassware varies enormously. The quality and area of tiling on the floor and walls varies from £23/m² upwards, and then you can add showers and enclosures, heated towel rails, underfloor heating, luxury baths and more.

The costs in the tables allow for two bathrooms and one cloakroom at the relevant cost (see below). If you plan to fit more bathroom facilities, or better quality facilities, then use the typical cost allowances below to allow for this.

Built-in cupboards

Built-in wardrobes and storage areas are already allowed for within the costs at roughly £20/m², £30/m² and £40/m² for standard, good and excellent specifications.

Heating

A standard heating solution is a radiator system with a gas boiler and basic controls. A standard central heating system will cost £18-23/m² (£4-5,000 for our house) and this is the allowance in the average build costs.

Underfloor heating is typically more expensive, so allow £30-40/m² (£6,600-8,800). If you want renewables, add this in to your budget accordingly. The standard costs allow for the inclusion of a mechanical whole-house ventilation system with heat recovery, costing around £1,600 for houses under 150m² and £2,100 for larger houses.

Electrical

Standard costs do not vary much from house to house other than by scale. If you decide to fit anything out of the ordinary (e.g. a whole-house structured cabling network), you will need to make an allowance for these upgrades.



3

Build Costs Step by Step

- 3.1** **Methodology**
- 3.2** **Foundations**
- 3.3** **Floor Structure**
- 3.4** **Superstructure**
- 3.5** **Roofing**
- 3.6** **Drainage**
- 3.7** **Electrics**
- 3.8** **Plumbing**
- 3.9** **Internal Carpentry & Joinery**
- 3.10** **Plastering**
- 3.11** **Finishing**

3.1 Methodology

Explaining what our costs are based on

This chapter breaks down every single item of expenditure for a typical house-building project, including labour. It is designed to help give you guide prices for every item but also to show you the relative costs for different elements. In certain cases it also compares different options. Of course labour rates in particular are highly fluid — but by exposing these costs so openly, we hope that you are able to make your own simple adjustments.

The floorplan for the house costed within this chapter measures up at 227m² — 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.

The budget for this project is around £200,000. A word on VAT: to account for cashflow, it is allowed for in the materials costs, on a different line. In most cases it is recoverable through the VAT431NB scheme. As tradesmen shouldn't charge you VAT, it is not accounted for in labour rates.





3.2 Foundations

Foundations are the most difficult cost to predict

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.

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.

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

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/ bag of lime	£80.20
VAT @ 20%	£16.04
Surveyor	£350.00
VAT @ 20% (not recoverable)	£70.00
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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.

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
2 loads away @ £200 per load	£400.00
VAT @ 20% (not recoverable)	£80.00
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Subtotal	£2,324.16

* *The ganger is the foreman of a group of labourers.*

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	£1,200.00
VAT @ 20% (not recoverable)	£240.00
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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 @ £104.43/m ³	£3,759.48
VAT @ 20%	£751.89
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Subtotal	£4,924.41

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.

26m ² , 100mm solid concrete blocks @ £7.60/m ²	£197.60
VAT @ 20%	£39.52
5m ² , 215mm solid concrete blocks @ £26/m ²	£130
VAT @ 20%	£26
1,200 bricks @ £350/1,000	£420.00
VAT @ 20%	£84.00
3 x ton bags of sand @ £36 each	£108.00
VAT @ 20%	£21.60
22 bags ordinary Portland cement @ £3.64 each	£80.08
VAT @ 20%	£16.02
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, 25m ² @ £13.50/m ²	£337.50
Labour for 215mm blockwork, 4m ² @ £21.50/m ²	£86.00
Cavity-fill concrete, 2m ³ @ £105.62/m ³	£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	£2,533.29

Foundations Total	£15,214.02
(of which recoverable VAT)	£1,101.15

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'.

3.3 Floor Structure

Two key choices, but the costs are similar

Many older homes have a 'suspended' ground floor, with timber joists spanning from wall to wall, supported by sleeper walls. The problems are manifest and are exacerbated by the modern requirement for insulation within the floor zone which, although possible, is hard to achieve, and is made even more difficult by the need to ventilate beneath the floor. The Building Regulations also require that the ground beneath the floor is concreted and, once this has all been done, most self-builders decide that they might as well build a solid concrete floor.

The Building Regulations require ground floors to be insulated to attain a U-value of at least 0.21. This can be achieved using 70mm rigid foam flooring slabs but it is often better to upgrade to 100mm to account for future requirements. The slabs can be laid beneath the concrete oversite, above it or in a combination of the two. With beam and block flooring the insulation is usually laid on top of the beams, beneath the screed and, as such, is laid at a later date. There are, however, systems that employ rigid foam infill blocks that form the floor. These provide excellent insulation but require that the finishing screed is laid at this early build stage.

NB: These costs assume a 100mm solid concrete oversite with an average fill of 300mm in each of the bays.

Preparation

2 labourers 1 day @ £100 each	£200.00
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Subtotal	£200.00

All vegetable soil or topsoil will have been cleared from the oversite in the earlier stages of the building work, but it is important that any vegetable or



organic matter, and tarmac or seams of coal, are removed. The ground within each section, or 'bay', of the building must be levelled out.

Consolidation and filling

Ganger plus semi-skilled labourer	
plus another labourer @ £41 per hour, 3 days	£984.00
38 tonnes hardcore @ £13 per tonne	£494.00
VAT @ 20%	£98.80
Vibrating plate compactor @ £27 a day, 3 days	£81.00
VAT @ 20% (not recoverable)	£16.20
13 tonnes sand blinding @ £16 per tonne	£208.00
VAT @ 20%	£41.60
2 labourers, 1 day @ £100 each	£200.00
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Subtotal	£2,123.60

Each bay must be filled with a minimum of 150mm and a maximum of 600mm hardcore, compacted and then blinded with clean sand so as not to puncture any damp-proof membrane. The consolidation process should be in 100mm layers with each layer compacted prior to the next being laid. There can be a temptation to use brick rubble or hardcore, but this must be broken up into 50mm pieces and the labour involved in that often means that it is better to buy in clean stone or Type 1 hardcore.

Damp-proof membrane, Radon gas and installation

2 rolls polythene membrane @ £59 per roll	£118.00
VAT @ 20%	£23.60
3 rolls sealing tape @ £6.77 each	£20.31
VAT @ 20%	£4.06
Ganger plus labourer @ £27.63 per hour, 1 day	£221.04
45 sheets 100mm flooring insulation @ £32 per sheet	£1,440.00
VAT @ 20%	£288.00
6 rolls foil tape @ £6.77 each	£40.62
VAT @ 20%	£8.12
Ganger plus 2 labourers @ £39.63 per hour, 1 day	£317.04
25mm perimeter insulation, 2 sheets @ £11.50 each	£23.00
VAT @ 20%	£4.60
1 labourer, 1 day @ £100/day	£100.00



Subtotal	£2,608.39
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The damp proof membrane must be continuous over the whole floor zone, dressed up the walls to link in with the damp proof course. It must be sealed at all joints, laps and junctions, including service entry points, and, to protect against Radon gas, sealed to a cavity tray in the inner leaf of the cavity walls, supported by the cavity fill and brought through the external wall leaf with weep holes to the outer skin. The membrane must be 300mu (1,200 gauge). The insulation slabs, if they are to be below the concrete, must be laid on the damp proof membrane and then sealed together using foil tape. Around the perimeter of the building an upstand of 25mm insulation must be provided to prevent cold bridging. Some builders prefer to lay a further layer of damp proof membrane above the insulation prior to pouring the concrete oversite.

Concrete oversite

18 sheets A142 mesh @ £14.70 per sheet	£264.60
VAT @ 20%	£52.92
Ganger plus labourer @ £27.63 per hour, 1 day	£221.04
12 cubic metres concrete, (mix type ST2 or GEN 1) @ £106.50/m ³	£1,278
VAT @ 20%	£255.60
Ganger plus 2 labourers @ £39.63 per hour, 1 day	£317.04
Concrete pump hire	£560.00
VAT @ 20% (not recoverable)	£112.00
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Subtotal	£3,061.20

Preparation is everything with concrete. If you're ready for it and all the levels have been set out correctly then the pour will go well. Some will prefer to barrow the concrete in. This is labour intensive, prone to waste and liable to cause harm to the structure due to the inevitable accidents. If the oversite is close to where the ready-mix concrete lorries can get and they can pour straight in, then the chances of accidents are minimised but, even then the force of the concrete delivery can disturb the membrane, and the concrete also has to be shifted from bay to bay. A concrete pump, though expensive, saves on all of this and saves time, making it possible to place huge amounts of concrete in hours rather than days. Most local authorities now ask for reinforcement within the slab.



Ground Floor Total	£7,993.19
(of which recoverable VAT)	£777.30

ALTERNATE COSTS FOR BEAM AND BLOCK

The need for reinforcement within the solid concrete oversite is one reason why the use of beam and block flooring becomes a more attractive option. If the slab has to be thickened or is required to sit on the foundation walls due to the fill exceeding 600mm or the fear of differential settlement, then the reinforcement may have to be laid in two layers and may have to be of a stronger type.

In a Radon gas area, which is gradually being extended to the whole country, the beam and block floor will require a membrane and the same precautions at the junction with the walls as with the solid slab oversite.

Although a concrete pump won't be needed, on many sites it will be necessary to hire a crane to move the beams around, and the labour element of placing the beams, building in the necessary cranked ventilators and infilling the beams with blocks will increase.

The flooring insulation wouldn't go in at this early stage but, for the sake of comparison, is left in these costings.

Levelling out oversite

2 labourers, 1 day @ £100 each	£200.00
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Laying floor beams and infilling

Floor beams – package including beams, split coursing bricks, cranked ventilators and airbricks	£1,762.00
VAT @ 20%	£352.40
125m ² infill blocks @ £7.60/m ²	£950
VAT @ 20%	£190
Crane hire, 1 day	£350.00
VAT @ 20% (not recoverable)	£70.00
Ganger plus semi-skilled labourer plus another labourer @ £41 per hour, 4 days	£1,312.00

Membrane/ Radon protection

2 rolls polythene membrane @ £59 per roll	£118.00
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VAT @ 20%	£23.60
3 rolls sealing tape @ £6.77 each	£20.31
VAT @ 20%	£4.06
Ganger plus labourer @ £27.63 per hour, 1 day	£221.04

Insulation

(costed for comparison; in practice left until later)

45 sheets 100mm insulation @ £32 per sheet	£1,440.00
VAT @ 20%	£288.00
6 rolls foil tape @ £6.77 each	£40.62
VAT @ 20%	£8.12
Ganger and 2 labourers @ £39.63/hour, 1 day	£317.04

Beam and Block Ground Floor Total	£7,667.19
(of which recoverable VAT)	£866.18

Which floor type?

On paper the costs of the two systems are remarkably similar but builders favour beam and block because, with fewer variable factors, there is a greater certainty of costs. The drawbacks with the beam and block floor are the need for absolute accuracy and the fact that the floor cannot be ordered – unless you take a chance – until the foundation walls have been built and measured, after which there may be a waiting time for delivery.

How to reduce these costs

This is a fairly labour-intensive part of the house but self-builders may decide that they can take on much if not all of the work involved at this stage, perhaps with a little help.

The concrete pump is an expensive item but if the pour was spread over more than one day and the labour requirement increased, its cost would pale into insignificance.

Mixing your own concrete may seem a good option but the mix won't be consistent and the structure could suffer.

3.4 Superstructure

The walls remain a key element of the overall cost

This superstructure cost may seem daunting – and expensive – at first glance. But you will find it an invaluable resource not only for costs, but for the necessary materials required on site, as well as the labour for this hugely significant part of the project.

These costings are based on a house built of masonry with a brickwork exterior to the ground floor and rendered blockwork to the upper storey. The internal leaf of cavity and partition walls is in blockwork. This allows for the use of a solid beam and block first floor and, in turn, means that the partition walling to the upper part can also be in blockwork. Therefore, virtually the entire superstructure is the domain of one trade — the bricklayers. They may even choose, as they're on site, to take responsibility for the placing of the first floor beams and their infilling with blocks. Otherwise the groundworkers can often be called upon to come back for this.

The brickwork in this case has been enhanced by a plinth running the circumference of the building, complete with special plinth bricks. It is further enhanced by a waist band dentil strip composed of proud headers, which would add 1,000 bricks to the order plus extra time for the bricklayers.

The house in question has a hipped roof, meaning there are no gable ends other than that to the single storey ground floor extension.

Large room sizes and the fact that the first floor is smaller than the ground floor means that it is necessary to utilise steel joists in various places to support walls and floors above.

Blockwork and stonework

7,500 bricks @ £350/1,000	£2,625.00
VAT @ 20%	£525.00
Two-and-one gang of bricklayers laying 7,000 bricks @ £400/1,000	£2,800.00
Stone porch and columns	£1,900.00
VAT @ 20%	£380.00
4 x 6m x 11mm reinforcement bars @ £5.80 each	£23.20
VAT @ 20%	£4.64
3m x 600mm 'Code 4' lead	£89.68
VAT @ 20%	£17.94
Bricklayer and labourer for stone	



porch, 3 days @ £269.04 per day	£807.12
200 plinth bricks @ £2.11 each	£422.00
VAT @ 20%	£84.40
Bricklayer and labourer, 5 days @ £269.04 per day for plinth bricks and dentil bricks	£1,345.20
360m ² Celcon/Thermalite blocks @ £10.60/m ²	£3,816
VAT @ 20%	£763
125m ² solid concrete blocks @ £7.60/m ²	£950
VAT @ 20%	£190
Two-and-one gang of bricklayers laying 475m ² blockwork @ £13.50/m ²	£6,412.50
24 bags building sand @ £35 per bag	£840.00
VAT @ 20%	£168
200 bags Portland cement @ £3.64 each	£728
VAT @ 20%	£145.60
23 x 5ltr plasticiser @ £4.16 each	£95.68
VAT @ 20%	£19.14
34.5m lintels for cavity brickwork @ £33.50/m	£1,155.75
VAT @ 20%	£231.15
8.2m 203 x 203 x 46kg steels @ £37.56/m	£307.99
VAT @ 20%	£61.60
4.5m 203 x 133 x 25kg steels @ £19.23/m	£86.55
VAT @ 20%	£17.31
3m 178 x 102 x 19kg steels @ £14.69/m	£44.07
VAT @ 20%	£8.81
5m 254 x 254 x 76kg steel @ £38.27/m	£191.35
VAT @ 20%	£38.27
23 concrete lintels/spreader beams/padstones/ drainage exits @ £18.73 each	£430.79
VAT @ 20%	£86.16
Bricklayer and labourer, 2 days @ £269.04 per day to bed steels, lintels, cavity closers, cavity trays and fix wall insulation	£538.08
65m cavity closers @ £4.81/m	£312.65
VAT @ 20%	£62.53
5 boxes wall ties @ £43.60 each	£218.00
VAT @ 20%	£43.60
900 cavity insulation retaining discs @ 5p each	£45.00
VAT @ 20%	£9.00
210m ² cavity wall insulation @ 3.97/m ²	£833.70



VAT @ 20%	£166.74
1 roll 600mm DPM (damp-proof membrane)	£13.56
VAT @ 20%	£2.71
5 air bricks, sleeves and vents @ £25 each	£125.00
VAT @ 20%	£25.00
Electricity meter box and hockey stick	£24.64
VAT @ 20%	£4.93
Gas meter box	£30.30
VAT @ 20%	£6.06
Two wrought iron balconies @ £350 each	£700.00
VAT @ 20%	£140.00
Skip for waste	£200.00
VAT @ 20% (not recoverable)	£40.00
Scaffolding hire and erect	£5,633.29
VAT @ 20% (not recoverable)	£1126.66
55m wallplate @ £2.98/m	£163.90
VAT @ 20%	£32.78
Carpenter to cut and scarf wallplates, half day	£81.00
Bed wall plates, bricklayer and labourer, half day	£134.52
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Subtotal	£38,524.95

You may notice there is a difference between the amount of bricks and blocks listed as materials and the amount that are laid. This accounts for the 1,200 that have already been costed in within Foundations, the 1,000 for the waist course and wastage. The mixer hire was also costed in within Foundations. With the internal partition walls in blockwork, you can use steel lintels over doors and openings. But these costings have assumed the use of prestressed concrete lintels, which can also be used as spreader beams and padstones beneath steel joists. Although the cutting and scarfing of the wallplates is the job of the carpenter, bedding it normally falls to the bricklayers.

First floor

Floor beams incl beams and batten clips	£1,400.00
VAT @ 20%	£280.00
100m ² infill blocks @ £7.60/m	£760.00
VAT @ 20%	£152.00
Ganger and semi-skilled labourer and another labourer @ £41 per hour, 3 days	£984.00



Crane hire, 1 day	£350.00
VAT @ 20% (not recoverable)	£70.00
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Subtotal	£3,996.00

If you were to utilise an engineered timber floor instead of the beams and blocks, then the costs for the flooring would be around £300 lower. Cheaper still would be the use of standard timber joists, which would save around £600. But you would have to purchase joist hangers and, with both of these flooring systems, you'd need to put down the decking as soon as the roof was on, whilst with the beam and block, screeding could wait until later.

While the crane is on site, utilise it for the full time that you have hired it for, and get it to pick up and load out packs of infill blocks onto boards laid onto those beams that have already been positioned.

External joinery

(white PVCu, pre-glazed)

18 windows, 23m ² @ £140.88/m ²	£3,240.24
VAT @ 20%	£648.05
6 French doors, 17m ² @ £174/m ²	£2,958.00
VAT @ 20%	£591.60
Purpose-made front door and frame	£1,680.00
VAT @ 20%	£336.00
20m window boards @ £4.53/m	£90.60
VAT @ 20%	£18.12
120 frame fixings @ 37p each	£44.40
VAT @ 20%	£8.88
14 tubes frame sealant @ £4.82 each	£67.48
VAT @ 20%	£13.50
Labour, 4 days @ £162 per day	£648.00
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Subtotal	£10,344.87

Although costed in at this juncture, PVCu and hardwood windows would not normally be fixed until the roof was finished and the scaffolding about to come down. Softwood timber windows, on the other hand, would be built in by the bricklayers as work commenced. Window boards are also costed in at this juncture but would not normally be fixed until the first fix carpentry stage.



Superstructure Total	£52,865.82
(of which recoverable VAT)	£5,282.52

What about timber frame?

While we have completed costs based on traditional masonry construction, the choice of timber frame is unlikely to make much difference to the actual costs; however, it may speed up the build process. The internal blocks would be replaced by the frame, while the first floor would be timber or I-beams instead of beam and block. The roof and joinery would stay more or less the same, as would other areas of the specification.

How do you reduce these costs?

This is one stage where it's not that easy to trim the costs, although there are some options:

- The choice of bricks at £350 per 1,000 is quite expensive, although it is possible to pay considerably more. The choice reflects the presumed quality of the house but considerable savings could be made by using a cheaper brick at, say, £265 per 1,000, which would effect a saving of £637.50.
- Most bricks, however much they cost to buy, will cost the same to lay.
- The stone porch could be dispensed with and replaced with brick pillars plus a timber canopy. Similarly the plinth and waist course could be deducted.
- Hire-only scaffolding can save money but cost lives. Stick to hire and erect.
- Softwood joinery can be cheaper but by the time you've paid to paint it, most cost benefits are lost.
- Some of the savings on the flooring systems are listed below, but bear in mind the huge number of complaints that builders get about creaking floors.
- It is sometimes possible to do without the crane but if you push the timescale out, labour might cost more.

3.5 Roofing

Several key choices with huge varieties in costs

This look at roof structures costs up a prefabricated attic truss roof, but there are other options available, as detailed below. Our benchmark house has a pitch of 40°, meaning that if occupation is required, there is quite a bit of work involved. There are two options. The first and cheapest, but only by a few hundred pounds on the material costs, is to occupy just the centre section of the roof beneath the short ridge and between the two hips. The second is to occupy more of this quite large roof by extending the attic into the hips — and that seems to make more sense.

No windows to the roof space are on the front elevation and natural lighting is obtained via two Velux windows to the rear plane of the roof. The roof space is to be left boarded, with plasterboard walls concealing the insulation. Access is via a loft trap, but it is entirely possible that a full staircase, above the proposed staircase to the first floor, could be installed and the attic space used for habitable purposes.

The rear extension to the family room, at 35°, does not provide sufficient space for anything but storage and is therefore constructed using simple fink trusses.

This roof could have been built using sawn lumber, which would have been cheaper as far as materials are concerned. But the labour costs would have risen proportionately to cancel out any benefit. So these costings assume provision of a complete prefabricated roof.

The Roof Structure

The wall plates have already been costed (labour and materials) within ‘Super-structure Cost’ because their bedding is the responsibility of the bricklayers. However, it’s quite likely that many roof suppliers will include this item, and even those that don’t will probably include the wall plate straps and lateral restraint straps, which can be retrofitted by the carpenters. With a roof of this type with attic, double, treble and girder trusses, it would be necessary to have a crane on site. Insulation is costed as rigid foam, 100mm between the rafters and 50mm beneath, right into the eaves to create a warm roof. Nevertheless, although belt and braces, 100mm insulation is set between the studs of the attic walls and mineral wool insulation is laid in the eaves void. The rear projection is a cold roof with mineral wool insulation between and over the ceiling joists.

Ceiling joists



Supply of trussed roof	
3 attic trusses @ £50.84 each	£152.52
1 double truss	£330.46
1 treble truss	£512.23
2 hip girders @ £120.88 each	£241.76
8 king posts	£22.88
4 beams	£79.53
15 mono trusses @ £2.165/m	£45.32
2 double mono trusses @ £52.92 each	£105.84
12 mono trusses @ £2.065/m	£44.90
1 set of bracing, rafters, joists, hip boards, binders, ridge boards, collars, purlins and supports	£571.88
1 set of 15mm OSB bracing to sloping ceiling	£192.50
1 set of truss clips, framing anchors, girder truss shoes and joist hangers	£295.90
1 set of wall plate straps and lateral restraint straps	£127.60
1 set of 22mm chipboard flooring and adhesives	£318.23
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Subtotal for prefabricated roof supply	£3,041.55
VAT @ 20%	£608.31
Carpenter and joiner x 2 for 12 days @ £324 per day	£3,888.00
Crane hire, 1 day @ £350	£350.00
VAT @ 20% (not recoverable)	£70.00
7 packs 2 x 5m lengths PVCu fascia @ £63.97 each	£447.79
VAT @ 20%	£89.56
7 packs PVCu soffit boards @ £74.47 each	£521.29
VAT @ 20%	£104.26
5 packs 65mm white trim top pins @ £15.32 each	£76.60
VAT @ 20%	£15.32
Carpenter and joiner x 2 for 2 days @ £324 per day	£648.00
2 GPL 3073/MO8 Velux rooflights @ £330.00 each	£660.00
VAT @ 20%	£132.00
2 flashing kits @ £58.60 each	£117.20
VAT @ 20%	£23.44
Carpenter and joiner for 1 day	£162.00
73 sheets 100mm rigid foam roofing insulation @ £43.97 each	£3,209.81
VAT @ 20%	£641.96
60 sheets 50mm rigid foam roofing	



insulation @ £18.42 each	£1,105.20
VAT @ 20%	£221.04
26 rolls 150mm mineral wool insulation @ £16.95 each	£440.70
VAT @ 20%	£88.14
Carpenter and labourer for 4 days @ £258 per day	£1,032.00
6 boxes 70 x 5mm screws @ £4.85 each	£29.10
VAT @ 20%	£5.82
Red rawlplugs, 2 packs	£9.30
VAT @ 20%	£1.86
2 packs 65mm ring shank nails	£19.98
VAT @ 20%	£4.00
2 packs 65mm losthead nails	£14.98
VAT @ 20%	£3.00
2 packs roundhead nails	£20.78
VAT @ 20%	£4.16
6 packs 100mm round wire nails	£46.68
VAT @ 20%	£9.34
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Subtotal	£14,213.31

The Roof Covering

As the main roof is a warm roof with the insulation between and down the slope of the rafters, the roofing underlay is a breathable one and there is no need, therefore, to install eaves ventilation. However, the rear single storey roof projection and the small monopitch roof to the side of the house are both cold roofs with mineral wool insulation laid in two layers, between and over the ceiling joists. This roof would, therefore, require eaves ventilation. The chosen roofing cover is natural slate and the most cost-effective and consistent at the present time seems to be Spanish.

6 x 50m rolls breathable membrane @ £135.37 per roll	£812.22
VAT @ 20%	£162.44
1 box 25kg 50mm galvanised clout nails	£43.64
VAT @ 20%	£8.73
3 packs 30mm galvanised clout nails @ £8.84 each	£26.52
VAT @ 20%	£5.30
1,000m treated sawn softwood battening @ 30p/m	£300.00
VAT @ 20%	£60.00
4,611 500mm x 250mm slates @ £1.34 each	£6,178.74



VAT @ 20%	£1,235.75
38 eaves support trays @ £5.63 each	£213.94
VAT @ 20%	£42.79
5 rolls eaves ventilator @ £10.36 each	£51.80
VAT @ 20%	£10.36
110 ridge/hip tiles @ £2.41 each	£265.10
VAT @ 20%	£53.02
1 roll of lead for flashing	£41.70
VAT @ 20%	£8.34
Roofer and semi-skilled labourer for 19 days @ £262 per day	£4,978.00
Skip for waste	£200.00
VAT @ 20% (not recoverable)	£40.00
General labourer for 1 day	£100.00
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Subtotal	£14,838.39

Roof structure and covering total	£32,701.56
(of which recoverable VAT)	£3,538.94

How to reduce these costs

You could cut down on the insulation in the stud walls to the attic floor. Strictly speaking, as the roof is a warm roof there is no need for this insulation or that on the eaves floor. The saving on rigid foam alone would be £571.61 and 18 fewer rolls of mineral wool would save another £305.10 plus, in both cases, the labour, which would amount to around £500. But what is the point of heating the eaves space?

Getting the slates onto the roof is a long job and one that the self-builder could do. But it's not easy, although one could save around five days amounting to £1,310.

Plain clay tiles would cost roughly the same but if one swapped to concrete interlocking, the tiling costs would almost half.

3.6 Drainage

An unglamorous but critical cost factor

It is possible for the works to the drainage to be carried out by the groundworkers at the same time as – or following straight on from – the foundations. After all, diggers will be on site and the same lorries that remove the spoil from the foundations can take away the excess from the drainage trenches. But there are some drawbacks. Firstly, the work to the drains may interrupt or preclude any works to the superstructure. Secondly, the likelihood is that the newly excavated and backfilled trenches will find themselves beneath scaffolding, and that could present bearing problems for the uprights. It could also mean that the point loading and compaction of the ground beneath the scaffolding will adversely affect newly laid drains.

On the other hand, those building with a timber frame, where there is a long period between order and delivery, might choose to use the intervening time getting the drainage done and then take the necessary precautions to prevent damage.

In most cases, however, drainage is best left until the scaffolding is down, and often the groundworkers can move on from the drainage works to the landscaping and driveways, which can't really be done until everything else is practically complete.

Works to connect the site to the sewer in the road would already have been accounted for, as these works can only be carried out by approved contractors and will vary. Below, however, is an example of typical connection costs for a home in an average village street with all mains services to hand.

Water and sewerage	£2,112.00
VAT (payable only on building water supply and recoverable)	£15.85

Laying Drains

Drains must be laid in trenches to a fall of 1:40, surrounded by and covered over with clean pea shingle before the trenches are finally backfilled with spoil. Soakaways for surface water drainage from guttering and downpipes etc. are usually 1m³ holes, which are filled with clean hardcore to within 100mm of ground level and then covered over with a square of membrane with topsoil over. All pipes, fittings etc. are assumed to be 110mm plastic type, suitable for



underground use.

Excavate 88m drains (max 900mm depth):	
ganger and labourer for 3 days @ £221.04 per day	£663.12
Excavate 5 soakaways: ganger and	
labourer for half a day @ £221.04 per day	£110.52
Load lorries: ganger and labourer for	
one-and-a-half days @ £221.04 per day	£331.56
Digger hire for 5 days @ £200 per day	£1,000.00
VAT (not recoverable) @ 20%	£200.00
3 loads of muck away @ £200 each	£600.00
VAT (not recoverable) @ 20%	£120.00
30 3m x 110mm pipes @ £14.90 each	£447.00
VAT @ 20%	£89.40
9 tons Type 1 hardcore for soakaways @ £13 per ton	£117.00
VAT @ 20%	£23.40
5 gulleys @ £38.29 each	£191.45
VAT @ 20%	£38.29
3 rest bends for SVP	
(soil and vent pipe) @ £12.36 each	£37.08
VAT @ 20%	£7.42
2 branches @ £18.23 each	£36.46
VAT @ 20%	£7.29
24 110mm drainage collars @ £4.88 each	£117.12
VAT @ 20%	£23.42
24 110mm drainage bends @ £14.50 each	£348.00
VAT @ 20%	£69.60
5 manhole inspection chambers @ £147.27 each	£736.35
VAT @ 20%	£147.27
5 manhole covers @ £48.79 each	£243.95
VAT @ 20%	£48.79
Ganger, semi-skilled labourer	
and labourer for 8 days @ £328 per day	£2,624.00

Drainage total	£8,378.49
(of which recoverable VAT)	£454.88

How to reduce these costs

Dealing with plastic-type drainage isn't that difficult and, although it's dirty

work, you could carry out all or most of it.

If you know how to use a level it's easier to correctly lay the pipes, but alternatively you can work back from the connection to the main sewer using pegs and calculating the rise at 1:40 (i.e. for every 40m of drainage run, the drains must rise or fall 1m). At a pinch, drainage can run at 1:60.

Pipe comes in 6m lengths, and as they are laid on 150mm pea shingle it is relatively easy to make sure that there are no dips. The pipe must also be surrounded and covered over with 150mm pea shingle before backfilling. This is labour intensive but can often be done by the self-builder.

With a beam and block ground floor, it is relatively easy for the drains to run beneath the building and that may save on not only drainage runs, but manholes.

3.7 Electrics

Key to success, but not a huge portion of total costs

Without denigrating any of the preceding tradesmen, the electrician, together with the plumbing and heating engineer, is a different kettle of fish. Whereas many of the other trades are labour only, in general these two trades are supply and fix – either exclusively or in part – as many are quite prepared to countenance the self-builder purchasing items such as light fittings. In many cases, however, due to the added complexity of most fancy fittings, there is little or no saving to be had.

The fact that the trade is supply and fix means that most electricians work on a more permanent basis. Many work alone, bringing in help on the odd occasion. Others are larger companies who employ men and women and, in these cases, it is usual for there to be one major electrician plus a trainee. All must have the stability to be able to take ongoing responsibility for their work.

Payment is usually made in two stages. The first is on completion of the first fix or carcassing stage, where the wires and back boxes etc. are positioned on the walls and through the floor and roof zone prior to plastering. The second and final payment is made upon practical completion of the trade, when the various certificates have been issued and approved by Building Control.

In most cases, the self-builder is advised to only use an electrician or electrical company that is Part P registered. Although it is possible to use a competent person who, whilst not registered, could be considered by Building Control as



a competent person to carry out the work, this is not generally advisable. Nevertheless, if that is the route you go down, an extra fee of £306.38 plus VAT will be payable to Building Control (varying from authority to authority) for an inspection upon completion of the work.

Electricians work with a plumber to earth pipework, commission the boiler and wire and commission the hot-water storage system.

20 ceiling pendant lights, incl switch and back box @ £4.89 each	£97.80
VAT @ 20%	£19.56
3 x 1-way light switches incl back box @ £2.34 each	£7.02
VAT @ 20%	£1.40
6 electric bathroom vents @ £21.00 each	£126.00
VAT @ 20%	£25.20
6 x 50m rolls of 1.5mm twin and earth cable @ £10 each	£60.00
VAT @ 20%	£12.00
28 packs of 1.5mm cable clips @ 65p each	£18.20
VAT @ 20%	£3.64
34 power sockets @ £5.94 each	£201.96
VAT @ 20%	£40.39
3 shaver sockets @ £18.99 each	£56.97
VAT @ 20%	£11.39
11 x 50m rolls of 2.5mm twin and earth cable @ £13.50 each	£148.50
VAT @ 20%	£29.70
40 packs of 2.5mm cable clips @ 65p each	£26.00
VAT @ 20%	£5.20
3 shower ceiling isolating pull switches @ £14.10 each	£42.30
VAT @ 20%	£8.46
3 mains-wired smoke alarms @ £20.02 each	£60.06
VAT @ 20%	£12.01
2 x 1,200mm florescent lights for loft @ £30 each	£60.00
VAT @ 20%	£12.00
11 fused spurs @ £6.54 each	£71.94
VAT @ 20%	£14.39
6 external coach lights, built-in PIR @ £32 each	£192.00
VAT @ 20%	£38.40
2 telephone flush slave sockets @ £7.27 each	£14.54
VAT @ 20%	£2.91
1 x 100m roll of six-core telephone cable	£16.98



VAT @ 20%	£3.40
1 x 100m roll of CT100 satellite cable	£35.00
VAT @ 20%	£7.00
8 satellite TV faceplates @ £6.60 each	£52.80
VAT @ 20%	£10.56
1 x 50m roll of 1.5mm three-core and earth cable	£22.00
VAT @ 20%	£4.40
1 x 50m roll of 6mm twin and earth cable	£51.50
VAT @ 20%	£10.30
2 packs of 6mm cable clips @ 65p each	£1.30
VAT @ 20%	£0.26
Consumer unit	£120.00
VAT @ 20%	£24.00
25 days' labour @ £174 per day	£4,350.00

Electrical total	£6,129.44
(of which recoverable VAT)	£296.57

(NB: In addition, now is the time to consider installing a smart home entertainment and lighting system, plus a whole-house alarm system, at around £15,800 + VAT. Plus a whole-house alarm system, at around £15,800 + VAT.)

How to reduce these costs

Avoid over specification. Think carefully about what you actually need, i.e. not too many power points.

Think about where your furniture will go and don't make the mistake of having power points that are inaccessible.

Brass, silver or even timber faceplates are attractive but they're much more expensive than traditional white plastic.

The electrician may let you help them on the carcassing and running of the wires for a small discount; but they must supervise under the conditions of their certification. A layperson cannot do the work and then seek certification from an electrician who has not been involved in all of the work.



3.8 Plumbing

A complex order list, and a big spend

As with the electrician, it is quite likely that the plumbing and central heating engineer will work on a supply-and-fix basis, either wholly or in part. Most self-builders will not want to be involved in the purchase of minor items, but may wish to provide major items such as the boiler and underfloor heating for the plumbers to fit on a labour-only basis.

The trade is divided into two stages, first fix (carcassing) and second fix, and payment is often made as each stage is completed.

The first arrival of the plumber on site may be to fix the standpipe for the building water supply. Part of this may be used for the eventual outside tap, but the requirement for non-return and shut-off valves and the need to box in the standpipe itself means that around an extra £100 may have to be allocated.

The next time the plumber comes on site will be just before the roof is tiled in order to set up the soil vent pipes (SVPs). If they are to be responsible for the lead flashing instead of the roofer, they will then stay to attend to that. If they are fitting the guttering and downpipes then they may well fix the guttering from the scaffold before it comes down but leave the downpipes until later.

The plumber will work closely with the electrician in the wiring up of the boiler and control systems, and their testing and firing.

Heating

Underfloor central heating system*	£3,997.00
VAT @ 20%	£799.40
3 white-painted steel towel rails @ £118 each	£354.00
VAT @ 20%	£70.80
Manifold outlet and timer for towel rails	£76.00
VAT @ 20%	£15.20
Twin wall pressurised hot water cylinder	£699.00
VAT @ 20%	£139.80
Oil-fired condensing boiler	£1,260.00
VAT @ 20%	£252.00
Horizontal flue kit	£130.00
VAT @ 20%	£26.00
1,235L bunded oil tank including fittings	£735.00
VAT @ 20%	£147.00



Apollo with tank readout	£75.00
VAT @ 20%	£15.00
Tiger loop	£78.00
VAT @ 20%	£15.60
Tank base: 1 ton bag all-in ballast	£34.00
VAT @ 20%	£6.80
10 bags ordinary Portland cement @ £2.90 each	£29.00
VAT @ 20%	£5.80
Labourer 2 days incl backfilling supply pipe trench	£200.00
25m roll plastic-coated oil feed pipe	£60.75
VAT @ 20%	£12.15
35 sheets 100mm flooring insulation for first floor (ground floor costed elsewhere) @ £23 per sheet	£805.00
VAT @ 20%	£161.00
2 rolls polythene membrane @ £50 each	£100.00
VAT @ 20%	£20.00
2 rolls sealing tape @ £6.77 each	£13.54
VAT @ 20%	£2.71
Labour – 18 man days @ £176 per day	£3,168.00
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Subtotal for heating	£13,503.55

*The figures assume a complete underfloor heating system to ground and first floor (supplied by Robbens Underfloor Heating Systems Ltd, under-floorheating.co.uk), to include: electronic controllers; loop actuators; room thermostats; remote sensor thermostats; setback control thermostats; manifolds, highperformance multi-layer pipe; and fixings. This costing assumes that the choice of a solid beam and block first floor has been made. If the alternatives of either a timber joist or an engineered timber floor were taken, then the price for the underfloor heating system would rise by £320 due to the need for heat spreader plates and pipe fixings. These costings also assume a Trianco oil-fired condensing boiler. The boiler is a system boiler providing mains pressure hot water to the central heating and the domestic hot water, without the need for expansion tanks in the loft.

First Fix Plumbing

26 x 3m x 15mm copper pipe @ £1.58/m	£123.24
VAT @ 20%	£24.65
20 x 15mm copper tees @ 30p each	£6.00



VAT @ 20%	£1.20
120 x 15mm copper elbows @ 15p each	£18.00
VAT @ 20%	£3.60
26 x 15mm copper couplings @ 9p each*	£2.34
VAT @ 20%	£0.47
94 x 15mm pipe clips @ 9p each	£8.46
VAT @ 20%	£1.69
18 x 15mm isolating valves @ 92p each	£16.56
VAT @ 20%	£3.31
28 x 3m x 22mm copper tube @ £3.02/m	£253.68
VAT @ 20%	£50.74
8 x 22mm copper tees @ 96p each	£7.68
VAT @ 20%	£1.54
30 x 22mm copper elbows @ 43p each	£12.90
VAT @ 20%	£2.58
10 x 22mm copper couplings @ 23p each	£2.30
VAT @ 20%	£0.46
101 x 22mm pipe clips @ 11p each	£11.11
VAT @ 20%	£2.22
8 x 22mm isolating valves @ £1.91 each	£15.28
VAT @ 20%	£3.06
2 washing machine hot & cold taps @ £1.23 each	£2.46
VAT @ 20%	£0.49
1 dish washer cold tap	£1.23
VAT @ 20%	£0.25
2 washing machine/dish washer open waste traps @ £7.92 each	£15.84
VAT @ 20%	£3.17
External cold water tap with hose union and 15mm 3/4 coupling	£12.19
VAT @ 20%	£2.44
8 x 3m 1 1/4 waste pipes @ £1.99 each	£15.92
VAT @ 20%	£3.18
16 x 1 1/4 waste elbows @ 59p each	£9.44
VAT @ 20%	£1.89
4 x 1 1/4 waste couplings @ 59p each	£2.36
VAT @ 20%	£0.47
36 x 1 1/4 waste clips @ 17p each	£6.12
VAT @ 20%	£1.22
25 x 3m 1 1/2 waste pipes @ £2.42 each	£60.50



VAT @ 20%	£12.10
7 x 11/2 waste tee 11/4 branches @ £1.18 each	£8.26
VAT @ 20%	£1.65
35 x 11/2 waste elbows @ 59p each	£20.65
VAT @ 20%	£4.13
11 x 11/2 waste couplings @ 59p each	£6.49
VAT @ 20%	£1.30
75 x 11/2 waste clips @ 17p each	£12.75
VAT @ 20%	£2.55
7 x 3m soil vent pipes @ £16.94 each	£118.58
VAT @ 20%	£23.72
4 soil vent pipe branches @ £14.24 each	£59.96
VAT @ 20%	£11.99
8 soil vent pipe bends @ £9.55 each	£76.40
VAT @ 20%	£15.28
19 soil vent pipe clips @ £1.64 each	£31.16
VAT @ 20%	£6.23
1 soil vent pipe roof cowl	£26.47
VAT @ 20%	£5.29
Labour – 16 man days @ £176	£2,816.00
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Subtotal	£3,973.20

*These costs assume the use of copper piping, which, in truth, most plumbers are more familiar with. The use of plastic plumbing would not necessarily save a great deal, although a plumber who was experienced in using it might be slightly quicker.

Second Fix Plumbing & Sanitaryware

4 white WC pans @ £43.20 each*	£172.80
VAT @ 20%	£34.56
4 white cisterns @ £45.52 each	£182.08
VAT @ 20%	£36.42
4 toilet seats @ £13.86 each	£55.44
VAT @ 20%	£11.09
4 straight multiquick connectors @ £3.74 each	£14.96
VAT @ 20%	£2.99
5 white basins @ £33.36 each	£166.80
VAT @ 20%	£33.36



5 white basin pedestals @ £25.91 each	£129.55
VAT @ 20%	£25.91
5 pairs basin taps @ £13.77 each	£68.85
VAT @ 20%	£13.77
5 basin wastes @ £2.70 each	£13.50
VAT @ 20%	£2.70
5 basin waste traps @ £3.03 each	£15.15
VAT @ 20%	£3.03
Standard white bath	£100.00
VAT @ 20%	£20.00
Bath panel	£14.32
VAT @ 20%	£2.86
Bath taps	£19.49
VAT @ 20%	£3.90
Bath waste	£2.83
VAT @ 20%	£0.57
Bath waste trap	£3.09
VAT @ 20%	£0.62
3 x 900 x 900mm shower trays @ £100.26 each	£300.78
VAT @ 20%	£60.16
3 pivot shower doors @ £156.10 each	£468.30
VAT @ 20%	£93.66
3 shower wastes and combi traps @ £6.90 each	£20.70
VAT @ 20%	£4.14
3 shower mixer units @ £118.38 each	£355.14
VAT @ 20%	£71.03
Labour – 7 man days @ £176	£1,232.00
<hr/>	
Subtotal	£3,756.55

*It's possible to spend much more than these figures on sanitaryware, but it's as well to remember that flair and imagination can add more value than simply buying expensive fittings. Buying very much cheaper, on the other hand, could detract from the value.

Guttering & Downpipes

This usually falls within the remit of the plumber but in some cases will be taken on by another of the trades such as the carpenter or the roofer. It's always best to fix the gutting from the scaffolding before it comes down as it's much easier



to set up the right falls from that vantage point.

20 x 3m lengths PVCu guttering @ £11.31 each	£226.20
VAT @ 20%	£45.24
115 gutter brackets @ £1.30 each	£149.50
VAT @ 20%	£29.90
14 union brackets @ £2.45 each	£34.30
VAT @ 20%	£6.86
7 gutter running outlets @ £4.12 each	£28.84
VAT @ 20%	£5.77
6 gutter stop ends @ £1.65 each	£9.90
VAT @ 20%	£1.98
4 x 90° gutter bends @ £4.10 each	£16.40
VAT @ 20%	£3.28
5 x 6m rainwater downpipes @ £16.08 each	£80.40
VAT @ 20%	£16.08
21 RWP brackets @ £1.86 each	£39.06
VAT @ 20%	£7.81
10 RWP bends @ £2.35 each	£23.35
VAT @ 20%	£4.67
1 box 50 x 5mm screws	£6.99
VAT @ 20%	£1.40
1 pack Rawl plugs	£4.65
VAT @ 20%	£0.93
1 box 25 x 4mm screws	£6.34
VAT @ 20%	£1.27
Labour – 5 man days @ £176	£880.00
<hr/>	
Subtotal	£1,631.12

Plumbing and central heating total	£22,864.42
(of which recoverable VAT)	£2,428.09

How to reduce these costs:

If a conventional radiator system with 16 basic radiators with TRVs (thermostatic radiator valves) was employed instead of under floor heating, then the savings could amount to £2,096.19.

The first article in this series assumed the supply of gas onto the site and if that were the case then that would probably be most people's first choice of

fuel, and there would also be savings. A gas-fired condensing system boiler from Worcester Bosch (worcester-bosch.co.uk) would cost £722.75 — when you add up the cost of the oil-fired boiler together with the tank and all its accoutrements, that represents a saving of £1,748.97. But you would have to pay for the connection and supply of gas to site and that would reduce the saving to £498.97.

You could fit the underfloor heating pipes to the floor yourself. It's a long job but, given the plans of where and how things go, it's not technically difficult. And it could save up to ten man days at £1,760.

3.9 Internal Carpentry & Joinery

Bespoke or off-the-shelf — a huge cost variation

The internal carpenter and joiner may well be the same chap that did the first fix and roof, but not always. Indeed, the two skills are quite different in many ways, with the roof and first fix carpentry largely dealing with sawn lumber that doesn't have to look that pretty, but does have to have structural integrity, whilst second fix carpentry, which also gets called joinery, deals with prepared timber — the finish of which is all important.

The division of the trade into first fix, roof and second fix is, however, not at all clear cut. Window boards, which were costed in *3.4 The Superstructure* are first fix items. They are often done just before the plastering, but not always, as it is possible to secretly fix them afterwards, thus avoiding damage. Door linings are first fix but are similarly left until just before plastering, or in some cases until afterwards in order to prevent damage. The vertical stud walls in the loft are costed here but could well have been included in the roof section, especially as their plastering and insulation has already been accounted for. Staircases that are to be carpeted are often fixed at the earlier stages of the build to facilitate access to the upper part, but those where the timber is to be exposed or decorative are left until the last possible moment. Balustrading and handrails are nearly always left until just before decoration.

Boxing in around soil and vent pipes is normally carried out by the carpenter using either plywood or plasterboard over a 50mm x 25mm sawn batten framework, and much of this has to be done before the plasterer comes in. However,



not all can, and boxing around pipes and behind toilets etc. may have to wait until after the plumber has finished second fixing the sanitaryware. Normally there is no need to buy extra materials for this, as leftovers from other works can be used. The decorative effects on this are mitigated by the probability that these areas are often tiled.

The kitchen units may well be fixed by the carpenter and these costings have assumed that. However, specialist kitchen supply firms may have their own operatives. For ease, the associated works to the kitchen and utility room areas by the plumbers and electricians are also costed in this section. Timber or laminated worktops would normally be fitted by the carpenters or kitchen fitters, but granite worktops, as assumed here, are normally fitted by the suppliers with the cost of that fitting included in their price.

Although this is a high-specification house, these costings assume a default of standard redwood joinery, which can be stained or painted. They also assume standard internal doors at a cost per door of £25, whereas it's possible to spend ten times that amount or more. The staircase, however, is costed as American white oak, as this can be considered an architectural item in its own right.

First Fix vs Second Fix

First fix comprises all the work required to take a building from foundation stage to plastering the internal walls. Second fix comprises all the work after the plastering to a finished house, meaning it requires a neater finish than first fix.

Internal and Second Fix Joinery

There are two built-in wardrobes in the dressing area of the master bedroom and it is assumed that these will have the same doors as for the rest of the house. All other bedrooms are assumed to have freestanding wardrobes. As the attic is not a habitable space, there is no requirement for fire doors to habitable rooms. But if this situation changed, the door linings and the affected doors would double in cost.

162m 47mm x 100mm studding @ £1.08/m	£174.96
VAT @ 20%	£34.99
3 x 25kg boxes 100mm round wire nails @ £31.96 each	£95.88
VAT @ 20%	£19.18
87m redwood rebated internal door framing @ £3.76/m	£327.12
VAT @ 20%	£65.42
3 boxes 70mm x 5mm screws @ £4.85 each	£14.55



VAT @ 20%	£2.91
15 standard internal doors @ £25 each	£375.00
VAT @ 20%	£75.00
4 pairs standard internal double doors @ £60 each	£240.00
VAT @ 20%	£48.00
19 packs door furniture @ £10.14 each	£192.66
VAT @ 20%	£38.53
252m softwood moulded skirting @ £2.77/m	£698.04
VAT @ 20%	£139.61
5 x 2.5kg packs 65mm lost head nails @ £7.49 each	£37.45
VAT @ 20%	£7.49
205m softwood moulded architrave @ £1.66/m	£340.30
VAT @ 20%	£68.06
2 x 2.5kg packs 40mm oval nails @ £10.29 each	£20.58
VAT @ 20%	£4.12
Insulated GRP loft hatch	£20.50
VAT @ 20%	£4.10
Aluminium loft ladder	£57.00
VAT @ 20%	£11.40
American white oak staircase complete with balustrading, aprons, stringers, handrails etc.	£3,197.00
VAT @ 20%	£639.40
37m 50 ex 50mm x 25mm PAR (planed all round) for airing cupboard and wardrobe shelving @ 86p/m	£31.82
VAT @ 20%	£6.36
2 coat rails @ £10.27 each and 1 @ £5.14	£25.68
VAT @ 20%	£5.14
Carpenter and joiner for 17 days @ £162 per day	£2,754.00
<hr/>	
Subtotal	£9,772.25

Kitchen and Utility Room Units and Appliances

The kitchen units are white melamine, soft closing with satin-finish 'D' handles. White goods are also included but their VAT element needs to be identified as this is not recoverable. Many self-builders choose to save money by economising on the units and finishings that are to be hidden away in the utility room.

Kitchen units, ready assembled incl extractor hood, sinks and all decorative features @ say	£11,120.00
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VAT @ 20%	£2,224.00
Appliances (oven, hob, dishwasher, washing machine, refrigerator, freezer) @ say	£2,380.00
VAT @ 20% (not recoverable)	£476.00
Granite worktops to kitchen and utility room (supply and fix — zero-rated for VAT)	£4,386.00
Carpenter and labourer for 5 days @ £258 per day	£1,290.00
Electrician for 1 day	£174.00
Plumber for 1 day	£176.00
<hr/>	
Subtotal	£22,226.00

Internal carpentry and joinery total	£31,998.25
(of which recoverable VAT)	£3,393.71

How to reduce these costs

The internal decorative joinery within this costing is, whilst not the cheapest, within the economy range. Some might argue that if fitted and decorated properly, this can have as much ‘wow’ factor as more expensive options. The choice of American white oak for the staircase is an expensive option; if one were to swap to a softwood equivalent there would be a saving of around £2,000.

Changing the granite worktops to laminate or melamine chipboard could save about £3,800 but that would have an effect on the ‘wow’ factor and possibly the value of the house. Local monumental masons are often cheaper than specialist kitchen suppliers for this sort of thing.

3.10 Plastering

Hard plastering inevitably adds to the costs

Plastering is sometimes a supply-and-fix trade but, with the rise in popularity of dry-lining, it has tended to slip back into being a labour-only trade. Plasterers are probably one of the hardest trades to locate and they are always busy, so you will need to identify who’s going to be doing your plastering at the earliest possible stage and then keep in touch with them to advise them on progress.

The walls of timber frame, steel frame and SIPs (structural insulated panels) houses are almost always finished with 12mm plasterboard fixed to the vertical



studs or counter battens. Those building in masonry have the choice of either hard (wet) plastering the walls or dry-lining with 12mm-thick plasterboard fixed to the walls with dabs of Gyproc adhesive. Along with the cost disadvantage of hard plaster, there is also the fact that it takes twice as long to do the work and it can take an inordinately long time to dry out, necessitating a three-to-four-week delay in the winter months. Cracking through drying out is also much more likely with a hard-plastered wall. Walls are usually costed right through – i.e. ignoring the openings for windows and doors – and this compensates for the reveals.

Ceilings are finished with plasterboard and it has become standard practice to use 15mm plasterboard, which does away with having to introduce noggings at each joint and at the perimeter. Fixing these days is almost always by drywall screws rather than nailing and this preserves the integrity of the board.

Both walls and ceilings are skim-coated with plaster. On a hard-plastered wall, this skim coat will be applied as a 3mm base plus a 2mm finish to the substrate of either sand and cement or proprietary base coat. For plasterboard walls and ceilings, the joints between the boards are first of all taped with an adhesive fibre tape before a 3mm-thick plaster topcoat is applied. In high-density housing, a tapered-edge board is used with the joints simply taped and skimmed over, but that is not really satisfactory for a better quality home. Ceilings are usually set with a 3mm plus 2mm smooth plaster finish over the taped boards.

External walls to be rendered are usually given two coats of a sand and cement mix, which contains a waterproofer. This then has to be painted with an exterior paint. The scaffolding has to be independent with no putlogs and will also stay up for the painter.

Floors are commonly screeded with a sand and cement mixture, either mixed on site or delivered ready mixed. It can then either be barrowed in or pumped in to be levelled out by hand. This is time consuming and labour intensive and with underfloor central heating pipes, potentially damaging. There has, therefore, been a move towards the use of self-levelling screeds, usually a calcium sulphate mix, that are pumped in by specialist contractors.

The attic is costed as having the stub walls, sloping and flat ceilings plasterboarded and skimmed.

Internal walls

200 sheets 12.5mm plasterboard @ £4.36 each	£872.00
VAT @ 20%	£174.40
80 x 25kg bags plasterboard adhesive @ £4.60 each	£368.00
VAT @ 20%	£73.60



10 rolls self-adhesive fibre tape @ £4.35 each	£43.50
VAT @ 20%	£8.70
30 skim beads @ £1.06 each	£31.80
VAT @ 20%	£6.36
54 bags plaster finish @ £4.34 per bag	£234.36
VAT @ 20%	£46.87
Plasterer plus labourer, 20 days @ £267.04 per day	£5,340.00
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Subtotal	£7,199.59

Ceilings and stub walls to loft

130 sheets 15mm plasterboard @ £6.90 per sheet	£897.00
VAT @ 20%	£179.40
4 boxes 32mm drywall screws @ £4.55 per box	£18.20
VAT @ 20%	£3.64
7 rolls self-adhesive fibre tape @ £4.35 each	£30.45
VAT @ 20%	£6.09
36 bags plaster finish @ £4.34 per bag	£156.24
VAT @ 20%	£31.24
Plasterer plus labourer, 10 days @ £267.04 per day	£2,670.40
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Subtotal	£3,992.66

Floor insulation and screed

The insulation for the ground floor has already been costed for within Part 3: The Floor Structure. The insulation to the eaves and the stub walls in the attic has already been costed for in Part 5: The Roof. The beam and block first floor is costed here with 50mm insulation beneath the screed, and the ceiling joists beneath the loft floor have 100mm mineral wool insulation beneath the decking.

38 sheets 50mm flooring insulation @ £13.50 per sheet	£513.00
VAT @ 20%	£102.60
6 rolls 100mm mineral wool insulation @ £11.99 per roll	£71.94
VAT @ 20%	£14.39
5 rolls foil tape @ £6.77 each	£33.85
VAT @ 20%	£6.77
Ganger plus labourer, 1 day @ £27.63 per hour	£221.04
Supply-and-fix self-levelling screed @ £16.79/m ²	£3,811.33



Subtotal	£4,774.92
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External rendering

The external render is taken down to the waist/plinth course of proud bricks and render stop beading is, therefore, not required on this building. If it was, then you would need 15 lengths of beading at £2.53 each and it would add a day's labour for a single plasterer's labourer at £100.

4 bags plasterer's sand @ £6.16 per bag	£24.64
VAT @ 20%	£4.93
48 bags Portland cement @ £3.64 per bag	£174.72
VAT @ 20%	£34.94
13 render angle beads @ 95p each	£12.35
VAT @ 20%	£2.47
Plasterer plus labourer, 5 days @ £267.04 per day	£1,335.20
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Subtotal	£1,589.25

Plastering total	£17,556.42
(of which recoverable VAT)	£696.40

Why not wet plaster?

Hard (wet) plastering fans prefer the solidity and durability that it offers, but it is more expensive. On our benchmark house, the extra cost of using hard plaster with a proprietary base coat plaster would amount to some £2,250.

How to reduce these costs

If you took on the job of laying the insulation to the first and loft floors, there would be a saving of £221 which, added to the cost of installing the insulation to the ground floor, would mean a total saving of £538.

Switching to a sand and cement screed would save around £580. But the mirror-flat surface that the self-levelling screed produces speeds up the laying of floor tiles etc.

The resourceful self-builder might also consider taking on all or part of the tacking or, at the very least, working with the plasterers by helping to cut the boards.



3.11 Finishing

DIY is tempting but often a false economy

The Decoration

The decorator is one of the most important site trades, as it is their job to repair the mistakes, rough patches and holes left by other trades.

Decorators are presumed to supply their own tools such as scrapers and Stanley knives but it is usual for things like brushes, rollers and other ancillaries to be provided by their clients — i.e you.

Prime 544 linear metres of internal woodwork prior to fixing – 2.5 days' labour @ £135 per day	£337.50
Prime 23 internal doors –	
1.5 days' labour @ £135 per day	£202.50
6 x 5-litre cans primer @ £34.42 each	£206.52
VAT @ 20%	£41.30
Undercoat internal woodwork –	
4 days' labour @ £135 per day	£540.00
Undercoat 23 internal doors –	
1.5 days' labour @ £135 per day	£202.50
10 x 5-litre cans undercoat @ £20.11 each	£201.10
VAT @ 20%	£40.22
Gloss internal woodwork –	
5.5 days' labour @ £135 per day	£742.50
Gloss internal doors – 1.5 days' labour @ £135 per day	£202.50
10 x 5-litre cans gloss paint @ £17.73 each	£177.30
VAT @ 20%	£35.46
Emulsion walls and ceilings (950m ²)	
– 26 days' labour @ £135 per day	£3,510.00
13 x 15-litre tubs white emulsion @ £30 each	£390.00
VAT @ 20%	£78.00
37 tubes decorator's caulk @ £1.81 each	£66.97
VAT @ 20%	£13.39
105m ² external render paintwork (2 coats)	
– 3.5 days' labour @ £135 per day	£472.50
4 x 5-litre tins white external wall covering @ £19.70 each	£78.80



VAT @ 20%	£15.76
2 boxes internal filler @ £7.94 each	£15.88
VAT @ 20%	£3.18
1 bottle white spirit	£2.56
VAT @ 20%	£0.51
1 masonry paint brush	£5.99
VAT @ 20%	£1.20
3 x 2" brushes @ £5.40 each	£16.20
VAT @ 20%	£3.24
3 x 9" roller kits @ £5.96 each	£17.88
VAT @ 20%	£3.58
1 packet medium glass paper and 1 packet fine glass paper @ £1.46 each	£2.92
VAT @ 20%	£0.58
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Subtotal	£7,628.54

Ceramic Tiling

Sticking tiles on walls or laying them on floors may seem simple. But it can be extremely time-consuming for the amateur. There are also sequences and starting points that may not be apparent to those who have not done it before.

Always insist on a flexible adhesive for floor tiles laid over underfloor central heating. Use waterproof grout in most wetroom and kitchen environments.

6m ² kitchen wall tiles @ say £30/m ²	£180.00
VAT @ 20%	£36.00
70m ² wall tiles @ say £10/m ²	£700.00
VAT @ 20%	£140.00
8 x 15kg tubs waterproof wall tile adhesive @ £16.82 each	£134.56
VAT @ 20%	£26.91
3 x 3.5kg bags white waterproof grout @ £8.74 each	£26.22
VAT @ 20%	£5.24
3 packets 2.5mm spacers @ £2.40 each	£7.20
VAT @ 20%	£1.44
Labour @ £20/m ²	£1,520.00
50m ² ceramic floor tiles @ say £20/m ²	£1,000.00
VAT @ 20%	£200.00
8 x 20kg bags flexible floor tile adhesive @ £43 each	£344.00
VAT @ 20%	£68.80



3 x 5kg bags grey grouting @ £9.41 each	£28.23
VAT @ 20%	£5.65
3 packets 5mm spacers @ £3.99 each	£11.97
VAT @ 20%	£2.39
Labour @ £25/m ²	£1,250.00
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Subtotal	£5,688.60

Timber Flooring and Carpets

Fitting click-lock flooring on a level base is relatively easy and may be a job for the self-builder. Many carpet suppliers throw the cost of the fitting in for free or at such a cheap rate that it doesn't really make sense to fit your own.

92m ² click-lock engineered timber flooring, single strip 15mm thick @ £30/m ²	£2,760.00
VAT @ 20%	£552.00
6 rolls underlay @ £60 each	£360.00
VAT @ 20%	£72.00
Carpenter and labourer, 3 days @ £258 per day	£774.00
150m ² carpet – supply and lay incl underlay, to include loft area, @ say £25m ²	£3,750.00
VAT (not recoverable) @ 20%	£750.00
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Subtotal	£9,018.00

Landscaping

This assumes a 1,000m² plot. No flower beds or hard landscaping other than pathways, patios, driveway and fencing have been allowed for. Regulations stipulate that driveways, or areas of hard paving greater than 5m², to the front of a house must either be in permeable material or have drains to prevent surface water finding its way onto the carriageway. These costings allow for a covered drainage channel across the bellmouth leading to a simple soakaway within the front lawn area.

Hardcore driveway, patio and paths base – 50 tons @ £13 per ton	£650.00
VAT @ 20%	£130.00
Ganger plus 2 labourers @ £39.63 per hour, 4 days	£1,268.16



Digger hire, 4 days @ £200 per day	£800.00
VAT @ 20% (not recoverable)	£160.00
110m ² Bradstone Woburn Rumbled	
50mm block pavers @ £20.99/m ²	£2,308.90
VAT @ 20%	£461.78
50 x 25kg bags kiln-dried sand @ £3.48 each	£174.00
VAT @ 20%	£34.80
6 drainage channels and covers @ £11.50 each	£69.00
VAT @ 20%	£13.80
3 x 3m 110mm pipe @ £14.90 each	£44.70
VAT @ 20%	£8.94
2 drainage collars @ £4.88 each	£9.76
VAT @ 20%	£1.95
1m ³ concrete	£105.62
VAT @ 20%	£21.12
Ganger plus 2 labourers @ £39.63 per hour, 5 days	£1,585.20
705 riven paving slabs – 450mm x 450mm @ £1.30 each	£916.50
VAT @ 20%	£183.30
4 bags building sand @ £32 per bag	£128.00
VAT @ 20%	£25.60
40 bags ordinary Portland cement @ £2.90 each	£116.00
VAT @ 20%	£23.20
Ganger plus 1 labourer @ £27.63 per hour, 9 days	£1,989.36
586m ² turf @ £2.40m ²	£1,406.40
Ganger plus 2 labourers @ £39.63 per hour, 4 days	£1,268.16
Posts, rails and boards for close-boarded fence package, 120 metres @ £20/m	£2,400.00
VAT @ 20%	£480.00
2m ³ concrete @ £105.62/m ³	£211.24
VAT @ 20%	£42.25
Ganger plus 1 labourer @ £27.63 per hour, 8 days	£1,768.32
Subtotal	£18,806.06

How to reduce these costs

- Taking on the role of decorator could save £6,000.
- Carrying out the ceramic tiling, if you know what you're doing, could save around £3,000.
- Laying the click-lock timber floor could save £774. But other forms of timber



flooring might be best left to professionals.

- Laying your own turf could save around £1,200 but remember, it's not just a question of laying — there's a lot of initial preparation and raking.

4

The Hidden Costs of Homebuilding

- 4.1 Design & Site Related Fees
- 4.2 Experts, Surveys & Assessments
- 4.3 Local Authority Charges
- 4.4 Insurances, Warranties & More
- 4.5 Hidden Building Costs



4.1 Design & Site Related Fees

Designers, planning applications, and more

Architect/designer Fees

Fees for house design vary hugely. For a full service – including contract administration and the full ‘hand-holding’ game, an Architect will charge between 7-10% of the build cost, whereas for a partial service, which might just include the initial design work, they tend to work on an agreed hourly rate, which will depend on the size of the project. RIBA quote between £55-150/hour for design work, and clients would be expecting to pay £5-10,000 for work on this basis. The world of house designers contains a huge disparity in fees. You could easily find someone willing to charge less than £1,000 for plans drawing services; while the more experienced and accomplished designers might well charge as much as an Architect. Whether it’s a fixed fee or an hourly rate will usually depend on how much work goes into the scheme (they’ll usually put you on an hourly rate if there’s lots of negotiation involved.) In general, whoever you go to, you should expect to pay between £5-10,000 for design fees. As mentioned, this may be as low as £1,000, or it may be as high as – Homebuilding & Renovating took a call from a self-builder who had just been quoted this from a leading London firm - £50,000. Ouch.

Planning Fees

The current fee for a planning application for a single dwelling is £385 — although this figure can be reviewed at any time. An application will not be accepted without the fees, although if it is a fresh application following a first refusal, you do get a free go.

An application has to include plans showing the layout of the building, the siting of the proposal, and elevations indicating the appearance, height, length and width of the building. This necessitates the employment of a professional from the outset, and this is likely to cost anywhere between £500 – for a job that probably won’t really assist your chances of getting a favourable decision – and £4,500.

For this fee, the designer should normally be able to provide you with a Design & Access Statement, which will state your case and run through the mandatory sections which deal with the use, amount, layout, scale, landscaping and boundary treatment, appearance and access. This can be a lengthy document but, in most cases, is usually just four or five pages long. The savvy self-builder may therefore be able to look at other applications and

save a bit of money by preparing this themselves.

Building Regulations Fees and Inspection Charges

In Scotland the fees for the Building Warrant, including the necessary inspection charges, are paid at the time of application. In England and Wales the fees are paid in two separate parts; on application and then when inspections are required. This often leads to a misunderstanding: the self-builder, believing that they have paid their architect or designer for the fees, then receives an unexpected bill from the local authority.

Charges for Building Regulations applications and inspections vary from authority to authority. The norm is around £700-1,000. If you go down the Building Notice route, which avoids the needs for submitting plans upfront and relies on retrospective inspections, you should expect to pay more on top of this.

Fees (Legal, etc) for Buying the Plot

Buying the average plot and selling the average home can involve the self builder in legal fees of around £1,000 for the two transactions depending on just how complicated the title is. In addition, on the purchase of any land or property, Stamp Duty is payable at 2% of the price over £125,000, rising to 5% above £250,000 and 10% above £925,001. There is also a requirement that all land and property transactions are registered with HM Land Registry. In the likely case that your building plot is an additional property (i.e. not your main dwelling) then you will have to pay an additional 3% stamp duty charge upfront (including on the 0% band up to £125,000, resulting in a 3% stamp duty charge), which can be reclaimed.

Onerous Planning Conditions

Many of the timber frame manufacturers base their indication of average completion costs, after erection of the frame, on fairly standard – if not cheap – materials. Urban sites in the less desirable or attractive areas can often be developed using these materials. However, many self-builders are building on rural or semi-rural plots where the planners may be very sensitive about which materials are appropriate. Changing from a rendered or Fletton brick external wall finish to a hand made brick can treble the material costs, whilst natural stone could be four times the price. If stone features are required then these can easily add £1,500 to a 140m² house. Changing from an interlocking concrete roof tile to either plain clay roof tiles or natural slates would add around £3,500. These materials are also likely to mean higher labour costs. Conversely, many local authorities frown on the use of PVC-u joinery in sensitive planning situations, making a possible saving of around £2,750 if softwood is chosen.

Unsuspected Ground Conditions and Muckaway/Trial Holes

Before buying a plot or a renovation opportunity a soil investigation and survey should always be commissioned in order to assess the type of foundation likely to be necessary (usually costing £500 or so in itself). However, any conclusions will be based upon trial holes that are either bored or dug at various points on the land, usually outside or beyond the limits of the proposed house. It is therefore possible that when the actual foundations are dug, what is experienced could be profoundly different from what was expected, necessitating a change in the type of foundation. This can vary from having to go a little bit deeper in order to avoid a soft spot such as an old pond, with a cost of little more than a few hundred pounds, right through to pile and ringbeam foundations involving extra costs of between £7,000 and £10,000.

The cost of removing spoil from foundations can also be high, currently in the region of £150 per load. Few contractors or groundworkers will give a fixed price for this work and if adverse ground conditions requiring extra digging arise, this will add to disposal costs. Muckaway is also a significant proportion of the cost of building a basement.

Highways Contractors, Sewage Connections and Creating Access

The costs of a standard driveway, approximately 5.5m wide and extending back 14m from the carriageway with turning and parking space, surfaced in gravel but with a tarmac section at the abutment to the road, is around £4,000. If you require the whole driveway to be surfaced in either tarmac or block pavers then the costs will rise by around £1,000.

Only Local Authority Approved Contractors are able to carry out works to, on or under the Highway. Whilst some local authorities will allow ordinary contractors (providing you or they have the necessary public liability insurance cover, typically £2,000,000) to carry out works up to and abutting the Highway e.g. the drop kerb for a new access, others insist that works such as this are carried out by approved licensed contractors. This can have the effect of pushing costs up from around £1,500 to something like £4,500. Connections to sewers within the Highway can cost around £3,500 and, on a busy road, where extra precautions have to be taken and traffic lights provided, the costs can escalate.



4.2 Experts, Surveys & Assessments

The planning application process is paperwork-heavy

Boundaries and Levels Survey

The prudent self-builder will want to establish the proper boundaries and exact shape of the plot, especially if the site is a tight one. At the same time, it is necessary to know the levels of the plot and to have those related to an ordnance datum, and the levels on the drainage details obtained from the water authority. It's difficult to be precise about costs for this service, but it's likely to be between £300 and £600 depending on the size and complexity of the plot.

Parking and Traffic Surveys

In towns and cities, it may be necessary to have a parking survey prepared to accompany an application. This will assess the availability of off-site parking and the impact of vehicles connected to the new dwelling. The cost can be variable, but it is unlikely to be less than £1,000.

Archaeological Surveys

If the site is in an area which is likely to contain archaeological remains or which is a site of historical interest (such as within a medieval village) then the local authority will insist on a Phase I Archaeological Survey being carried out prior to application, with the results accompanying any subsequent submission. The archaeological officer along with the local authority will determine – following advice from interested parties – the extent, positioning and depth of any trenches, and the survey must be carried out by a suitably qualified person or company.

This can cost anywhere between £1,500 and £6,000 on a normal site. At application stage, this will be the extent of this expenditure. If further works are required, these will add extra costs and it is possible that significant findings could halt, alter or delay the construction.

Code for Sustainable Homes Assessment

Many local planning authorities have enthusiastically adopted the disciplines and requirements of the Code for Sustainable Homes — stipulating within consents that any new homes must reach a certain level of that Code. While this does not necessarily have to accompany any application, and may be a condition within a consent, it could be necessary to make contact with and commission a Code assessor at the application stage.



Most won't want a fee at this stage, but the moment they have to properly look at the proposals, they may require a fee amounting to half their eventual charges. These could be anywhere from £775 to £1,500 or more plus VAT. (Although, it's important to note that the Code may potentially be axed in the coming months/years).

Flood Risk Assessment

If the site is on the Environment Agency's or the local authority's maps as being at risk of flooding, then a Flood Risk Assessment (FRA) will be required. The planners will not accept the application unless accompanied by such a report and, quite obviously, whatever is applied for must conform to the requirements set out within the Assessment. The need for a FRA does not necessarily mean that the site cannot be developed. But, it will almost certainly mean that some remedial or precautionary works might be recommended and it will mean that any finished ground floor levels are above the last known or feared flood levels. The likely cost of a FRA is around £1,500 plus VAT.

Bat and Other Wildlife Surveys

The presence of bats (whether real or imagined by others wishing to frustrate the development) will mean that a bat survey may be necessary. This will involve the inspection of any buildings or features on site and then the monitoring of the site over a given period when bats are active, to determine the extent of their occupation. The cost can be anywhere between £1,500 and £3,000.

A similar process will need to be employed for newts, owls and other fauna and flora. The results are unlikely to prevent the development of the site, but may determine what remedial actions are required and may introduce a delay of up to two years while animals and plants are either relocated, or allowed to find an alternative habitat.

4.3 Local Authority Charges

Councils have freedom to charge homebuilders £1,000s

Community Infrastructure Levy

The Community Infrastructure Levy (CIL) was introduced in 2010 and was designed to introduce some transparency for developers and homebuilders to be able to predict what charges they might be liable for. It was also designed to allow local authorities to be able to better predict revenue from the range of development charges currently in place.

Local authorities were encouraged but not obliged to introduce CIL charging schemes and by 2014 between 30-50% of councils had got a mechanism in place. As the cost of the levy directly related to the size of the development, new houses (and even large extensions) over 100m² were liable, including self-builds. Typical charges of £70-150/m² (and much more in some cases) meant that many self-builders were faced with having to pay local authorities £10,000s in upfront costs as a result of gaining planning approval.

In March 2014, the Government legislated to provide an exemption for self-builders, provided they lived in their house for at least three years and could meet certain criteria to prove they were genuine self-builders. This exemption is expected to last three years. You can find out more, including the forms you need to fill out in order to apply for an exemption, here https://ecab.planningportal.co.uk/uploads/1app/forms/form_7_self_build_part_1_exemption_claim.pdf

Affordable Housing Contributions

Self-builders and small developers are increasingly finding themselves liable for Affordable Housing Contributions (AHCs) which, until recently, were primarily reserved for developers building medium and large estates. The Affordable Housing Contribution recently set by Three Rivers District Council in Hertfordshire in its highest value area would be £187,500 for a 150m² property, and even in its lower value area would total £52,500 for the same-size dwelling, which is still a significant sum. This is at the extreme end, but the good news is that, unlike CIL, AHCs are negotiable and can be challenged if they make your scheme unviable. In most cases this process would require the services of a specialist planning consultant.

Section 106 Agreements & Additional Charges

Although the Government has exempted self-builders from the Community Infrastructure Levy there are many planning consents out there with a Section



106 Agreement attached, which will require the payment of infrastructure charges or contributions to affordable housing. These are and will be unaffected by the changes.

In most cases, these payments have to be made by the developer at the time of commencement of work. But some local authorities require payment upfront at the time of application if a Section 106 Agreement has not already been entered into. This can run into the £1,000s and, even if they accept the prior preparation of the Agreement, this may involve solicitor's charges of up to £1,000.

4.4 Insurances, Warranties & More

Administering a project and site is expensive

Finance Costs and Redemption Penalties

It is easy to forget that borrowing to fund a self build project has its own costs. Finance costs will vary according to personal circumstances, but most people find they have to pay a lender's survey/valuation fee on their plot or renovation project of £3–400, plus further fees of £40–50 for each of four or five interim inspections required before the release of mortgage stage payments. Some special offers, such as fixed rates, may also require an arrangement fee of £3–400. If you are using a broker to arrange your mortgage there will also be a fee for their services.

If you are contemplating a mortgage where the stage payments are made in advance, be aware that there will be an arrangement fee and a mortgage guarantee premium starting at £600. Part of this cost, however, is offset as there will be no interim inspection fees.

If you're having to change lenders in order to obtain a stage payment mortgage, watch out for any redemption penalty charges that might be imposed by your existing lender.

Finally, don't forget that from the moment you borrow money, interest is due.

Warranties and Insurances

It doesn't make sense to self build without adequate insurance and warranties and to do so, despite the initial saving, can be a false economy. If you are using a builder and you are not intending to supply any materials yourself, including high value items such as kitchens and sanitaryware, then there is an argument for relying on their site insurance. Otherwise it makes sense to have your own self build insurance policy and this can cost between £500 and £1,000 depending on the size of the overall contract. Although there are now several competitors



offering structural guarantee insurance or warranties for self builders, this has not resulted in any significant reduction in costs. The average self builder can still expect to pay between £600 and £1,000.

4.5 Hidden Building Costs

Costs that probably aren't on your budget sheet

Extra Labour Costs Caused by Delivery Delays

Time is money in any building project and delays caused by lateness or non-delivery of materials can incur extra labour costs for waiting time, plus increased finance, rental and hire costs. Most materials are available from builder's merchants, but if you wish to take advantage of reduced prices for full loads you will probably want to be quoted for direct loads, from manufacturer to site. Bricks and floor beams are usually available within a two week period, whilst blocks have a lead in time of about a week. Trusses and other joinery products, such as staircases and windows, can often have a lead in time of three weeks and at certain holiday times this can be extended. Timber frame manufacturers often have lead in times from order to delivery and erection, of anything from eight to twelve weeks and, unless this is allowed for, it can result in all work on site coming to a grinding – and very expensive – halt.

Wastage of Materials

With extensions, renovations and conversions, the natural inclination of the discerning self builder is to use materials that blend into the original. This means that the choice is often to use second hand or re-claimed materials, and these often carry a premium. However, they also have a high wastage factor making it necessary to over order in the first place, as it can be very expensive or impossible to obtain extras in small quantities. Labour costs may also be increased. Bricks might be of uneven shape or consistency, making the job of selection and laying a slower process. Slates and tiles might well need re-drilling or shaping and this too slows down the work, therefore increasing the price.

Certain new materials such as bricks and blocks have to be ordered in full loads, meaning that you have to buy more in the first place and that, on tight sites, there might be additional costs in disposing of the excess.

Services

Privatisation and the splitting of responsibilities between producers and providers have caused immense complications for those seeking a new supply of services.



Whilst there are scales of charges laid down for things like a new water supply, a temporary stand pipe and the right to connections to sewers, electricity and gas suppliers now quote each individual situation separately.

In a suburban plot or in a large village with most main services, a quotation for supply of water and the right to connect to a mains sewer can vary in price between £500 and £700 in addition to the cost of any associated work to the public highway. Gas can vary from a few hundred pounds to over £700 and electricity from £500 to £1,200. The cost of a new domestic telephone line is about the only constant with a price of £74.99.

The cost of installing the essential services to a more remote location can be vast and this needs to be researched from the outset. Although not strictly necessary at the application stage, and probably not directly required by the planners, the self-builder will want to know whether (and at what cost) services are available — not least because they occasion questions within the application forms.

Theft and Vandalism on Your Building Site

The cost of replacing any lost or stolen tools or building materials should be covered by your site insurance policy, as will the repair of vandalised work. Bear in mind, however, that you will have to cover the cost of the excess – the part of any claim which must be paid by the policyholder. The excess varies from insurer to insurer but is typically at least £400. Most small items that are stolen from site – plant or materials – will not be worth claiming for.

Also not covered is any time that is lost in waiting for replacement materials and the loss of momentum on site this could cause. Certain subcontractors might not be able to wait for new materials and may well have to move on to another site. If you can't get them back later, then it might cost extra to employ other tradesmen to take over the job part way through and complete things. What can't be quantified is the emotional cost that such an event can produce, so take every precaution to avoid thefts from happening by taking site security seriously.

Extra Building Costs Due to Prelims and Extras

Additional building work not itemised in the original contract price is known in the trade as an 'extra.' Depending on the number of changes or additions to the original plans that are requested, the cost of extras can total £1,000s on top of a 'fixed' contract price. Many self builders fail to realise the cost implications of changing their mind – often the additional labour cost is not obvious to a layman – and feel that their contractor or subcontractors are trying to rip them off, leading to disputes, delays and further costs.

The best way to control extras is to make certain that absolutely every detail is



finalised and described accurately within the plans and specification, and then to make absolutely no additions or alterations. This means choosing all of your materials, fixtures and finishes in advance of getting in quotes. In reality, this is rarely practical and even if it were, it is unlikely that changes can be avoided altogether – it is often impossible to turn down ideas that will make for a better home – and so it is a good idea to allow for extras within your budget contingency of 10%.

When you agree a contract with your builder, discuss the basis on which extras will be handled. When you ask a builder or subcontractor to do extra work, agree a price for labour and any materials there and then.

There may also be a cost attached to the fixed costs of running a building site — from a portable WC to security fencing, a site hut, and so on. These costs are usually taken on by a main contractor but if you're running the project yourself, allow something in the budget for these — it can run into the low £1,000s over the course of a building project.

Accommodation and Furniture Storage

If you are living in your old property during the construction of your new home, then whilst you might not have additional living costs you may well have to include interest costs on any additional borrowing. If you have decided to sell up and move into rented accommodation then be aware that the monthly rent might be more than your normal mortgage costs.

Most properties are let on a shorthold tenancy agreement for six months, extendable thereafter on a monthly basis, but sometimes the landlords will require a new fixed term agreement.

Those living in mobile homes will be best off but will have to include purchase and setting up costs within their cashflow projections, although much of the purchase cost might well be recovered upon resale at the end of the project. If you are in a mobile home or in furnished rented accommodation, don't forget to include the costs of storage, which for an average four bedroom house can be around £200 per month.

Scaffolding and Plant Hire

An average sized four bedroom house will need scaffolding for between twelve and sixteen weeks at a cost for hire and erection of around £125 per week. That is worked out on a rate of £12/m for each lift. If your site is on sloping or water-logged ground then it might be necessary to employ a foot scaffold (scaffolding and boarding at or around ground level) and that can add around £10/m².

If there are delays on site and the hire period needs to be extended then there might well be a weekly penalty of around 10% of the total hire charges. Bad

ground or difficult access might also necessitate the hiring of an all terrain fork lift truck in order to get materials on site and that can cost around £250 per week. Shifting loads of muck on site can also mean that you need to hire a dumper to work alongside the diggers and this can cost around £99 per week.

You may also need to allow for hire of some sort of storage facility on site and portable WC facilities for the builders.

Your Own Time and Expenses

Perhaps the least obvious cost of all is that of your own time and expenses in visiting plots, the site, suppliers, architects and so on. The additional motoring costs of driving to and from the site every day can be considerable, as can the cost of the inevitable telephone calls, particularly on mobile phones, to builders and suppliers. There is also a notional cost attached to your own time – which could perhaps otherwise be spent doing overtime, freelance work, or a second job. This is especially the case for DIYers putting in countless hours.



How to Reduce Your Build Costs by Up to 50%

5.1 Keep Your Design Simple

5.2 Don't Get Carried Away

5.3 Corners Add Costs

5.4 Design for Minimum Foundations

5.5 Other Ways to Save Money

5.1 Keep Your Design Simple

Simple shapes mean you can maximise floorspace

Look at the two shapes below and imagine they are the outline of your house. The rectangular house has a perimeter measuring 40m (two walls of 15m, two walls of 5m) in length and the area inside the rectangle is 75m². That means that with this shape, you'll have to build 40m of external wall to give you 75m² of space inside the shape. Over two storeys, you'll have to build 80m of wall to give you 150m² of space.

The square shape has the same perimeter, 40m, but this time, that length of wall encloses 100m² of space, or, on two storeys, the same 80m of external wall now gives you 200m² of space.

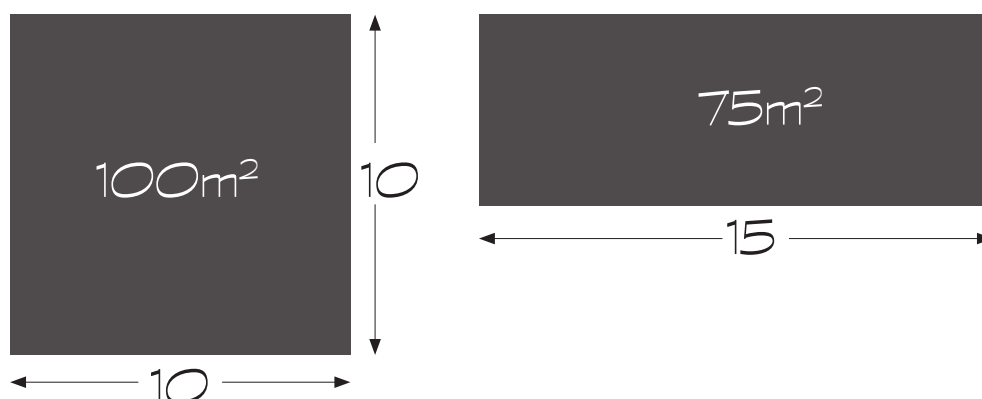
In other words, by simply using a different basic shape, you have just increased the size of your house by 25%. Or, in more practical terms, over two floors you have just given yourself an extra 50m² of space, pretty much free of charge.

If you can go to a third storey by utilising the roof space for extra rooms and if you use a gabled rather than hipped roof at a 42-47° pitch, you can gain up to a further 40% extra usable living space.

These 'roof rooms' generally come at a much lower build cost/m² simply because you are now sharing the same foundation cost between three floors and you still have the same amount of roof over the top of the extra rooms as you would have had if they weren't there.

Using this principle, you can simply and cheaply achieve a spacious four to five bedroom, three bathroom, low-cost home on a relatively small footprint. If you only need three bedrooms, but more living space, why not use the roof space as an additional living room?

This isn't to say that the only way you can build cheaply is to build square houses. Have a look around most regular housing developments – the developers have spent decades trying to build houses to the same quality for less – and you'll see lots of simple shapes.





GEORGIAN SIMPLICITY

The square house shape is the most efficient way to create maximum space at minimal external walling cost. In the case of this home – self-built by Editor Jason Orme – square and rectangular shapes can lend themselves to Georgian-style designs (which is why most speculative developers love them so). The build cost (in 2006) was approximately £890/m². In fact, extra savings could have been made — by using a gabled rather than a hipped roof and the addition of the garage adds quite a lot of extra cost.

5.2 Don't Get Carried Away

*Do only what you need to —
concentrate on the basics when it comes to specification*

Many self-builders think that before they start their first self-build project, in order to be able to make all the right decisions, they need to learn all there is to know about homebuilding. This is not the case. Often, the more you know, the more confused you get. The more options you find out about, the more money you'll think you'll have to spend to 'get it right'.

In reality, the simple methods and materials that housebuilders have been using over many years are also usually the best options if you are on a tight budget. The fact is that if a product or system is commonly and widely used



across the industry and across the country, there will be more people providing it and there will therefore naturally be more competition on price.

If you spend as much of your free time as possible in the early stages getting and comparing quotes for all the basic materials and services you are going to need, from as wide a selection of sources as possible, you will usually be surprised at the price variances.

For example: good-looking bricks could cost anywhere between £250 and £750/1,000. If you just go to one or two suppliers you may find that your favourite brick costs £600/1,000. However, if you spend a day visiting all the suppliers in your area, you will find that some of them stock different makes of bricks. By seeing more choices, you may find another brick you like just as much for £300/1,000.

For a four bedroom detached house you may need 15,000 bricks. The saving you could make by going for the cheaper brick could therefore be £4,500. If you do the same thing for roof tiles, windows, kitchens, bathrooms, tiles, ironmongery etc. you could save many thousands of pounds on the project as a whole, just by spending time shopping around.

Working at saving on the basics doesn't mean that you have to completely ignore all the new ideas and products that you will see, but before you commit yourselves to spending your limited funds on what might be classed as 'things you want,' just make sure you have all the 'things you need' covered first.

In my time as a self-build project manager I have found that this simple principle is probably the hardest to instil into clients with tight budgets. It is, however, one of the most important.

5.3 Corners Add Costs

L-shaped houses look great, but add complexity to the build process

Every time you add a corner when designing a house, you increase the 'unit cost' of the build (i.e. the build cost/m²). The cheapest design to build has just four corners.

Look at the two shapes above. The first shape has four corners; as with our previous example it has a perimeter of 40m and encloses 100m² per storey or 200m² over two floors.

The second shape has six corners, still has a perimeter of 40m, but now encloses an area of just 64m², or over two storeys, 128m².

This time you have lost 72m² from the maximum amount of space that could be enclosed within the shape. That's a considerable loss, equating to about six



double bedrooms!

Using the second shape for your house, you have simply moved part of two of the external walls from the first shape (which are marked A and B ABOVE) and added two extra corners, so that instead of including floor area, those walls now exclude floor area. It's as simple as that.

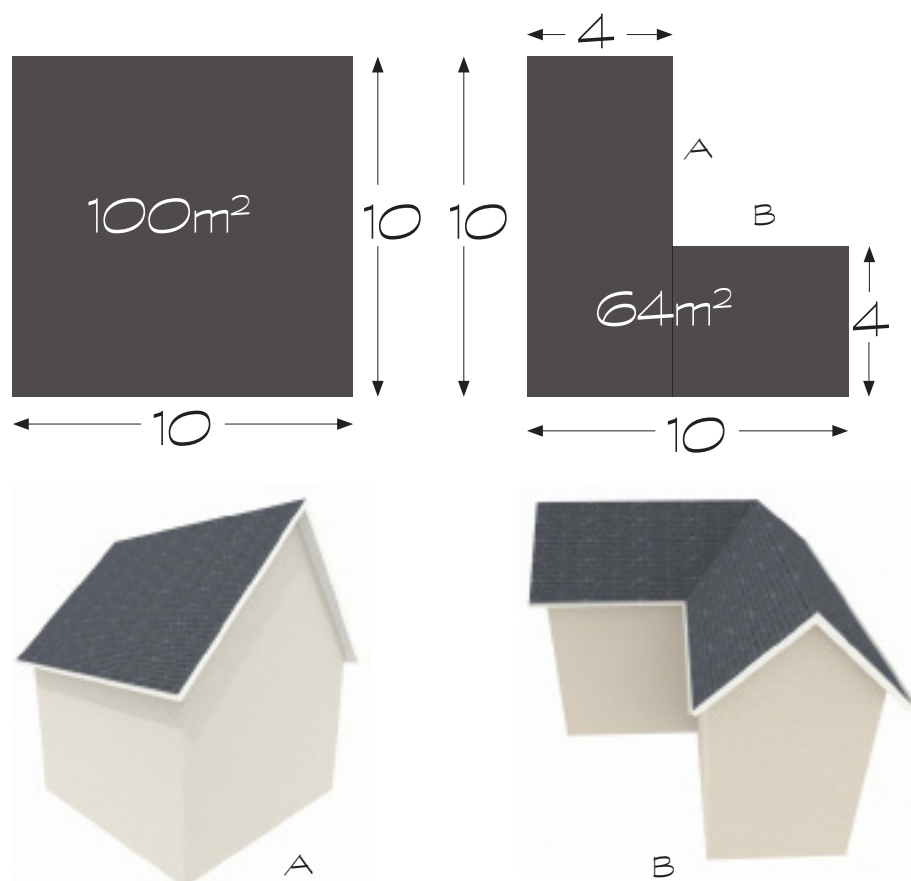
However, it gets worse. Now that you have created a floorplan made up of two rectangles, the roof becomes more complicated and more expensive to build — look at the two roof layout drawings (TOP RIGHT) for the two shapes of house.

Roof A is a simple 'up and down' roof. It's fast and cheap to build and gives you the option of easily opening up a third floor and getting up to 40% extra floor area within the existing building.

Roof B is more complicated to design. It will take longer to build and cost significantly more. It also cuts down the possibility of using the roof space for extra rooms.

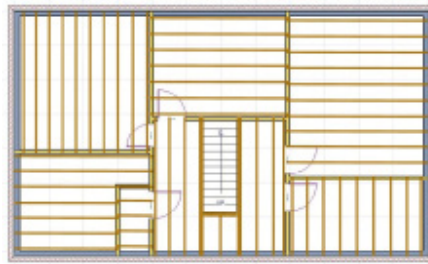
Again, this article isn't trying to get you to build square houses — but you will see how going away from the 'simple square' not only loses available floor area, but can also increase the cost/m² of the floor area that you are left with.

Bear these facts in mind when you are designing your house and you could possibly save tens of thousands of pounds in build costs on your project, whilst also giving yourself the maximum use of the space available on your plot.

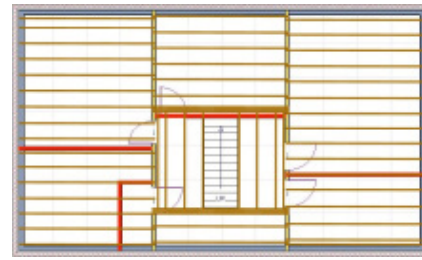


5.4 Design for Minimum Foundations

*The less you dig under the ground,
the less you'll spend and the lower your risk*



OPTION 1



OPTION 2

Underground is the big unknown factor in any new build project. Above ground things can be measured (“We’ll need 15,000 bricks, 15 windows,” etc). However, until you start to dig holes in the ground, you can never be certain what you are going to find — even if you go to the expense of doing trial digs, nothing can guarantee the composition of your ground until you start to dig the footings.

If a wall is classed as non load-bearing and it is built in timber (and even sometimes if it is built in blockwork), it does not usually need a foundation. Instead, it can often sit directly onto the floor slab. So, if you can take the load off a wall, you can often do away with its foundation.

Look at the simple example illustrated above right. In Option 1, joists sit on all of the internal walls, thus, all the internal walls are classed as load bearing and need foundations. However, in Option 2, I have shown the joists ‘spanning over’ the walls marked red (in other words they don’t put any load onto them). This makes the five red walls non load-bearing so they don’t now need foundations.

This leaves only the external wall plus two internal walls needing foundations, potentially saving thousands in groundworks costs. Now, as well as saving on the cost of standard foundations, if you hit a problem underground, it won’t have such a dramatic effect on your budget — a way to avert disaster!



5.5 Other Ways to Save Money

Significantly reducing build costs requires a holistic approach

Utilise the attic space

By making use of the attic you can increase your usable floor area and value by up to 40% at minimal extra cost. Attic trusses will actually cost £1-3,000 more than standard trusses, but in this case it's worth it.

Roof tiles

The low-cost options are often large-format concrete tiles. If you want small tiles, handmade tiles or natural materials, you'll spend more.

Don't include a chimney

Chimneys are not generally needed these days (unless you really want an open fire). They are expensive to build and, because they stick out from the side wall, can significantly reduce the internal floor area of your house (especially if you are building on a narrow plot). By doing without one you can save £2-8,000.

Quoins and surrounds

Instead of buying stone features for the windows and corners, consider using a contrasting brick or raised render (painted in a different colour). They can be very effective and sometimes don't cost any extra.

Think twice about including bay windows

Here's why — you'll need three windows instead of one; they require more work underground to form the foundations; you'll need special corner bricks and special lintels; an insulated, (usually) tiled roof and internal ceiling are probably needed; and expensive lead flashings and cavity trays have to be handmade and fitted. As a result, the extra cost is usually £2-4,000 per bay.

Keep landscaping simple

Turf the gardens: Turf starts at around £1.20/m² and each 'sod' has its own bit of topsoil on the back of it. To turf all your garden areas, just level, rake to remove stones then roll — and get the turf ordered. An average garden area can be transformed for less than £500.

Gravel: Pathways and even your driveway can be finished in gravel to give a very pleasing finish. There are many types and colours to choose from and you



can mix and match to create some nice effects. Always try to order full loads rather than the tonne bags — this will save you a lot of money (stone starts from about £15/tonne loose or about £35/tonne bagged, depending on where you are in the UK).

Patios: 2” by 2” concrete riven-effect slabs can be bought for just a few pounds each and will quickly give you a decent patio area. If you are feeling brave, you could try laying them yourself too.

Fencing: Post and rail fencing usually comprises 4” treated posts at 6’ to 8’ centres with 4” by 2” treated timbers simply nailed to them. Using metal spikes instead of concrete to set the posts will make it a faster, easier and cheaper job which you may be able to do yourself.