Swadlincote Conservation Area Maintenance Guide

HOW TO MAINTAIN AND REPAIR YOUR OLD BUILDING or

"A Stitch in Time Saves Nine"



South Derbyshire District Council

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This guide has been produced by Mel Morris Conservation for South Derbyshire District Council. It is specific to Swadlincote but it has been informed by advice from IHBC, SPAB and English Heritage

Society for the Protection of Ancient Buildings - www.spab.org.uk/homeowners/ English Heritage - www.english-heritage.org.uk/your-home/

Introduction

This guide is intended for all property owners and businesses in Swadlincote conservation area, but sections could equally apply to other historic buildings outside Swadlincote. It is designed to help building owners to look after their property.

It makes good economic sense to carry out regular maintenance of an old property. Regular maintenance will cut down on costs in the long-term for more expensive repairs. Modest amounts of inspection, maintenance and repair carried out on a regular basis can safeguard the well-being of a building, while failure to identify problems early enough can lead to major faults and damage, which may then be extremely expensive to put right. For example, repainting joinery regularly will prevent windows rotting; cleaning out gutters regularly will prevent a build up of standing water in gutters and water washing down the walls, flushing out joints and moss growth. Regular maintenance will also help to preserve those parts of old buildings which are of special interest, many of which can be very costly to replace.

It makes sense but it needs you, the building owner, to be pro-active.

- Remember to check and inspect the building annually, sometimes more regularly
- Look up at high level, using binoculars if necessary or a ladder, tied or footed securely
- Look inside your loft space to see for signs of displaced slates, lead or water damage
- Get a contractor to look at key problems, if you are unsure about what you are looking at
- Get a second opinion most contractors will not charge for an initial visit and advice
- Speak to the District Council Conservation Officer or THI project officer. They are available, free of charge, to provide specialist and experienced advice
- If in doubt, seek professional advice from someone who is well qualified, e.g. a chartered surveyor or an architect with specialist knowledge of historic buildings (conservation accredited)
- · Speak to the District Council Building Control Surveyor

A list of useful contacts, sources for materials, publications and websites is provided throughout this guide.

Finding the right help

The District Council conservation officer or Townscape Heritage officer can provide advice on the repair of historic buildings. Many works may be eligible for grant assistance.

The District Council Building Control team can provide advice on whether repair works will require a Building Regulations application and how to meet the regulations. Tel: 01283 595737

Specialist contractors working in Derbyshire are listed on the Derbyshire Crafts Register. http://www.derbyshirehistoricbuildings.org.uk/craftsregister.php

For further advice there are a number of online sources. Many of these sources are identified 1 in this good practice guide.

01 General maintenance

Old buildings often have very different construction methods from modern buildings and they need different types of maintenance and repair.

Before carrying out any works affecting the external appearance of a building in the conservation area, owners are advised to check with the Planning Authority about whether any works need permission. The planning authority is currently seeking to introduce an "Article 4 Direction", which will require planning permission to be submitted for some works, such as altering the roof material, painting elevations and remodelling boundary walls. Cladding walls already needs planning permission in conservation areas.

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.

Please also note that Building Regulations Approval may also be required for some internal and external alterations to a building. For further information on works which may require Building Regulations approval please speak to the Building Control Department in the District Council offices.

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.

There are of course occasions when emergency work may be needed or work to address immediate public health and safety.

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.



Within the High Street there are a number of tall plane trees; leaf litter and spring flowers from these trees can all too easily block gutters. Along the High Street properties will therefore require more regular cleaning out of gutters.

PLANT GROWTH

Plant growth on buildings, walls and ideally up to a metre around the edge of a building should be controlled and removed. This should be done at an early stage before roots take hold and penetrate deeply into walls or block pipes and gutters. On occasion, where roots have taken hold, a systemic "spot" weedkiller applied several times can be effective

to avoid having to dig roots out and disturb mortar. 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, a build-up of soil which may promote damp problems. If possible, and where it does not impact on footings, try to ensure that external ground levels are 150mm lower than the dpc (if you have one), or the suspended or solid floor level inside the building, if you don't.

Please be aware that permission may be required for works to trees in the conservation area if they are over a certain size.

VENTILATION

Maintaining original ventilation points on a building can be vital in preventing condensation and outbreaks of fungal attack.

Try to ensure that there is some through ventilation in chimney stacks if the pots are open and vented but not operational. Passive ventilation like this is healthy for the building and the occupants.

Make sure that any loft insulation does not block eaves ventilation by pulling the insulation away from the slate / roofing felt.

Ensure that air bricks are not blocked to allow free flow of air under floors and in roofs. Dampness and poor ventilation promote fungal and insect attack, where, for example, ventilators serving voids under timber floors become blocked.

02 Carrying out an inspection

THERE IS A DIFFERENCE BETWEEN A CASUAL INSPECTION AND PLANNED PERIODIC INSPECTION.

Planned periodic inspection should be undertaken at least once a year, ideally during rainy weather: there is nothing like a downpour for identifying roof defects or blocked gutters.

Start at the roof and then work downwards outside the building. Use binoculars to pick up detail at high level. If you suspect the roof has problems, you may need to make checks via a ladder (see safety below). Then move inside the building and start in the roof space, moving down floor by floor and room by room, taking in any 'hidden' spaces in cupboards on the way and finishing in the cellar or basement (if there is one). Make a note of areas of damp.

Check all pipework for leaks. Poke a knife into window cills and frames, and any other wood that has cracked or crazed paintwork. If the wood is very soft there may be an outbreak of wet rot to be dealt with.

The challenge is to determine whether the defects are historic and of no consequence, of a minor nature and therefore of no immediate risk, or warrant further investigation by professional advisers.

Remember that not everything will have to be tackled at the same time, although it can often make economic sense to do so. Some things can be put off for a short time, and dealt with when there are enough similar jobs to warrant the expenditure — to justify the cost of scaffolding, for instance.

STAY SAFE

Ensure that you carry out any inspection or building maintenance safely.

Ladders should be tied onto the building and there should be someone at the foot of the ladder. Watch where you tread, especially in roof spaces, and make sure you have enough light to see what you are doing.

Safety equipment is needed for some jobs, including gloves for clearing drains or removing pigeon droppings from gutters.

If in any doubt about safe access, particularly on roofs and in attics, use a reputable, professional builder for the inspection or work.

CYCLICAL MAINTENANCE CHART

Regular Tasks 1.0 Roofs

Building Element	Maintenance Task	Frequency	March / April	Sept / Oct
1.1 Roof areas generally	Inspect roof areas from safely accessible high points, using a ladder strapped securely, the bottom of the ladder footed and held by a second person.	Twice per year	√	✓
1.2 Slate roofs	Inspect for slipped, cracked, displaced and broken slates. Replace to match, to the same dimensions and head-lap, using either "tingles", or carry out permanent repair with slate to match.	Annual		✓
1.3 Tiled roofs	Inspect for slipped, cracked, displaced and broken slates. Replace to match, to the same dimensions and head-lap, using either "tingles", or carry out permanent repair with slate to match.	Annual		✓
1.4 Leadwork and lead flat areas	Inspect condition of leadwork, such as the back of parapet walls or flashings. Dress back clips, re-fix wedges and make good mortar fillets. Make temporary repairs to any cracks or splits, using flashband or similar. Undertake permanent repair to leadwork within 6 months.	Annual		✓
1.5 Ridges	Inspect ridges with binoculars and check for displaced mortar on roof surface, in gutters or on the ground	Annual		✓

2.0 Rainwater Disposal

Building Element	Maintenance Task	Frequency	March / April	Sept / Oct
2.1 Rainwater goods (cast iron or cast aluminium)	Inspection from ground level Check for leaks, blockages, overspill, faulty joints, wet masonry. Check fixings. Note faults and arrange for maintenance and repair.	Twice per year During / after stormy weather	✓	✓
2.2 Rainwater gutters (cast iron or timber)	From a secure ladder, clear gutters, sumps and downpipes of debris and removed leaf litter. Rod if necessary. Check all connections and fixings are secure.	Twice per year	1	√
2.3 Rainwater gutters (lead flat and tapered gutters)	Inspect roof surface at close hand and make a note of any defects. Clean out leaf litter or debris. Debris must be removed from the roof and not simply flushed down rainwater pipes. Check fall for any signs of ponding.	Twice per year	✓	✓

Building Element	Maintenance Task	Frequency	March / April	Sept / Oct
3.1 Walls generally	Remove any vegetation (e.g. ivy and self-seeded plants) from principal walls and within a metre of the main walls. Tackle perennial weeds with a systemic weedkiller	Twice per year	√	1
3.2 Brickwork – general	Check for any cracks, dropped arches, missing areas of pointing, mossy growth or wet patches Arrange for permanent repair within next 12 months	Annually		√
3.3 Render - general	Check for any signs of cracking of masonry or loss of adhesion (i) Cleaning and washing render (ii) Washed down water-based paint or mineral paint using a mild detergent every 5 years flat surfaces and run off from cills. Do not wash down limewash. Areas receiving scuff marks should be washed down with a mild detergent solution using a soft bristle brush from 1-5 years	(i) Annually (ii) 5 years	✓	
3.4 Copings and parapets	Inspect from the ground and accessible high points. Note any signs of movement or areas where joints are open. Programme repair within next 6-9 months.	Annually, after stormy weather in the autumn		✓
3.5 Cornices to shopfronts and bay windows	Check leadwork for any displaced lead, missing fixings or wedges, cracks or pitting. Arrange for immediate repair	Annually		1
3.6 Ventilation	Inspect ventilation grilles, ducts, and air bricks & remove any obstructions, such as plants, weeds, leaf litter and soil	Annually		√
3.7 Windows	Inspect sash windows and other windows and repair any damaged glass, /cracked panes. Replace any missing putty with acrylic or linseed oil putty	i) As necessary, when notified of damage ii) Annually	✓	
3.8 Shopfronts / large areas of timber	Check for any surface signs of rot or decay, using a small penknife, if in doubt, noting any spongy areas or signs of wet rot.	Annually	✓	
3.9 Decoration	Inspect paint condition & note any loss of paint. Arrange for re-decoration within 12 months	Annually	✓	
3.10 Windows and doors generally	Check operation of hinges, bolts and locks and lubricate as necessary. Check security of locks.	Annually	✓	

4.0 Exterior Areas

Building Element	Maintenance Task	Frequency	March / April	Sept / Oct
4.1 Areas 1 metre around building envelope	Weed and remove litter and leaves	Twice per year	√	✓
4.2 Perimeter drains	Check inspection hatches of combined sewers and flush out drains and if necessary rod. Note any signs of roots or root damage in the inspection pit or any signs of blockages Remove weeds, leaf litter and clean out open drains / gulleys Remove blockages from the base of any rainwater pipe shoes	Annually	✓	

Cyclical Tasks

Building Element	Maintenance	Frequency
	Task	
Windows and doors generally (exterior)	Re-paint windows and doors	5-7 years
Sash windows	Sash windows - removing staff beads and parting beads, re-cord sashes with existing weights, ease sashes	10+ years Life expectancy depends upon usage and level of exposure
Chimney stacks	Re-flaunch cappings & re-fix pots	10 years, or sooner if required
Cast iron Rainwater Goods	Repaint using a gloss paint or a bitumen paint to BS416	5-10 years
Ridges	Re-bed ridges and mortar joints	10-20 years
Render - decoration	Re-paint using a water-based paint or a mineral paint, such as Beeck ™	5-10 years for water-based paint 20 + years for mineral paint, depending upon performance
Re-slating	Reslate or re-tile	50-100 years, depending upon factors such as location, quality of workmanship, condition of battens and nails
Brickwork	Re-point brickwork	60-100 years, depending upon weathering and exposure
Lead flat / tapered gutters and flashings to chimneys	Replace lead	50 + years

03 Roofs

Swadlincote has particular characteristics which are not shared with other places. Whilst there has been the occasional replacement roof covering of concrete tiles, a significant proportion of the buildings in the conservation area retain the original 19th century slate and tiled roof coverings and they provide a characteristic feature of the town's architecture.

The introduction of an Article 4 Direction will require property owners of houses to apply for planning permission for replacing roof coverings with alternatives. The District Council will resist the removal of slate roofs.

Check your roof twice yearly. 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 percolating through these areas can lead to timber decay requiring substantial repair works.

Welsh slate

The majority of the roofs in the town centre are clad in Welsh slate, which was imported after the railway first appeared in the town. When used on a terraced row, Welsh slate was often continuous between properties in the row and did not incorporate joints, although steps and abutments occur along some of the High Street properties. Welsh slate continues to have a strong presence in the town with a uniform colour and profile.

Welsh slate is very durable but each roof will eventually need re-roofing; this is because the battens and the fixings (nails)



come to the end of their useful life. There is also something called "nail sickness", which causes the nails to slip. As a short-term expedient, replacement of the occasional slipped slate can be done using "tingles" (copper or galvanized steel wire), which is a good way of maintaining your building short-term. Broken slates should be replaced immediately. There will eventually come a point at which complete re-roofing is required, on average a 60-100 year cycle.

Battens and nails will usually be the first elements to deteriorate and re-roofing should be undertaken with replacement tanalised battens and non-ferrous nails.

If the whole roof covering has to be re-laid, this is a good time to lay a vapour-permeable roofing felt, which lets the roof breathe but keeps out wind-driven rain and snow. Historically the roof was weather-proofed from snow and driving rain by 'torching', a lime and haired mortar spread in the angle between the slate and the battens. It is still important to ensure good ventilation in the roof space.

Spray-on treatments to seal the underside of roofs should be avoided as they prevent slates and tiles from being salvaged for re-laying and may also reduce the ventilating properties of a roof space, increasing the risk of fungal and insect attack.

The age of most of the buildings in the conservation area is such that Welsh slate will rare-

ly need replacing unless it has other defects, such as excessive delamination. That occurs when the slate is saturated for a long period.

Replacing an old roof covering is disruptive and expensive and can cause damage, so make sure the work is necessary and effective. Damp could be caused by defects in chimneys or lead work, or by slipped slates or tiles.

If you are considering re-roofing, please ensure that the roofing contractor does not assume that the Welsh slate should be replaced. It is usual to be able to re-use a high percentage of the original slate and far preferable to make up any damaged slate with second-hand Welsh slate than carry out comprehensive replacement, as it will be very difficult to get a good match in a terraced row.

Staffordshire Blue Clay Tiles

Swadlincote has a number of properties with blue clay tiles, which date from the first half of the 19th century and a few examples of red clay tiles which date from the end of the 19th century.

Staffordshire blue clay tiles are extremely hard-wearing but they can be damaged by impact or through damage to their 'nibs.' Slipped tiles or reclaimed tiles can be hung by easing them underneath adjoining and overlapping tiles and then pushing the nibs over the battens, which locks them into place.

Traditional Leadwork

Lead relies on good detailing to work properly. It expands in the heat of the day and contracts as it cools and so lead should be laid with relatively few fixings. Full details of how to lay lead are available from the Lead Sheet Association.

www.leadsheet.co.uk/lsa-pocket-guide

Lead is commonly used to protect the timber cornice of traditional shopfronts or the covering of a projecting bay window. For each of these, lead should be laid in a number of sheets jointed together with 'welts' or 'rolls'.

Lead valleys – lead is used to provide a broad weatherproof detail at the junction of two slopes of slate. It is also used to line a flat-bottomed valley behind a parapet or where two roofs meet.

Sometimes over-fixed lead valleys can become stretched and nail holes can become en-

larged. Lead can suffer fatigue. The most common problem is that lead is laid in sheets which are too large for the thickness of lead – they stretch and develop cracks and holes.

Lead-lined flat parapet gutters are not fixed and the sheets of lead are laid to overlap each other and dressed over steps. The gutters have a slight fall and are usually tapered.

Where there are lead-lined gutters, look for signs of cracking. An effective short-term repair can often be carried out by repairing cracks and holes by 'lead burning'; however, this is a specialist job.

Lead Gutters - a number of the buildings in Swadlincote have





parapet gutters, i.e. lead is hidden behind a short wall. This applies mainly to the terracotta buildings and details. These should be inspected for leaf litter and debris, as it is a build-up of this which often causes gutters to overflow. Parapet gutters usually have outlets which pass through the masonry. These are particularly vulnerable and should be regularly kept clear of detritus. There are protective wire guards which can be fitted over the outlets to prevent leaf litter from blocking up gutters – flooding from these events is usually quite sudden but can cause large amounts of damage.

Snow should be removed from lead parapet gutters - heating tapes can be added to keep gutters clear of snow.

Where there are plants in gutters or in high level joints, remove these as quickly as possible, because if they take hold, their roots can cause even more costly damage.

The temporary repair of leadwork with adhesive tapes and bands should only be used as a short-term repair to prevent leaks, whilst full repairs are planned.

Ridges and Hips

Junctions in roofs are potential trouble-spots. Ridge and hip tiles may work loose and may need rebedding.

Try to keep the existing roof ridges. Within Swadlincote many of the red and blue clay ridges had highly decorative patterns, or were pierced. If you are receiving a grant, it is likely that we will require missing decorative ridges to be reinstated, if there is good evidence for them.

The ridge tiles in Swadlincote are predominantly butt-jointed,



which means that they rely for a waterproof junction on the pointing between the individual tiles. The tiles are laid onto a bed of mortar, which is usually not visible. The life of a roof can be lengthened by occasional re-bedding and re-pointing of ridge tiles, even if the main roof slopes do not need re-laying.

04 Chimney maintenance & repair

The chimneys of old buildings need more frequent maintenance than masonry less exposed to the weather, but this is often neglected because of difficult access.

Bent or leaning chimneys are caused by differential expansion and erosion of mortar joints, but a leaning or cracked stack may not be dangerous – seek professional advice before embarking on any unnecessary work. Erosion of mortar between bricks or stones in a chimney can lead to smokiness, dampness, increased fire risk and instability. Mortar joints are most susceptible to weathering at the top of a stack (weed growth may be a symptom), on the sides where it faces the prevailing wind, or the point at or just below where it passes through the roof.

Mortar for repointing or re-bedding bricks or stones should normally be lime-based (without cement).



Ensure that chimney pots remain wellseated and secure. They can become unstable due to the deterioration of surrounding mortar ('flaunching') and careless flue sweeping. As with pointing, mortar used for renewing flaunching should usually be limebased on old buildings. The provision of a protective lead capping over flaunching may sometimes be justified. Cowls and covers also need checking.

Mortar fillets, lead flashings and other weatherings to chimneys should be well maintained as this is a first point

of water penetration. Lead flashings at chimneys should be inspected for early signs of deterioration; pitting or slipping out of position. Lead back-gutters behind chimneys often leak where they are not cleared out or snow collects against them.

05 Rainwater systems

A number of signs can emerge on a building which indicate that problems are occurring with rainwater goods. Usually this is because their maintenance has been overlooked. Signs to note in the vicinity of downpipes and gutters can include:

External signs

- Plant or algae growth
- Eroded mortar joints
- Eroded masonry
- Damp staining to walls behind or beneath rainwater goods
- Saturation of masonry, brickwork or render
- Wet rot in external joinery
- Damage to foundations

Internal signs

- Damp patches on wall and ceiling plaster
- Decay of timber skirting boards and panelling
- Dry rot in structural and concealed timber
- A musty smelling odour caused by dampness in rooms

Many problems, such as emerging leaks and overflows, might only be visible during heavy rainfall, which is why it is important to check rainwater systems during rainfall.

Please note that defective plumbing from waste pipes can also cause the same effects at low level.

Traditional buildings in the town centre contain one of several designs of cast-iron eaves detail and rainwater disposal; ogee and half-round.

Cast iron is a strong material which, if correctly designed and maintained, can be one of the most durable elements of the building fabric. However, if the paint layer which protects it is neglected, the underlying metal will rust and eventually fail, particularly if poorly detailed. Another potential problem is the misalignment of components, such as broken sections of drain-pipes or gutters, which might only be evident during heavy rainfall.

Cast-iron is still manufactured today and there are companies specializing in producing cast patterns to a large range of designs and profiles. The paint applied to new cast iron rainwater systems at the foundry is only a transit finish so the system will need to be carefully painted to avoid rusting before it is installed with any bare or cut metal primed accordingly.

1) Cast-iron gutters were often designed to sit on the corbelled eaves of a brick or terracotta building and gutters formed an integral part of the design of the eaves. These gutters were usually flat-bottomed with a flat back and an ogee profile to the front. Because these gutters are fixed in position, and they sit on the wall-head, two faces are in permanent contact with brickwork / wallplate, and the bottom and back is often inaccessible; they are therefore difficult to paint and maintain insitu. The joints of the cast sections need to



be checked regularly and a bitumen-based paint to BS416 can be added to the inside bottom of the gutter to prolong their life. Substituting cast iron with painted cast aluminium might be acceptable where access for redecoration is exceptionally awkward.

2) Half-round gutters are another traditional form of gutter. These are easier to maintain in-situ and can be painted in-situ. Gutters will need repainting approximately every 5-7 years, if painted properly in the first place.

Joints in cast iron rainwater pipes do not need be sealed because the upper pipe runs inside the socket of the lower pipe, preventing leaks, and an unsealed pipe will be easier to dismantle and repair in the future. Generally, all that is required is three lead wedges placed between the socket and the spigot to centralise and secure it.

Gutters, on the other hand, must be sealed with low modulus silicone sealant or special rubberized bitumen gutter mastic. The sealant is spread evenly within the gutter socket before placing the gutter spigot into the socket and bolting them together with stainless steel or zinc-plated screws and washers. The nuts should be lightly tightened onto the washers to avoid damaging the paint. Finally, any excess sealant should be removed.

Painting

When installing new gutters, it is essential that the cast iron is primed with two coats of a zincbased primer, one coat of micaceous iron oxide, followed by two coats of gloss paint. These should be applied liberally to all surfaces and sanded between coats of gloss. Regular painting of cast iron is essential to prevent rust.

Maintenance

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. Gutters can fracture at bolt fixings. Where gutters sit on brackets, these should be checked to make sure that there are enough brackets to support the lengths of gutter and they are not



sagging, which an lead to overspill.

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, once after the autumn leaf fall. Also remember to check hopper heads, if these survive. Scoop out the rubbish from the guttering using a trowel or a piece of card bent into a scoop within the profile of the gutter. To prevent the down pipe becoming blocked, do not push the rubbish into the top of the downpipe. When you have removed all of the solid rubbish and most of the soft rubbish, flush the guttering with water.

06 Brickwork

Swadlincote is dominated by brick buildings, most built between 1830 and 1920. Although these vary in style and detail, they share common construction methods and maintenance problems.

The later 19th century local bricks were often finished with a smooth dark red face. These were generally very good at resisting pollution and were often used in conjunction with Terracotta or faience (glazed terracotta).

There are other more unusual types of bricks, such as the buff-coloured bricks found in the back streets and on industrial buildings and patterned brickwork, where red and pink or buff-coloured bricks were used together to create interesting textures and patterns, such as Flemish bond chequerboard.

Brickwork, if properly looked after, should not need much maintenance. Pointing is designed to be sacrificial – this means that the joints have a life-span and will eventually over time deteriorate and will need re-pointing, but the more durable material – brick (or stone) should last indefinitely, if the joints are maintained properly. Although pointing will not last forever, in general, buildings dating from 1830-1920 will not need comprehensive re-pointing because the pointing will not have deteriorated to the same extent as much older



buildings. Many of these buildings were built with robust brickwork, hard-fired, and built with fine joints. This will of course vary form building-to-building and certain locations will be more prone because of the prevailing weather patterns.

Brickwork can, however, become damaged if it is saturated for long periods, particularly on chimney stacks, on parapets, around rainwater pipes and at the bottom of walls - look out for these key areas.



Deeply-eroded mortar joints in walls should be raked out by hand and repointed using a lime-based mix (without cement).

Other signs to look out for on brick buildings include dropped brick arches to lintels and cracks through brickwork, not just through joints. These sorts of structural defects should be regularly monitored over time (at least for one whole year) before jumping to conclusions. It is best to seek professional advice over structural defects from a chartered surveyor or structural engineer.

RE-POINTING BRICKWORK

It is not necessary to repoint entire elevations just for consistency of finish. Large areas of sound old pointing should be left undisturbed and patch pointing can be very successful.

Problem – there are gaps / holes in the pointing

Possible reasons

- Serious decay of mortar joints because of rainwater flushing out mortar from above
- Plant growth / roots has pushed out or destabilized original mortar

Mortar (pointing) should be sacrificial. Prior to the widespread introduction of Portland Cement in the early 20th century, buildings were constructed with lime mortars.

Lime-based mortars allow walls to "breathe" and are far more compatible with old brickwork than harder, impermeable cement mortars; sometimes a hard mortar has been used and, where this is harder than the surrounding brickwork, has created its own set of problems. This can lead to accelerated decay of the bricks leaving the harder mortar standing proud and the face of the bricks missing. Ideally hard, cement mortars should be removed, particularly where there is evidence that they are causing damage. If there are no signs of deterioration, then it may be best to leave the mortar alone.

Mortars

There are two types of traditional lime mortar – one is called a fat lime putty, the other is naturally hydraulic lime. Neither should be used when there is a risk of frost.

Fat Lime Putty comes supplied either as a tub of wet lime putty from specialist suppliers, or as a hydrated bag of lime, which will need to be soaked in water and left for some time (slaked) before it can be used. Using dry (hydrated) lime in a mix with a very small proportion of cement (1:2:9) 1 cement to 2 parts line to 9 parts sand is occasionally acceptable for exposed chimney stacks but is not appropriate for general walling. For general walling, the mix should incorporate an additional ingredient, in the form of either crushed brick, PFA or a blast slag – known as pozzolanic material. This assists in the set of the mortar.

Naturally Hydraulic Lime is supplied from builders merchants or specialist quarry suppliers in a dry bagged form (hydrated). This is used in conjunction with sand, with no cement. Naturally hydraulic lime has certain properties which mean that it sets in combination with water and there is no need for any additives or cement. NHL is mixed in the proportion of 1 part lime to 2.5 parts sand by volume.

Naturally Hydraulic Lime is available in different strengths which vary according to where they come from. NHL 2 is normally the most useful for general brickwork. NHL 3.5 is ideal for exposed locations, such as high-level chimney stacks.

In either case, the aggregate (sand) in the mortar needs to be well-graded, which means that a general, soft building sand will be inadequate. The sand should have a range of aggregate sizes to prevent rapid shrinkage and to provide a satisfactory match to the original mortar. Sand should be 'washed' and 'sharp'.

Problem - the surface of the bricks has deteriorated, crumbled or "spalled"

Possible reasons:

- the use of a hard cement mortar rather than a lime-based one;
- continuous saturation (caused, for example, by leaking gutters)
- rotten timber lintels over windows and doors

Problem - the brickwork has cracked or is bulging out from the rest of the wall

Possible reasons:

- tree root damage shrinkage of clay subsoil
- rotten timber lintels over windows and doors
- removal of load-bearing walls internally
- plants growing in joints
- ground heave / subsidence

The bricks themselves can often be carefully removed and then reversed to hide the decay.

Only bricks that are severely damaged should be cut out and replaced.

See list of sources of replacement brick at the end of the guide. We advise against the use of reclaimed bricks from different buildings, as they may be under-fired, painted or from an internal wall.

Replacement bricks should match the existing ones as closely as possible in size, colour, texture and durability. They should be laid in the same way, i.e. with the same bond. It is better to leave replacement bricks to blend in naturally over time than to try and tone them down.

07 Terracotta

Terracotta is particularly expensive to replicate or to restore. There are no off-the-peg sources for modelled terracotta, although you may be lucky and find a new source for the small details, such as a decorative band or moulded eaves / cornice. There are two companies specialising in fabricating modelled bespoke terracotta. There is also one local company manufacturing offthe-peg terracotta components, such as chimney pots, ridges and copings. Full details of suppliers are included at the end of the guide.



08 Cleaning

CLEANING BRICKWORK

In general, it is advisable not to clean brickwork, unless the grime / heavy soiling is causing further corrosive problems to the brickwork or if there is graffiti. In many cases it will do more harm than good.

Abrasive cleaning techniques will probably remove the protective fireskins from the bricks, leaving the softer inner parts vulnerable to decay.

There are systems available using high-pressure steam cleaning (e.g. DOFF[™]). If brickwork needs cleaning, this type of system is likely to be the most suited to the brick buildings in Swadlincote because it has no abrasive particles which can damage the face of the bricks. A trial area should always be undertaken on an unobtrusive location.

However, if a building is part of a row, as many in Swadlincote are, it is probably advisable not to clean it. If you are thinking about cleaning your building, please speak to the conservation officer for free advice.

CLEANING TERRACOTTA

Cleaning of terracotta is a specialist job, as it is very easy to damage the face of the terracotta.

For a list of suitable specialist cleaning companies that can undertake this level of skilled work, please speak to the Conservation Officer.

09 Render

Swadlincote has very few old rendered buildings. Render was used for several reasons; to cover up and protect poor quality building materials, such as rubblestone, or, in the absence of fine stone and for economy, render was used to create a smooth finish to a façade. For architectural reasons, a smooth finish was important in classical designs, where render was often used to imitate fine ashlar stonework. During the 1960s and 70s render was a fashionable alteration and it often covered up original facing bricks or stone. It was inevitably a cement-based render.

Render was more commonly used in the first half of the 19th century in classical Georgian designs. The examples at Swadlincote are mainly the earlier buildings in the town, pre-1850. We can see render used at 25-35 West Street in conjunction with moulded stucco architraves, which frame each window; here render unifies the row and creates a simple, classical form.

Later examples of render in the town centre are usually limited to small panels, combined with a timber-frame effect, and date from late in the 19th century – they



were used to create the illusion of a much older "Olde English" building, a detail typical of the Arts and Crafts movement.

Render can become cracked, 'blown' or just generally worn over time. Hairline cracks can allow rainwater through and behind the render. If the render is a cement-based mix, water can become trapped behind the sheet of render. Frost action can cause significant damage to the brickwork and any hidden timber underneath the render. If you have a rendered building, look out for any areas of detached or hollow patches of render or any cracks.

When painting a rendered building, it is always advisable to use paints which do not seal in the moisture and rendered buildings, like brick ones, need to be able to 'breathe'. Acrylic paints should be avoided but with a build-up of paint over many years, the chances are that one of these old coats of paint was acrylic. For this reason, it is particularly important to monitor rendered buildings.

If patching render, the best way to create a smooth and compatible repair is to have the render analysed to see what it contains. However, this is not always an affordable option.

Where patch repairs are required, particularly to stucco renders, it may be necessary to cut out slightly larger areas, to avoid a patchy appearance between old and new. This will need to be determined by architectural features (e.g. architraves or projecting bands) or by the corners of a façade.

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.

In Swadlincote render was usually one of two types; either a Roman Cement Stucco, or a lime render. Both can be easily reproduced today but rendering is a skilled job when using

these materials. A straightforward cement render is almost always unacceptable on an old building. It is hard, impervious and will not allow the walls to 'breathe', trapping in any moisture.

When investigating render on the Arts and Crafts timber-frame buildings, it is more usual to find a harder cementitious render. If these rendered panels are not cracked, it is important to check the junction of the render and the timber frame, where there may have been some shrinkage, to make sure this is properly sealed. These joints can be sealed with an expandable material, such as lime mortar or oakum, not mastic.

If you are considering replacing large areas of render, it is advisable to discuss this with the District Council conservation officer for technical advice.

For a list of local skilled contractors who use traditional renders please visit the following website;

www.derbyshirehistoricbuildings.org.uk/craftsregister.php

10 Windows, doors and external joinery

A large number of traditional joinery details in Swadlincote have been restored over the last two decades.

The planning authority is seeking to introduce an Article 4 Direction, which will ensure that property owners of the historic buildings in the conservation area apply for planning permission to replace windows or doors. Full details of all properties affected by this are on the District Council website.

Painted external joinery can deteriorate rapidly if finishes are not maintained. Softwood joinery needs to be protected with a paint finish - on average every 5 to 7 years. Timber door and window cills are more exposed to weather than any other element of joinery and tend to deteriorate more quickly, even when made of hardwood. 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. Any cracks or open joints should be filled to stop water getting in and causing rot through fungal decay. Open joints also allow, or cause, the frame of a door or window to sag, making opening and closing difficult. Broken or missing putty should be replaced, otherwise water may rot the glazing bars.



Most historic windows and doors can be repaired adequately for far less cost than replacing them. In the Swadlincote conservation area, where original sash windows and panelled doors are beyond repair, we encourage that they are replaced with like-for-like copies. A grant may be available and you are advised to check availability of grants with the District Council Conservation Officer.

Replacement windows will need Building Regulations approval. For domestic properties, there are some

windows-supply companies that are registered under a "competent person scheme", which means that the windows they supply meet the required standards. However, please check that these windows are appropriate in the conservation area. Many will be to a standard size and material which does not replicate the details of historic windows. The Local Planning Au-

thority are working with the Building Inspectors on achieving appropriate standards in the conservation area.

If you are retaining or reinstating sash windows, and you need to upgrade the energy efficiency and performance of the windows, there are two options to consider – installing secondary glazing or draught proofing. Secondary glazing has further benefits in significantly reducing external noise.

For advice on how to improve the thermal performance of windows in the conservation area, how to successfully install secondary glazing or draught-proof, there are detailed advice notes available from the English Heritage website; www.english-heritage.org.uk/your-home/saving-energy/



11 Paint

The local planning authority is proposing to introduce an 'Article 4 Direction' into the town, which will have an influence over the paint colours adopted in certain parts of the Conservation Area. We have produced a colour chart to show a large range of Victorian and Edward-ian colours that would be recommended in the conservation area.

You are advised to check the planning website to see if your property is affected.

Paint for Joinery

Paint for external joinery needs to provide a protective finish to prevent moisture from becoming sealed and trapped and causing rot.

Historically, during the 19th century paint was manufactured using either toxic lead or oil. Lead paints are not now manufactured for general use, for obvious reasons, but traditional oil paint is manufactured by a limited number of companies. This is supplied with either an eggshell finish or a more gloss finish.

Gloss paint was almost universally introduced in the 20th century and this is still an acceptable finish for joinery, as it provides longevity. Many gloss paints are made with solvent-borne V.O.C.s. Provided that these are limited to external joinery, they can be used. Water-based gloss paints, are not generally as long-lasting as solvent-borne / oil based gloss paints and when using water-based paints, external joinery is likely to need more regular maintenance / re-application.

Microporous paints are available which in theory allow the timber to 'breathe'. These may be suitable in some circumstances. There are a limited number of suppliers of suitable microporous paints.

Paint for Render

Render was usually painted and even if it was not originally painted, it may have been subsequently painted at some time. The type of paint chosen for currently rendered buildings will depend on the current paint system. Masonry paints vary in constituents and not all masonry paints will be suitable, if they remove the breathability of the render and form a film over the surface. Water-based masonry paints are more suitable than acrylic-based paints. Textured masonry paints will almost always be unacceptable on the conservation area. It is best to ask the manufacturer first about the composition as once paint is applied to render, it will be almost impossible to reverse the process without great expense.

For new render, there are two options we recommend; either limewash, which needs regular maintenance, or a mineral paint, which bonds to the render and lasts a considerable amount of time before needing re-painting (25-30 years). Both are vapour permeable. Before deciding on which option, it is advisable to discuss this with the conservation officer, as they have different maintenance implications.

Paint for Brickwork

There are a number of buildings in the conservation area which have painted brickwork. This very old local tradition seems to have its roots in the early 19th century practice of painting brickwork to create a more Picturesque character to a cottage. This was a practice adopted by many of the local estates. However, where an existing brick or stone building has not been painted, the planning authority will advise against this practice. Most brickwork was designed to be seen and to be decorative and add texture; painting creates a permanent maintenance problem. Of the properties included in the Article 4 Direction, the planning authority will resist painting currently unpainted brickwork.

For those buildings which are already painted, it is preferable to adopt a simple pale or stone-coloured paint. Alternatively, it may be possible and desirable to remove the paint and the conservation officer can advise on the suitability of this for specific buildings and the best way of removing paint.

DOS AND DON'TS

DO	DON'T
carry out regular inspection and maintenance	allow serious defects to remain
seek advice from suitability qualified professionals	expect independent advice from someone who has something to sell you
use only reliable contractors or craftspeople	employ anyone without seeing references or inspecting their work
Avoid cement pointing Avoid hard renders Avoid spray-on roof foams	
respect the building's character and history and make sure new work is sympathetic to it	remove or demolish any original element if it is part of the special character of Swadlincote
use traditional materials and proven techniques	
analyse the cause of the defects	rely on commercially based claims for any product or technique
Be wary of companies that claim to waterproof buildings. They rarely help with old buildings, many of which need to "breathe" to perform efficiently	use so-called 'maintenance free' products
remedy previous bad repairs	
obtain necessary planning and legal consents	do any work without the required consent

SOURCES OF MATERIALS

Swadlincote is particularly distinctive for its range of local building materials, some of which were originally manufactured in the town, and many sourced from nearby factories or potworks. The re-use of building materials from demolished buildings, which incorporate those particular local characteristics, will be encouraged, as the locally made materials are a finite resource. Some materials, such as salt-glazed stoneware, are no longer manufactured due to the hazardous conditions of manufacture. These are particularly desirable to maintain.

New building materials should be sourced locally whenever possible in order to maintain local distinctiveness and to reduce travel distances. The use of modern materials should be limited to situations where their use would help create a building of clear townscape quality which would further enhance the quality of the area.

Red Bricks

The dominant building material in the town centre is red brick. There are a few early 19th century buildings but the majority of the buildings are mid-late 19th century and these used in association with the more refined smooth

qualities of terracotta demanded a more consistent and precise finish to the facing bricks; these tend to be a deep red colour.

Bricks that may be suitable for new build adjacent to smooth Victorian reds are; Ibstock Leicester Tapped Red

Ibstock Leicester Orange (and poss. Red) Stock Ibstock Arden Red Charnwood Forest Brick Victorian Red – handmade bricks in three colours, best mixed Terca Dorchester Red Milton Hall Soft Traditional Red

Bricks that may be suitable for general building in the town centre can be more red-orange, including boundary walls;

Furness Brick Company 'Natural Orange' 73 x 215 (used for Swadlincote Masterplan works) Furness Brick Company 'Ember Blend' (used for rear wall at 47 West Street Swadlincote and boundary wall at 34 Church Street on corner of Civic Way) Furness Brick Company 'Old Victorian Red Light/Medium'

Stockists

Furness Brick And Tile Company Askham in Furness Cumbria LA16 7HF Tel: 01229 462411

Ibstock Leicester Road, Ibstock, Leicestershire LE67 6HS Tel: 01530 261999 Charnwood Old Station Close, Shepshed Nr Loughborough Leicestershire LE12 9NJ Tel: 01509 503203

Terca (Weinerberger) John Byrne Tel: 07795 037984

Buff-coloured facing bricks

Whilst fireclays were valued as refractory raw materials, the fireclays with low iron contents were used for the manufacture of vitrified clay pipes and stoneware pottery. Traditionally in Swadlincote, the local fireclays which exhibited relatively low iron contents were also used for the manufacture of buff-coloured facing bricks. There are examples of buff-coloured facing bricks scattered around the town, often reserved for the industrial complexes, such as along Alexandra Road, at the Sharpes Pottery site, or for bands of contrasting colour.

Buff-coloured facing bricks can be obtained from a limited number of suppliers. There are none in the Swadlincote area.

Furness Brick Company – Mixed Yellow

Blue bricks for paving

The blue wire-cut bricks that an be found throughout the town are; "Ketley Brick Dragfaced Square Edged Staffordshire Blue Pavers"

Ketley Brick Company Ltd Dreadnought Works Pensnett Brierley Hill , West Midlands DY5 4TH tel: 01384 78361 or tel: 07809 523995

Granite for kerbs, paving, gulleys and channels

New granite supplied for the town centre improvements has come from; "Hardscape Mill Red granite kerbs and Hardscape Royal white granite channel blocks and setts"

Sandstone

New granite supplied for the town centre improvements has come from; "Woodkirk Stone Quarry" Woodkirk Stone Britannia House Morely, Leeds Tel: 01132 530464

Terracotta

There are two specialist companies in the UK currently manufacturing new terracotta details for buildings; Shaws of Darwen and Hathern Terra Cotta. Terracotta is a very special product that has a long history of use in the town centre. It takes great skill to replicate terracotta details.

Shaws of Darwen	Hathern Terra Cotta,
Waterside	Charnwood,
Darwen	Old Station Close,
Lancashire	Shepshed, Nr Loughborough Leicester-
BB3 3NX	shire LE12 9NJ
Tel: 07792 267483	Tel: 0844 931 0022

or 01254 775 111

Glazed Bricks for Stall Risers

Glazed bricks are manufactured by Ibstock and are available in any bespoke RAL colour-matched bricks, as well as a range of standard colours. www.ibstock.com/glazed-bricks-introduction.asp (Ibstock Leicester) 01530 261999 Tel: 0870 903 4000

Clay Building Materials

Clay building materials include red, blue and red clay details manufactured for buildings.

They include chimney pots, clay copings in "saddleback" and "hogs back" profiles, crestings and pierced designs for roof ridges, plain clay ridges and decorative finials. They also include decorative bricks used as a string-course or a moulded eaves, found on the terraced properties in Swadlincote.

There are several sources for these products. The closest to Swadlincote, and the source which has been used for most of the grant-aided work, is;

"Hanson Redbank" Atherstone Road, Measham Swadlincote, Derbyshire DE12 7EL tel: 01530 270 333