Preliminary Assessment of a pair of wall paintings in the Nave at
The Church of Saint Peter & Saint Paul
Burgh le Marsh
Lincolnshire

Client: St Peter & Paul PCC

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1.0: Introduction

Fig.1: Saint Peter & Saint Paul Burgh le Marsh

This report has been commissioned by Burgh le Marsh Parochial Church Council (PCC) to investigate the significance and conservation needs of a pair of wall paintings in the nave at the Church of Saints Peter & Paul at Burgh le Marsh, Lincolnshire.

The church is listed grade I (list entry no. 1222765) and constructed c.1500 with later alterations in 1702, late C18 and restored c.1871. There is a brief mention of the wall paintings in the Historic England List Entry Summary, as: “central bay spandrels of south arcade with small fragments of fresco”¹. Firstly, it is important to note the paintings are not true fresco. The technique of true fresco was painted onto fresh, wet lime plaster with the pigments being incorporated (fixed) into the surface of the plaster as it cures. This technique is extremely rare in the English parish church with basic cross sectional analysis of a small fragment removed from one of the paintings confirming they were executed “a secco” (i.e. on dry plaster).

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2.0: Summary
This document is not intended to be a definitive guide to the origin and date of execution of the wall paintings or a proposal for their conservation. It is designed to highlight their potential significance, provide an insight into their conservation needs and identify areas for further research. It is hoped and anticipated this document will provide a stimulus to drive a conservation proposal and address some of the issues surrounding their future care and presentation.

Although some preliminary research has been carried out by the author to shed light on this, their origin and context remains unclear. However, sufficient research has been carried out to present a hypothesis about their likely origin as hatchments potentially associated with a mortuary chapel (or similar) once located in the south aisle. It must be stressed this remains a hypothesis with the intended purpose of providing the stimulus for further investigation and research.

Historical research should be backed up with scientific analysis of the pigments used and potentially binding media; this may help to date the wall paintings, provide the basis for a comparative study of similar ecclesiastical wall paintings and help to drive a conservation proposal.

The condition of the wall paintings has been briefly assessed along with the decay processes that have contributed to their current poor condition and recommendations made to
stabilise the paintings and slow down further decay. In summary these measures include (in order of priority).

- Consolidation of loose, flaking and friable material to hold back further losses of plaster and paint.
- Recording (to scale) by photography and drawing of their current condition to provide a reference for further inspections in case of future deterioration.
- Installation of an environmental monitoring system to record: temperature, relative humidity and dew point.
- Provide recommendations for their future care.

This preliminary investigation has identified several areas that warrant further research to bring the history of the wall paintings into context and identify the substrate and materials used by the artist. An understanding of their context and technology of materials will help to inform an appropriate programme of conservation treatment.

A small discrete sample of loose painted plaster was removed from one of the paintings for cross sectional analysis under an optical microscope to determine the number of paint layers present (to highlight any evidence of later over-painting). The paintings have been executed on a red background and further red paint was detected on the arcade columns in the nave. Two further samples were removed from the nave for analysis and comparison to determine if the same paints/pigments were used. First impressions under an optical microscope indicate they appear to be very different, but further analysis will be required to confirm or refute this.

The heritage value and significance of the wall paintings has been assessed and it is stressed that their true significance can only be realistically defined following further research.

Other issues addressed include the need to carry out a detailed condition assessment of the paint and plaster. This will provide a permanent record of their current condition, help to inform the conservation proposal and provide a reference for future condition assessments if necessary.

Mechanisms of decay and deterioration are examined and particular attention is drawn to the major decay factor – moisture and high humidity and the importance of continued environmental monitoring inside the church.
The presentation of the wall paintings is currently understated and poorly presented. Recommendations are made (following further research) to draw closer attention to them and highlight their potential significance as a local and national heritage asset.

3.0: Brief

PPIY Architects have been asked to carry out investigation work at the church with the intention of carrying out re-roofing works to the nave and tower next year (2017). Historic England have requested that the investigation includes a preliminary examination of the existing visible wall painting to the arcading and assessment of the significance and conservation needs and opportunities, and recommendations for further research.

In pursuance of this, a site visit to the church was made on September 2\textsuperscript{nd} 2016 when access to the wall paintings was provided via a mobile elevated working platform. The location of the wall paintings and comparative sample sites on the arcade columns are included on the floor plans in the appendix of this report.

4.0: Heritage Values

People may value a place for many reasons beyond utility or personal association: for its distinctive architecture or landscape, the story it can tell about its past, its connection with notable people or events, because they find it beautiful or inspiring, or for its role as a focus of a community. These are examples of cultural and natural heritage values in the historic environment that people want to enjoy and sustain for the benefit of present and future generations at every level from the ‘familiar and cherished local scene’ to the nationally or internationally significant place.

Many heritage values are recognised by the statutory designation and regulation of significant places, where a particular value, such as ‘architectural or historic interest’ or ‘scientific interest’, is judged to be ‘special’, which is above a defined threshold of importance. Designation necessarily requires the assessment of the importance of specific heritage values of a place; but decisions about its day-to-day management should take account of all the values that contribute to its significance. Moreover, the significance of a place (or in this case – object/painting) should influence decisions about its future, whether or not it has statutory designation.
This section is intended to prompt thought about the range of inter-related heritage values that may be attached to the wall paintings. The values range from *evidential*, which is dependent on the fabric of the paintings, through *historical* and *aesthetic*, to *communal* values, which derive from people’s identification with them.

4.1: Evidential Value

This lies within what we see physically of the wall paintings today – their design, the technology used in their execution, craftsmanship and any subsequent interventions.

There is no documentary evidence immediately available regarding the date of origin or the context in which the wall paintings were originally intended. Pevsner makes a fleeting reference to them as “badly damaged scraps of early C17(?) date”. He clearly questions the date proposed and provides no evidence for this supposition.

Although both paintings are in poor condition, sufficient detail remains of their design to determine they were painted on a red surrounding background, framed with a lozenge shape defined using a yellow border with a twisted rope (?) design painted onto the border. Both lozenges are divided vertically with black on the right hand side and white on the left hand side of the easternmost, and red on the left hand side of the westernmost. Traces of a central armorial design are visible on both paintings, including what appears to be three lions passant on a red background. The remaining armorial detail is less legible.

Given these facts it appears the paintings may be hatchments.

**Hatchments** are armorial shields painted onto a square- or ‘lozenge’-shaped frame. (In heraldry, the term ‘lozenge’ describes a diamond or rhomboid; its four sides are all equal but its angles are not square.) The background is painted somberly in black, and occasionally skulls and crossed bones adorn the frame, often with skulls painted on the arms itself. Once granted as a reward for an act of bravery or distinction, the term hatchment is believed to be a corruption of the word ‘achievement’. The tradition of hanging these armorial shields or escutcheons in churches goes back to the 17th century and its roots extend further back still to the time when the family of a dead knight would display his helmet and shield in the church or family chapel. In those days, when a nobleman died his heraldic shield would be

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carried before the coffin. The background to the shield or ‘escutcheon’ was often painted black and white to indicate whether it was the husband or wife who had died. If the right or dexter side was black and the left or sinister side was white, then it was the nobleman himself who had died leaving a widow (as is the case here). However, if the sinister side was black and the dexter side was white, then it was the wife who had died, pre-deceasing her husband.

To find a hatchment painted directly onto wall plaster inside a church is extremely unusual, they were normally painted on board or canvas and carried in the funeral procession and afterwards fixed in the church.

4.2: Historical Value
Historical value derives from the ways in which past people, events and aspects of life can be connected through a place (the church itself and the wall paintings) to the present. It tends to be illustrative or associative.

If the wall paintings are indeed hatchments, then their illustrative value is high because they would represent a rare example of hatchments painted in a church as a permanent fixture directly onto wall plaster. If proven, this would link with their associative value - i.e. their potential association with a local notable family giving their overall historical value a particular resonance. This also raises the question: “why are they located either side of the central arch in the south arcade?”. One possible explanation may be they once framed the opening to a mortuary chapel (or similar) built into the south arcade.

4.3: Aesthetic value
Aesthetic value derives from the ways in which people draw sensory and intellectual stimulation from the wall paintings. Here, this aesthetic value derives from what we currently see of the wall paintings and the stimulus they provide. Presently, they are impossible to interpret, at a high level and poorly lit. There is nothing in place in the church to draw the attention of the casual visitor to the paintings and they could easily be missed. Their current aesthetic value is low, but could be enhanced with improved lighting and the installation of a small display nearby, with clear images and a brief accompanying narrative

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4 Cunnington, P (1990) How Old is that Church?, Blandford, London
(following further research) explaining their likely origins and historical context to the local area and community.

4.4: Communal value
The church itself is of high value to the local community. It is a much loved building that is held dear by many local people who have at some point in their lives worshipped there. It is a focal point for christenings, weddings and funerals and so holds a high emotional value for them and will continue to do so. The wall paintings are an integral part of the interior fabric and although their origin and meaning are currently enigmatic, after several conversations with members of the local community on the day of my site visit, there is clearly a great deal of interest in them and a desire to improve their understanding of them.
This acknowledgement of their potential value to the history of the church and consequently the local community in Burgh le Marsh further justifies the need to conserve them and improve the manner in which they are displayed and interpreted.

4.5: Areas requiring further research
The date of execution and purpose/meaning of the wall paintings remains enigmatic, with a hypothesis proposed that they may be hatchments associated with a notable family and a chapel located in the south aisle. This may, or may not be the case, but it remains a possibility there could be a reference to the wall paintings in the Churchwarden’s Accounts, Vestry Minute Books or other relevant documents currently housed in the Lincolnshire Archive. For an experienced researcher, the archive provides free access to a wealth of information associated with the history of Burgh le Marsh and may be contacted through their website at....

https://www.lincolnshire.gov.uk/libraries-and-archives/lincolnshire-archives/archives-resources/

Although badly deteriorated there are traces of a heraldic design in the centre of the wall paintings and further research through the Heraldry Society and College of Arms may help to identify them and potentially their associations with a noble family.
5.0: Heritage Significance

The significance of the wall paintings and their potential importance is indicated by their inclusion in the Grade I listing notice for the church. However, because of a lack of knowledge and understanding regarding their origin and function their significance is presently low.

It is anticipated that further research will bring the wall paintings firmly into context prompting reappraisal and raising of their significance based on evidential, historical and aesthetic values.
6.0: Description

Fig. 2: The Wall Paintings

Fig. 3: Detailed view (see also appendix)
The “hatchment” design of the wall paintings is clearly visible in fig.3. Both sections are surrounded with later layers of paint or similar coating, which raises the question: “have the two extant paintings been revealed, by cleaning back the later layers of paint to expose them, or have they always been visible and left untouched during periods of re-decoration in the church”. This remains unclear at this stage, but a close inspection of the surface on both does appear to reveal areas that may have been scraped back in the past in an attempt to remove the later over-paints to uncover the wall paintings and if so, contributed significantly to their current poor condition.

The wall paintings may extend further beneath the white paint/coatings that surround them - note how the yellow border on the rightmost painting is partially obscured under the later layers of paint (particularly at the top). This is an area requiring further investigation by an experienced accredited conservator to assess the risks of undertaking further uncovering work. Such an exercise is likely to involve mechanical and/or chemical techniques that may compromise the integrity of the underlying wall paintings and great care and consideration should be taken before any attempt is made. It may be advisable to leave them as they are, or possibly attempt to peer beneath the surface of the surrounding white paint using a non-invasive technique.

No evidence for past conservation treatment was detected during the course of the preliminary investigation.

Further paint in close proximity to the wall paintings is visible on the archivolt of the arcade arch. The outline of the lozenge shape and traces of the black background extend onto the edge of the arch itself, with further red and black/green pigment visible. Furthermore, a twisted foliate design, similar to climbing ivy is visible on both sides of the arch, just above the capitals that presumably once extended entirely across the archivolt (see fig.4).

If this paint is coeval with the wall paintings it is associated with them and adds further weight to the argument that the wall paintings may extend further.
Fig. 4: Further traces of paint

Yellow border and black background extend onto the edge of the arch.

Black/green paint extending onto the archivolt of the arch.

Twisted foliate design.
6.1: Preliminary Examination

No in-depth analysis of the mortar substrate has been carried out, but a cursory inspection based on colour, compressive strength and the aggregates contained suggest the substrate is a fine lime mortar with a low compressive strength - most likely a simple lime putty with finely divided sand added.

Visually there appears to be a single thin coat of pigment applied to the wall paintings, with a fine powdery texture and appearance, suggesting the binding medium used to carry the pigment has deteriorated over time.

The two images overleaf represent two paint cross sections. Firstly, a small sample of loose plaster with paint clinging to the surface removed from the red painted background of the rightmost wall painting. The second, a comparative sample removed from the nave column identified as location 2 on the floor plan in the appendix.
Fig. 4: Microscope cross section (X100) Wall painting

- Fine lime plaster skim
- Plaster substrate
- Thin single layer of red-pigmented distemper type paint

Fig. 5: Microscope cross section (X100) Nave column (location 2)

- Fine lime plaster skim
- 2 applications of limewash
- Red (possibly oil) paint
- Approx 5 applications of limewash

The earliest application of limewash is shown at the base of the sample, with subsequent layers stacked above as they would have been applied in real time.

The red paint has the typical appearance of a C19 oil paint and is visually very different to the red in the wall painting.
No in depth analysis of the makeup of both types of red paint has been undertaken, although physically and under the microscope they are quite dissimilar. The red applied to the wall painting has the texture and appearance of a soft distemper. Distempers are simply pigment and extender (usually chalk) carried in an animal glue binder (or similar) and have a soft chalky texture with the ability to absorb and transfer moisture. Oil paints comprise an oil (often linseed) with pigment, extenders and driers added. They are of a harder texture and do not absorb or transfer moisture.

The red detected on the arcade column is ubiquitous throughout the nave and manifested in some areas as a chevron design (fig. 6).
6.2: Opportunities for further research

Analysis and comparison of the physical make-up of: the paints used on the wall paintings themselves, the traces of paint on the archivolt of the arcade arch and the red paint on the nave arcade columns may help to determine when they were applied and highlight any similarities. Pigment identification can assist in dating paints, for example: Naples Yellow introduced after 1704 and synthetic ultramarine shortly after 1830 and if detected must post-date these respective periods. Combined with historical research this type of analysis

has the potential to define the timeline for when the paints were applied and highlight if they are coeval. Additional techniques may be used to define the binding media used (the oil or “glue” used to carry the pigments) helping to build up a complete picture of the make-up of these paints.

The advice of a professional conservator will be required if further analysis of the paints is considered beneficial. A conservator will be able to assess if non-invasive techniques are feasible or whether it will be necessary to remove physical samples for analysis.

Professional advice should also be sought if further investigation of the extent of the wall paintings is considered. Physical removal of the surrounding later over-paints will involve either mechanical or chemical means and should not be undertaken lightly, with the potential to inflict further damage to what is essentially a very fragile surface. Again, the feasibility of using non-invasive techniques should be investigated, but it may be advisable to leave the surrounding areas untouched.

7.0: Condition Recording

This is essential as both a permanent record, and a means of assessing conservation requirements, the presentation of the condition of the wall paintings – and the building that contains them – forms the fundamental component of most conservation proposals and reports. It is important that records of current condition are objective, and consistent, using clearly defined parameters.

In addition to textual descriptions, condition documentation provides the clearest representation of the types, and distribution, of the various deterioration phenomena. Condition records can be presented in various ways, using both graphic and photographic methods. Examples include:

- Graphic overlays on photographs
- Annotated drawings, produced manually or using computer graphics programs and applied onto line drawings or digitised images

Determination of the scale used for the documentation, and the level of detail required should reflect the agreed project brief, and the specific nature of the site. The preparation
of baseline images or drawings at the appropriate scale can be extremely useful for all site-related recording, from pre-treatment condition to the areas treated during conservation.

Condition recording can range from the identification of general patterns of deterioration, to the detailed recording of specific instances of damage or decay. Regardless of the scale or extent of the recording, it is essential that the information is presented in a consistent and clear manner, and the chosen approach is defined and justified.

Recording the condition of a wall painting provides the basic framework within which future conservation decisions can be made. Normally referred to as a condition survey this material may be the primary objective of a conservation project, used to formulate conservation proposals, or undertaken to provide detailed records within a larger conservation report.

The condition survey must be an objective record, and should provide all the necessary information to enable areas of risk or concern to be identified. Presentation of the condition survey can comprise any combination of text, graphics, and photographs.

The various types of deterioration phenomena observed, e.g. visible salts, flaking paint, or delaminated plaster, must be fully described. Technical terms used must be explained. Where descriptions seem inadequate, a ‘visual glossary’ can be useful: this consists of same-scale photographs of characteristic areas representing each of the observed deterioration phenomena. The ‘visual glossary’ may be presented within the text of the document, or as part of its documentation.

8.0: Deterioration & damage
A preliminary assessment of the wall paintings has highlighted their poor condition. A close inspection revealed several areas of loose painted surface plaster at immediate risk of detachment. The paint itself has a powdery texture and is de-naturing (i.e the binding medium that carries the pigment is deteriorating) leaving behind loose pigment and extenders.
There is also potential the wall paintings have suffered mechanical damage in the past. This may have been caused if the paintings were uncovered by removing later over-paints, attempts to clean the surface or even vandalism. Under no circumstances should any attempt be made to clean or “dust” the paintings. Any such intervention must be left to a professional conservator.

A detailed condition survey will bring into focus specific areas of damage and provide a “condition map” of their current condition. This will also provide a useful reference for future inspections to determine if the paintings are continuing to deteriorate and/or the effectiveness of any remedial treatment undertaken.

8.1: Causes of deterioration

Moisture, as liquid and vapour, is arguably the principal cause of the deterioration of wall paintings. Moisture activates decay mechanisms such as soluble salts and micro-organisms. In historic buildings, moisture is available as liquid water from infiltration and rising damp, while water vapour affects wall paintings through moisture absorption and condensation. Infiltration and rising damp cause damage primarily by introducing and transporting soluble salts and by raising internal absolute humidity through evaporation. Infiltration can also cause staining and erosion.

Condensation may activate cycles of salt dissolution and re-crystallization, as well as cause dimensional change in original and added materials, and favour bio-deterioration. These distinctions are significant since it is immediately obvious that effects from liquid moisture are localized, whereas those from water vapour are essentially ubiquitous. Sources of liquid moisture relate to failures of the building envelope and are reasonably straightforward to assess and address. By contrast, water vapour is an aspect of the dynamic internal microclimate. This is created by the building envelope transforming the prevailing external climate outside the building and by the building’s use. Among the principal factors that affect this transformation are the nature and materials of the fabric, air exchange (ventilation) and heating. Building use also affects water vapour, particularly from heating and (to a lesser extent) people. Because microclimates are constantly changing through seasonal variations, they should be monitored over time (particularly temperature, relative humidity and dew point)\(^6\)

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9.0: Environmental Assessment

It is understood no environmental monitoring has ever been carried out within the church in the past. On the day of the site visit a number of environmental monitors were being installed inside the church (in various locations and levels) by a timber specialist. Ultimately, the data recorded will be downloaded and assessed, ideally to include one full year, thus allowing for seasonal variations. Furthermore, it is suggested one monitor be placed in a secure location outside the church to monitor the external environment. A comparison of the internal and external environmental conditions will provide an indication of the effectiveness of the building envelope to buffer seasonal environmental changes. As previously discussed, moisture is a principal cause of deterioration in wall paintings and after the intended re-roofing work to the nave next year it is likely, after a period of stabilization the internal environment (and moisture content) will change. It is therefore vital, the monitoring exercise is continued to assess the impact of this and note any increase or decrease to the humidity and dew point within the church. The monitors will need to taken down, the data downloaded and the batteries replaced annually.

10.0: Future presentation of the wall paintings

The wall paintings are currently difficult to see. They are positioned quite high within the nave and due to their condition impossible to interpret. If a decision is made to carry out immediate remedial conservation (which is recommended) an opportunity will arise to record them accurately using high-resolution digital photography. Coupled with historical research into their origin and context it will be possible and desirable to produce an informative display close to the wall paintings to assist with their interpretation for the benefit of all.

11.0: Practical Measures

Practical measures can be defined as the actions taken to address the conservation requirements of the wall paintings. These actions can be broadly divided into the following types, although they may address more than one:

- **Preventive:** aimed at addressing potential causes of deterioration
  
  *e.g. developing site maintenance and management strategies, restricting access*
• **Passive**: aimed at preventing or mitigating the activation of deterioration agents
  
  *e.g. alterations to environmental conditions or building services*

• **Remedial**: implementing direct interventions to the wall paintings to remedy specific problems

• **Aesthetic**: aimed at improving the visual appearance of the wall paintings and their surroundings

  *e.g. cleaning, re-integration, replacement of missing elements, decoration of adjacent surfaces, provision of a suitable informative display.*

12.0: Site related works

To provide a useful context, it will be necessary to identify and summarise any works to the church which may impact on the condition or conservation of the wall paintings. This is clearly the case here, with the intention of re-roofing the nave next year. All accompanying and relevant work to the building fabric should be accounted for in a conservation proposal, in particular -

• Repair of the building fabric, such as grouting, repointing, rendering, or redecoration both internally and externally
• Building alterations
• Works to rainwater disposal and drainage systems
• Works to services, such as heating, electricity, or levels of ventilation

It is important to distinguish within the proposal those works that have been carried out, those proposed, and those recommended or identified during the project.

13.0: Testing & trials

Testing or trials of conservation materials and application methods should be undertaken as part of determining an appropriate conservation proposal, and should be fully presented with information including:

• selection criteria
• testing methods and materials
• areas tested, with before-and-after documentation

Trials to demonstrate the use of a particular technique, or its effect on different areas of the painting should be fully illustrated and explained, as well as the means by which the final choice was made.

14.0: Recommendations

• Undoubtedly the wall paintings are at immediate risk. The lime plaster substrate is lifting in some areas and in danger of imminent detachment. Immediate remedial intervention by an accredited conservator is required to stabilize both paintings and consolidate and hold back areas of loose and flaking plaster.

• Given sufficient funds a conservation proposal should be commissioned to address their conservation needs and ensure their future survival.

• Continued Environmental Monitoring. This should be an ongoing process to start immediately and continue following the proposed re-roofing work to the nave. Data should be downloaded and batteries replaced annually. Assessment of the data will highlight any change to the environment inside the church and the effectiveness of the building envelope following this work.

• Research the history of the wall paintings and the techniques and materials used in their execution. This will assist the conservation proposal and bring the history of the wall paintings into context.

• Improve their presentation. Both paintings are poorly lit with inappropriate bulbs. Exposure to light has a cumulative effect and over time can cause colour changes in paint films. A more suitable method of “conservation grade” lighting should be investigated. There is nothing in place to draw the attention of the visitor to the paintings and provision of a new display with accompanying narrative should be investigated.
Bibliography


Cunnington, P (1990) *How Old is that Church?*, Blandford, London


Wall painting (left)
Wall painting (right)