1 Extending and improving your home – an introduction

Houses are like people. They are conceived (in the mind of the designer). Over several months they grow (during construction) and they are eventually born (when completed). They grow and have to change to meet the changing circumstances of a growing family (extra bedrooms or new conservatory) and gradually mature as they grow older. If they go out of fashion they are updated with all the latest trends (en-suite bathrooms and central heating). Sometimes they get sick (dry rot, woodworm and rising damp) and have to be cured so that their lives can be extended. Eventually they get very old and then it may be necessary to put them out of their misery (although we do not advocate euthanasia here!).

Unlike people, houses are virtually immortal and as they get very old they usually become more interesting and more loved (even if they are a bit crotchety).

There is no doubt that carrying out significant changes to your own house can be incredibly rewarding. We all have our own ideas about the sort of house we want to live in but, unfortunately, we nearly always have to buy a house that does not come up to our expectations. So then we have a choice, keep moving in the forlorn hope that we will find the perfect house, or try to make the one we are living in as near as possible to our perfect house.

It is reckoned that the three most stressful things that can happen to you in life are (in order of greatest stress)

1. The death of a loved one,
2. Divorce and
3. Moving house.

In this book we cannot help with the first two but, hopefully, we can eliminate the stress of the third by helping you to avoid moving.

In this chapter, a few basic questions are covered, such as

- Why would you want to extend or improve your house anyway?
- Where did this idea of controlling or doing the alterations yourself come from?
- What processes and procedures do you need to go through to have the most chance of success when making these changes?
- Are there a few simple things that you need to know to help you avoid the tiger traps that you might otherwise fall into?

Extending and Improving Your Home: An Introduction, First Edition. M.J. Billington and C. Gibbs.

WHY EXTEND OR IMPROVE YOUR HOME?

There are almost as many answers to this question as there are ways of actually doing the work. It is incredible to think that only 5 years ago property prices seemed that they would continue inexorably to rise by considerably more than the rate of inflation year after year. After all, it had been like this for such a long time that your house was seen (perhaps incorrectly) as not just a place to live but also as an investment. How else, the theory went, could you expect to beat inflation so easily. People tended to move rather than face the stress and strain of '*having the builders in*' and they were often put off carrying out improvements for fear of getting ripped off by unscrupulous tradesmen and builders, and then of course there was '*the mess*'! Strangely enough, when they actually did move, they would normally replace the bathroom and kitchen and carry out a complete redecoration!

How things have changed. The credit crisis of 2007, the subsequent recession and the resultant fall in houses prices (and current stagnation in the market) have convinced most people that unless you have to move, do not – improve or extend instead.

According to a report by Sainsbury's Finance, an estimated £3.2 billion worth of personal loans was taken out in 2010 for home improvements alone, and it is likely to be a similar figure in 2011 – with one in five personal loans being taken out solely to pay towards improving people's homes.

Arguments against moving include

- **The high cost**: At least £7500 in stamp duty for a property over £250 000, professional fees payable to estate agents and solicitors amounting to another 3 or 4% of the sale price, removals costs adding another £1000 or £2000 – for an average priced house it can cost between £15 000 and £20 000 to move, and much more as you go up market.
- **The stress of selling your house and buying another one, especially in a stagnant market**: According to Hometrack (www.hometrack.co.uk) the average time it takes to sell a home stood at 9.4 weeks in July 2011, which is almost the longest time taken to sell a property since the survey began in 2001 and '*despite weak consumer sentiment the housing market is currently in broad equilibrium although prices continue to slowly edge lower*', in other words – stagnant!
- **The difficulty in raising a mortgage deposit**: The deposit needed will vary with the type of mortgage sought and, generally speaking, the lower the deposit, the higher the interest rate you will have to pay and the higher the arrangement fee. At present minimum deposits start at 10% of the valuation and go up depending on the product sought. That is a sum of at least £25 000 to be raised.
- **The general state of the economy**: Do you really want to spend all your savings and end up with higher mortgage repayments when you may not have a job next week?

So, unless you have to move for personal or business reasons, why spend so much money moving when you could spend it on the house you currently live in and make it how you want it to be?

Some of the reasons often put forward for extending and/or altering your home are

- **It will add value to your home**: To check if this is true you should first find out the current market value of your home by getting it valued by an estate agent. Then get an estimate of its potential value once the proposed improvements have been completed

(not forgetting to include the estimated cost of the improvements in your calculation). Unless your home is in an exceptionally sought after area and/or is in need of drastic improvements and repairs it is unlikely to gain a great deal in value by being improved. Additionally, the authors have seen cases of 'over improvement', where a house has been priced out of its area by too many extensions and alterations.

- **Improvements will make your home more attractive to potential buyers**: This is undoubtedly true, provided that the improvements are well executed, well designed and are in keeping with the design of the house and its general location. If poorly constructed and out of sync with the ambience of the area the 'improvements' will actually make your house less attractive to buyers. It is often the case that, having gone through the processes of alteration and improvement, many people decide that they actually rather like their house, so they decide not to move after all! Additionally, you could argue that if you spend, say, £25 000 making your house more attractive to buyers, why not simply reduce the price by £25 000 and save yourself the hassle?
- **Construction companies may well be lowering their prices to compete for work to stay afloat**: Do not ever use this as an excuse to improve your house. Whilst it is true that general construction costs are relatively low at present, companies that undercut the general market rates to get work usually end up cutting corners in the construction, or they look for ways to claim extras during the contract works, or they go bust halfway through the project! Be prepared to pay the market rate using reputable builders, after all if you pay peanuts you get monkeys (and you do not want to be the monkey!).
- **The improvements will make my house a better and more comfortable place in which to live**: The best reason of all and the only one that really matters in the end.

Ideas for extending and improving

Home improvements can be divided into the following general classifications:

- Ordinary regular maintenance, such as painting exterior woodwork (windows, doors, fascia boards, rainwater gutters and downpipes etc.), replacing the odd slipped roof tile and changing tap washers.
- Necessary repairs brought about by lack of maintenance, accidents or emergencies, such as replacing perished rainwater gutters, downpipes and fascia boards, renewing roof coverings and unblocking foul drains.
- Repairs needed because of defects that arise, such as renewing a defective damp-proof course or treating timbers for woodworm or rot.
- Internal redecoration to reflect personal tastes.
- Internal structural remodelling by removing walls and chimney breasts to create more or different space.
- Upgrading out-of-date services installations, such as rewiring and new central heating systems.
- Refitting and updating kitchens, bathrooms, utility rooms and bedrooms (e.g. installing fitted furniture).
- Installing new bathrooms, kitchens and utility rooms within the existing spaces (e.g. converting a bedroom to an extra bathroom after the kids leave home!).

- Converting 'dead' space to living space, such as loft, garage and basement conversions and the conversion of outhouses and sheds to, for example, garden offices for people working from home.
- Single and two storey extensions to provide additional improved accommodation of any kind.
- Upgrading the thermal performance of the dwelling to make it more energy efficient and reduce household energy bills, such as new windows and external doors, upgraded insulation in walls, floors and roof and the installation of energy efficient heating and lighting systems.
- Installing energy efficiency measures, such as photovoltaic panels, solar water heating, wind turbines and so on.

It is quite a long list and when people first climb onto the property ladder they are usually unprepared for the likely expenditure involved in owning a home of their own. In Chapter 4 maintenance issues are looked at. It is made clear that regular planned maintenance, not responsive maintenance, is the best and most cost effective way of looking after your home. The old adage of 'a stitch in time' really is the best answer when it comes to looking after your house.

DO-IT-YOURSELF

In Chapter 3, the pros and cons of DIY against getting a builder to do the work are considered. The DIY phenomenon is, in fact, quite a recent innovation and saw the start of a move away from the traditional way of commissioning work from a builder. In his poem, *A Truthful Song* written in 1910, Rudyard Kipling writes in a section on The Bricklayer:

> *'I tell this tale, which is strictly true,*
> *Just by way of convincing you*
> *How very little, since things were made,*
> *Things have altered in the building trade.'*

This attitude was true up until the end of World War II. It is generally agreed that the DIY movement (like so many other things) started in the United States in the late 1940s and early1950s. In the immediate post-war period, as the American economy boomed and full employment returned, a comprehensive building programme spread private dwellings across much of the United States. After the upheaval and disruption caused by World War II, it is as if many citizens, including returning ex-servicemen, sought the safety and security of their own homes, and improving and extending their property was an expression of this need. This desire was assisted by two major technological developments:

1. New materials, such as hardboard, plasterboard, emulsion paint, Formica and plastics.
2. In 1946, the American tool company Black & Decker introduced its Home Utility line, the world's first popularly priced drills and accessories. Such was the popularity of these products that the one-millionth $\frac{1}{4}$-inch Home Utility drill came off the assembly line only 4 years later in 1950.

DIY took a little longer to reach the United Kingdom. This is mainly due to the following stark differences that existed between Britain and the United States as a consequence of the war.

- Many UK cities were partially destroyed by mass bombing raids and strikes from unmanned explosive devices (the V1 flying bomb or 'doodlebug' and the world's first ballistic missile, the V2 rocket) throughout the war. In London alone, over one million houses were destroyed or damaged during the Blitz between 7 September 1940 and 10 May 1941. By contrast, there were no air raids on the American mainland during the war and no buildings were destroyed.
- The housing stock in Britain was much more diverse and, of course, covered a much longer period.
- At the end of the war the United Kingdom was effectively bankrupt. During the war the United States had supplied war material to Britain and the other Allies under a program known as Lend-Lease. A total of $31.4 billion worth of supplies and equipment was supplied to Britain. Although there was no charge for the Lend-Lease aid delivered during the war, in 1946 the post-war Anglo-American loan further indebted Britain to the United States, resulting in an initial loan value of £1.075 billion. Payment was to be stretched out over 50 annual payments, starting in 1951. The final payment of $83.3 million (£42.5 million) was made on 29 December 2006.
- The level of owner-occupation in Britain in 1951 stood at a mere 28%. Only 18% was local authority rented housing, so the majority (54%) was owned by private landlords.

So, in Britain, returning ex-servicemen often found that their homes had been destroyed, the economy was in severe recession so jobs were hard to come by, inflation was at around 5% (historically high at that time) and like it or not they would be renting substandard housing from a private landlord. Consequently, they had no incentive or interest in improving their homes.

Recovery was slow and the shortage of new houses in Britain until the late 1950s meant that buyers had to take what they could get, which often meant older properties. Traditionally, such older properties were decorated in dark and sombre colours, few had inside toilets or bathrooms and none had any form of central heating. However, the mood eventually changed and during the latter part of the 1950s the economy improved, resulting in a housing boom which saw the numbers change drastically, so that by 1961 the number of owner-occupiers had increased to 43%, occupation of local authority rented housing had increased to 24% and the private rented sector had shrunk to 33%. People in older properties wanted to upgrade and brighten up their houses but the shortage of money and the lack of suitable contractors meant that they had to do it themselves.

Two principle sources of information came to their rescue:

1. Magazines such as *Practical Householder* (first published in 1955 and the first DIY publication of its kind) and *Do It Yourself* magazine (first published 1957 and said to have reached a readership of around 3 750 000 monthly by March 1960).
2. The launch of the first DIY series of programmes on British television in 1955 (Bucknell's Do It Yourself), which attracted 7 million viewers. This was followed by a further series in 1962 'Bucknell's House', which followed a 39-week BBC project renovating a house, bought for £2250, in Ealing (and now reckoned to be worth £800 000!).

It is claimed that these programmes alone kick-started the DIY industry in the United Kingdom, which today is worth around £8 billion annually. However, in the 1960s DIY was a hobby of the few and obtaining the necessary materials in the late 1950s and early 1960s was no small task. These had to be obtained from traditional builder's merchants and timber yards (where the service could be intimidating to the average DIY enthusiast) or small 'handyman' shops, often in backstreets. Therefore, it may be no coincidence that in 1969 Britain's first major DIY store was founded by Richard Block and David Quayle; the first store opened in Portswood, Southampton, in a disused cinema. Although initially called Block and Quayle, the name was soon shortened to B&Q.

Until recently the DIY industry was dominated by the big four – B&Q, Sainsbury's Homebase and Wickes, although Focus ceased trading in May 2011. Recent consumer research indicates that the superstores are dominant in the sector but it is equally clear that there is a substantial amount of business that goes to non-specialists. For example, Wilkinsons is highly successful and attracted more customers than Focus.

Current research has shown that there has been a decline in DIY sales in the last 2 or 3 years; some blame it on the recession but the causes may be more complex. One of the major developments of the latter stages of the consumer boom up to late 2006 was that people tended to stop doing DIY and started employing others to do it for them. As tradesmen are more likely to use a builder's merchant, DIY retailers lost share. At present there seems no doubt that the DIY industry will stagnate until a general improvement in the economy. It is evident that people tend to do most DIY soon after moving house. With far fewer transactions in the current housing market, this alone means that there will be less cause to do DIY.

EXTENDING AND IMPROVING YOUR HOME – PRACTICES AND PROCEDURES

To get a good understanding of the basic procedures behind the improvement and extension of your home, the most comprehensive information may be found on the Royal Institute of British Architects' (RIBA) web site (http://www.architecture.com). Known as the *Outline Plan of Work* it takes you through a number of stages from the inception of the project, when you start having vague ideas about what you want to do, to the post-completion stage, when you tie up all the loose ends after the project has come to a satisfactory conclusion. There are several stages identified by the RIBA.

Stage A – Appraisal

Here you identify what your needs are and what you want to achieve. You would also work out the financial practicalities of a range of options that you might have and look at any possible constraints on any of the proposals. After carrying out these processes you should be in a position to list out under each of your options the pros and cons, so that you can decide which of them (if any) you should proceed with. Such processes are usually called 'feasibility studies'.

Stage B – Design brief

From your feasibility studies you will come up with an initial statement of requirements. This needs to be developed into a Design Brief, which should confirm the key requirements and constraints. You should also try to identify how you intend to get the work done (e.g. employ a professional designer to do everything for you, employ a builder to do all the work, buy the materials yourself and employ subcontractors to do each stage or do it all yourself etc.) and you will also need to decide on the experts you need to employ to design those parts of the works that you cannot do yourself, such as a structural engineer or specialist services engineer.

Stage C – Concept

You have now made some positive decisions about what you want to achieve and how you want to achieve it. So now you need to develop your design brief into what architects call a Concept Design. At the end of this stage you should be able to determine the form in which the project is to proceed and ensure that it is feasible functionally, technically and financially. You would also review the decisions you have made about how you want to get the work done and what it is likely to cost.

Stage D – Development

Your concept design can now be worked up into plans, specification of principle materials (external walls, roof finish, position and type of windows and external doors), the structural support system and the major services, and the costings can be checked to make sure you are still within your budget. This stage ends with the preparation and submission of your planning application (if you need one).

Stage E – Technical design

Now you get down to the nitty gritty of the technical detailing. This is where you really do need expert advice so that you can be confident that your design will

- Pass building regulations;
- Conform to acceptable standards of building construction;
- Be sufficiently well detailed and described to allow contractors who are tendering to do this accurately and
- Not contain any design elements that will be unsafe to construct.

Stage F – Production information

Production information is needed so that you can obtain accurate competitive tenders if you are going down this route to have your work done. It usually means preparing a specification that can be priced by the various contractors who are tendering for the work. The specification will vary in detail depending on the complexity of the work; for simple schemes it could be simply a written description of what you want to do, structured so that each item of work is described and can be priced separately. This is termed an itemised specification and it is normal to describe the pieces of work by trade and/or element, such

as foundations, brickwork, joinery, plumbing, roof tiling and so on. The advantage of an itemised specification is that when it comes to doing the work and you decide to change your mind about, for example, the number of socket outlets you would like, then that element can be readily identified and a revised cost worked out accurately. If you just have a single figure for the entire project, how do you know whether or not you are being overcharged for the item. Of course, if you employ a professional to manage the job for you he will be able to advise you and negotiate with the contractor from a position of knowledge and experience.

For very small jobs it would not be necessary to prepare a fully itemised specification but it is still a good idea to have an accurate description (sometimes called a 'Schedule of Work') of what you want to achieve so that there are no misunderstandings with the contractor.

This stage ends with the preparation and submission of your building regulations application and planning application (if you need one).

Stage G – Tender documentation and stage H – tender action

If you have decided to go out to competitive tender for your work (it is normal to obtain at least three separate tenders) you will need to prepare three separate sets of all the design and specification information and tell the contractors the date when you want the tenders to be returned. For larger contracts, late submission of a tender would normally disqualify the tenderer, however for smaller scale domestic work it is usual to accept the tenders even if they are a bit late, and in boom times it is not unknown for tenderers to not bother to submit a price! You should, of course, gauge their interest in submitting a price before sending them the documents. Stage H consists of evaluating the tenders when they have been returned. Do not just look at the bottom line and do not imagine that you have to accept the lowest tender. If you have asked for itemised pricing you can compare individual prices for the different parts of the work and see if a contractor has loaded a particular item because he thinks that it may lead to extra work that can inflate the costs later in the contract. One such item is foundation excavation. If, when the building control officer arrives on site, he is not happy with the depth of the foundation excavation because the subsoil is not as expected, he may ask for the foundations to be dug deeper. Such unknowns are usually dealt with by including a 'provisional sum' in the specification where you can tell the contractor to allow extra money to cover this eventuality. If the foundations do not have to be increased in depth then you simply disregard the provisional sum. Another way to budget for unexpected items is to include a 'contingency' sum in your specification. This is usually done by stating that a certain percentage (say 10%) is to be added to the final tender figure for works as yet unknown or undefined and you may or may not need to spend this.

Stage J – Mobilisation

After you have received the tenders and have decided which one to accept you will need to enter into a contractual arrangement with the successful contractor. As is discussed in Chapter 3, you can opt for a formal standard contract or can simply accept the contractor's price by a letter of confirmation. Most reputable contractors will have standard terms and conditions of business and you should study these carefully before signing the agreement. They will tell you what the responsibilities of each party to the contract are and will explain

how payments are to be made to the contractor. At this stage you should also agree how information will be given to the contractor and discuss how the works will take place. This will include the start on site date and programme for the works and items such as protection of your premises, areas allocated to the contractor for storage of materials, temporary water and electricity supplies for the works, toilet accommodation for use by the contractor and the hours when the contractor will be permitted to work. You should also check that they have the correct insurances in place.

Stage K – Construction to practical completion

At last you have reached the construction stage of the contract and the works are underway. This is where you have to decide whether to control the works yourself or employ a project manager to look after the job, or allow the contractor to organise everything. Much will depend on your own knowledge and abilities (including how much spare time you have) and the complexity of the job. All these issues are discussed in more detail in Chapter 3.

Stage L – Post-practical completion

When a contract nears completion a number of administrative issues need to be dealt with. These include the final inspection by building control and the final payment to the contractor. On larger contracts it is usual to hold back a small amount of money, say 2.5–5%, of the contract sum for a period of 6 months during the defects liability period so that money is available to put right minor defects in case the contractor refuses to do so. On most small domestic scale jobs this will not normally apply; you should check the terms and conditions agreed with the builder at the start of the contract, where it will usually state that the final payment must be paid at practical completion. Practical completion is usually deemed to be when you take over and use the completed works, although in some cases the practical completion may be phased so that certain parts of the works are taken over before the completion of others. You would only pay for the parts as they were completed of course. The contractor will arrange for any necessary tests of services to be carried out and will arrange the issue of the relevant building control certificates where Competent Persons have been used (for electrical installations and the installation of replacement windows and external doors, for example). You should also obtain commissioning certificates for new boiler installations or fixed fuel burning heating appliances and full operating and maintenance instructions. Finally, just before the work is complete and ready to be handed over, you should go round the job with the contractor and make a comprehensive list of anything that is not to your satisfaction within the bounds of the contract. This stage is called snagging and the final payment should not be made until all the snagging items have been completed.

PRACTICAL DESIGN TIPS

As stated at the beginning of this Chapter, carrying out significant changes to your own house can be incredibly rewarding. If you have not done it before it can also be a daunting experience. A few simple things that will help you avoid some of the major pitfalls to which

you might otherwise succumb are listed here. However, if you are in doubt never be frightened to seek expert advice. It will save you money and stress in the long run.

Obtaining planning permission can be sometimes simple, sometimes very complex and this process can be influenced by numerous factors, such as

- **The materials and style of design**: It is very often the case that people wishing to extend their property want it to blend in or be 'sympathetic' with the original building. On the other hand there are those who wish to be more adventurous, perhaps using lots of glass and non-traditional materials. There is no hard and fast rule that will guarantee planning permission is obtained. The common statement that extensions should be in keeping with the character and appearance of the local street scene is very true, if you live in a street where all properties are very similar. However, if you live in an old detached stone built property with an interesting history it could be more sympathetic to the original property to have a more contemporary design, thereby making clear what is old and what is new. This will retain the historical character and appearance of the original building and may be a more agreeable option for the planners.
- **Other planning legislation applying to the property**: The type of materials and style of improvement could be influenced by different types of legislation. For example, Conservation Area Consent, National Parks legislation, the situation of the property in an Area of Outstanding Natural Beauty, Listed Building Consent and so on.
- **Natural light and privacy**: This is a case of being considerate to neighbours. Even if you submit a design that ticks all other boxes, it could be refused planning permission if it would adversely affect your neighbour's use and enjoyment of their property. A common complaint is that your extension would greatly reduce the amount of light entering the neighbour's property. A basic rule is to draw a 45° line from the centre of your neighbour's window to your extension, if you encroach on this line there may be cause for concern. Extensions and improvements that may overlook a neighbour's garden or into their house could also be refused. This could apply to single storey extensions with accessible flat roofs, for example. If there is a risk of directly opposing windows, then a distance of 21 m is required.
- **Scale of proposal**: Extensions should be subservient to the original house and, therefore, should not dominate it. Proposals that extend the full height, length or width would not normally be acceptable.
- **Style**: The architectural style of the property should be consistent also. For example, roof, window and door styles and sizes should be consistent.

Many local authorities produce householder guides to domestic alterations and extensions that consider design factors for different situations. Additional guidance can also be obtained online from the Planning Portal (www.planningportal.gov.uk).

Described so far are some of the design principles that apply to the project conceptually. At a more basic level you might also like to consider the following design tips. These have been picked up over a lifetime spent designing and building alterations and extensions to buildings. They are offered so that some of the pitfalls that have befallen others can be avoided.

- **Connecting the extension to the house**: To most people, the logical way of connecting the extension is as shown in Figure 1.1. Here the extension side wall lines up with the

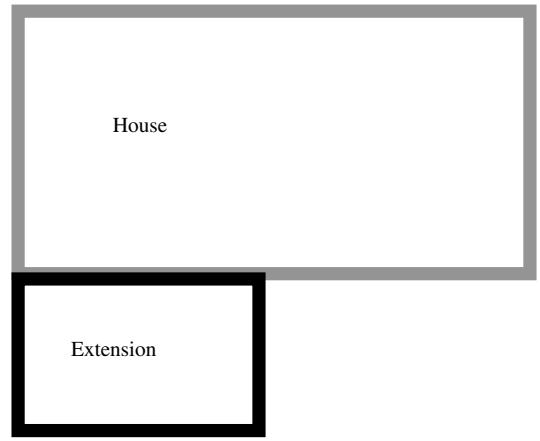

Figure 1.1 Positioning of extension – in alignment with house.

side wall of the house. Now consider Figure 1.2. The extension is offset so that it is no longer in alignment with the side wall of the house. Why would this be done? Mainly because it disguises the junction between the house and extension. If the aim is for the extension to merge with the house and not stand out like a sore thumb, then it is necessary to consider the wall and roof materials. Most houses in the United Kingdom have walls finished externally in facing bricks. Over many years the design of bricks has changed and the most noticeable change is in the size of the bricks. A modern facing brick has a height of about 65 mm. A brick produced in the housing boom between the two World Wars had a height of about 75 mm and Victorian bricks were often larger than this. So unless you have a fairly modern house you will not be able match the height of the brick courses, and you would not be able to match the texture and colour of the bricks either. If you exactly line up the extension with the house, the resulting

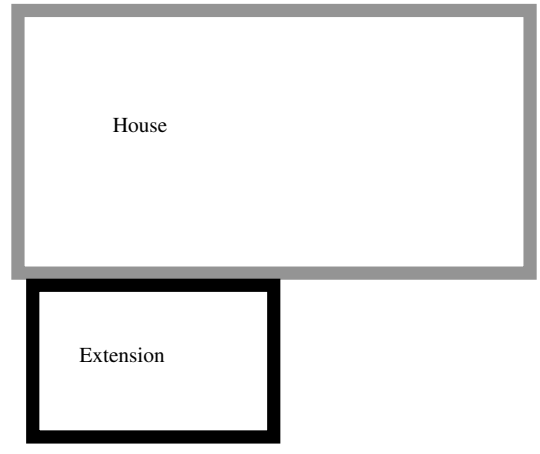

Figure 1.2 Positioning of extension – offset in relation to house.

junction will be difficult to build and will look awful. Merely offsetting the extension by the length of a brick solves both the constructional and aesthetic problems. It is also stronger structurally as it moves the work of cutting into the existing building away from the corner.

- **Designing the roof**: Generally speaking, if a house has a pitched roof the extension will look better if it also has a pitched roof, preferably of the same pitch. The same applies for flat roofs. There will be the same problems of matching materials for tiled or slated pitched roofs that there are with matching bricks. If an extension roof merges with the house roof (for single storey extensions to bungalows and two storey extensions to two storey houses) it may be possible to use the tiles or slates taken off the existing roof at the point of connection to put these on the most exposed slopes of the extension roof. The new tiles can be put on the slopes that are less obvious or hidden from view.
- **Design tips inside the extension**: Try to think in three dimensions. It is not uncommon for college students on the first year of their design courses to draw the ground and first floors of a building without adequate thought for the continuity between the two different plans. In such cases the staircase may not work out or they find that the upstairs toilet can only be drained via a pipe that comes down through the middle of the lounge! The golden rule is to plan ahead. Do not just plan alterations for the immediate future but try to think about how the alterations might be adapted should your circumstances change. Have a definite plan for the future development of your house and do not let your current alterations jeopardise future plans. An obvious example is the construction of a single storey extension on a two storey house. Is it possible that you may want to extend upwards on top of this in a few years time? It is not just a matter of making sure that the foundations can take two storeys. You must also consider the position of the extension, not only in relation to the ground floor but also in relation to the first floor. And you may not want a flat roof on your extension but it is easier to turn a flat roof into a future first floor than it is to do the same to a pitched roof!
- **Walls**: It is often a good idea to construct the internal walls of an extension in the same type of materials as the external walls. For example, if your extension has cavity masonry external walls then the inner leaf will be in lightweight concrete blockwork, so build the internal partition walls in the same type of blocks where possible. The temptation is to build the internal walls in plasterboard-lined timber stud partitioning. The reason for matching the materials is that if you do not, a crack will form at the junction of the studwork and the blockwork as the two materials move differently. This can be filled when redecorating the extension at some later date but in the meantime the crack will be evident. If you must build the internal walls in a different material it makes sense to dry line the external walls instead of wet plastering them. The plasterboard lining to the external blockwork will match the plasterboard lining of the stud partitions and will reduce or eliminate the tendency for cracking. If the extension is built entirely from timber framing then use the same system for the internal partition walls.
- **Ceilings and roofs**: What cannot be avoided is the crack that often occurs at ceiling level where the ceiling or roof structure meets the external walls. The trick here is to cover the junction between wall and ceiling with a plaster cove to mask the join. It also helps if the size of the ceiling joists is slightly increased, so that they are not near the limit

of their strength. This makes the structure more robust and reduces the deflection on the joists. If you are building a pitched roof on your extension and you want to use the roof space for storage, plan for this. Design the ceiling joists in the new roof as if they were floor joists and allow for boarding out the roof to give a proper space to put your things. This may sound obvious, but how many times have you balanced cardboard boxes full of books, suitcases, old televisions and so on on the ceiling joists in your roof space and then wondered why the ceiling below is cracking? You also run the risk of putting your foot through the ceiling when trying to find the Christmas decorations that somehow, inexplicably, have migrated to the furthest corner of the roof space!

- **Services**: These can be an expensive part of any improvement in terms of both materials and labour. The less distance services have to travel the more economic and efficient they will be. Put similar rooms next to each other, for example bathroom next to kitchen (on the same floor) or bathroom above kitchen (on different floors). The travel distance for your hot water (from heating source to taps) can be costly over time if you have to run your taps for ages before you get hot water. This is because you have to draw off the cold water in the pipe before the hot water gets through to the taps. Then all the hot water left in the pipes will be allowed to cool, therefore wasting all that energy (and money) used to heat it up in the first place! Travel distances are also important with regard to routing of pipes and cables. Lifting of floor boards, notching of joists, 'boxing-in' of pipes or ugly pipe runs on walls can all add to the workload (and the cost) and affect the end product. Of course all these hidden services can prove problematic for any future work – how many times have you heard of a nail going through a pipe or cable? When designing floor plans try to think what furniture you will put in rooms. Consider alternative layouts because most people like to change things around now and again. So if you could put the television in, say, three different places in your new lounge, make sure that there are sufficient electrical outlets in each of the three places; do not forget that you need more than just a double socket outlet these days to cope with all the equipment (television, DVD player, satellite box, games console, floor lamp etc.), and this is especially true in children's bedrooms!

Good planning with plenty of forethought is the key to success when altering or extending your home.

Just remember : Plan Ahead