OAK NOTES

YOUR QUESTIONS ANSWERED

CARPENTER OAK LTD

Designers and manufacturers of contemporary or traditional oak frames for new houses,
extensions, conservatories, cabins, garden buildings and other structures

in association with
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1. What do we do next?

- Read our information pack and Oak Notes. Write down a brief outline of your requirements, budget etc.
- If you're looking for a site, contact estate agents, site finders and local newspapers to get a feeling for site costs (see page 10).
- If you want to extend your existing house, take some photos of it and see if there are any existing plans.
- If you have a plot for a new building or you are extending an existing building or adding a conservatory, call us on 01803 732 900. We will be happy to send you photographs of projects similar to the one you are planning. You are also welcome to visit us in Devon to see some finished buildings and after a detailed discussion we would be happy to arrange a free meeting in Devon with Roderick James Architects. Before you make such a visit, we would suggest you make informal enquiries at your local planning department to sound out their views on your project.

2. Do you do all the design work or can we use our own architect?

You are welcome to use your own architect. We will be happy to assist with oak-frame drawings as necessary, or provide consultancy to save reinventing the wheel! Alternatively, we recommend you use Roderick James Architects LLP (01803 722474) who have specialised in the design of oak-framed buildings for many years. They will design your building with you, apply for planning permission and building regulation approval, prepare oak-frame drawings and typical details for all building work as required. These services can be charged at hourly rates or as a percentage of the total build cost.

For the sake of efficiency and economy, it is advisable that you or your architect discuss these points with us at an early stage. We can show you photographs and plans of different structures to stimulate ideas and help you get what you want. The design process can be enormously exciting – and with the right builder, the whole project can be great fun. We are now building many contemporary designs with lots of space and light.

We do not offer free design work or free site visits, as the cost would have to be added on elsewhere. However, we do make some standard oak frames which can be bought without design fees. Roderick James Architects has several offices across the country.

You should be aware that Roderick James is both the principal of Roderick James Architects LLP and founder/ chairman of Carpenter Oak Ltd. This link has advantages as it combines Roderick James Architects' long experience of designing houses, extensions and outbuildings using oak, with Carpenter Oak Ltd's skills in making the frames. Jointly, we have designed and made several award-winning buildings. Many of our houses have featured in books, magazine and newspaper articles, as well as numerous television programmes. Our reputation travels by the recommendation of satisfied customers and, as a consequence, we do not need to advertise.

As a final note, we welcome the opportunity to use oak in ways which are both innovative and contemporary, and in conjunction with the most up-to-date materials.

3. How long will it take to design and build our house or extension?

That depends on the size, budget, complexity and planning constraints, but as a general guideline the design stage should take 1 to 2 months.

During this time Roderick James Architects LLP will work with you to establish a detailed list of your requirements, then sketch designs and discuss them with you, gradually incorporating changes until we have a design that is exactly right for you. We then draw up the plans, elevations and sections, and prepare the planning application.

A planning decision is generally given within 2 months. Once approval has been obtained, detailed drawings showing construction, drainage, insulation, glazing, foundations etc., are prepared for building regulation consent. This stage will take a further 1 to 2 months.

In other words, you should be ready to build within 4 to 6 months of your initial visit to us. The build time for completion of an average size house is 6 months to a year. It will take between 2 weeks and 2 months to make the oak frame in our yard, and 4 or 5 days of intensive work to erect it on site.

We have excellent relationships with many planning authorities and conservation officers and often work with them on their own projects. The trust which we have built up between us often helps smooth delicate negotiations, and planners and building control officers do seem to like and respect our workmanship, and we are gaining considerable support for our contemporary designs.

4. What happens after the plans are ready?

Once your plans have been finalised, Carpenter Oak will prepare a price quotation for making the frame. If the price is acceptable and you would like to book a slot in our work programme, we will ask for a deposit of 5% of the quotation price, which will be refunded if planning permission is not granted. Roderick James Architects will then apply for planning permission, obtain an Engineers' Certificate and prepare frame drawings and apply for building regulation approval. When the time comes for us to build the frame, we will ask for the following payments:

• On order of sawn oak from mill	25.0%
• Just before making the frame	30.0%
• When frame ready for erection	22.5%
• After erection and completion	17.5%

Detailed 'Terms and Information' are always sent out with guide prices/quotes, but if you would like a copy now please call Carpenter Oak's head office in Devon.

5. How much do your buildings cost?

As a guide, our finished building price per square foot is £100 to £150. This refers to the useable area for both ground and first floor. It must be regarded as a rough guide only and you should be aware that a high specification could push this figure above £150 per sq ft. The £100 per sq ft might include concrete tiles on the roof, insulation levels to building regulation standards rather than above, double-glazing rather than 'K' glass etc. If for example concrete tiles cost £2500, then hand-made clay tiles might add £5000 to £6000 to the cost. The figure of £100 per sq ft is for a basic specification which is achievable with resourcefulness – for example, assisting your builder in sourcing second-hand materials to get higher quality at lower cost! It may be possible to build for slightly less, but the sort of quality we find our clients begin to want once they get started makes it difficult!

Be aware of the price difference between night storage heaters and electric immersion at say £1500, on the one hand, and full underfloor heating plus some radiators, boiler, flues etc. at £5000 to £6000. Similarly, a change from simple weatherboarding to stone cladding can have a huge influence on the cost.

As an example: a 36ft x 20ft standard dropped-tie frame, 22ft high, with a first floor, might cost £125,000 including foundations and simple cladding. That is £87 per sq ft for a house with 1440 sq ft of useable space.
Compare this to a 36ft x 20ft x 18ft full height ‘barnroom’, open from floor to roof. This might cost £75,000 for 720 sq ft, or £104 per sq ft, but it will give you a very dramatic space and encloses a large volume. These prices are only a rough guide and fluctuate according to the buoyancy of the market and builders prices and can change quite rapidly.

In order to fully appreciate the drama of the roof space, it is worth considering having the first floor as the main living area and kitchen, with the bedrooms downstairs. Some dormers may be required in a dropped-tie frame to get full height windows as the first floor eaves height is only 4ft. In many cases the full glazing at the ends of the building may give adequate views. VAT is additional to all prices shown, if applicable, although currently there is no VAT on new houses.

6. Can you put up your oak frames anywhere?

Providing you have the necessary planning consents, we can erect your frame almost anywhere in the world.

7. Are oak-framed houses difficult to insure and mortgage?

We have never encountered any problems with insurance. Most of the UK's biggest lenders are prepared to offer mortgages to self-builders. Details are available from "Your Mortgage" and "What Mortgage" magazines. You can also talk to the Ecology Building Society – tel: 01535 635933.

8. Is it more difficult to obtain planning permission for an oak-framed house?

We have often found it easier to obtain planning permission for an oak-framed building than for a conventionally-constructed one, providing the planners are prepared to consider a structure on the site in the first place. Roderick James Architects LLP and Carpenter Oak Ltd have an excellent track record with conservation officers and planners, and the quality of craftsmanship may often swing borderline cases in your favour.

9. How does a first floor fit into an oak barnhouse?

A first floor is incorporated in a very similar way to that in any conventional building, using either a dropped-tie beam which gives a first floor to eaves height of about 4ft (1200mm), or full frame giving any height from floor to eaves that you require. Joists normally run between or on top of tie beams. Almost any shape house can be built with oak framing, so don't feel limited by our 'standard' frames which are illustrated to give an indication of price. We have built some very unconventional and exciting frames to enclose unusual spaces in contemporary homes.

10. Do Carpenter Oak frames need special foundations, and can you build them on sloping ground?

Oak-framed buildings are lightweight compared with masonry structures, but it is still important to have foundations which go down to firm, bearing ground. This depth depends on ground conditions and, for permanent structures like houses, will be 600mm to 1000mm (2' to 3') deep, or to the depth specified by the building control inspector. A mass concrete strip footing is normally used. Above this we recommend a dwarf wall of brick or stone to lift the 'bottom plate' of the oak frame about 225mm (9") above ground level to avoid splashing by rain water. A damp-proof course is also required. These items will be built by your main contractor.

There are numerous ways of building on sloping ground, and an oak frame is particularly suited to this. The oak posts can continue down to the lower ground level, like stilts, providing useful space underneath. You can also enter your house at the higher level which gives exciting design possibilities. Oak posts can rest on a concrete pad to the appropriate depth.

For agricultural buildings or cabins, we often simply rest the oak frame on oak 'feet' or 'sleepers' on paving slabs directly on the subsoil. The oak-pegged frame is flexible and providing the building is not extensively glazed, minor movement or settlement is unlikely to affect it. If there is any settlement, it is a simple matter to jack up the corner of the frame and slide another paving slab underneath. Although this process is quite straightforward, a normal foundation, whilst being more expensive, will provide a more durable solution.

The inside floor of the building will generally have a 100mm (4") concrete slab laid on hard-core and damp proof membrane. Above this you can install insulation, screed, tiles or timber floor. Hot-water underfloor heating can be installed in the floor screed or under the timber boards if you require it.

11. What happens to the appearance of green oak when it dries out?

It is part of the nature of green oak to split, bend and shrink whilst drying and, to a lesser extent, throughout its life. We select our timber carefully, but can give no guarantees as to whether, when or where splits and bends may occur. There are, however, certain techniques for cladding which can minimise these effects, and we will always be happy to discuss these with you or your architect. Generally, you will require a follow-up visit by our carpenters (or your builders) to deal with such matters after about a year. This visit is chargeable on a time basis, or by quote if you prefer.

12. Does my building have to be all oak, or can I combine it with other materials?

Walls:
The walls of your building can be entirely brick, stone or concrete block with an oak roof above, or a combination of these. Your ground-floor rooms can be masonry with a full-size oak frame above, or you can have a masonry core with an attached oak-barn type building as a main living room.

The system is extremely versatile, but we can advise at design stage which approach is most suitable for your needs. Timber cladding (weather-boarding) is particularly suitable as the outside weatherproofing of an oak frame in conjunction with the appropriate vapour barriers, insulation and breather membranes. Alternatively, breathing wall insulation such as 'Warmcell' are environmentally-friendly and worth considering. Remember: conventional softwood timber-frame houses generally have a brick outer skin.

Roofs:
Your building can be roofed with conventional clay tiles, stone tiles, concrete tiles, slates, thatch, or even wood boarding. Any building can have roofing of corrugated iron, or other sheet materials. These are installed in the conventional way. The only difference between an oak roof structure and one of softwood is that the oak roof, although more expensive, looks beautiful from inside, will last far longer and can provide more flexible use of internal spaces compared with contemporary gang-nailed softwood trusses.

13. Surely the shrinkage and bending in the oak will cause leaks and draughts?

There will be some movement but, generally, our design techniques minimise this effect. For example, we use a special silicone, primer and EPDM tape to seal the double-glazed units to the oak, and this is fully backed up by the glazing firms that we recommend to do the installation.

The glass can be bent over 1' in a 10' length – it is all toughened; we never use laminated because it will crack – and even 4mm thick toughened glass can span 2' and support a 13 stone man. When it comes to cladding, we recommend that this goes outside the frame – for example, boards on the ceiling – so any shrinkage in the oak has no effect on the airtightness of the boards.

In very rare cases, a timber joist or stud may develop an unusual bend or split; but it is only timber, so it can be cut out and replaced!

Of course, a water leak, or draught can occur in any building, but this can generally be remedied with an application of silicone or "Seal-once", or a coverbead bedded in mastic.

14. Have you developed special techniques to provide effective glazing?

Yes we have. Traditional carpentry techniques for jointing stud to bottom plate tend to allow water to track in by capillary action. We have developed recessed bottom plates, blind pegging and stepped glazing, with provision for additional flashings where necessary. We also particularly recommend glazing outside the frame members so the oak frame is inside. A series of special seals allow several lines of defence against water penetration. A simple screwed coverboard allows for easy elimination of leaks in the unlikely event that they do occur. We do not complicate the design with rebates which, in our view, actually increase the chance of failure.

The disadvantage of externally-installed glazing is that there is a certain loss of texture and modelling on the facade of the building but this is balanced by enhanced weather-tightness, and you simply have to make a choice depending on your personal requirements and the degree of exposure of your house – particularly to wind. The cost is similar. Some glazing firms recommend solid bedding in the central channel and this can be discussed at the design stage.

15. Do you use separate door and window frames?

Separate frames are not necessary, although you can have them if you want, and we can recommend proprietary adjustable fixings to allow for movement. We like the simplicity of doors and windows simply hinged between the studs and posts. Doors and windows can be hinged on. Dry oak glazing coverboards are screwed in place, together with a special hollow-tube draughtstrip.

16. Won't shrinkage in the studs make the door too small for its opening?

We suggest that you don't countersink the hinges initially. After a year, it is a relatively simple matter to add a further strip of wood to make up for the shrinkage and then install the hinges permanently. The alternative of having a separate frame still costs a lot more, and canny fixings are still needed to cope with shrinkage.

17. Is the frame insulated?

An oak frame building may be insulated to any level beyond Building Regs that you require. We recommend installing all the insulation outside the frame. This has several other benefits:

1. A continuous vapour barrier without breaks can be wrapped around the frame.
2. The building is then waterproof from the outside and work can start inside.
3. The frame is protected from weather and deterioration.
4. Draughts can be virtually eliminated.

18. Do you have to treat the oak?

Heart oak is naturally durable and resistant to insect attack. In fact, it is virtually impossible to get protective fluids to penetrate oak. If there is any sapwood, this can be treated if required, but it is not essential. American oak, however, is not durable and cannot be used in the same way. We always use English oak throughout, unless you particularly want to use European oak which can be cheaper.

We can finish the oak in one of several ways:

1. Hand hewn, which imparts an incomparably subtle finish, but is considerably more expensive.
2. Sandblasting using silver sand, or a pale coloured stone dust free of any contamination with ferrous compounds or residues. Any ferrous residue will make the oak turn black. Sandblasting helps smooth sharp corners, raises the grain a little and cleans mud and tool marks. Some stains may remain which should become less obtrusive with time. Sandblasting is the most economical way of treating the frame and costs between £600 and £1000.
3. Planing. We generally avoid this, but can do it if requested.
4. We recommend leaving the oak untreated on the surface, but you can add pale wax if you wish. This usually makes the frame yellower, and it tends to darken more over the years.

Oak is a natural material and, as a result, there will be a degree of variation in colour between finished pieces (especially once they have been sandblasted). Where we use timber that is more seasoned (curved timbers, braces and some glazed members), these timbers may turn out darker than average. If a frame is put into storage or left on site for a period before erection, some timber may turn darker as a result.

19. Is there enough oak to make all your buildings?

There is a huge supply of oak and our use of it, as a renewable resource, encourages the development of commercial woodland. Oak is also used for many other purposes, such as fencing. If there ever were a shortage, it is probably that use which would diminish. Also, price will regulate demand, and curiously, a doubling of the price in the forest does not make that much difference to the price installed, after the tree has been felled, sawn, worked and framed.

There may be a shortfall for 10 to 20 years in about 50 years' time due to a reduction in planting 100 years or so ago. However, we do plant 2 trees for every one we use, and offer you a further 8 trees to plant for every one used in your frame. In the past 10 years we have planted over 30,000 oak trees.

It is worth bearing in mind that it is not necessary to have perfect wood, completely free of knots and sapwood. These features add character to buildings and we like to encourage frame-builders to use the oak as it comes. The familiar rounded features of many old oak barns simply derive from the sapwood being eaten away over the years. The heartwood cannot easily be touched by woodworm and becomes harder and harder over the years. We enjoy using thinnings, hand conversion/pitsawing and small diameter trees, and would be pleased to discuss this with you.

20. You build a lot of chunky green-oak conservatories – what are the advantages and implications?

The overall design of a conservatory must relate to the style of the house which it adjoins. However, many contemporary conservatories are very spindly and feel more like greenhouses with imitation twiddly bits for decoration. We have pioneered the design of 'glass barns' which feel like, and are, substantial rooms with a wonderful light quality. Providing they have double-glazed units (or low emission 'K' glass) and adequate heating (underfloor heating with water from your central heating boiler is very suitable), we have found they are used year-round and create very special living spaces. Conservatories generally cost at least £100 per sq ft finished.

Your conservatory will be designed specially for your house and needs; we do not do 'kits', although there are some standard configurations. One popular design approach is to design a lean-to type running the length of your house linking, perhaps, a sitting room, kitchen and hallway. This can also incorporate a walkway at first floor level outside, giving access from upstairs bedrooms to a long balcony.

This design has numerous advantages:

1. It allows us to design a more generous pitch on the roof glazing.
2. It gives internal space of 9' to 12' width but using a single-length ,double-glazed unit 3.3m (11').
3. External cedar chain-link blinds can be used which reduce summer overheating rather than just giving shade as internal blinds do.
4. Ventilation and cooling in summer is provided by simple hinged vertical vents in a sheltered position.
5. The optimum height to ridge (min. 11'0") does not interfere with window-sill height on first floor level.
6. The conservatory can be any length and it is not necessary to use expensive angled glass sections.
7. Existing external windows on your house simply become doorways to the conservatory.
8. Without the walkway at first-floor level, the roof can join the house directly, just below window-sill level. It will then need to be narrower (probably max .10' – 3m) and vents will be required at the ends at high level if the conservatory faces south.

Double pitched roof conservatories also work very well and enable you to have the advantage of a full traditional oak frame construction. These would generally have one gable end adjoining the house and the other facing outwards. The roof may be partly tiled or fully glazed, and can incorporate a fireplace or woodstove as well.

The conservatory will need to be designed by us specially for your house, or we can supply an oak frame to designs drawn up by you or your architect. We would charge design fees if you would like us to prepare plans. If you have drawings of your house, this will obviously reduce the costs, but these must show levels, materials, exact opening sizes, plans, elevations and sections. Photographs are very useful. If you would like to discuss your particular project, please telephone or send some information after talking to us.

21. How much do traditionally-framed oak conservatories cost?

This is very variable, but cost is influenced more by your particular requirements for openings, glazing, heating, doors, floor finishes, lighting and area, rather than the oak frame.

Oak frame costs:
As a guide, a simple pyramid oak frame, erected on your footings, say 3m square, might cost around £8000 to £10,000. A lean-to design, 12' wide by 30' long with oak posts, studs, braces, tie beams, walkway etc., might cost £15,000. A lean-to structure without walkway, 9' wide by 20' long, might be about £10,000 to £12,000. A full oak-frame barn structure might be about £16,000 for a 12' x 24' frame.

Depending on your choice of fittings, finishes, cladding and foundations, the total build cost is likely to be in excess of 3 times the oak frame cost. But please remember you will be adding a room which you will then use year-round. Many people for whom we have built a glass barn say they rarely use any other living room!

22. How much work can I do myself to save money?

An oak-frame building is particularly suitable for self-builders, as we erect the oak frame – the difficult part – and leave you to clad it yourself. Alternatively, you may wish to use your own builder and work with him or her. We can provide typical details showing how to insulate, glaze and clad the frame. Straightforward softwood boarding above the rafters can be covered in 1000 gauge polythene which will initially waterproof the roof and subsequently act as the vapour barrier. You then have a waterproof roof giving you a covered workspace which you can insulate, batten and tile or slate when it, or the weather, suits you

23. Do you do conservation and repair work on old buildings?

We specialise in the design and manufacture of new frames, but we also do some conservation and repair work. For instance, we repaired the 80' x 30' mediaeval kitchen roof that was damaged in the fire at Windsor Castle. We also installed a breathtaking new green-oak lantern, 80' long, which we made in our yard and craned into position on the top of the castle roof. Some years ago we fully conserved a 1404 barn in Sussex having winched it upright before repairing all the damaged joints and braces.

24. What about finding a plot?

This can be surprisingly difficult, but you may be lucky. It is usually best to do some research on possible plots in your area before meeting us so we have a clearer idea of what we can achieve for you with the budget you have left after buying a site.

Your options are either to buy a bare plot and try and obtain planning permission having first made informal enquiries with the Planning Office, or to buy a plot on which there is an existing building which can be demolished. It may be possible to buy an option from the owners, agreeing a price if you get planning approval. This avoids their selling it to someone else once you have received planning permission.

You should:
1) Contact all estate agents and buy local papers. You will have to chase them up very regularly!
2) Register with a site-finding agency, but make it clear you want to build a Carpenter Oak oak-framed building. Try contacting Plotfinder on 0906 5575400. If you are looking in the Wilts, Dorset, Hampshire & East

Somerset area we can recommend Charlotte Miller Property Search: 01794 884757. Email address: cmiller@cmpropertysearch.co.uk

3) Ask for plots with planning permission or with a dilapidated bungalow on them which can be taken down ("bungalow eating"). This often enables you to build on a site in a beautiful location where planning consent would otherwise be difficult to achieve.
4) Consider building a barn-type extension to an ordinary house. We have many techniques for blending the two together.

There is no VAT on new-build houses, even if you have removed an existing bungalow. We can help you decide the best course.

Finally, why not stay in a Roderick James Architects designed Carpenter Oak Ltd oak frame building to have a night away and get the feel of it? As featured in Alastair Sawday's Bed & Breakfast for Garden Lovers book: Joanna & Iain MacLeod, Homestead Farm, Canon Frome, Ledbury, Herefordshire HR8 2TG. Telephone: 01531 670268. Fax: 01531 670210. Email: imacleod@btopenworld.com