

CONSERVATION

Colours and Finishes for Historic Buildings



St Edmundsbury
BOROUGH COUNCIL

The Suffolk Preservation Society fully endorses all of the text in this leaflet. It hopes that those who are considering painting or repainting listed or historic buildings will take full account of its contents.

Acknowledgements

The Borough Council wishes to thank Timothy Easton, artist and architectural historian who specialises in the painted surfaces of buildings, for his invaluable help and expertise in the production of this leaflet. Thanks also to Ted Ingilby and Philip Aitkens for their advice and contributions.

Introduction

Using traditional materials and pigments to decorate your historic building is not complicated or difficult - it is just a question of knowing which are the right products to use and where you can get them. A glossary is provided at the end of this leaflet to explain the terms used in describing traditional finishes.

Decorating historic buildings raises several questions which an owner should consider before looking at a colour chart or picking up a paintbrush:

- Should this building or surface be painted at all?
- Which type of product should I use? Should it be oil paint, limewash or distemper?
- Which colour shall I choose?

Since the mid-20th century, historic buildings have experienced alarming and widespread problems with damp and decay because they have often been treated in the same way as modern buildings. Modern cavity wall construction relies on preventing moisture from getting into the building by creating a cavity to separate the internal and external walls.

Historic buildings were constructed with very different materials and technology to 20th century structures and need a very different approach in their maintenance. Solid wall construction works by using the mass of the walls to control the movement of moisture, in the form of water and water vapour, into and away from the building to maintain a comfortable living environment. Traditional, solid wall buildings were constructed with porous materials which absorb moisture during damp conditions and release it by evaporation on dry days, allowing the building to 'breathe'. Since the 1950's, owners acting on the advice of builders, surveyors, architects and paint manufacturers well versed in modern construction but with little understanding of historic buildings have tried to keep out the weather by using branded synthetic alkyd masonry paints, cement paints and hard gloss paints. Sealing a porous fabric in an attempt to repel water does not take into account how much moisture is also

generated inside a building. This moisture needs to escape. Preventing the building from 'breathing' increases the build-up of moisture in the walls and is one of the main causes of damp found in old houses, and particularly timber framed houses, today. The most important quality of traditional or natural decorative finishes is that they 'breathe' whilst at the same time protecting the surface from rain.

Colour in historic Suffolk

External decoration

Apart from rare examples of red paint applied to external plastered surfaces to imitate brickwork and the occasional use of red or black pigment on external timbers, little evidence has been found to confirm that buildings in Suffolk were coloured externally before the 18th century. The fashion in Suffolk at this time was for natural plaster or whitewash. It was only from the 18th century onwards that off-white was applied. Up to the late 17th century, barns were generally plastered. An alternative covering from that time until the present day was clapboarding, often in elm, which was either left natural or was painted red. Historic paintings of the Suffolk landscape from the 17th century, through to Constable's landscapes in the early 19th century, show white or off-white plastered buildings with the occasional red brick building or red painted barn. Black and brown bituminous paint, now so frequently replicated on barn conversions, was a product of the coal industry and began to be used on agricultural buildings in the latter part of the 19th century. By the late 19th century, a limited range of natural pigments were used to add colour to limewash. Red and yellow ochre produced, respectively, a pink and pale yellow tinted limewash, which are still the colours most associated with the Suffolk landscape. The current fashion for a wide spectrum of vivid external colours is more to do with the products made by commercial paint companies than what is appropriate in a Suffolk landscape or street scene. The range of colours found in colour charts under such headings as 'traditional', 'heritage', 'period' and 'historic' tend to have little reference to Suffolk's history.

If there is such a thing as a traditional, external Suffolk colour it is lime white, which is a soft, translucent off-white. On external plasterwork, you should avoid using anything other than white, off-white or colours derived from the natural pigments used traditionally. This gives access to a wide palette of appropriate colours ranging from pale pinks through terracotta shades to yellows.

External joinery

During the late 15th and 16th centuries, many window mullions were painted with white distemper or oil paint. This practice continued into the 17th century. From around 1600, dark grey oil paint (made from lampblack) was often used to paint the mullions. One reason for this was to give them a stone-like appearance from the outside.

From the late 17th century, window frames, doors and other external joinery were similarly painted in a limited range of colours. For instance, off-white against a dark brick background was traditional. Where the background was an unpainted or light-coloured plaster, green was commonly used in rural Suffolk. Black and dark brown were also fairly commonplace in more urban settings with blues and maroons added later.

Departing from this range of colours can have a disproportionate effect on the appearance of a building. If the building is one of a group, such as a terrace or town square, an inappropriate choice of colour scheme can overstate its presence, draw undue attention to the joinery and affect the entire neighbourhood.

Internal decoration

Although research into original schemes is becoming more widespread, the majority of 'historic recreations' are undeniably the product of late-20th century interior design concepts. Ideas have often been taken from the glossy magazines which are generally not based on either original or local research.

Suffolk is very fortunate in having a large number of historic buildings which contain original decoration. This not only includes wall paintings in richer houses but the plain colours which were used to pick out timber frames. Examples of this type of decoration date from the early-14th century onwards and shortly after 1600, many houses had more than one room decorated in this way. In most buildings before 1700 internal hearths were either painted using a red colourwash, plastered, or they used a combination of both. Frequently these have been whitened with size-based paint during the 18th or 19th centuries but it is fairly easy for the earlier scheme to be recovered if skilled advice is taken. However it is important not to take a wire brush or scraper to the surface as the original size-based paint may now be loosely fixed. The same advice applies to timbers and ceilings.

If you find colours which are fragmentary, following the correct advice makes it fairly easy to reinstate missing areas on beams, studs and brickwork. The advantage of doing this with traditional size-based paints is that it is reversible at any time. When reconstructing these historic interiors it is important not to paint over good examples of the original scheme.

During the 18th and 19th centuries blue, and then also green, distemper became fashionable on the walls of some rooms, with pink or white used in service rooms. During the 19th century, synthetically produced pigments began to be developed and used, giving a wider range of colours, mostly for woodwork. Wallpapers were first used from the 18th century onwards. In living rooms and bedrooms especially, hand-made wallpapers became popular from the 1730's. If you find any fragments of wallpaper in your building you should, if possible, leave it in place for future generations as it is an important record of house interiors over time.

Accurate historic colour schemes, such as a brown and dark green wall decoration applied by the original owner of a Victorian terrace house in the 19th century, might now be considered unattractive. However, future generations will almost certainly view

such schemes differently and perhaps more favourably. If a historic colour scheme has survived, your first option should be to clean and conserve. Otherwise the type of paint is probably more important than the colour. Surfaces which have not been painted before, such as brick or timber frame, should be left unpainted.

Wall paintings

It is very rare to find a wall painting dating from before 1560 in most Suffolk houses. The rare examples from the first half of the 16th century come from houses with a priestly connection or those which belonged to people very high up the social scale. Both fragments and complete schemes of wall paintings from the late 16th and early 17th centuries are frequently found in Suffolk. If you do find any, it is best to consult a specialist conservator through your conservation officer. You will not be forced to spend vast sums of money but you will be advised on the best way to proceed without destroying the historic painting.



16th century wall painting

Historic painted brickwork

There are numerous examples, many of which are just traces, of painted brickwork dating from the 16th and 17th centuries. Uneven red bricks were laid in a thick lime mortar bed and covered with a liberal coat of ruddle, a mixture of red ochre pigment and binder, usually size (a thin, gluey substance). A thin white (or occasionally black) line was often, but not always, carefully painted along an indented line between the bricks to give an appearance similar to the use of expensive rubbed brickwork. Evidence of such work can be found on fireplaces throughout Suffolk. You should always seek expert advice before restoring this type of brickwork.

Decoration or paint on internal woodwork

During the 16th and 17th centuries, farmhouses and small townhouses belonging to aspiring gentry often had a panelled chamber, typically in oak (usually the parlour). In bigger houses, more than one room was treated in this way. Many of these rooms were never painted, but others were. Sometimes a simple yellow ochre background was picked out with imitation graining or in a 'stone' colour. Panelled doors were also treated this way, or they might have a geometric pattern which matched a paint scheme on the adjacent walls.

Panelling and doors from the late 17th century onwards were often made with softwood. These should be painted with a flat colour but not with gloss paint.

Plaster ceilings from the 16th century onwards

These do not necessarily have to be of the decorative type. Many were not originally painted, whether they were made of plain plaster or enriched (moulded). However, as they became dirty over time from open hearths they would be given successive coats of white distemper.

Before making a decision to reveal an older joisted ceiling that is covered over, and that may appear to be of a higher quality than the later fabric covering it, you should contact the conservation team for advice, as listed building consent may be required. It is important to understand that many joists supporting plain plaster ceilings made in the 17th, 18th and 19th centuries were never meant to be seen and should not be exposed. Joist joinery from the mid-17th century onwards was often plain and made using inferior timber, while the original plaster finish was highly valued. The same can be said for some wall studs, particularly from the 18th and 19th centuries. There are, however, a number of 17th century joisted ceilings which have original distemper paintwork. This is usually black, grey, red, russet and yellow ochre. Sometimes the underside of the floorboards between the joists is painted white or laths (thin, flat strips of wood) are nailed to the boards with a skim of hair plaster on top. The treatment of the joists and plaster – whether they are unfinished, coloured or whitewashed - gives a clue to the changes over time and can help date the structure. Wherever possible, the distemper is best left alone as cleaning or removing it may mean that older layers are also removed.

You should always lift a floorboard (provided these are not oak) to inspect a hidden joisted ceiling for any clues of its original appearance. This should be done with care and it is best to choose boards which have already been disturbed. Do not cut holes in the plaster from below.

If an enriched ceiling has been painted with layers of distemper, you should wash it off and leave the ceiling unpainted. This is how such ceilings were meant to be seen, with a crispness to the moulded decoration. Never apply modern paints to an old ceiling which has not been treated in that way before.

Although most historic plaster ceilings were not painted, a few have been found in Suffolk over the last 30 years which have painted decoration. Others have been found with candle marked designs using ritual markings to ward off evil spirits. If you find one of these, you should think yourself very fortunate!

Shop fronts

Shop fronts dating from before 1950 were traditionally a single dark colour with lettering on the window or a hand painted sign above.

Standard corporate shop front colour schemes are often not appropriate for an historic shop front. A well-maintained shop front with a traditional choice of colour and a hand painted sign makes

a distinctive statement which is very different to the corporate branding in many shopping centres. A commercial building provides an opportunity to relate the external decoration to the function and style of the building.



Shopfront with a traditional sign

To paint or not to paint?

Historic surfaces which do not look like they have been painted before, whether brick, plaster or wood, should be left unpainted. Sometimes experts who know where to look can find fragments of paint which can be analysed. Serious consideration can be given to reinstating colour washes with the appropriate materials. Otherwise, you should not paint the surface. Apart from the damage which can be caused by non-breathable masonry paint, the character and appearance of the building will be completely changed, often irreversibly. If a building is listed or protected by an Article 4 Direction (see page 11), you will need listed building consent or planning permission from the borough council for such painting.

A few historic lime plastered elevations have survived without ever having limewash or distemper decoration added. Occasionally you may find such an example which has been covered up and revealed later during new works. In these cases, you should keep the unpainted lime plaster as it is rare.

Some exposed external timber frames of medieval town houses were limewashed when the walls were decorated at a later time, possibly to look more like a plastered surface. There is, however, no conclusive evidence that this was a widespread traditional practice. It is better not to limewash over frames which have not been previously limewashed. If a wall has limited areas of limewash this is of historic interest and, if practical, should be left alone.

When repainting a building with flying freeholds or areas of overlapping ownership, you may be tempted to follow the line of the boundary in the paintwork. However, this can be detrimental to the appearance of both the building and the wider area. It is essential to co-ordinate with other owners, making every effort to repaint the building as a whole.

Which product should I use?

A list of suppliers of suitable products is available from the borough council.

LIMEWASH is the simplest, most effective and most economical external treatment for plasters and earth daub. It is breathable and cannot be matched either in appearance or suitability by any paint system. Limewash is made from mature lime putty and water to create whitewash, while earth pigments are added to produce colourwash. Tallow, raw linseed oil or casein can also sometimes be added to help rainwater run off the surface. However, tallow and linseed oil should only be added in very small quantities as they can reduce the permeability of limewash. External lime plasters, earth daubs and clay lump buildings should only ever be limewashed to avoid damp problems caused by a lack of permeability and evaporation. There are no modern paints which can provide the same protection for historic buildings.

Limewash has become a popular alternative for decorating internal lime plasters and wattle and daub infill panels. Local evidence, however, shows it was not historically used on the internal walls of Suffolk's timber-framed buildings. It can be difficult to remove and should not be used internally as it can irreversibly obscure architectural features and wall paintings. Limewash is often used in churches with damp walls (where distemper may flake off), but in other cases, distemper is the best choice.

If it is made and applied properly, limewash will not brush off when it is rubbed against. It is easy to use and should be applied in thin coats. Be sure to make enough limewash for a whole wall as matching the colour exactly with each batch is difficult. Pigmented limewash will dry to a much lighter shade than it appears when wet whereas natural limewash looks invisible when applied but will dry to a white finish. Please see the further reading section at the end of this leaflet for more detailed information about making and applying limewash.

DISTEMPER made with a size binder is known as 'glue bound' or 'soft' distemper, and is the traditional decoration for interior use. If you have damp walls you should solve the problem and let the fabric dry before decorating with distemper (see the borough council's leaflet about damp for further advice).

Although it is still available, distemper has not experienced the same revival as limewash in recent years. However, it is easy to make and very inexpensive - all you need is a large bag of chalk (whiting), some pigments and a packet of size.

Traditional red and yellow ochre only had size as a binder and did not include chalk. Black, used in the 17th century, could be mixed with chalk to give shades of grey. Chalk and size used together made whitening suitable for use on the panels between the timber frame and ceilings.

Again, you should make enough for a whole wall or room to get a matching colour. If the distemper is made to the correct strength it will not come off onto your clothes or hands. Please see the further reading section at the end of this leaflet for more detailed information about making and applying distemper.

There are a variety of commercial distempers available for internal use, based on products derived from starch and cellulose or natural oils and resins. These are collectively known as oil-bound distempers. There is also at least one, traditionally called 'walop', which is suitable for exterior use. Distemper has a very similar appearance to limewash when it is used on external walls and will also stick to cement renders.

LEAD PAINTS were historically used for decorating windows, doors and other timber features. The use of lead paints was banned in 1992 except for use on Grade I and II* listed buildings, when they can still only be used under licence. Lead paints are very durable and should be painted over rather than removed, for both historical and health reasons.

LINSEED OIL PAINT is an excellent and safe natural alternative to lead paints. It is a high quality environmentally-friendly product which has unbeatable wood caring properties when used directly on bare wood. It also adheres well to most synthetic paints. When it is applied correctly, linseed oil paint has a longer life than modern synthetic alkyd paints. It also has the advantage of a one-pot system for primer, undercoat and topcoat.

LIME PAINT is made from pure, high calcium, hydrated lime with 5% acrylic. Mineral or earth oxides added for colour. Lime paint is only suitable for external walls, with the exception of churches. It is supplied as a powder in tubs and can be mixed with water on site.

POZILIME is made from a hydrated lime with PVA and linseed oil. It is suitable for use on cement renders and previously painted surfaces.

A range of **MODERN NATURAL PAINTS** is now available. These paints have been produced as much for the benefit of the environment and the health of the painter as for historic buildings. They are based on various ingredients, such as citrus oils, plant extracts, natural clays and casein, which are mixed in various combinations. These paints are easy to use, allow surfaces to breathe and can provide an alternative to limewash and distemper.

SYNTHETIC ALKYD RESINS AND CEMENT PAINT are the paints which are usually available at the local store. They give a flat, bright colour lacking in the variation and subtlety of traditional colourwashes and are unsuitable for traditional historic fabrics which need a breathable finish. They do not adhere successfully to

natural decorative finishes, which can prompt some manufactures to recommend all previous coatings are removed. Synthetic paints have the added disadvantage that they are not biodegradable.

SEALERS should never be use on historic surfaces. They are designed to stop moisture entering the walls by providing a non-permeable coating. They provide a dry, sound, surface for new work if they are used before decorating and are only effective in modern buildings with cavity walls which are designed to block out moisture. However, the fabric of historic buildings works completely differently. It does so by managing the movement of moisture, including the escape of any moisture generated within the building. This is done through the use of permeable materials which allow the fabric to 'breathe' (holding water vapour on damp and wet days and drying out through evaporation on dry days). Sealers prevent the fabric from breathing and will trap any moisture already present in the walls. This will make the walls damp, causing the structure to decay. The moisture may be drawn to the surface in warm conditions, causing the finished surfaces to bubble or peel off. The fundamental principle when caring for an historic building is to maintain the breathability of the fabric at all times by using vapour-permeable products.

Removing paint from old buildings

You should always be cautious if you are planning to remove any paint. In many buildings, later layers of paintwork may be hiding painted scenes, text or patterns from the post-mediaeval period through to 19th century stencils. If these are visible, they should be conserved. Otherwise, unless there are good reasons, old plain paintwork on the interior of buildings is best left undisturbed and simply painted over. If multiple layers of paint are stopping windows from functioning properly, or are obscuring architectural details or, alternatively if an inappropriate paint has been used, you should always test a small trial area in an inconspicuous place before carrying out widespread removal.

There are several ways of removing paint. The most appropriate method will depend upon the type of product you are removing and the surface you are stripping it from.

Steam stripping, sandpaper and washing with water are the safest methods.

POULTICES are applied to painted surfaces and left for a period of time. When they are removed they draw the paint away or loosen it sufficiently so it can be easily taken off. Poultices are useful for removing paint from decorative work, such as cornices, as well as plain timbers. They are also useful for removing 19th and 20th century stains and varnishes from timber beams. You will need to use a poultice if you are reintroducing a traditional distemper scheme. This is because distemper, which is a water-bound glue paint, will not adhere to the timber surface if there is a barrier of stain or varnish left.

CHEMICAL SOLVENTS can be very effective in removing oil-based paints but over zealous scraping and repeated washing down can cause damage. Most paint removers are also very toxic.

BURNING OFF with a blowtorch should be avoided. It is extremely dangerous in an old building and poses a serious risk of fire. Hot air strippers do not carry the same risk but have been known to ignite inflammable materials in sash boxes and thatch.

PRESSURE BLASTING will remove paint but can also damage the surface of the material being cleaned. There are lots of variations of blasting available which use various abrasives, but they can all potentially cause irreversible damage to the surface of fabric if too much pressure is used. If you think this method is appropriate for your building, always make sure that you employ a qualified and experienced contractor and carry out a test patch on a small, inconspicuous area. The test patch results must be approved by the borough council's conservation officer before a large area is cleaned. On listed buildings, you may need listed building consent to carry out such work.

Is permission needed?

Listed Buildings

You will need consent if you are painting either the internal or external walls of a listed building for the first time. This is unlikely to be granted if the surface is of historic significance. You will also need consent to change the colour by redecorating if it affects the character of the building. You should always check whether you need to make an application with the borough council. As it can take several weeks to grant consent, you should check well in advance of starting work.

If you use cement-based or other waterproof or hard gloss paints on a traditional lime or clay plaster, you may be left open to enforcement action which would require you to remove the paint. This is especially the case if it is the first time such a finish has been used. Unauthorised painting of a listed building can leave the owner and person carrying out the work liable to prosecution.

Article 4 Directions

Many unlisted properties in conservation areas are covered by Article 4 Directions, which help to prevent unsympathetic alterations to traditional buildings in order to protect the character and appearance of the area. You will need permission to paint surfaces for the first time or to significantly change the colour of painted surfaces. Again, you should check if permission is needed in plenty of time as it can take six to eight weeks to be granted.

Glossary

CASEIN: a milk protein sometimes added to limewash (more recently in the form of powdered milk).

DISTEMPER: whitening mixed with size and water (soft distemper). It can be coloured by adding pigments although this is not historically correct. A pigment such as yellow or red ochre only needs size if reapplied to historic timbers or as ruddle to brickwork.

LIME: chalk, limestone and other types of calcium carbonate. When lime is burnt in a kiln it becomes quicklime (calcium oxide). Water is added to this in a process known as 'slaking' to form hydrated lime (calcium hydroxide). The addition of more water makes a paste called lime putty.

LIMEWASH: a liquid made with quicklime in a surplus of water. It can also contain alum, casein, size or other binders. Coloured washes can be made with the addition of pigments. Non-pigmented limewash and distemper is called whitewash.

PIGMENT: colour, usually in powder form, which is added to limewash and distemper to make a colour wash. Traditional pigments are made from earth and include burnt sienna (reddish-brown), raw sienna (yellowish-brown), red and yellow ochres (earth containing ferrous oxide, commonly known as rust, to give reddish-brown and yellow/orange pigments) and umber (dark/reddish-brown). Lamp-black is fine black soot used to darken the colour of the limewash or distemper.

SIZE: a thin, gluey substance used as a sealer and binder. Traditionally this was made by boiling up off-cuts from the leather trades, now easily available from hardware stores or artists shops.

TALLOW: a type of animal fat sometimes added to limewash during the slaking process.

WHITING: pure chalk.

Advice and Contact Details

For further advice about all aspects of decoration and colours for historic properties, including suppliers of materials, please contact:

The Conservation Team
Planning and Engineering Services
St Edmundsbury Borough Council
Western Way
Bury St Edmunds
IP33 3YS

Tel: (01284) 757356 or 757339

E-mail: conservation@stedsbcc.gov.uk

Further reading

Jane Schofield, *Lime in Building – a Practical Guide* Black Dog Press

Gordon T Pearson *Conservation of Clay and Chalk Buildings* (see chapter 7: Wall decoration)

John and Nicola Ashurst, *Practical Building Conservation Volume 3: Mortars, Plasters and Renders* Gower Technical Press

Articles:

The Building Conservation Directory is published each year by Cathedral Communications Ltd. The following articles have appeared in the publication (the year of publication is in brackets) and can be viewed at www.buildingconservation.com

Traditional Lime Plaster: Myths, preconceptions and the Relevance of Good practice
Ian Constantinides (1995)

Vapour Permeable Paint Gareth Davies (1996)

Awash with Colour: the use of Limewash as a Decorative and Protective Coating
Bob Bennett (1997)

Traditional Paints Colin Mitchell Rose (2002)

Limewash and Distempers Elizabeth Hirst (2002)

Historic Wallpaper Conservation Phillipa Mapes (1997)

Wallpapers in the Historic Environment Allyson McDermott (2004)

Poultices Catherine Woolfitt and Graham Abrey (2000)

For the treatment of painted brickwork internally and externally:

The Internal Decorative Treatment of 16th and 17th Century Brickwork in Suffolk
Timothy Easton: Post Medieval Archaeology, 20 (1986) pgs 1-17

The Disguise of Historic Brickwork Rediscovered, Material Culture on Medieval Europe
Timothy Easton: Papers of the 'Medieval Europe Brugge 1997' Conference, 7 (1997) pgs 485-95

The Painting of Historic Brick: The English Evidence
Timothy Easton: Weald and Downland Open Air Museum Magazine Spring 2001 pgs 26-9

Brick, Our Colourful Past
Timothy Easton: Cornerstone, the magazine of the Society for the Protection of Ancient Buildings Vol 25 No. 2 2004 pgs 42-4

Colourwash and Plaster on 17th Century Brickwork
Timothy Easton: Weald and Downland Open Air Museum Magazine Spring 2005 pgs 8 and 9

For painted and inscribed examples of ceilings:

Ritual Marks on Historic Timber
Timothy Easton: Weald and Downland Open Air Museum Magazine Spring 1999

For plain colours used in Suffolk houses:

Seventeenth-century Colour in Suffolk House Interiors
Timothy Easton Aldeburgh Festival Programme June 1989

Examples of Reconstructed Historic Interiors can be seen at:

The Weald and Downland Museum, West Dean. Pendean Farmhouse has a repainted fireplace and an educational film called 'Use of paintwork on brick'.

Houses on the Shakespeare Trust, Stratford-on-Avon, have recreated several rooms to show the different methods used.

Bedfield Hall, Bedfield, Woodbridge, is open under the 'Invitation to View' Scheme and has examples of painted timbers and brickwork.

Useful websites

English Heritage www.english-heritage.org.uk
(includes access to the National Monuments Record and the Images of England website)

Institute of Historic Building Conservation www.ihbc.org.uk

Building Conservation Directory www.buildingconservation.com

Society for the Protection of Ancient Buildings www.spab.org.uk

Victorian Society www.victorian-society.org.uk

Twentieth Century Society www.c20society.org.uk

Georgian Group www.georgiangroup.org.uk

