



# Design Guide 14

## Extensions & Alterations

### 14.1 EXTENSIONS AND ALTERATIONS

The following guidance is intended to provide design advice for domestic extensions and alterations. The guidance is not intended to be exhaustive, but sets out key design principles relevant to changes of this kind. Although weighted towards older, traditional house types, this design advice is applicable to all types of domestic property, irrespective of age or size.



*Fig. 1 Two-storey side extension to a traditional house*

Many properties need altering or enlarging from time to time in order to meet the evolving needs of successive owners; and most (though not all) offer scope for both types of change. Whether, or to what extent, alterations or extensions are possible will depend on the individual context of the property in question; with the success or otherwise of such changes dependant both on a thorough understanding of that unique context and on the design approach subsequently adopted.

As an overarching principle, the scale, form and character of the original property should be sympathetically reflected in any proposed changes.

The character of a given property will derive from a number of factors, including:

- architectural style
- local details
- building type (semi-detached, detached, cottage or terrace)
- date/ period
- size and shape of plan
- elevational composition (overall proportions, symmetrical/ asymmetric etc.)
- roof pitch
- window and door openings
- materials
- setting (including relationship with other buildings)

Extensions or alterations that are of an inappropriate scale, or likely to obscure or significantly alter the form or character of the original property, are unlikely to be supported; as are extensions or alterations likely to fill a garden area, to provide substandard living conditions, or to result in a loss of amenity for neighbouring properties (through overlooking or overshadowing, for example).

It is also important to consider whether the size and architectural details of the original dwelling, or the gaps between buildings, make a particular contribution to the character or appearance of the street or settlement.

Bulky extensions that would block the outlook from, or daylight reaching, principal rooms and garden or patio areas of adjacent properties should be avoided. The position and nature of windows in relation to potential overlooking should also be carefully considered. The impact of a proposed extension on the capacity of a site to accommodate parking must also be addressed.

Domestic extensions often require Planning Permission; and if the property is Listed the extension will almost certainly require Listed Building Consent in addition. You should check with the Planning Department prior to carrying out any work, both in order to check what consents (if any) may be needed, and whether the proposal is likely to be supported in its current form.

### 14.2 EXTENSIONS: AMOUNT

While many properties can successfully accommodate some degree of enlargement, no property can accommodate endless enlargement without fundamentally compromising aspects of its original character and design. Even an apparently modest extension may be inappropriate if, for example, the original property has already been significantly extended.



Fig. 2 Addition to a period terrace in a Conservation Area

There is no fixed rule for the extent to which a property can successfully be enlarged; every property is different. In general, however, any extension or accumulation of extensions should remain clearly secondary and subservient to the original property. Extensions which would, through

their scale and massing, result in the primacy of the original property being eroded or lost altogether should be avoided. An extension or accumulation of extensions which would double, or more than double, the existing volume, is unlikely to be supported. Extensions will usually need to be secondary in terms of footprint, height and volume.



Fig. 3 Two-storey rear projecting gabled extensions

### 14.3 EXTENSIONS: FORM

Two aspects of the design of a property are particularly important when considering a traditional extension: the building span and the roof pitch. The span of the extension should match, or be less than, that of the original property, and it should not generally exceed the span of the original property. The roof should be of a similar pitch.

While domestic extensions in West Oxfordshire vary greatly in form, the following are the three most common forms of traditional domestic extension found in the District:

1. single-storey pitched roof form, either aligned with the ridge or projecting at ninety degrees, generally from the rear elevation;

- two-storey pitched roof form, either aligned with the ridge or projecting at ninety degrees, generally from the rear elevation; and
- single-storey lean-to form, generally projecting from a rear elevation, though sometimes from an end-gable.

In the case of a pitched roof extension aligned with the ridge of the house, while continuing the established span may potentially be appropriate for extending a flat-fronted terrace, it may be less successful when extending a detached or semi-detached house, as it can result in the extension being neither sufficiently differentiated from, nor sufficiently secondary and subservient to, the original house. In the case of a semi-detached house it can also unbalance the symmetry of the original pair of houses.



Fig. 4 Single-storey lean-to extension

Extending with a reduced span is generally a successful approach, which can result in the extension appearing both clearly differentiated from, and secondary and subservient to, the original house. For the differentiation to be clearly expressed it is important that the stepping in

of the wall (be it to one elevation only – almost always the front elevation – or to both elevations) is sufficiently pronounced: typically no less than c.300mm.

Likewise, if the roof of a two-storey pitched roof extension is to step down from that of the original house, in order that the differentiation is clearly expressed, it is important that the stepping down of the ridge and eaves of the roof is sufficiently pronounced: typically no less than c.600mm.

A lean-to extension can represent an appropriate way in which to extend a traditional property. Such extensions tend to be single-storey, and may be suitable when a modest amount of additional space is sought. Traditionally, the span of a lean-to extension would be half, or less than half, that of the original house; with a roof of similar pitch to that of the original house.

### 14.4 EXTENSIONS: TRADITIONAL OR MODERN

Although a well-designed traditional extension, in terms of its form, details and materials, is generally a successful approach when seeking to enlarge a traditional property, it is not the only approach.

A well designed and well executed modern extension can also be successful – not least because it has the potential to clearly express a new chapter in the story of the property through being clearly differentiated from the existing structure.

A modern design approach can be expressed through untraditional or modern forms, details and materials, or use of materials. A successful modern extension is arguably more difficult to achieve than a successful traditional extension, as the former will diverge in its design language from that of the original property.



Fig. 5 A modern, highly successful glazed extension/ link

For a modern approach to be successful, it is crucial that the design intention is clearly expressed. If the design appears unresolved – for example because it falls uncomfortably between modern and traditional – it is unlikely to be successful. The relationship between old and new is crucial, with the junction between the two, and how this is handled, especially important.

### 14.5 EXTENSIONS: GLAZED LINKS

In some circumstances, a predominantly glazed structure may be appropriate either as an extension in its own right, or as a link between a property and either a new extension or a pre-existing but detached structure, such as an outbuilding.

The potential advantages of a predominantly glazed structure include its transparency, which can be exploited both for its visual and physical unobtrusiveness (its apparent lack of mass), and the fact that it can allow views through the structure to original fabric beyond.

A glazed link can be an effective way of physically and visually separating (and thus differentiating) an extension from a property, particularly in cases where a greater degree of physical attachment might cause undue harm to the character or fabric of that property, or might be difficult to achieve because of the resultant junction of walls or roof.

While the aspiration may be for an extension or link that is predominantly transparent in nature, two things in particular can work against this aim, and so undermine the original design intention. Firstly, large areas of minimally framed glazing can be prohibitively costly when compared to more extensive and conspicuous framing (the use of the latter resulting in a physically and visually more imposing structure). And secondly, even if the structure itself is largely transparent, this quality can easily be undermined by later changes, such as the addition of blinds or curtains, furniture or other domestic paraphernalia. Also, a predominantly glazed structure will also increase in visual prominence at night, due to internal lighting.

### 14.6 EXTENSIONS: PORCHES

A porch, just like other forms of extension, should relate in its scale, proportions and character to the original property. Traditional porches vary considerably in size and design. The simplest take the form of a hood, typically gabled or flat, projecting over the door and supported on timber or stone brackets. Larger canopies may be supported on posts, and sometimes the porch may be completely enclosed, with an outer door – again, typically with a gabled or flat roof.

While a small gabled hood may be suitable for a modest period cottage, a large enclosed porch may appear disproportionately big, and be harmful to the character of the building. In general, matching the roof covering of the porch to that of the original property is a successful approach.

### 14.7 EXTENSIONS: LISTED BUILDINGS

Like non-Listed Buildings, many Listed Buildings offer some scope for enlargement. However, in some cases (perhaps owing to the building's sensitivity, or because it has already been extended) it may be impossible to extend the building at all without causing undue harm to its character or fabric. Any proposed extension likely to obscure the original form of a Listed Building, to obscure or result in the loss of significant original fabric or features, or which fails to respond sympathetically or meaningfully to the Listed Building, is unlikely to be supported.



*Fig. 6 Historical extension to a Listed Building*

Some Listed Buildings have poor quality later extensions. In such cases, where a net gain for the building can be clearly demonstrated, it may be appropriate to replace the extension/s with a more appropriate addition, or to remove it altogether.

*See also:* Design Guide 7: Listed Buildings, Registered Parks & Scheduled Monuments

### 14.8 ALTERATIONS (INTERNAL)

For domestic properties, the most common internal alterations are changes to the layout of floors, and to the orientation, size and shape of rooms – typically either by making new openings in walls (to increase circulation, or to make a more open-plan layout) or by inserting new walls (in order to subdivide a room).

In the case of new openings in walls or the complete removal of walls (where either is deemed acceptable) it is important that the structural implications are fully understood, if necessary by taking advice from a suitably experienced structural engineer before proceeding (this advice in turn may need to be submitted as part of the application).

In the case of Listed Buildings, while new openings can often be carried out without causing undue harm to the character or fabric of the building, this is not always the case. Particularly for those Listed Buildings dating from before 1800, the size and shape of rooms can be highly distinctive, and often should not be significantly altered. In addition, new openings can result in the loss of significant features, such as original panelling, plasterwork or cornicing. The removal of an original chimney-breast, fireplace or staircase from a Listed Building is generally unlikely to be supported.

The subdivision of rooms, typically by the use of stud partitions, is generally a more straightforward change, as there are rarely structural issues and the change can often successfully be made both to non-Listed and Listed Buildings. For Listed Buildings it has the attraction of being easily reversible, and thus potentially entailing less overall impact than that resulting from a loss of walling.

### 14.9 ALTERATIONS (EXTERNAL)

Apart from extensions, the most common alterations to exteriors include changes to windows, doors and doorways, roofing materials, and paint colours. By their nature, external alterations are more conspicuous than internal alterations, and should be carried out with particular regard to the implications for the character and appearance of the building – especially if the building is Listed or in a Conservation Area. If the building is Listed, the change may require Listed Building Consent.

*See also:* Design Guide 7: Listed Buildings, Registered Parks & Scheduled Monuments

### 14.10 REPAIRING WINDOWS AND DOORS

The repair of traditional timber windows and doors is often a better and cheaper alternative to their wholesale replacement. Draughty and ill-fitting windows and doors can be greatly improved by the stripping of old paint layers, through re-hanging or the use of draft proofing strips. For reducing noise and draughts, secondary glazing can be an effective alternative to double-glazing. Damaged frames or casements (including those with partial rot) can often be restored through a pieced-in timber repair. Damaged or faulty ironmongery, including hinges, handles, catches and locks, can easily be renewed (though it is always desirable to retain original fittings where practicable).

Traditional window designs are fundamental to the character of local buildings. When replacement windows are installed, these should match the originals in terms of design, proportions, dimensions, materials and glazing. Modern top-hung lights and large sheets of fixed glazing are rarely appropriate.



*Fig. 7 Original windows should be retained and repaired*

Timber (either softwood or hardwood) is the traditional material for windows and doors in the District. Modern substitutes such as uPVC and aluminium do not look the same, and generally have poor environmental consequences.

Paint is the traditional finish for external joinery. European hardwoods such as oak and elm were usually left unfinished to weather naturally. Timber stains and varnishes are modern introductions, and should generally be avoided on traditional joinery.

*See also:* Design Guide 10: Windows & doors; Design Guide 19: Traditional paint colours

### 14.11 REPAIRING STONEMWORK

The re-pointing of stone walling and brickwork should always be undertaken with great care, as the visual character of a building or boundary wall can be harmed by ill-advised work. Hard, cement-rich mortars and raised ribbon pointing should be avoided. Bagged mortar joints are the traditional finish in the District.

Roughcast render on stone buildings may be a traditional finish, and if so should be retained where existing. Removal of traditional stucco or render finishes can expose poor quality porous stone to unacceptable weathering. External finishes of this kind were often an essential part of the original architectural concept, and should be retained or restored wherever possible. Stone or brick walling should not be painted, as this can lead to damage of the walling materials as well as resulting in dramatic visual alteration.



Fig. 8 Stonework should always be repaired with care

Traditional building techniques involve the use of materials that are porous, and which allow moisture in solid wall construction to 'breathe' – i.e. to evaporate naturally from the external stonework or render. Local limestone was traditionally laid with lime mortar to give breathable joints between the stones; with lime plaster applied internally, and perhaps lime render and limewash applied externally.

Unlike some modern impermeable materials (such as cement-rich mortars and renders) traditional lime-based materials allow the structure to breathe

and are flexible enough to accommodate structural movement. Such materials are fundamental not only to the character and appearance of traditional buildings, but also, crucially, to the intended and ongoing performance and maintenance of the fabric. For these reasons, traditional building methods and materials should be fully understood and carefully respected when carrying out repair work.

See *also*: Design Guide 8: Stonework

### 14.12 DAMP IN TRADITIONAL BUILDINGS

Damp is a common problem in many traditional buildings. The severity of damp in a building can range from negligible, requiring minor or no remedial work; through to serious, likely to result in damage to the fabric or the building, and requiring urgent attention.

Before any works to address damp are carried out, it is important to understand, if possible, the source/s of the moisture, and only then to carry out proportionate and appropriate remedial works where necessary.

While 'rising damp' from the ground beneath or adjacent to the wall can be a source of invasive moisture, most damp in old buildings originates at higher level. Common culprits include blocked or defective guttering and down-pipes, loose or damaged slates or tiles (including ridge tiles), and failed or damaged flashing (most notably to chimneys). Water seeping into solid walls at high level may take some time to work its way down within the masonry, and only then become visible at lower level.

Over time, many traditional buildings have been unwisely repaired or 'improved' using hard and impermeable modern renders which trap moisture, making natural evaporation impossible. The results





*Fig. 9 Water damage to cellar steps in a Listed Building are often severe damp and condensation.*

Where proprietary ‘damp proofing’ installers are consulted, the problem may be misdiagnosed. This can occur due to the use of electrical resistance meters designed for timber rather than masonry. Surface meter readings on walls can be misleading, as salts deposited on an inner surface will carry electric current even if the wall itself is relatively dry. Invariably recommendations are for even more impermeable materials, which may at best mask the problem, and which may drive damp elsewhere. The most accurate test of moisture content in masonry is the laboratory oven-balance method.

Chemical damp course injections, tanking and even dry lining are common prescriptions when damp is identified in traditional buildings. In the worst case, sealing external and internal surfaces leads to a dramatic rise in moisture levels within the structure.

Typical treatments have included the removal of internal plaster to a height of 1–1.5m, the application of a waterproofing plaster system, and injection of waterproofing solutions into the wall.

In thick, irregularly filled stone walls it is generally impossible to form a completely waterproof layer. However, where the layer is incomplete, moisture may be forced up in such places under increased pressure. In time this can lead to a ‘tide mark’ as the moisture is driven ever higher, potentially resulting in structural damage to joinery for example.

### 14.13 AVOIDING DAMP IN TRADITIONAL BUILDINGS

The following is a list of the principal measures recommended in order to avoid damp in traditional buildings (though many of these apply equally well to modern buildings):

- Ensure the roof – including tiles/ slates, ridge, chimneys and flashing – is in good condition;
- Ensure that gutters and down-pipes are kept clear and do not leak;
- Ensure that down-pipes discharge to drains or soakaways some distance from the building (if they discharge direct to the ground the water is likely to track back into the building);
- Ensure that external ground levels are well drained and as low as possible (without exposing footings or foundations). Consider the use of a ‘French drain’;
- Prevent the saturation of external walls by flush pointing using a lime-based mix. This will also promote the evaporation of any moisture within the wall. Cement-rich mortar should be avoided, as this will trap moisture and may lead to frost damage;
- Where modern gypsum plasters have failed in damp conditions they can be replaced with lime plaster which will reduce condensation problems. Pozzolan additives for lime plasters help them set in damp conditions. Hard cement renders can be replaced with lime

renders. Lime renders should not be sealed with an impervious paint. Limewashes can be used to resist penetrating rain, and mixed with oils, tallow or other ingredients to reduce water penetration. Silicate masonry paints may also be suitable;

- Ensure the building is properly ventilated and heated.

**See also:** Design Guide 6: Conservation Areas; Design Guide 7: Listed Buildings, Registered Parks and Scheduled Monuments; Design Guide 8: Stonework; Design Guide 10: Windows and doors; Design Guide 15: Conversion of agricultural buildings; Design Guide 19: Traditional paint colours

