BEDFORD BOROUGH COUNCIL

BEDFORD CONSERVATION AREA

MAINTAINING AND REPAIRING YOUR HISTORIC BUILDING

November 2010

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Për Informacion Per Informazione Informacja Za Informacije

للمعلومات برای اطلاع ਜਾਣਕਾਰੀ ਲਈ معلومات کے لئی তথ্যের জন্য

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INTRODUCTION

Bedford Conservation Area includes a wide range of building types from 15th and 16th century timber framed and masonry buildings to 18th and 19th century brick and stucco. This guide is intended to offer good practice in the repair and maintenance of historic buildings in the Bedford Conservation Area. Due to the range of construction types and possible problems, this is not meant to be a comprehensive guide; rather it is intended to point you in the right direction. The Council recommends that, if in any doubt of the cause of problems, or the most appropriate repair methods, professional advice be sought. A list of useful contacts, publications and websites is provided at the end of this guide.

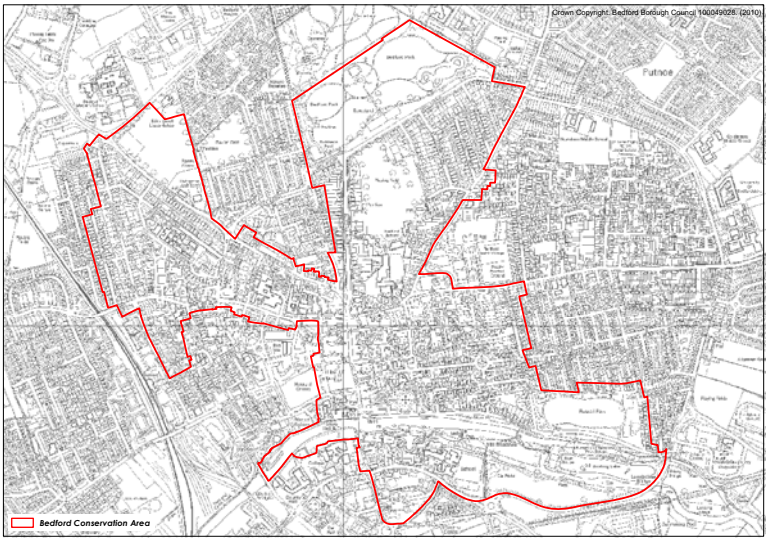
Regular property maintenance makes sound economic sense as well as cultivating a sense of pride in our local community. Regular maintenance can limit the need for more expensive repairs at a later time. For example, regular cleaning of gutters and drains will be much cheaper than dealing with a serious outbreak of dry rot in a timber roof structure following neglect.

Old buildings also contain 'embodied energy' - ie. all the energy in the materials and effort taken to build them. As awareness of the need for a sustainable approach grows, the benefits of maintaining buildings rather than allowing them to decay are high.

THE REQUIREMENT FOR PERMISSION

There are a number of permissions which may be required before you undertake any work, please read the whole of this section.

Before carrying out any works affecting the external appearance of a building, owners are advised to check with the Planning Service to see if permission will be required. Where planning permission is required, the Council have a duty to ensure that any proposal preserves or enhances the character or appearance of the Conservation Area.



Certain minor works to your house may be carried out without the need for a planning application to the Council. This is known as *permitted development rights* and includes works such as changing windows and doors. However, the Council may remove these rights with an 'Article 4 Direction' where it feels that control over such development is needed to preserve the character of an area. Where an Article 4 direction is in force, you must get planning permission to undertake the works that it controls. The Council's Planning Service will be able to advise you of any Article 4 Directions in place. Please bear in mind that the permitted development rights which apply to many common projects for businesses and houses do not apply to flats,

maisonettes or other buildings. The onus is on the owner to find out this information and ignorance is no defence should any matter be the subject of legal action.

If the building is also a listed building works are more strictly controlled. The carrying out works of alteration or demolition, both externally and internally, to a listed building may require consent. It is recommended to contact the Planning Service for advice in the first instance.

Trees within the Conservation Area may also be protected. If a tree is greater than 7.5 centimetres diameter measured at 1.5 metres above the ground, a tree owner is required to give the Council six weeks' notice before carrying out any work. This gives the Council the opportunity to consider whether a Tree Preservation Order should be made to protect the tree. If you have any doubts or questions please contact the Tree Officer within the Historic Environment Team.

Please note that Building Regulations Approval may also be required for any internal and external alterations to any building. Further information on works which may require Building Regulations approval may be found at the end of this guide.

Contact details for the Council's Planning Service, Historic Environment Team and Building Control Service may also be found at the end of this guide.

General Maintenance

Regular maintenance will go a long way to ensuring the continued preservation of a historic building, particularly those elements which deal with water and damp penetration such as roofs, gutters, downpipes, gullies and perimeter drains and open joints in masonry or cracked render.

CLEARING LEAVES AND SNOW

It is recommended that leaves and accumulated silt are cleared from gutters, flat roofs, downpipes and gullies at least every six months and particularly after the autumn fall of leaves. This is one of the most important maintenance operations and if neglected will soon lead to major problems. Clearing snow from valley and parapet gutters to prevent it building up above the level of flashings is also recommended.

PLANT GROWTH

Plant growth on buildings, walls and around the perimeter should be controlled and removed where injurious. This should be done at an early stage before roots take hold and penetrate deeply into walls or block pipes and gutters. Where plant growth is removed from building perimeters care should be taken to ensure that ground levels are maintained to prevent exposure of the wall base and foundations or conversely, build-up which may promote damp problems. As set out above, please be aware that permission may be required for works to certain trees.

VENTILATION

Maintaining original ventilation points on a building can be vital in preventing condensation and outbreaks of fungal attack. Ensure that air bricks are not blocked to allow free flow of air under floors and in roofs.

BRICKWORK AND STONEWORK

Brick is by far the most common building material in the Conservation Area, usually soft red but with a significant range of buff shades. Stone types vary in the Conservation Area with the early examples being local limestone.

From the 18th century a variety of limestones from further afield were used such as Ketton stone and Bath stone, particularly for detailing buildings. The common factor to all is that they are relatively soft building materials in comparison to many of the bricks and cement-based materials used today.

Prior to the widespread introduction of Portland Cement in the early 20th century, the buildings were constructed with pure lime mortars. Lime-based mixes, which form a permeable mortar, are far more compatible with these relatively soft materials than harder, impermeable cement mortars. Mortar which is harder than the brick or stone will prevent moisture from evaporating out through the joints so that instead it comes out only through the bricks or stones. This leads to accelerated decay of the bricks leaving the mortar standing proud. The reasons for this are partly to do with salts in the wall material and partly to do with frost action when water collects behind the hard mortar. This means that the bricks or stones have to be replaced far sooner than would otherwise have been necessary had the mortar been acting sacrificially in the way that it should.

CLEANING BRICKWORK AND STONEWORK

Brickwork and stonework cleaning is a specialist field and will always require the advice of specialist contractors. All cleaning methods can cause damage if undertaken carelessly. Any cleaning should be considered very carefully as it will often remove evidence of the patina of age that can add to the attractiveness and character of a building. The Council advises that cleaning should only be undertaken where it is necessary to remove corrosive dirt or to bring about a major improvement in appearance. A trial patch should always be undertaken and the results assessed before committing to the full cleaning. If the building is listed then listed building consent will usually be required to clean the building.

REPAIR AND REPLACEMENT OF BRICKS AND STONES

It is advised that bricks and stones should only be replaced where they have lost their structural integrity because of deep erosion or where weatherings are no longer performing the function of throwing water clear of surfaces below.

A good mix of colours and tones

Where replacement bricks are required, they should match the existing as closely as possible. Up until the latter years of the 19th century when technical advances in brick production were made, bricks were handmade. The handmaking process produced bricks that had some variation in shape and size while the firing methods produced a mix of colours with differing tones within those colours. For example, the soft reds commonly referred to from the Victorian period in Bedford actually include a mix of reds, light browns and oranges. Modern replacements to match traditional bricks are widely available and should have a similar appearance and pick up on all of these characteristics.

A stonemason who is familiar with the building stones used in this region should be able to advise you on the type of stone required to match your building. The repair of stones by mortar filling of areas should be used sparingly and it is recommended that it is limited to those areas that are not subjected to heavy weathering and do not perform a weathering function. Mortar mixes for filling stonework should always be softer than the stone, for the reasons set out above. The use of any cement in the mix would not normally be appropriate - they should be lime-based mixes only.

SUITABLE MORTAR TYPES AND MIXES

As discussed above, it is always advisable to use pure lime mortars for repointing and rebuilding areas of traditional brick and stonework rather than ones containing cement. These may be pure lime putty mortars though hydraulic lime mortars (please note that this is a different material to hydrated lime) of strength NHL2 to NHL3.5 may be suitable as these will also provide a permeable mortar. In addition to allowing the building to breathe, lime mortars will also usually provide a better colour match to the existing traditional mortar than cement based mortars. Mixes will vary according to stone or brick type along with location on the building and therefore relative strength required (eg. chimneys will usually require a relatively stronger mix). A general guide to an appropriate mix will be a proportion of 1:3 of lime to sand by volume.

Examples of good brick and stone pointing

Examples of poor brick and stone pointing

The sand should have a range of aggregate sizes to prevent rapid shrinkage and to provide a satisfactory match to the original mortar. Modern soft building sands are rarely suitable as they have a relatively uniform aggregate size and high proportion of 'fines', often producing dark ochre colours rather than the lighter cream shades of traditional mortars. A better match will usually be produced by using sharp or plastering sands which tend to have a more suitable range of aggregate sizes and will result in a 'gritty' finish. Additives, such as plasticiser and pigments, should be avoided and the correct colour should be obtained by choosing and adjusting the type of lime and aggregate.

POINTING: PREPARATION AND FINISHES

Brickwork damaged by angle grinding

Repointing should only be undertaken where mortar has weathered out, leaving open or deeply recessed joints vulnerable to water penetration. Areas of sound old pointing should be left undisturbed. It is not necessary to repoint entire elevations just for consistency of finish, if done properly new pointing will quickly blend with the existing. In preparing for re-pointing, mortar should not be forcibly removed using angle grinders or any other method which is likely to damage the arisses of the bricks or stones or increase the joint widths. Such damage is irreversible and can severely harm the appearance of a wall. Loose pointing should be removed manually using a knife or

spike, or where there are harder sections, using a sharp chisel and hammer. However, care must be taken to ensure bricks and stones are not damaged. Where a wall has previously been repointed in a very hard cement mix it is often best left to loosen naturally over time, as removal may create more damage.

Late 19th century tuck pointing

The joint should be finished in accordance with the original form where there is evidence of it. This is particularly applicable where joints are finished with a special treatment (providing this is original and not recent) eg. an incised line in the centre of each joint or 'tuck' pointing. Where this is not the case, a fractionally recessed brushed finish is usually appropriate. Mortar should not spread beyond the joint onto the face of the stone or brick as this can severely disfigure the overall appearance of the wall. Relatively recent forms of joint finish such as 'strap' or 'ribbon' pointing, bucket handle and weather-struck are unsuitable for historic buildings work and can lead to damage of the brick or stone.

Inappropriate bucket handle joints and ribbon pointing

TIMBER FRAMED BUILDINGS AND STRUCTURAL TIMBERS

A limited number of timber framed buildings remain in the Conservation Area and the majority of those are listed buildings due to their age and architectural interest. For those buildings, listed building consent may be required dependant upon the extent and type of repair. Where repair or partial replacement of timber framing members is required on a listed building, replacement material must be limited to the minimum necessary to restore the structural integrity of the frame. Replacement timber must match the existing and it may be advisable to use fully seasoned timber depending upon its location within the frame. Traditional carpentry methods should normally be employed for repair ie. decayed parts should be carefully cut out and new sections spliced in. However, there may be occasions where metal strap reinforcement may be preferable to excessive loss of original timber. When repairing infill panels on any timber framed building it is vital that they remain capable of moving in harmony with the timber frame without cracking. This will normally require using wattle and daub or lime mortars, depending upon the nature of the existing infill panel. An early discussion of the repair strategy for the building with the Council's Historic Environment Team is recommended

When dealing with outbreaks of fungal or insect attack, prior to any measures being taken, the problem should be analysed in order to identify the cause properly. Owners are advised to take independent professional advice, rather than that of a specialist contractor who has a product to sell. Certainly in the case of fungal attack, treatment with fungicides will be ineffective in the long term if the source of the moisture is not stopped (eg. leaking roofs or downpipes). Further sources of guidance for dealing with fungal and insect attack are provided at the end of the document.

RENDER

There are a number of reasons why render finishes were used historically in the Conservation Area. In their early applications, they provided a cheap, durable protective coating to timber framed or poor quality rubble stone buildings. As classical architectural styles became more favoured during the 18th century, render finishes were used to simulate more expensive ashlar masonry, being lined out to resemble joints in stonework (these renders are frequently referred to as stucco); stucco was often applied over a low quality brick structure. The majority of these early renders used lime putty as the binding agent, though there may be occasional examples of oil mastic or natural hydraulic cement. Render finishes continued to be used throughout the 19th century up to the present day with Portland cement renders becoming increasingly common from the late 19th century onwards until its almost ubiquitous use today.

Prior to undertaking any repair of a render finish, it is vital to understand the composition of the render and its function in the way the building behaves. Understanding how an alteration of the type of render will affect the building's performance overall is particularly important. For example, on timber framed buildings, a pure lime render will protect the often lightweight timber frame from the elements while its breathable nature will prevent moisture build up in the wall and the timber itself. The build up of moisture will usually lead to fungal and insect attack. The alteration of these renders to a hard impermeable and inflexible cement render, which occurred particularly from the middle part of the 20th century, can have disastrous consequences for the timber frame. There are numerous examples throughout the Borough where this has occurred and has led to severe decay of the timber frame. Similarly, the application of

impermeable paint systems to breathable renders can lead to the trapping of moisture and subsequent damp and timber decay. Traditional lime renders should be finished with lime wash where a decorative finish is required.

Where repair or replacement of render on a historic building is required, the appearance of the original should be copied. Where patch repairs are required, particularly to stucco renders, areas should be cut out to be clearly defined by architectural features or by the corners of a façade wherever possible. This is to avoid a patchy appearance between old and new. Non-traditional features such as bell drips, metal angles and stops should be avoided. Architectural features such as rustication, lining-out, cornices and architraves should be carefully copied in any scheme of repair.

Where a building is listed, any repair must exactly match the existing render in terms of the render mix, the type of lath and the finish that has been used historically. The exception to this would be where the original render has been replaced with a modern cement render which is clearly harming the building as a whole. On listed buildings where extensive replacement of render is required, an application for listed building consent may be needed. You should contact the Council's Planning Service to establish whether or not any consents or permissions will be required for repair or replacement of render.

ROOFS

Prior to the mid 20th century the roofing materials used in the Conservation Area were plain clay tile, natural slate and lead. While there has been more recent replacement of roof coverings with materials such as concrete tile and artificial slate, a significant proportion of the buildings retain these original roof coverings and they provide a characteristic feature of the town's architecture. Where planning permission is required for changing a roof covering, the Council will seek to ensure that original roof coverings are preserved. Total re-roofing of a listed building will usually require listed building consent and early or original roof coverings must be preserved.

Bedford Gallery - reroofed in slate

Original clay tile roofs and concrete tile replacement

General good maintenance requires the removal of excess moss as it can harbour moisture leading to frost damage of slates and tiles. It is important to pay close attention to flashings and valley gutters as water ingress through these areas can lead to timber decay requiring substantial repair works. Spray-on treatments to seal roofs are not recommended as they prevent slates and tiles from being salvaged for re-laying and may also reduce the ventilating qualities of a roof space increasing the risk of fungal and insect attack. Similarly, repair of leadwork with bitumen coated fabrics or tapes is not recommended as they conceal later-developing faults and inhibit carrying out of permanent repairs. Owners of listed buildings should note that spray-on roof treatments and repairs of leadwork using bitumen fabrics would be unacceptable.

WINDOWS, DOORS AND EXTERNAL JOINERY

A large proportion of the historic buildings in Bedford, particularly in the case of the later Victorian development, retain their original windows and doors. The importance of these features to the character of a building should not be underestimated - they are conspicuous elements of the design. Houses with original features are also increasingly sought after and often command higher prices. The Planning Service will be able to advise on whether any permission will be required to replace windows and doors. Where a building is listed, listed building consent will invariably be required to replace a complete window or door. However, where only repairs are required on a like-for-like basis, presuming that the majority of the original fabric is to be retained, such work may be done without the need for formal consent.

Beautiful Victorian doors

The majority of the historic windows in Bedford Conservation Area are timber sliding sash windows though side-hung casement types are not uncommon on less prominent elevations. Most nineteenth century windows are of softwood imported from Scandinavia and the Baltic States. This slow-grown, high quality durable timber is far superior to the inferior species used today, which require chemical preservatives to ensure some degree of longevity. Many windows retain their historic cylinder glass, the irregular character being formed by the ripples and air bubbles, causing distorted reflections, making a subtle, but significant, contribution to the character of buildings in the Conservation Area. Doors may contain etched or stained glass which can add greatly to the appeal and exuberance of historic entrances.

Most historic windows and doors can be repaired adequately for far less cost than replacing them. Where original windows and doors are beyond repair, they should be replaced with like for like copies. It is important to replicate frame thickness, glazing bar and moulding details - such features play a big part in the character of the building. Where windows and doors are being earmarked for replacement to potentially improve thermal performance or noise insulation, other options such as improving seals on existing windows and secondary glazing should be considered first. There are various products now available which may be fitted to existing frames and can significantly improve the airtightness of a window without harming its visual character. Secondary glazing can be highly effective in reducing external noise while internal shutters and heavy curtains will also significantly reduce draughts. More detailed information is widely available on improving the thermal performance of traditional buildings and sources are listed at the end of this guide.

More than almost any other feature of a building, regular maintenance of external timber is crucial to ensuring its longevity. Where cracks or open joints occur, they should be filled to stop water getting in and rotting the timber through fungal decay. Open joints may also cause frames to swell or sag, making opening and closing difficult. Putty should be regularly checked as, where it fails, it may allow water to penetrate, leading to decay of frames or glazing bars. Cracked or peeling paint also allows water into the frame and due to the impermeable nature of most modern paints, this leads to trapped moisture and subsequent decay. Traditionally, joinery was painted using lead-based paints which were more flexible than today's modern paints and was less susceptible to cracking and allowing moisture ingress. (Note - protective measures should be taken when removing old paint coatings due to their potential lead and arsenic content).

Repair of windows and doors should be undertaken using timber spliced on to the existing frames, though for smaller repairs, resin may be acceptable. A traditional joiner should be able to undertake such repairs. Where repainting is required, it is advisable to use breathable microporous paints as they allow passage of water vapour, ensuring that moisture does not build up in the timber. Where glazing requires replacement, modern cylinder or imperfect glass types is preferable to dead flat modern float glass.

The consequences of poor maintenance

RAINWATER SYSTEMS

It is essential that rainwater systems are functioning efficiently. Where this is not the case, blocked hoppers or leaking gutters can lead to frost damage of masonry and timber decay. Systems should be checked during periods of heavy rainfall as leaks will be more obvious.

Vegetation should be removed from gutters and downpipes, and gullies should be regularly cleared of blockages such as dead leaves - at least twice a year is recommended. Regular painting of cast iron is essential to prevent rust.

FURTHER CONTACTS AND USEFUL SOURCES OF INFORMATION

BEDFORD BOROUGH COUNCIL

Planning Services 01234 2217290
Historic Environment Team 01234 221953
Building Control 01234 221761

OTHER CONTACTS

English Heritage (East of England Region) 01223 582700
English Heritage (Customer Services, publication requests, etc) 0870 333 1181
Society for the Protection of Ancient Buildings (SPAB) 020 7377 1644
The Victorian Society 0208 994 1019
The Georgian Group 0871 750 2936
Institute of Historic Building Conservation 01747 873133

GOVERNMENT & ENGLISH HERITAGE PUBLICATIONS

Many of the following documents are also available online:

Planning Policy Statement 5: Planning for the Historic Environment
Department for Communities and Local Government (ISBN 9780117540958)

Energy Conservation in Traditional Buildings
English Heritage (Product code 51367) 2007

Climate Change and the Historic Environment
English Heritage (Product code 51392) 2008

Building Regulations and Historic Buildings
English Heritage (Product code 50900) 2004

Draughtproofing and Secondary Glazing
English Heritage 1994
http://www.helm.org.uk/upload/pdf/Draughtproofing%20and%20secondary%20glazing_1994.pdf?1285662704

Energy Savings
English Heritage 1994
http://www.helm.org.uk/upload/pdf/Energy%20Savings_1994.pdf?1285662704

USEFUL WEBSITES

Bedford Borough Council	www.bedford.gov.uk
Planning Portal	www.planningportal.gov.uk
Funds for Historic Buildings	www.ffhb.org.uk
HELM: Guidance on the historic environment from across the country compiled by English Heritage	www.helm.org.uk
Institute of Historic Building Conservation	www.ihbc.org.uk
English Heritage	www.english-heritage.org.uk
Society for the Protection of Ancient Buildings (SPAB): provide technical guidance on specific types of repair	www.spab.org.uk
Heritage Gateway: Search across national and local records of England's historic sites and buildings	www.heritagegateway.org.uk/gateway
Climate Change and Your Home: information about energy efficiency in old buildings	www.climatechangeandyourhome.org.uk
Building Conservation Directory: Articles and specialist craftsmen	www.buildingconservation.com
Work out your carbon footprint	carboncalculator.direct.gov.uk
Register of Accredited Conservation Architects	www.aabc-register.co.uk
Register of Accredited Conservation Surveyors	http://www.rics.org/site/scripts/download_info.aspx?fileID=2466

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Survey and Repair of Traditional Buildings: A Sustainable Approach
Oxley R (2003) Donhead Publications.

Practical Building Conservation Series Volumes 1-5
Ashurst J & N (1998) Gower Publishing Ltd, EH technical guidance books.

Old House Handbook: A Practical Guide To Care And Repair
Hunt R and Suhr M (2008) London.

Is timber treatment always necessary? An introduction for homeowners
Information Sheet 14 available from SPAB

Care for Victorian Houses No. 9: Timber windows. A brief guide to the care and repair of windows in Victorian and Edwardian houses
Victorian Society ISBN 0 901657 33 6.

BUILDING REGULATIONS

It is important to improve the thermal efficiency of all buildings when undertaking this type of work but lesser standards may be accepted provided that the Conservation Officer has stated that meeting the current regulation standard would be detrimental to the character or performance of the building.

The following repair and renovation work **will require the submission of a formal Building Regulations application**:

Replacement windows/doors

Where a window or door (which has a glazed area of 50% or more) is replaced in a building which is listed or is in a Conservation Area the replacement should meet the current 'U' value required under the Building Regulations. In many cases the inclusion of secondary glazing would provide an acceptable solution.

Replacement roofs/roof coverings (pitched roofs and flat roofs)

The Regulations will require the replacement material to be suitable for the purpose in terms of weather resistance and structural stability. Regulations also require that where this type of work is carried out that the thermal insulation is upgraded to current Building Regulations standards. Because the increased insulation may result in a higher condensation risk consideration will need to be given for the inclusion of vapour check membranes or additional ventilation.

Replacement or repair of external cladding or render or internal plaster to an external wall.

Where more than 25% of a wall elevation is to be repaired the Regulations require that the thermal efficiency of the whole of the wall should be improved to the current Building Regulation standard.

Replacement ground floors.

Where more than 25% of a ground floor is to be replaced the Regulations require that the thermal efficiency of the whole of the replacement floor should be improved to the current Building Regulation standard.

Where a lesser standard is requested documented reasons from the Conservation Officer must be included with the Building Regulations application.

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