

# Complete Guide to Renovating a House

## PART FIVE: STRUCTURAL CHANGES

Continuing our major new series for those taking on old houses, **Natasha Brinsmead** looks at how to handle key structural improvements

### BASEMENT CONVERSION

Many Georgian, Victorian and even Edwardian houses were built with cellars — in fact they were common right up until the 1930s. If you are lucky enough to find that your renovation project has a cellar or basement (a whole underground floor as opposed to a room), then converting it could be the ideal way to gain more space without extending outwards.

Converting a basement is a job for the professionals and there are many specialist firms out there. The first thing you should do is get a couple of these companies in to assess the work that would need to be carried out. In many cases the basement floor needs to be lowered to ensure there is sufficient headroom (no minimum requirement under the

Building Regulations but 2.1m is a practical height to aim for). This will mean that the foundations will have to be underpinned for support.

The basement will also need waterproofing — this involves lining it with a membrane before a secondary wall is built around the lining. Any water that then proceeds to enter is collected in a sump and then pumped away.

When it comes to who will carry out the work, there are several options. You could get an architect to draw up the plans, recommend contractors and project manage, or you could oversee the project yourself. Alternatively, you could employ a specialist basement conversion company who will take on all aspects of the project.



#### WHAT WILL IT COST?

The cost of a basement conversion will depend on whether the floor has to be dug out and the foundations underpinned, and also on whether the existing floor is a concrete oversite slab as opposed to traditional floor joists (the former is more expensive). Prices for a straightforward conversion start at £750-£1,400/m<sup>2</sup>, rising to £1,500-£2,000/m<sup>2</sup> for those with more complex requirements.

#### SPECIALISTS

Whilst it is possible to waterproof a basement yourself, the range of potential factors affecting potential damp and water ingress is significant and, as such, specialist help in specifying the right product at least is important. Try Delta Membranes ([deltamembranes.com](http://deltamembranes.com)).

## CONVERTING THE LOFT

One of the most popular, least disruptive and cost-effective ways of adding another room to a house is to convert the existing loft.

Much of the mess and disruption associated with other extensions can be contained with a loft conversion, with rubbish often going straight out through a waste shoot. The only form of major disruption comes with the fitting of the new staircase on the floor below.

A straightforward loft conversion, carried out by builders or a loft conversion specialist, should only take around four to five weeks.

The main area which can incur extra cost and time is the plumbing and electrics — many loft specialists will insist that a qualified electrician and plumber run checks before they will give a quote. However, plumbing for a bathroom can usually be added on to existing plumbing below, with the soil pipe being extended upwards. Problems occur when the existing boiler cannot keep up with extra demands, so be sure to check this out beforehand.

As a general rule, a fully fitted loft conversion should cost between £750–1,000/m<sup>2</sup>, meaning the typical 5x5m conversion will cost between £18–25,000, although significant savings can be made by specifying rooflights (at around £400–700 each) rather than needing dormers at around £2–4,000 each. It's actually not an impossible task for the DIYer to undertake, which will reduce costs to the low £1,000s.

JEREMY PHILLIPS

### info

As a rule of thumb, if you can measure 2.3m from the floor to the roof in your loft, at the highest part, you have sufficient head height for a conversion

#### The Regulations

Loft conversions will need to gain Building Regulations approval. Fire safety rules in particular are quite onerous — in this case, the requirement of a self-closing, 30-minute fire-rated door



### THE RULES

Most loft conversions fall under Permitted Development rights (depending on the size of any dormer windows fitted), but permission will still need to be sought if you live in a listed building and, in some cases, a Conservation Area. Building Regulations state that if the loft is to be converted into a bedroom, playroom, study or bathroom, there must be a permanent staircase (as opposed to a loft ladder).



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## INTERNAL REMODELLING

Many older properties have layouts which just don't suit modern living, with a maze of smaller, separate rooms, linked by inner hallways, with pantries and lobbies everywhere you turn, small hallways and long narrow landings all commonplace.

So it is no wonder that many renovators choose to remodel these internal spaces to create a more free-flowing, open layout.

Doing this means removing walls, which in some cases is a simple job. However, when the wall is load-bearing and plays a significant role in the structural integrity of the rest of the house, then it can be a little more complicated.

The good news is that pretty much any wall – structural

or not – can be removed. Structural walls will have to be replaced with structural steelwork, which will be supported either on the existing walls, or on newly constructed 'nib' walls or piers.

If you plan on removing intersecting structural walls, a new column may need to be added to support the intersecting steels that will be required for support. A structural engineer will be required here (see overleaf for more information).

Steels are usually added below ceiling level, but it is also possible to integrate them, out of sight, within the floor/ceiling void. This will inevitably add to costs as it involves removing the floor above and putting it back.

### info

Adding a stud partition wall is a task within the capabilities of most DIYers. See [homebuilding.co.uk/advice/diyguides](http://homebuilding.co.uk/advice/diyguides) for more.



### info

While internal remodelling doesn't require planning approval unless the house is listed, you will usually need to meet Building Regulations. See [planningportal.gov.uk](http://planningportal.gov.uk) for more



### MONEY-SAVING TIP

When opening up internal spaces, changes in floor level

often have to be taken into account and are common in older properties. Bear this in mind when considering knocking two rooms into one as getting the floors level will add to costs.



## STRUCTURAL ENGINEERS

**Structural engineers are concerned with all aspects of a structure and its stability. They work alongside architects.**

If your project involves the removal of load-bearing walls, cutting into roof timbers, widening window or door openings or removing a chimney breast – basically anything that is likely to alter the structure of the building – then consulting a structural engineer is a very good idea and often essential. They will be able to advise you on the placement, size and type of steel beam required for the removal of walls and the like and can also give you alternative options where what you have planned is not viable. Your builder, architect or even the building control officer will be able to tell you whether or not you should be getting advice from one – which in most cases, you should.

How involved a structural engineer gets in your project will depend on the complexity of the work. It can vary from a simple site visit and some recommendations, to a full set of structural drawings.

Structural engineers charge between £450-£800 per day. On a simple project, requiring just a site visit and a set of calculations, a day may be all that is needed.

## GARAGE CONVERSIONS

If your home comes with an integral garage, you might find that the space is better served as additional living accommodation than for the storage of bikes and tools (of course, they're never used for cars!). The good news is that it is perfectly possible to convert a garage and, although you should check with an estate agent, the additional value of the living space usually outweighs the value lost through losing the garage. Work does not tend to need planning permission but will need Building Regulations approval — there are also some fire safety issues to consider.

existing garage wall will likely have single leaf construction, you'll need to apply a compound or waterproofing breather membrane (similar to a basement conversion) to the walls, along with insulation which can be hidden behind plasterboard as part of an inner leaf.

In terms of getting the work done, there are some specialist contractors (charging around £5-10,000 for the work) but it can usually be handled by a regular contractor. ■

### info

**If you're carrying out work that is either on the boundary of a neighbour's property or affects a shared wall, then you'll need to observe the Party Wall Act 1996 ([planningportal.gov.uk](http://planningportal.gov.uk))**

### Making the Most of the Garage

Architect Your Home (0800 849 8505) extended the single storey bay right across the front of this semi-detached 1930s property to ensure that the garage conversion and new porch blended in seamlessly

## ALL ABOUT PROPS

When any wall is removed, the floor above must be supported. This should be done using props — often referred to as Acrows (despite there being several brands available). If the first floor joists run parallel to the wall being removed, the load above should be supported using needles through the wall, and supporting these on props instead.

One of the key tasks is to level the floors (garages have to be at least 100mm lower than the dwelling's usual level) and can usually be made up by adding a damp-proof membrane if required and sufficient floor insulation. You'll need to add a new infill wall to replace the garage door opening (which won't have foundations) and bear in mind that, as your