

MCNEILAGE CONSERVATION

Weeks Farm | Talaton | Exeter EX5 2RG | T: 01404 822076
enquiries@mcneilage-conservation.co.uk | www.mcneilage-conservation.co.uk

Partners: Torquil McNeilage ACR | Ruth McNeilage ACR
VAT No. 736 7680 95

St. Sylvesters Church, Chivelstone

Survey of the plaster and wall decoration



October 2019

1. Introduction

The PCC of St Sylvester's Church, Chivelstone are in the process of planning major repair and conservation works to both the exterior and interior structure. As part of this programme, McNeilage Conservation were commissioned to examine the condition of the interior painted surfaces.

The purpose of this survey was to both examine the condition of the painted surfaces and their plaster supports and in addition investigate for earlier wall paintings beneath the present modern paint layers.

This report concerns the results of the survey and includes proposals for the best way forward with regard to the treatment of the interior wall surfaces.

I am grateful for the enthusiasm and support of all the church wardens during this process.

2. History and description

2.2 The Building

St. Sylvester's church is a Grade II* listed building situated on the north side of the valley at the edge of the hamlet of Chivelstone. The ground slopes up from the north side of the church.

This charming church dates largely from the 15th century. It is constructed of slate stone rubble with slate covered roofs supported on medieval wagon roof structures. Although parts of it were restored in late 19th or early 20th century it still retains its 15th century plan¹ and many of the 15th century interior timber furnishings including the screen with medieval and renaissance paintings, a parclose screen and a rare octagonal painted pulpit.

The plan of the church consists of a nave, north and south aisles and chapels, south porch and west tower.

At the east end of the south wall is the opening to the rood screen stair which is blocked halfway up.

2.2 The wall paintings

Uncovering trials revealed that St. Sylvester's church retains a remarkable collection of 18th century wall paintings of oval and rectangular text panels with elaborate decorative borders in the nave.

The panels are currently largely hidden beneath later layers of limewash. It is rare to find a complete scheme of painted text panels from one period. The only later mechanical damage caused to the completeness of the scheme has been by the insertion of 19th century monuments. Fortunately the cartouche panels are relatively high and the monuments are generally set at a lower level.

¹ Parish Church. C15 restored in late C19 or early C20. Slate stone rubble walls. Gabled slate roofs. Plan: nave, north and south aisles and chapels, south porch and west tower, all apparently dating from the C15. Exterior: 3 stage crenellated west tower with set-back buttresses. 5-sided stair turret on south side. South Hams type roll-moulded west doorway with 4-centred head. 3-light Perpendicular window above has had its mullions renewed. 2-light cinquefoiled belfry openings. North aisle has 4 completely restored Perpendicular style windows. Blocked north doorway near west end. The north chapel projects slightly and appears from its junction with the chancel on its east end to have been rebuilt. The east end windows have also been renewed. The south aisle is recessed from the chancel at the east end. The most easterly window to the south aisle is largely C15 with only part of its mullions replaced. 3-sided rood stair turret adjoining it. Otherwise windows are complete restorations. The small gabled south porch has stone coping and a chamfered plinth continuous from the aisle. 2-centred granite moulded doorway with carved spandrels and square hoodmould, C19 panelled gates with railings above. Interior: 2-centred arched double roll-moulded south doorway with contemporary door of overlapping studded planks with very heavy strap hinges and large wooden lock. Porch has partly restored medieval wagon roof. The internal walls have old plaster. 2 5-bay granite arcades with Pevsner A-type piers which have moulded cup capitals and roundheaded arches. Double chamfered rubble tower arch with projecting imposts. Over the nave and aisles the medieval wagon roofs survive, although somewhat restored, whilst over the chancel the roof has probably been completely replaced. Medieval rood screen, somewhat mutilated and without the coving, but with painted figures to panels and also some renaissance ornament. The parclose screens also survive but in a less complete state. Unusual survival of a very good wooden medieval octagonal pulpit, richly carved and set on a tapering stem. Altar rails and table are C17 with chunky turned balusters and legs.

From the survey three panels have been discovered on the north wall. It is thought that there is likely to be a fourth at the east end. However, the monument in this area is in an extremely unstable condition and it was not possible to examine the wall directly above. The panels are painted on the walls between the window openings.

The borders of the oval cartouche panels are surrounded with vigorous scrolling designs in earth reds and yellows and a sap green colour painted in a free naïve style. The rectangular borders so far reveal bands of plain yellow ochre colour alternated with decorative designs within the rectangular frame.

The lettering is large cursive lower case script painted in black. Text references and capitals are painted in red and simple black scrolling designs separate the different verses.

Text in wall paintings increased in size in the 18th century. This may have been associated with the increase in literacy and the assumption that the congregation would be able to read the text. The change from gothic to cursive script in wall paintings occurred around the end of the 17th century. The use of cursive script then continued until the reintroduction of the gothic script with the Victorian search for the return of medieval art and architecture

The central text uncovered on the north wall is thought to be part of the epistle to St John which is concerned with the love and fellowship of God. The words so far uncovered read:

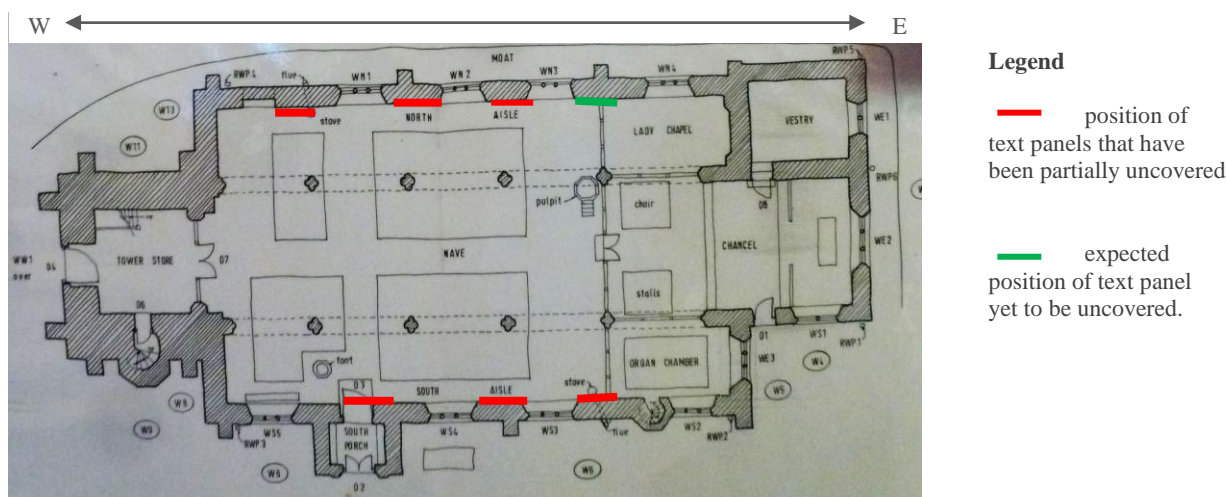
*'...that he...love...
.....a love his....
..... The fi.st ..istle'*

The most commonly found texts include the Ten Commandments, the Creed and the Lord's Prayer. However, text from the Psalms and the Proverbs are also found. Near the south door one frequently finds 'I had rather be a doorkeeper in the house of my God than to dwell in the tents of ungodliness'. One would also expect to find encouragements to almsgiving.

There was a proliferation of painted Royal Arms and text panels during the reign of Queen Anne (1702 – 1714). Anne restored to the church the first-fruits and tenths which had been appropriated to the crown since 1534, and founded Queen Anne's Bounty to administer these funds. The Church at Abbey Dore (Hereford) contains a fine example of early 18th century text panels which are also accompanied by a huge painted Royal Arms.

There are a number of similar text schemes in Devon churches dating from the 17th and 18th centuries. A very similar style of lettering and borders can be seen at the church of St. Mary the Virgin in Combyne (see page 14).

2.3 Plan (Le Page Architects) showing the position of the 18th century wall paintings in the nave

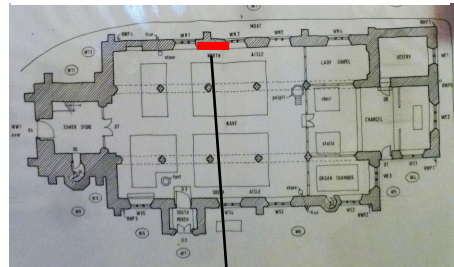


3. Photographs showing the areas of 18th century wall painting that have been uncovered

3.1 North wall of the nave

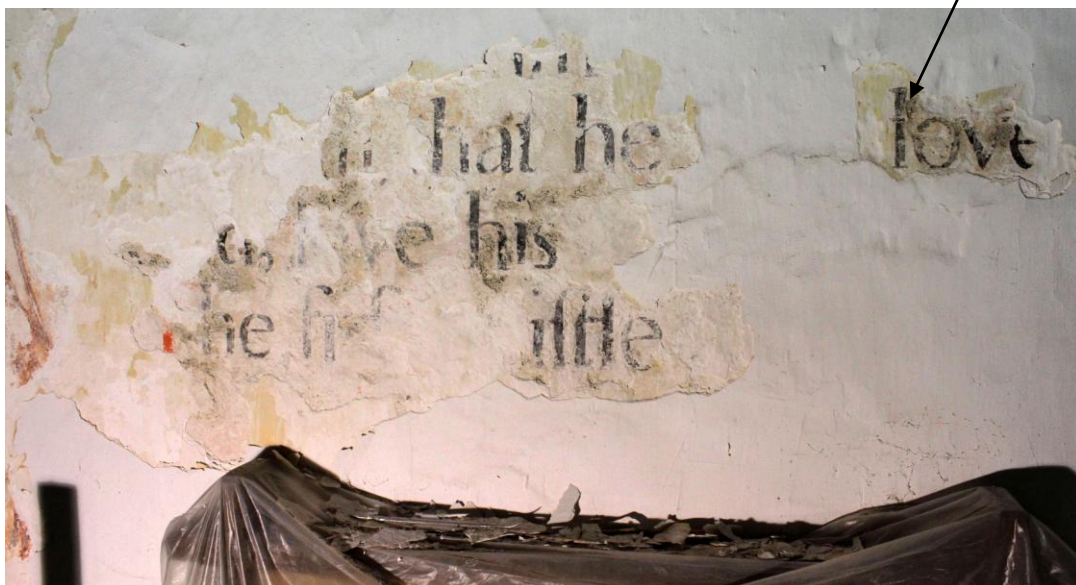


Figs 1 & 2 Position of text



Figs 3 & 4.

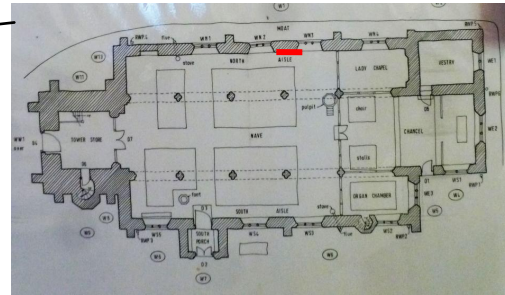
Details of the ornate border painted largely in red and yellow ochres and the cursive style text. The letters measure approximately 4 - 7 cm in height which makes them extremely legible from the floor.



3.2 North wall of the nave



Fig 5. Position of the text



Figs 6 & 7.

Details showing an area of text panel that was revealed. This is a rectangular panel. The lettering uncovered so far is in remarkably good condition



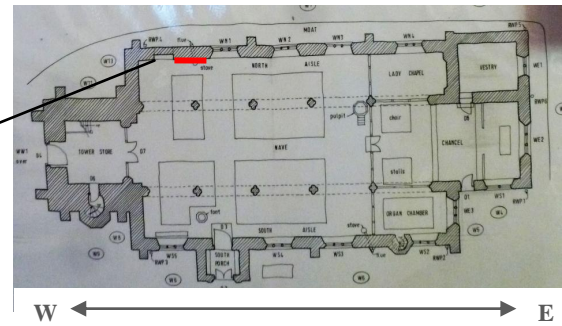
3.3 North wall of the nave

Fig 9.

Text panel at the west end of the north wall. This panel has been previously uncovered and was only relatively recently painted over. A stove pipe was inserted into the wall in the 19th century



Fig 8. Position of text



Figs10&11

Details of the text and border decoration

3.4 South wall of the nave



Fig 11. Position of text

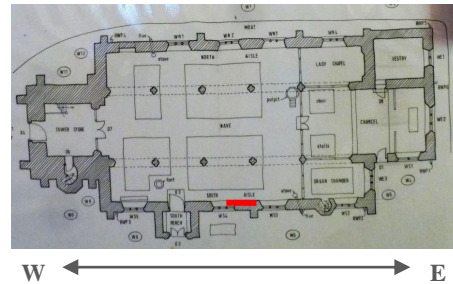


Fig 12

Oval text panel partially uncovered on the south wall.

Fig 13.

Detail showing the dark red outlines with yellow ochre and organic green glazes used for the coloured decoration.



3.5 South wall of the nave



Fig 15

Rectangular text uncovered at the east end of the north wall of the nave



Fig 14. Position of text

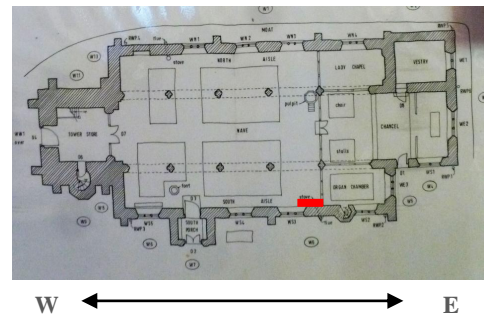


Fig 16. Detail of border



Fig 17.

Detail of letter which has been covered with a thick brown sealant.

3.6 South wall of the nave



Fig 19.

Text over the south door. A tie beam was inserted in this wall in 2013. The fragments below were recovered during this process.

Fig 18 Position of text

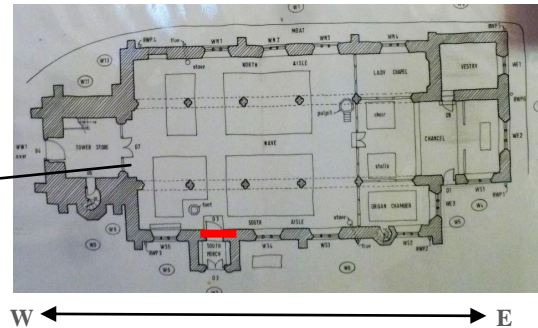


Fig 20.

Text partially revealed on the wall.

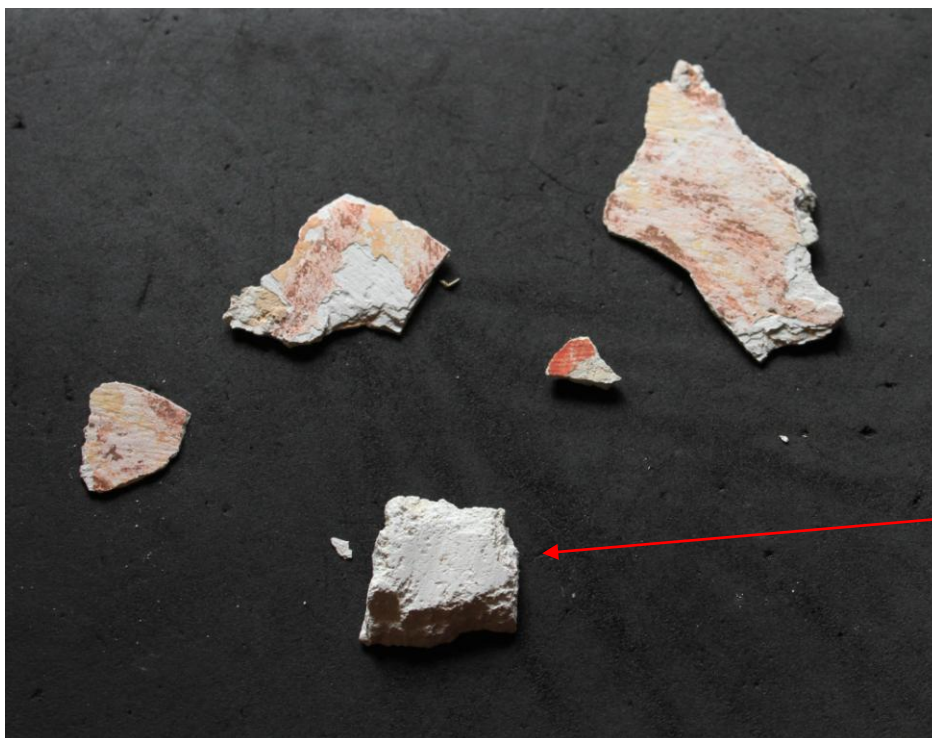


Fig 21

Fragments of an 18th century text panel, recovered when the tie beam was inserted.

Detail of the back of the fragment, showing the upper plaster layer which contains gypsum.

4. Wall painting and plaster survey

No evidence has been uncovered in the rural Deans records referring to payment for any decorative painting. Milles Survey (18th century survey of Villages) is also very scant for Chivelstone Church 'comon stone & covered with slate'. Beatrix Cresswell² who wrote in the first part of the 20th century refers to the walls being plastered but says little else.

4.1 Plasters

The upper section of the walls in the nave from the level of the wall plate and continuing up behind the vertical section of the roof timbers has clearly been renewed. It is thought that this was probably undertaken during the Victorian restoration in the 19th century when the roof was restored.



Fig 22.

Detail showing the later plaster at the top of the north wall



Fig 23

Detail showing the later plaster at the top of the south wall

A detailed examination of the exposed areas of plaster in the nave revealed the existence of two layers of plaster supporting the limewash layers. This plaster appears to cover most of the walls of the nave apart from the west end of the south aisle which has been re-plastered with cement, and areas of localised repairs for example for the flu pipe for the stove at the west end of the north wall.

The first layer of plaster is a coarse coat, consisting of lime and largely black silica which is poorly bound. The silica content is extremely high creating a weak mortar. In a number of areas on the south wall it can be seen to have completely lost cohesion creating large voids behind the wall paintings. The upper coat of plaster consists of a lime and gypsum mix and is relatively hard. The addition of gypsum to plasters is a practice that started in the 18th century. In many areas it is this layer which is supporting the painting and retaining the level wall surface. It is not unusual to find a weak coarse coat supporting a wall painting. (a very similar situation was found in Newton St Cyres). This may be due in part to availability of suitable sand.

²Exeter churches; notes on the history, fabrics and features of interest in the churches of the Deanery of Christianity, Devon . Exeter; Beatrix F Cresswell; J.G. Commin, 1908.

Fragments of a possible earlier plaster were exposed in an area at the east end of the south wall where a monument recently fell down. Remains of a white lime mortar containing dark aggregate were exposed which were covered with a thin limewash.

The west end of the south aisle has been re-plastered internally, with what appears to be a cement-based render and the south wall of the chapel in the south aisle also has modern plaster.

The east wall of the chancel was re-plastered when the reredos and window were inserted in the 19th century and the other walls in the chancel have a number of later repairs.



Fig 24

Detail showing the coarse coat of plaster which is very high in aggregate.



Fig 25

View of the west wall of the south aisle which has been re-plastered with a cement based mortar.

4.2 Lime-wash layers and decorative schemes

Access to the various areas was provided using a ladder. Each area was carefully examined using a magnified head lens. The investigation involved the careful removal of overlying limewash layers with a scalpel in order to understand the layer structure and to look for evidence of earlier decorative schemes.

Reference is made in the Rural Dean's report from 1972, to the wall painting on the North wall and the possibility of further uncovering. Mr Roger Tucker from the village remembered wall paintings with text and border decoration on the south wall over the door and at the west end of the north wall. This historical knowledge provided a basis for the initial choice of areas to examine.

A total of six painted texts with decorative borders were discovered in the nave (see pages 2-9). In many areas the uncovering process involved the removal of up to ten later lime wash layers. The uppermost schemes were modern film forming paints, the most recent being masonry paint. In areas where the paintings had previously been uncovered – at the west end of the north wall and over the south door, only one layer of modern paint was found covering the paintings. Unfortunately this modern paint layer was much harder to separate from the 18th century decoration than the softer later lime wash layers.

A tie was inserted over the south door in the 2013 and during this work a piece of plaster with some surviving paint was removed. This piece has been given to McNeillage conservation. It is clearly part of a border and lettering from a text panel (see fig 21, P.9).

The monument inserted immediately below the central text panel on the south wall (see page 7) cuts off the lower section of the border decoration; this monument dates from 1830. The monument on the far east section (see page 8) of wall that also cuts off the lower section of the painting dates from 1850.

Investigations in the chapels and chancel revealed very little and it is thought that these areas have had a number of alterations and can be seen to contain a number of later repairs.

Only two layers of limewash were found beneath the 18th century scheme. Both of these layers are extremely well bound to the 18th century decoration and it is thought that they are probably preparatory layers for the same scheme.

No medieval decoration was uncovered during this survey. However, it is possible that medieval wall paintings do exist in some areas. With such an extensive covering of 18th century schemes, however, it is unlikely that they will be revealed.



Fig 26

Detail of the fragment from over the south door showing the earlier limewash and lime and gypsum plaster layer.



Fig 27.

Detail of the decorative border on the north wall showing the build up of overlying limewash layers.



Fig 28.

Detail of the border of the text partially uncovered at the west end of the north wall. Note the area that has been previously exposed and then repainted with the modern paint finish.



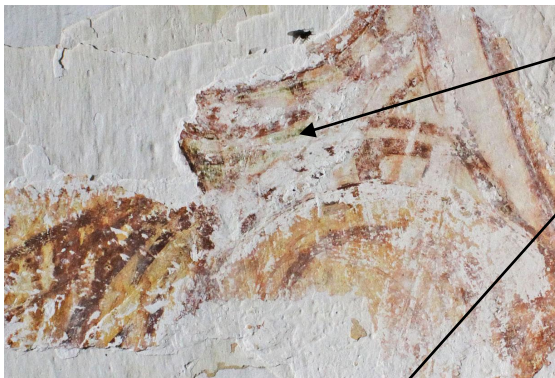
Fig 29 &30

Similar 18th century text panel from St. Mary the Virgin, Combyne

5. Technique of execution of the 18th century painted text panels

Three paint samples were taken for analysis. The samples are taken using a scalpel with the aid of a magnified head lens. These are put into a plaster phial which is sent to Catherine Hassall Paint analysis.

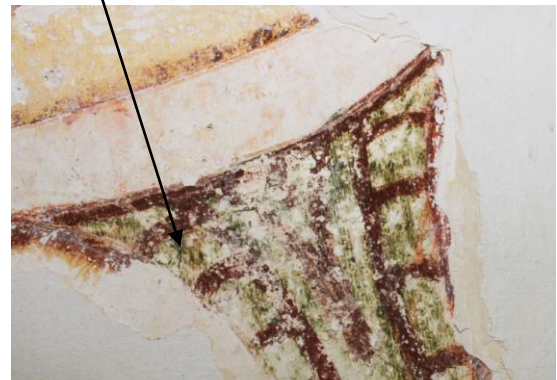
The samples were taken from the following areas:



Sample 1- a green glaze over a brown ochre

Sample 2 - a vivid red

Sample 3 – a green glaze over a red ochre



The samples were examined under low magnification and then the pieces were mounted in cold-setting polyester resin to be cut and polished as cross-sections. Material from the coloured layers was dispersed on glass slides and the pigments identified using a polarising light microscope.

5.1 Results of the analysis

5.1a. *Plaster*

The plaster in the sample is predominantly lime with some gypsum.

5.1b *Painted decoration*

The painted scheme is an aqueous based painting applied onto a limewash ground. The design is lined out in iron oxide reds with colour washes added over the top.

The colours used for the decorative borders are largely iron oxides apart from an organic green glaze made up of a mix of an organic blue pigment with carbon black, calcium carbonate and some fine iron oxide yellow.

The pigments would have been bound in either lime water or a dilute organic size.

The vivid red colour used for some of the letters and decorative scrolls in the text is a very fine iron oxide mixed with red lead.

In the cross-section made from Sample 1 the brown layer has cracks in it which are filled with the green glaze.

The red is painted over thin layer of pure white limewash which appears to be the second limewash layer on the lime plaster.

All of the colours used for the painting have been available throughout the medieval period. The presence of the gypsum in the plaster, together with the style of the lettering and decoration in the plaster is a clear indication that these paintings date from the 18th century.

C. Hassall, Paint Analysis
5, Patshull Road, London NW5 2JX
October 2019

Report no.C425

SAMPLE 1

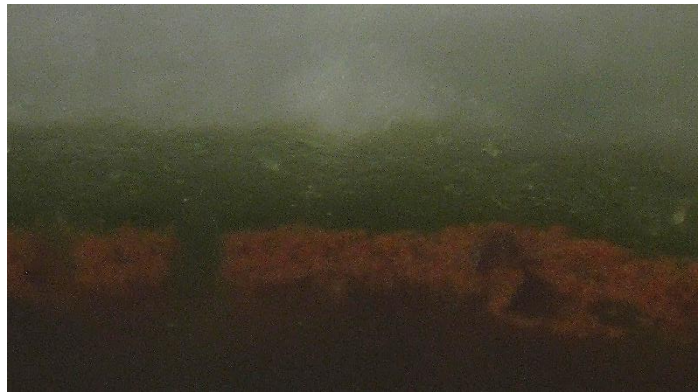
Brown with green glaze

Showing the green overlaid with
later limewashes



Detail of the green

There is no dirt between the brown
and the green, but the green does
fill cracks in the underlying brown,
and so it may have been applied at a
slightly later stage



SAMPLE 2

Red letter

two layers of limewash

plaster



Detail of the red



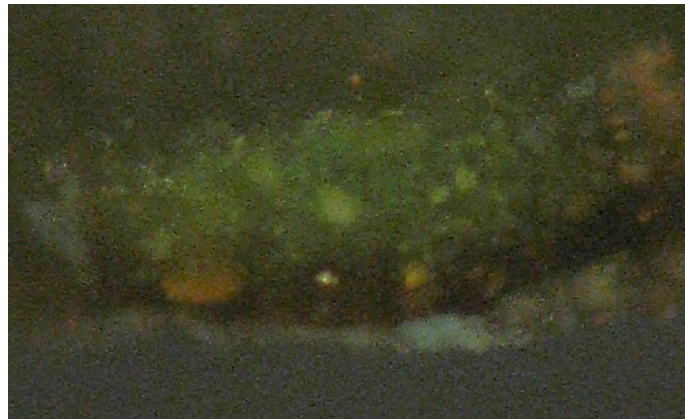
SAMPLE 3

Brown with green glaze

Fragment (i)

[Other way up?]

Showing yellow and white pigment particles in the upper layer



Fragment (ii)

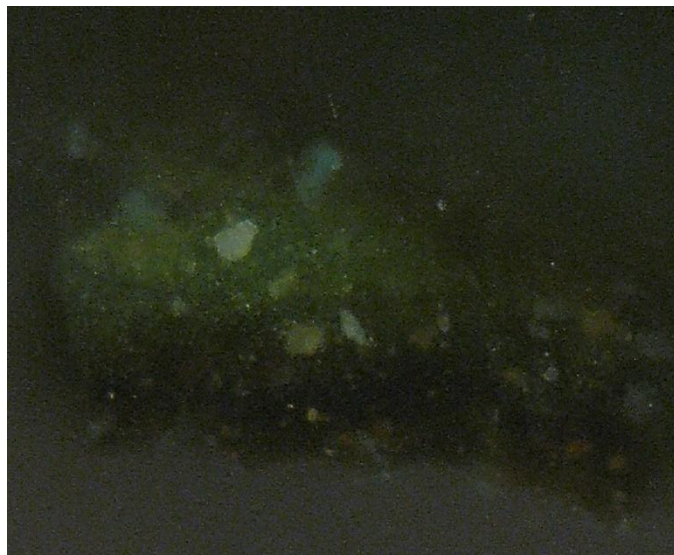
The green is less clear in this fragment, but the section does show that there was more than one layer laid over the the second with more pigment than the first



brown:

Fragment (iii)

[Other way up?]



5.1c Later painted schemes

On most of the walls there is a considerable build up of later limewash layers. The most recent scheme is a modern film forming paint finish which is relatively hard with a coarse texture – similar to masonry paint. Beneath is a stronger film-forming layer which appears to contain some oil. These layers are resistant to water and therefore impermeable.

6. Condition survey of the interior walls

The church has suffered from serious problems of water ingress, due to a combination of high external ground levels, failing rainwater goods and failed pointing. These structural issues are all being dealt with as part of a Heritage Lottery application.

There is clearly a problem on the south wall of the south chapel. Here, there is a later modern plaster and significant areas have been lost. A monument at the east end of the south aisle recently fell off the wall. The problems on this wall would appear to be a combination of the failure of the structure leading to moisture ingress and the unsuitability of the present plaster on this wall which is relatively hard and would restrict moisture from passing through. As noted in the Quinquennial Inspection report, the exterior was pointed with a hard cement mortar which has now begun to fail.

The lower section of the north wall has clearly suffered from the long-term affects of moisture ingress with the loss of plaster and limewash layers. There are a number of later repairs. A calcite crust is visible in some areas indicating that there has been considerable amount of moisture carrying the calcium to the surface. This failure is associated with high ground levels on the exterior which have recently been rectified with the insertion of a French Drain. The plaster higher up the wall is also suffering from a loss of cohesion and significant voids were noted behind the wall paintings. These failures are thought to be associated with historic failure of pointing and rainwater goods.

There is considerable detachment of the limewash layers on the north wall, particularly in the central area. On examination most of the detachment is occurring between the earlier and later layers. The most recent modern paint layer is much stronger and more impermeable than the layers beneath and this has probably exacerbated the problem trapping the moisture within the wall and causing the weaker layers to pull away from the wall. Fortunately the separation appears to be occurring between the limewash and the 18th century decorative scheme beneath which is relatively stable in the areas examined.



Fig 31.

Lower north wall of the nave showing deterioration of the plaster and evidence of microbiological growth

**Fig 32**

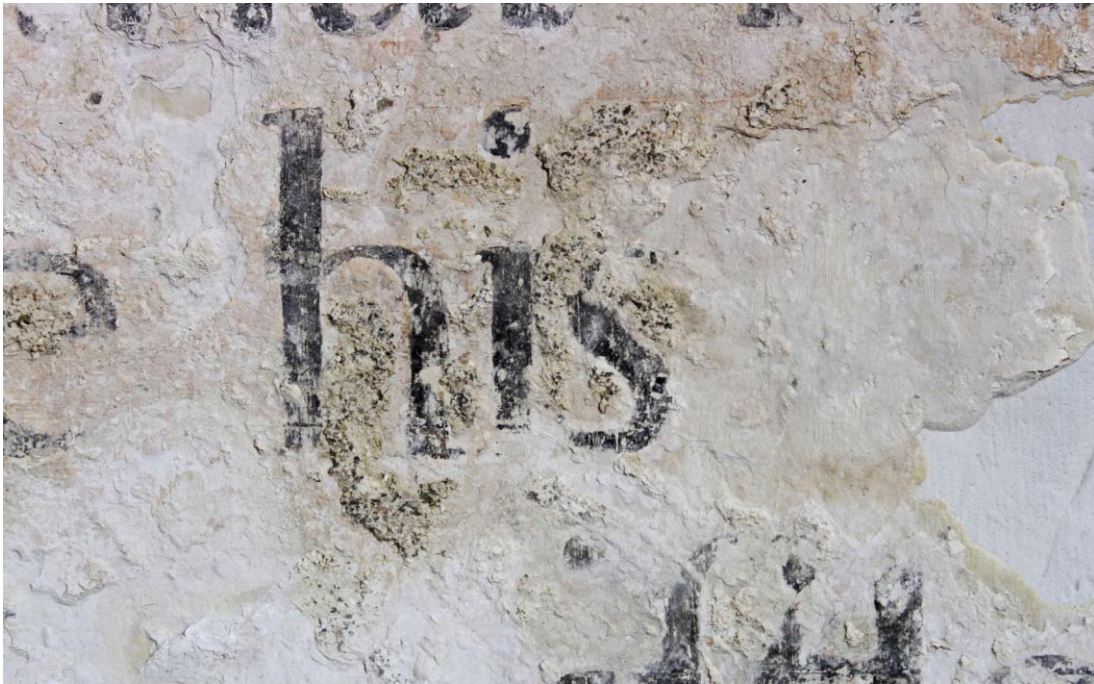
Detail showing the detachment of the later paint layers on the north wall

6.1 Condition of the painted decoration

The condition of the painted decoration is variable. From the small windows of painted decoration that have been exposed it is clear that there is some loss of cohesion of the painted decoration which is powdering. This is particularly the case in areas where the plaster has lost cohesion on the north wall. However, in other adjacent areas it has also been found to be remarkably stable

In areas where it has been previously uncovered and then repainted over there is some loss of the surface layer.

The text panel partially uncovered at the east end of the south wall has been covered with a hard thick brown layer, thought to be a sealant applied when the walls were partly re-plastered. Removal of this layer is possible but it significantly slows down the uncovering process.

**Fig 33**

Detail from the north wall where the first coat of plaster has lost cohesion in some areas leading to the deterioration of the painted surface.

6.2 Emergency treatment

In some areas it was necessary to undertake emergency consolidation of the paint and plaster layer where the plaster had lost cohesion. In these areas the plaster was consolidated using a 5% solution of Syton X30 (water based colloidal silica) applied to the surface with a brush through Japanese Tissue.



Fig 33.

Detail showing emergency treatment being carried out during the uncovering process. An acrylic dispersion B60a is being applied to areas of the lettering that have lost cohesion. The dispersion is applied with a brush through Japanese tissue.

7. Analysis of the causes of deterioration

The problems with the structure which have led to some failures of the internal plaster have already been dealt with in detail in the Quinquennial report and proposals have been put forward to rectify the situation. These concern repointing the exterior walls with lime mortar and repair to rainwater goods.

The main issue of concern for the wall paintings is the presence of moisture in the walls and the impermeable overlying paint layers that prevent the moisture from passing out through the surface. This has led to a continual wetting and drying cycle behind the surface with the formation of salts within the plaster that supports the painting.

8. Proposals for Treatment

8.1 The wall paintings

The uncovering trials have revealed that a significant 18th century scheme of painted decorative text panels has survived on the walls in the nave. The presence of later modern paint finishes which are now beginning to pull away from the surface necessitates the uncovering of the 18th century scheme. These later layers are generally impermeable and stronger than the lime washes beneath. It is also clear that in some areas the presence of these impermeable layers has prevented the moisture from passing out through the surface leading to salt crystallisation within the plaster and subsequent loss of cohesion of both the plaster and painted decoration.

The normal process for the conservation of wall paintings would be to stabilise the condition of the exterior structure and internal environment prior to undertaking the work.

It is recommended that the initial uncovering and consolidation work should concentrate on areas where the overlying paint and lime-wash layers are unstable. However, all areas of wall painting will need to be stabilised prior to any redecoration work.

The proposed method of treatment would be as follows:

8.1a *Removal of the later limewash layers partially detached from the surface*

This work involves the painstaking removal of the later limewash layers using a combination of scalpels and fine spatulas with the aid of a magnified head lens. As the overlying limewash layers are removed care is taken to ensure that these later layers do not themselves support text schemes.

8.1b *Consolidation of the painted surface*

The 18th century decoration showed some evidence of loss of cohesion in the areas that were exposed. Powdering areas of paint will need to be consolidated as the work progresses. This can be undertaken through Japanese tissue by applying a 5% dispersion of a thermoplastic Acrylic polymer such as Primal B60a.

If areas of flaking paint are revealed during the process, these can be reattached using a solution of dispersed lime putty or acrylic dispersion, as appropriate to the situation.

8.1c *Consolidation of the plaster support.*

It is quite possible that during the uncovering work, areas of plaster will be exposed that are either suffering from loss of cohesion or loss of attachment. The consolidation of the plaster may have to be undertaken in conjunction with the stabilisation of the paint layer that it supports.

The plaster can be reattached using a lime-based grout such as lime putty and Trass. The surface of the wall painting is first protected with Japanese tissue prior to injecting the grout into the void. Where necessary fresco presses can be applied to exert pressure while the grout sets.

Areas of crumbling and powdering plaster that have lost cohesion can be consolidated using Syton X30 (colloidal silica) or Calosil Nanolime³. This can be injected into exposed edges or applied to the surface through Japanese tissue as appropriate.

Once the uncovering work is complete all lacunae in the plaster will be filled with a lime mortar consisting of lime, sand and stone dust.

8.1d *Aesthetic presentation*

There will be no reconstruction of missing areas since this would jeopardise the authenticity of the original. However, areas of loss can be toned using watercolours, so that they do not distract the eye from the original work.

Once the work has been completed it may be considered appropriate to apply a coat of lime-wash to the fills to tone them in with the surrounding area.

8.2 *Treatment of the other walls that have no earlier decoration*

The modern finishes are generally pulling the underlying limewash layers away from the surface. These later layers should be removed from the surface. The walls can then be repainted with a limewash.

It is recommended that an off-white colour is used for the limewash rather than a stark white. The off-white colour tends to enhance historic features such as monuments and wall paintings.

³ Nanolime consists of artificially made, nano-sized particles of calcium hydroxide suspended in alcohol.

9. Future Maintenance

Once the exterior repair work has been completed there will be a period of drying out. During this phase it is quite possible that salt crystallisation will occur within or on the surface of the wall paintings, which could lead to some further damage. It is important that an allowance is made for future maintenance during this period to assess their condition while the wall adapts to the changes in moisture content.

The present Heritage Lottery grant does not include making improvements to the heating and lighting. However, when the church can afford to make these improvements it is important to consider their affect on the wall paintings and choose appropriate systems for this environment.

The fall of the monument on the south wall indicates that there are likely to be further failures of iron cramps in other monuments caused by the long-term high moisture levels within the wall. The monument in the same position on the north wall opposite is also in a precarious condition and the church are currently looking into the possibility of having it repaired.

Bibliography

Royal Arms and Commandments in our Churches . H.Munro Cautley. The Boydell Press 1974
St. Sylvesters Church, Chivelstone, Devon. Quinquennial Report. Le Page architects.
Annotations from the Rural Dean Reports - courtesy of the Parish.

10. Photographs of the interior and exterior walls.



Fig 34.

Chancel looking east. These walls have largely been re-plastered. No evidence of earlier decorative schemes was found.



Figs 35.

North chapel – north wall. This wall has a patchwork of later repairs.



Fig 36.

South Chapel



Fig 37

East end of the south wall showing the area where the monument fell off the wall. This has now been repaired.



Fig 38. View of the nave and chancel looking east.



Fig 39. View of the north wall of the nave



Fig 40. View of the south wall of the nave.



Fig 41. Exterior view looking from the east



Fig 37.

Detail showing the rood stair tower, which has a number of failed mortar joints.