

THE ULTIMATE BARN



CONVERSION DESIGN GUIDE

In this special guide, the names behind some of the country's most successful barn conversions reveal their top design tips

Opportunity for an Individual Home

This contemporary Cotswold barn conversion and extension project, a collaboration between Anna Parker and Millar + Howard Workshop, has combined an informal cluster of agricultural buildings – carefully ‘stitching’ them together to create a characterful new home.

Embrace the Simplicity of Their Form

The starting point for designing a barn conversion is to embrace the building's inherent ‘barn-y-ness’. I find real beauty in their pragmatic simplicity, but you do have to work with their core character and make the structure, form and materials work for you rather than force them to be something that they are not.

The barn form lends itself to so much of what we want in a modern home – space, height and massive openings for walls of glass. They allow for experimentation in affordable, interesting materials, too.

Metal, timber, fibreboard, rubber, you name it, pretty much anything goes with these buildings – except trying to make them what they are not. They are not constructed from traditional house materials, for instance, so trying to re clad them in slate, tile, brick or stone will more than likely end up looking wrong.

Nor are they ‘polite’, with regularly spaced portrait windows which conform to the golden ratio. They shouldn’t have porches, dormers, brick chimneys or fiddly domestic details.

Charlie Luxton, Charlie Luxton Design



Understand What You're Dealing With Early On

The critical thing with barns is to research the ground conditions and the stability of the structure from the start. With a timber frame barn you're likely to be retaining the skeleton of the building externally, but internally the barn may not be structurally sufficient, and therefore an independent structure might need to be built within the timber outer shell — keeping the historic character visual rather than structural.

If you're erecting a new steel structure within the barn's shell, for instance, this offers more flexibility in terms of layout, so you don't have to conform to a rigid arrangement of rooms, and can create the varied and cathedral-like ceiling heights that successful barn conversions are known for.

Likewise, the barn might be sound internally, but the outer skin might need to be saved from ruin. It all depends on the fragility of the building in question, which is why early research is so important. As with any build, budget is always going to be a significant discussion and will dictate what you can achieve. Having a specialist quantity surveyor checking what you're doing will help guide you in the right direction, as well as helping you to prioritise and manage costs accordingly.

Nicolas Tye, Nicolas Tye Architects



A New Building Within the Structure

In this project by Hudson Architects, a new steel structure has been built within the timber frame barn to support the new arrangement of spaces.



Linking with Glass

Using frameless glazing to link agricultural structures is a favourable option as it is all about being respectful of the existing architecture and being honest about where the intervention between old and new is. It also helps you to understand the sequence of the buildings.

A frameless glass link creates that seamless transition between the textured material of the barn and the crispness of the glass. It's not a cheap part of the build – the glass itself will be costly – however, it can be a relatively straightforward design concept and in most cases, you can go straight to a glazing specialist and install company with the designs.

Nicolas Tye, Nicolas Tye Architects

Think Spaces, Not Rooms

Try not to divide the building into too many spaces — instead, work with the existing partitions where you can (as shown ABOVE).

Don't just think rooms, think spaces — dwellings consist of public and private spaces, so consider how freestanding elements, such as storage, can create these areas.

David Nossiter, David Nossiter Architects





Adding a New Floor

Where you plan to introduce a new level will depend on where your tie beams (the horizontal timbers connecting the structural roof members — as shown LEFT) are placed. If the tie beams are between 2.5–4.5m above ground level, you may have to be very careful to get the required headheight to meet Building Regulations. It's possible to change the position of the tie beams if the barn is not listed, but it's a task best avoided as it can change the character of the building.

What's more, in some instances you'll be able to use the existing structure to support a new floor. However, in many cases you'll need to introduce steel.

Hannah Wooller, Hudson Architects

Don't Spoil the Aesthetic with Inappropriate Rainwater Goods

The secondary elevation can be a good place to conceal all the necessary elements associated with transforming a barn into a home — such as flues, soil pipes, rainwater goods, etc. You should also ensure that the material you choose for your rainwater goods is considered as part of the overall aesthetic of the building. PVCu can be inappropriate, with cast iron or aluminum rainwater goods more favourable.

Hannah Wooller, Hudson Architects

Consider the Scale of Your Furniture

When converting a barn, it's important to retain the feeling of a non-domestic building while still creating a home. Don't be tempted to divide the whole space up into separate rooms, as found in a conventional house — be brave and keep big spaces and big openings.

It's a balance of keeping the agricultural feel by making features of its rustic elements and then combining them with appropriately scaled requirements of a house. For example, a staircase for a 'standard' home would be lost, so exaggerate it proportionally in accordance with the size of the barn. You could also use big furniture (not necessarily lots), hang large-scale artwork, and fit directional spotlights to focus light into specific areas where required.

Tomas Millar, Millar + Howard Workshop





Adding New Glazed Openings May Require Some Negotiation

When you have a barn with an existing planning permission in place, the local planning department can be quite conservative and might not want to push the boundaries of design when it comes to introducing new openings. Often, you'll need to negotiate adding new windows and doors, and discuss what can and can't be done.

With some projects, there are opportunities and innovative ways of introducing natural light. For instance, on a recent conversion with dark-stained timber cladding, we replaced a board with frameless glass to allow light to penetrate without looking intrusive to the overall form.

Nicolas Tye, Nicolas Tye Architects

Introduce Double-Height Spaces Wisely

Barns are characterised by tall spaces with ceilings stretching to the apex of the roof; they are agricultural buildings and have a scale and majesty to match.

Keep the essential character of the spaces, but also be aware that tall spaces can be difficult to make comfortable. Large, tall spaces can be challenging to heat as they can suffer from the stack effect of warm air rising to the roof.

The scale of the agricultural spaces might not fit in with domestic activities and it is often better to house circulation areas within the grander spaces. Haylofts can lend themselves to becoming mezzanine, helping to divide the spaces without destroying the nature of the building.

David Nossiter, David Nossiter Architects

Many barns are not quite tall enough to accommodate two floors with the modern head height standard of 2.4m. As barn conversions will typically involve adding a new floor, this can emphasise the volume of the double-height areas — the single-height spaces at ground level with a room above will feel more intimate (as LEFT).

Think about how you're going to move between these 'open' and 'closed' spaces. You don't want to have your snug in a double-height section, as it won't feel relaxing. Instead, your living space should be in a cosy, quiet part of the barn with a lower ceiling height, then perhaps there will be an expansive, double-height space in the more communal part of the home. These lofty spaces can be put to better use for a kitchen, for example, which is all about exhibition and show.

Neil Dawson, Snook Architects

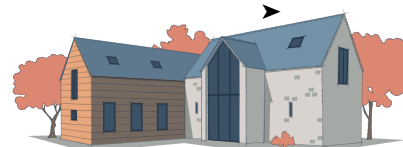


Use 'Honest' Materials

A barn is an agricultural building and designed to be solid, sturdy and industrial. It will pay you to remember this when considering materials for the internal fit out — you don't want it to look like a suburban house. In our Cat Hill Barn project (ABOVE), for instance, the whole ground floor features a polished concrete slab which created a utilitarian aesthetic.

Steel is another material which lends itself well to barns and can be introduced in various ways, whether it's in the tie beams, staircase, exposed steel joists, or even within the finishes, such as handles.

Neil Dawson, Snook Architects





Introducing Light from Above Needs Thought

While you might be able to come up with interesting ways of bringing in light from above - through glazed roof tiles, a mesh covered rooflight, etc - you should approach rooflights with caution. Not only can glazing get expensive but installing rooflights can also move away from the architectural language of the building, making it look domesticated, and tarnish the character if visible from the exterior. Historic England and conservation officers will also have strict design guidance on the matter too.

Hannah Wooller, Hudson Architects

If you are going to go down the route of adding rooflights, then give the building the respect it deserves and opt for conservation rooflights. Unlike 'normal' rooflights, conservation models will have a black frame with a transom across, and will sit a little prouder from the roof tiles - both Velux and The Rooflight Company do good models.

Neil Dawson, Snook Architects

'Bridge' Landings Can Work Wonders

Barns are usually long and relatively narrow, and so a central hallway is often the most space-efficient option to provide access and circulation. It is also the ideal place to have a space that is open from floor to ridge, at least in part, so that the sense of volume - the most appealing characteristic of a barn - is apparent immediately upon entering the building.

The first floor will typically need to be linked across the open central hallway. That said, some design solutions have two staircases or a split staircase, with the bedroom accommodation divided into two - the master bedroom arrangement to one side, and family or guest bedrooms to the other, accessed from a galleried landing.

A key consideration here is to avoid cutting across the main glazed barn door opening, so a galleried 'bridge' landing, with a void either side, is a good solution.

Michael Holmes, Chair of NaCSBA

Bringing in Natural Light

This old cart door entrance provided an opportunity to introduce light into this barn conversion and extension project (RIGHT), undertaken with the aid of Border Oak.





Consider the Landscape

When it comes to the landscaping, simple is best. Imagine a romantic rural context with meadow planting, level changes and hedges. Boundary treatments are best created with natural planting, although dwarf walls built in materials that sit within the local vernacular will also help to keep the agricultural language. The last thing you want is to create a suburban garden.

Consider parking too. If you have a large glass opening you don't want cars in the forecourt blocking the view. If you have ancillary buildings or barns on site, then why not convert one of these spaces into a garage or carport — a place to keep the cars away from the front of the barn.

Think too about how you will arrive at the property. Do you want to see who is arriving? In which case, do you have trees or hedges lining the driveway?

Finally, when you are considering the surroundings, you'll need to get an ecology survey done early on to understand what wildlife you're dealing with (and as part of your planning application). For instance, if you happen to have a rare bat species you may need to factor in a bat loft on their flight path. (You can only carry out a bat survey between the months of May and August as they don't move in the winter, so make sure you plan this in as soon as possible.) ^H

Joinery Should Ideally be Utilitarian in Style

Windows and doors need to be simple, robust and functional in style. Setting the windows back into the walls also helps to maintain the shadow lines of the original openings. Existing openings are often filled with timber shutters or doors, or sometimes with timber slats, providing ventilation as well as daylight. If there are any original windows intact, consider salvaging and repairing these, or use them as a template for replacements. If there are no surviving windows, look at local farm buildings for clues as to the tradition. Narrow ventilation slits are also common in barns in some areas, and these can be glazed with a fixed unit.

Many barns have a large floor-to-eaves cart door entrance at one side, and a smaller exit on the opposite side of the barn. The treatment of this opening — invariably the single biggest opportunity to introduce light to the interior — is one of the major design considerations when taking on a barn conversion. A functional design is best, such as glazed doors and fixed sidelights, with a strong vertical emphasis and fixed-frame sections. Frameless glazing is an option that can be used to fill even the largest opening and — when set well back into the opening — can be unobtrusive.

Barn doors are usually utilitarian, constructed from vertical planks of timber. Proportions are sturdy and the outer frame wide and solid. New doors should follow this pattern. Door furniture and ironmongery should also be utilitarian.

Michael Holmes, Chair of NaCSBA

Hannah Wooller, Hudson Architects



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