

Results of Photographic Survey & 3d Modelling at

Llanegryn Church, Llanegryn

NGR SH 59620 05787



Project Number CR127-2016



C.R Archaeology

Compiled by C. Rees & Adam Stanford
On Behalf of Llanegryn Church

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Llanegryn Church, Llanegryn

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1.0 Introduction

C.R Archaeology were instructed by Llanegryn Church (also known as the Church of St Mary and St Egryn), Llanegryn to conduct a photographic survey and 3d modelling at the site.

Llanegryn Church is a Grade I Listed Building (Cadw ID: 4729, NPRN 43890, PRN 6971). It is positioned in a rural setting on a south facing bluff above the confluence of two streams. It is located to the north-north-west of the village of Llanegryn and is reached by a minor road which runs off the northern end of the main village street (figure 1).

Although it is likely that the church has much earlier origins, Llanegryn church first appears in the 1253 Norwich Taxation records. The church is believed to have been a dependent of the Cistercian house at Cymer which held lands in the area. The present structure is largely medieval and probably dates from the 14th Century, although the font most likely survived from an earlier building.

Repairs to the building are recorded in 1573, and the roof was further repaired in 1770. The church underwent a major refurbishment between 1858-1876 whilst the living was held by Griffith Arthur Jones, an MP and leader of the Oxford Movement in Wales. These works included the erection of the vestry in 1876, and the replacement of the church windows. The church continues in use as a place of worship by the Church in Wales.

These recording works were undertaken prior to planned works to the chancel. There is currently damp within the gable wall which requires immediate attention and it was therefore felt that it was a priority to create a record of the building prior to the commencement of works. The church has recently been the target for vandalism and is considered to be at risk of further damage. This record can be used retrospectively in the unfortunate event that any repairs may be required.

The record of the church consists of a full photographic record consisting of a range of digital photographs taken from ground level and hand held masts, with and without photographic scales. These photographs were used to generate 3d models of the church exterior and interior. Special attention was concentrated on the roof structure, rood screen and the barrel vaulted ceiling in the chancel and separate models were generated for these areas.

2.0 Project Aims & Objectives

The aim of this programme of works was to create a full photographic record and 3d model of the church exterior and interior.

The objective of the programme of archaeological works was to create a full photographic record and 3d model of the church exterior and interior and to make it widely accessible to the public.

3.0 Scheme of Works - Methodology

The methodology employed will conform to the requirements for a Photographic Survey as specified in *Understanding Historic Buildings: A Guide to Good Recording Practice* (Historic England 2016) and The Chartered Institute for Archaeologists: *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* (2014).

A detailed photographic record was made of the church exterior and interior prior to the commencement of remedial works to the render on the gable wall above the altar. This information will be utilised at a future date to generate line drawings and a detailed building description.

The following points are detailed in *Understanding Historic Buildings: A Guide to Good Recording Practice* (English Heritage 2006).

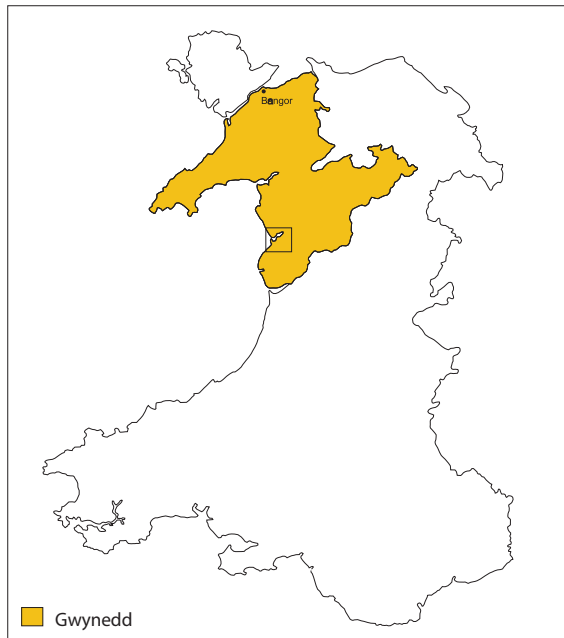


Figure 1. Site Location Map
 (Source: OS Open Data Mapping Contains Ordnance Survey data
 © Crown copyright and database right 2016)

The record created for the site will consist of:

Written Account	Points 1-3
Drawings	Point 8
Photography	Points 1-5, 7-8.

3.1 Desk Based Research

Due to the targeted nature of these works it was not within the scope of the project to conduct detailed research into the history of the church at this stage.

The RCAHMS database and survey of the area was consulted together with the Cadw Listed Building Description and Historic Environment Record. This information is included within the main report text.

The works were carried out accordance with the CIfA Standards and Guidance documents (2014).

This material forms the historical background of this archaeological report which also includes the results of the photographic survey and the 3d model on compact disc.

3.2 Methodology for Photographic Survey/Photogrammetry

The photographic survey was conducted by Catherine Rees and Adam Stanford. Ground and mast photography was utilised to gain the most comprehensive record of the site possible. This data was used to produce a 3-d model of the church.

3.2.1 Equipment

A combination of the following equipment was utilised during the photographic survey:

Cameras - High-resolution 20mp Sony Alpha and Nikon D800 digital cameras were used to create a photographic record of the site.

Camera Positioning/control – The following systems were used to create the photographic record - Tripod, Wireless Radio Remote viewing/shutter control unit, Telescopic Pole 5m, Telescopic Mast 9m.

The photographs taken during the course of these works will be stored in a loss less TIF format and will be included on CD in this report.

They will also be input into digital processing software to create a 3-d model (see 3.2.3).

3.2.2 Pole/Mast Photography

A hand held telescopic mast was used to raise the camera up to a maximum of 9m above head height. This enabled low level aerial photography to be achieved for oblique landscape views and vertical or near vertical views of the church structure and interior fixtures and fittings. It allowed for shots to be taken much nearer to the church itself than would be possible using only the vehicle mounted equipment. The camera was controlled with a Wireless Radio Remote viewing/shutter unit. This equipment has proven particularly effective during walk through landscape surveys and for the recording of upstanding structures.

3.2.3 3-D Modelling – Structure from Motion

3-D models of the church exterior and interior were generated using the Agisoft PhotoScan software with a Professional Edition Licence. Digital photographs were used by this 3-d modelling software to detect the feature points of the subject and to match these points in different images to create a point cloud.

The camera positions are calculated automatically and a dense reconstruction or geometric model was built to create a Digital Terrain Model. The resulting model can be manipulated for viewing from any angle. The Digital Terrain Model was overlaid with the original photographs for true colour representation. A second version was also produced where this texture and colour are removed which allows for features to be viewed more clearly when using a variety of artificial light and shading techniques to highlight certain features.

Should it be required geo-referencing can be applied to data at a later date. If required this data can also be utilised to produce accurate scaled line drawings of the building elevations.

3.2.4 Archive Compilation

All records created during the fieldwork have been checked for consistency and accuracy and will form the *Primary Site Archive (PI)* (EH 2006). The archive will contain all data collected. It will be ordered, indexed, adequately documented, internally consistent, secure, quantified, conforming to standards required by the archive repository and signposted appropriately to ensure future use in research, as detailed in the English Heritage *Management of Research Projects in the Historic Environment* (MoRPHE) methodology.

The archive will be assembled in accordance with the guidelines published in, *Standards in the museum care of archaeological collections* (Museums & Galleries Commission 1994), *Guidelines for the preparation of excavation archives for long-term storage* (United Kingdom Institute for Conservation, 1990) and *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (AAF 2007).

The complete site archive is to be deposited at the RCAHMS. As the data will be in digital form the Royal Commission digital guidelines for deposition will be adhered to.

3.3 Timetable for Proposed Works

Works at Llanegryn Church commenced on April 18th 2016 and initial site works were carried out in a single day. A follow up visit was made on the 14th June to gather additional data for the exterior 3d model.

3.4 Staffing

The project was managed by Catherine Rees (MCIfA, BA Archaeology, MA Archaeology, PgDip Historic Environment Conservation). Site work was conducted by Catherine Rees and Adam Stanford (MCIfA).

All projects are carried out in accordance with CIfA *Standard and Guidance* documents.

3.5 Monitoring

The site is subject to Ecclesiastic Exemption and the works were not intrusive. They were not therefore subject to monitoring. The Snowdonia National Parks Archaeologist John Roberts was however contacted and informed of the works to be undertaken.

3.6 Health and Safety

A risk assessment was conducted prior to the commencement of works and site staff were familiarised with its contents. A first aid kit was located in the site vehicle.

3.7 The Report

This report clearly and accurately incorporates information gathered during the programme of archaeological works. It presents the documentary evidence gathered in such a way as to create a clear and coherent record.

This report includes:

- A location plan
- An archive compact disc containing photographic images and 3d models
- The location and direction of photographic plates

A digital Adobe PDF version and a bound paper copy of the final report will be lodged with the Gwynedd Historic Environment Record.

3.7.1 Copyright

C.R Archaeology and sub-contractors shall retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it hereby provides a licence to the client and the local authority for the use of the report by the client and the local authority in all matters directly relating to the project as described in the Project Specification.

4.0 Geographical and Geological Context

4.1 Topography

Llanegryn Church is located in a rural setting and is situated in an elevated position on a south facing bluff above the confluence of two streams. It is located to the north-north-west of the village of Llanegryn and is reached by a minor road which runs off the northern end of the main village street.

4.2 Geology

The underlying bedrock is recorded as *“Ty'r Gawen Mudstone Formation - Mudstone. Sedimentary Bedrock formed approximately 451 to 461 million years ago in the Ordovician Period. Local environment previously dominated by shallow seas. These rocks were formed in shallow seas with mainly siliciclastic sediments (comprising of fragments or clasts of silicate minerals) deposited as mud, silt, sand and gravel”*.

The superficial geology is recorded as *“Till, Devensian - Diamicton. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by ice age conditions. These rocks were formed in cold periods with Ice Age glaciers scouring the landscape and depositing moraines of till with outwash sand and gravel deposits from seasonal and post glacial meltwaters”* (Source: www.mapapps.bgs.ac.uk/geologyofbritain/home.html).

5.0 Historical Background

Llanegryn Church is a Grade I Listed Building (Cadw ID: 4729, NPRN 43890, PRN 6971).

The Listed Building description for the building is as follows:

“Location

The church is located on a S facing bluff above the confluence of two streams, NNW of the present nucleated village, and is reached by a minor road off the N end of the main village street.

History

Llanegryn church first appears in the 1253 Taxatio, probably as a dependent of the Cistercian house at Cymer which held lands in the area. The present structure is largely medieval, probably of the C14, including the S porch, although the font probably survived from an earlier building. The first incumbent was installed in 1469. Repairs are recorded from 1573, and the roof was further repaired in 1770. The church, whilst the living was held by Griffith Arthur Jones, an MP and leader

of the Oxford Movement in Wales, underwent a major refurbishment between 1858-1876, including the erection of the vestry in 1876, and replacement of the windows.

Interior

The S porch has an arched braced collar truss, cusped above the collar, the chamfer of the arches embellished with regular diminutive nailheads and a central rose. Carved corbels. Cusped windbraces to the single purlin. Marble and slate floor, and stone benches each side. The S door is a pointed arch of 2 chamfered orders and a C19 door with elaborate iron hinges. The interior walls are whitewashed, and have a roof of 5 bays over the nave part, and 2 bays to the chancel, the E bay underdrawn with late medieval timber celure with applied ribs and bosses carved with leaves and symbols. The main roof has medieval arch-braced collar trusses. Two tiers of purlins with cusped windbraces. Quatrefoil frieze applied over the eaves ashlar. The chancel is paved with encaustic tiles. Two steps to the altar; the top step with fine encaustic tiles, dated 1846, possibly by Godwin. The major feature of the church is the extremely fine chancel screen and rood loft extending to the full width [6.32m] with a central gated opening to the chancel, all probably late C15 or early C16. The screen, of 7 bays, wider at the centre, has moulded stanchions and rail, with an openwork top stage, and the lower stage with applied tracery. The loft over is carved both sides, being more elaborate to the E. Panelled coving with large spreading leaf bosses alternating with smaller bosses exhibiting carvings of a stag, hedgehog, etc. with the symbols of the Passion. Two major friezes of undercut running vine scrolls form the cornice, surmounted by crestings both sides, and supporting moulded muntins front and back of the loft. Between each muntin, openwork carved panels in a variety of leaf and geometric forms. A further undercut scroll with crestings forms the capping. The W face is less elaborate, but follows the same programme. Applied buttresses on the muntins and triangular brackets over form emplacements for 14 statuettes. The intervening panels have applied tracery heads. The loft itself, which is 1.75m wide overall, has a mortice on the top rail each side, probably for the missing rood, suggesting it was once a rood chapel.

Glass: E window, a Crucifixion with figures in arched canopies, angels in the tracery, by H Hughes, 1872, a gift of W R M Wynne. N window, some old plain quarries but 7 yellow stained monograms and symbols. SW window, the Good Shepherd. W Window, Archangel announcing the Resurrection, also by Hughes, and the NW window, Christ and labourers, by Ward and Hughes, 1882.

Fixtures: Font, a lobed square bowl on a circular shaft, set in a ring of a square base, possibly C13. Pulpit, Octagonal, on a plain base, all C19. Organ installed 1872.

Monuments: E wall, N side, (a) a white marble aedicule, with fluted pilasters and entablature, and a cornice arched at the centre carrying 3 gadrooned urns. Apron with putto between carved corbels. At the centre an enriched tablet draped either side with the coloured mantled arms of Owen and crest over. Inscription to Richard Owen of Peniarth, d.1714, and Elizabeth Pughe, his wife, added 1738; East wall, S side: (b) a large marble monument of similar form, to Lewis Owen of Peniarth, [son of (a)], d.1729, and wife, Margaret Williams of Llanworda, Salop, and daughter Jane, who married Richard, Lord Bulkeley. Also added, Richard Owen, his son, d.1729; S Wall, from the E: (c) White Carrara marble on grey, by the Johns Carline of Salop, a monument in the form of a sarcophagus, with entablature embellished with anthemion, to the noted antiquary, William Wynne of Peniarth, d.1834, and various members of the family; (d) White marble tablet flanked by fluted columns, entablature over carrying arms with supporters on a panel supported by scrolls. Draped urn over and gerbs at the top, all set on a black marble field. To Edward Williams, d.1762, and Lady Bulkeley, heiress of Lewis Owen, d.1765; (e) Marble framed tablet to Jane Wynne of Wem, Caernarfon and Peniarth, d.1811. On the N wall, from the E: (f) A brass cross flanked by shields set on slate, to Mary Wynne, d.1866; (g) Mary Wynne, d.1900; (h) a brass cross and shields, with circumscription set in black marble, to William Watkin Edward Wynne of Peniarth, MP, d.1880; (i) a memorial tablet, as last, to William Robert Maurice Wynne, MP, d.1909; (j) a white

marble aedicule with mantled arms breaking the pediment, animals on Ionic pilasters, to Owen Slaney Wynne, d.1908. In the floor; two further tablets, WW 1834, probably the entrance to the Wynne vault, and another inscribed HAEC AULA MANET HAEREDEM.

Exterior

The building is constructed of rubble stone, with a black ragstone W gable. Slate roof between raised copings on both E and W gable ends. Simple nave and chancel in a single cell with a medieval S porch, with the N vestry, boiler house and a tall gabled W bellcote added. 1- and 2-light windows with cusped heads, all C19, also the E window in a slightly curvilinear style with heavy hood moulds and diamond stops. The W window is a 2-light C19 plate tracery window with a quatrefoil head and relieving arch over. Ovolo eaves moulding on the S. The medieval S porch is gabled with a plain pointed external arch in the stone coped gable end.

Reason for Listing

Included at Grade I as a building of largely medieval fabric including a fine C15 roof and containing an outstanding medieval screen and rood loft, and with fine monuments to the local Owen and Wynne families”.

The Historic Environment Record entry for the church adds “In 1931 the heating system was introduced and a boiler room added to the west end of the north vestry. A door was inserted in the north wall of the nave leading to the boiler room (NLW B/F/280).

In 1965-6 the church was re-roofed, a new heating system introduced and some restoration work carried out on the rood screen.

There is a cross inscribed stone of possibly 11th or 12th century date. There are two marble memorials of 1714 and 1729. There is a small 16th century helmet set by the altar. The seating is of the 19th century. The square font may be 12th century in date.

The rood screen and loft, probably of early 16th century date (although Gresham (n.d.) says late 15th century), is of seven bays; the door is located in the central double bay. It has been fully described by Crossley and Ridgemont (1945, 169-74) and was carefully restored under the guidance of W W E Wynne” (GAT HER Entry PRN 6971).

6.0 Results of Photographic Works (Plates 1 – 63)

The photographic survey of Llanegryn Church was undertaken on 18th April 2016 by Catherine Rees and Adam Stanford.

The results of the works were utilised to create a number of 3-D models of the site interior and exterior. A separate model was also created of the inscribed cross which had been built into the southern church elevation. Files containing these models are included on the CD accompanying this report and they are as follows

Model A: Llanegryn Church Exterior – Web link: <https://skfb.ly/PYRu>

Model B: Inscribed Cross in South Facing Elevations – Web link: <https://skfb.ly/Nr7Y>

Model C: Church Interior (General) – Web link: <https://skfb.ly/OoAz>

Model D: Church Interior (Roof) – Web link: <https://skfb.ly/VpnA>

Model E: Church Interior (Rood Screen) – Web link: <https://skfb.ly/NNKU>

Plates 1 – 63 detail the church in a more traditional format and are the results of the photographic survey of the church. Plates 1 – 24 detail the church exterior whilst plates 29 – 63 detail the interior. Plates 25 – 28 detail outbuildings associated with the church.

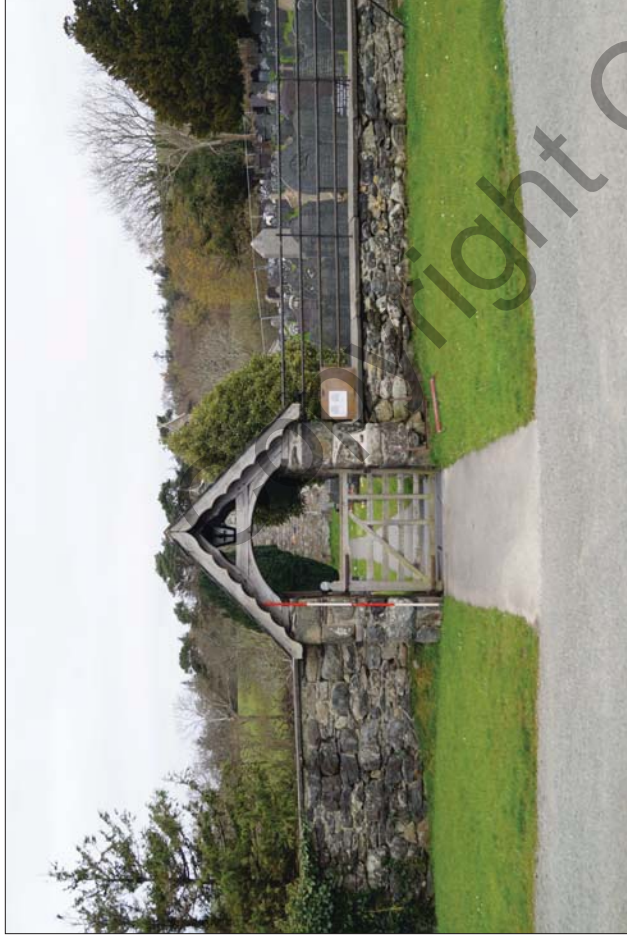


Plate 1. Lychgate at Entrance to Llanegryn Churchyard

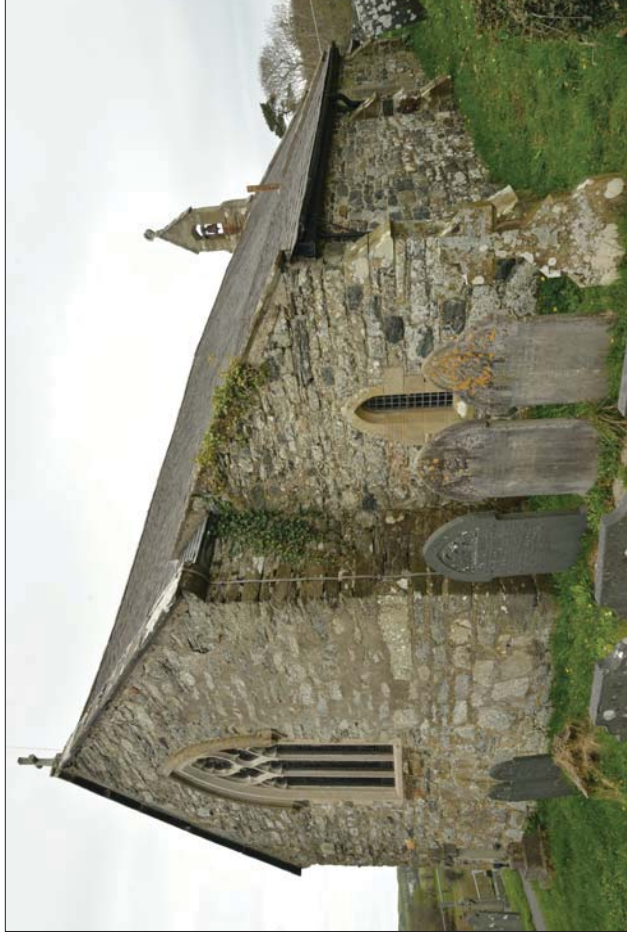


Plate 2. Llanegryn Church Eastern and Northern Facing Elevations



Plate 3. Llanegryn Church East Facing Elevation



Plate 4. Llanegryn Church South Facing Elevation (Eastern End)



Plate 5. Llanegryn Church South Facing Elevation



Plate 6. Llanegryn Church South Facing Elevation

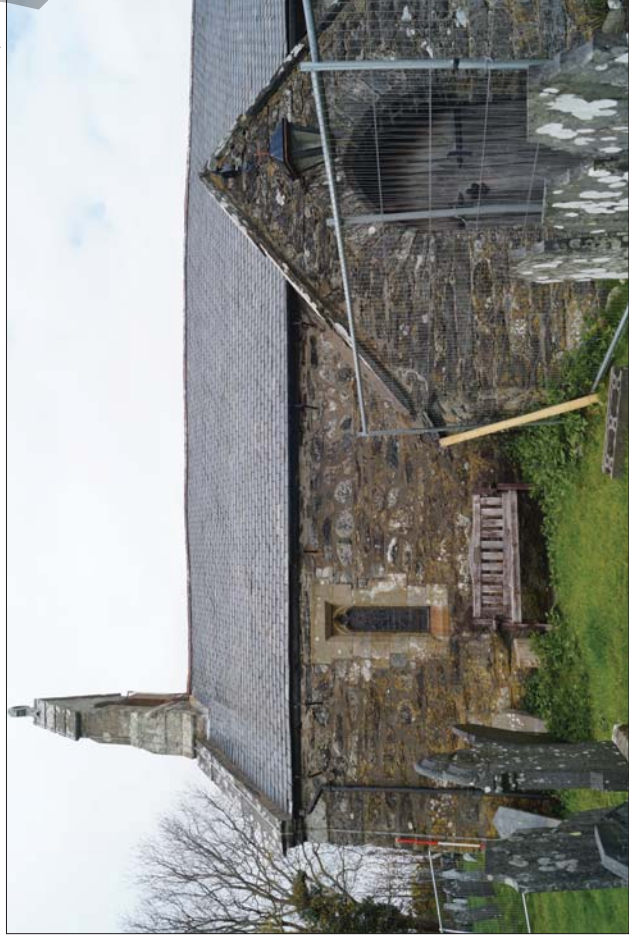


Plate 7. Llanegryn Church South Facing Elevation



Plate 8. Porch in South Facing Elevation

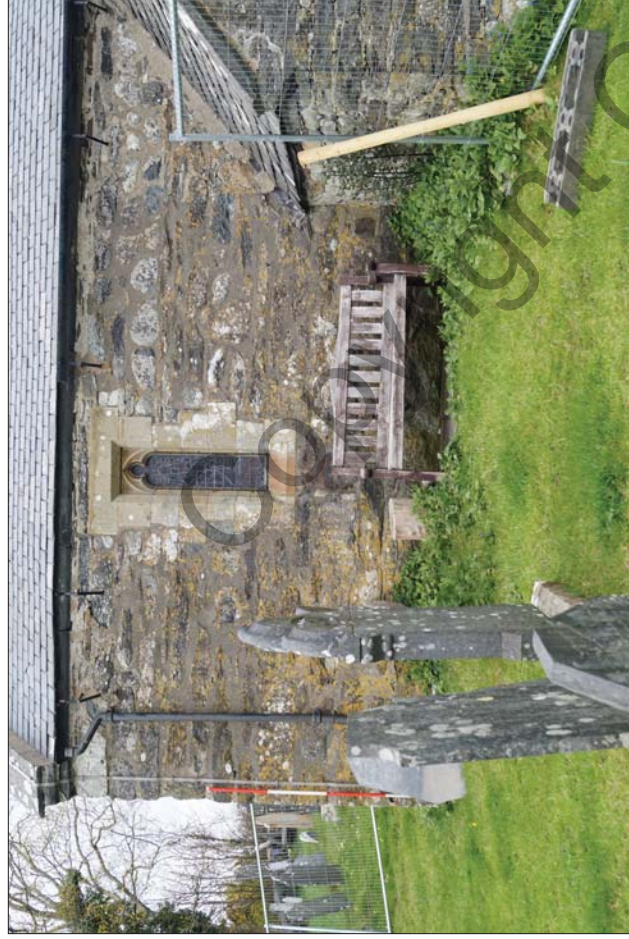


Plate 9. Llanegryn Church South Facing Elevation (Western End)



Plate 10. Llanegryn Church South Facing Elevation (Western End)

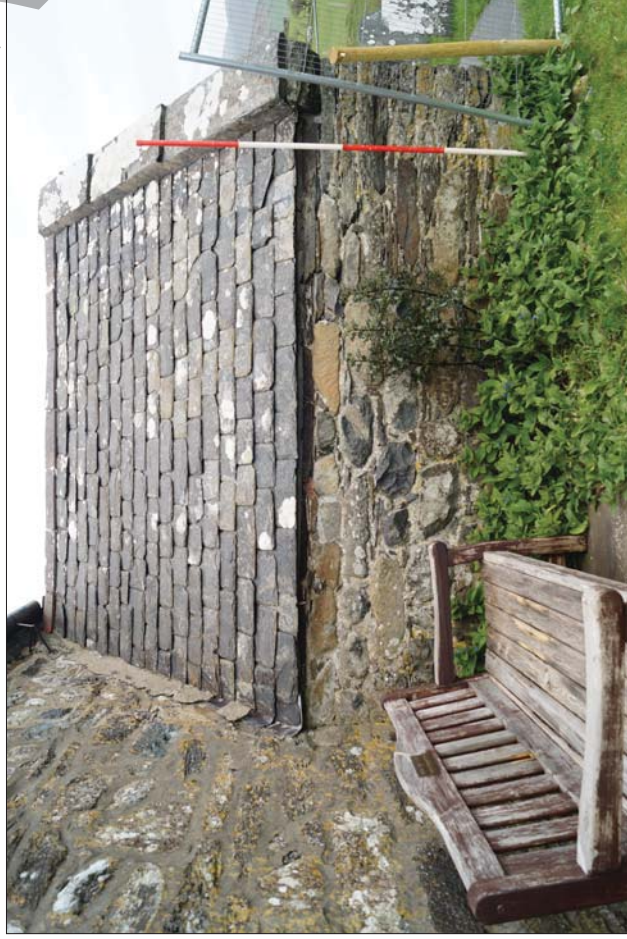


Plate 11. Llanegryn Church Porch- West Facing Elevation

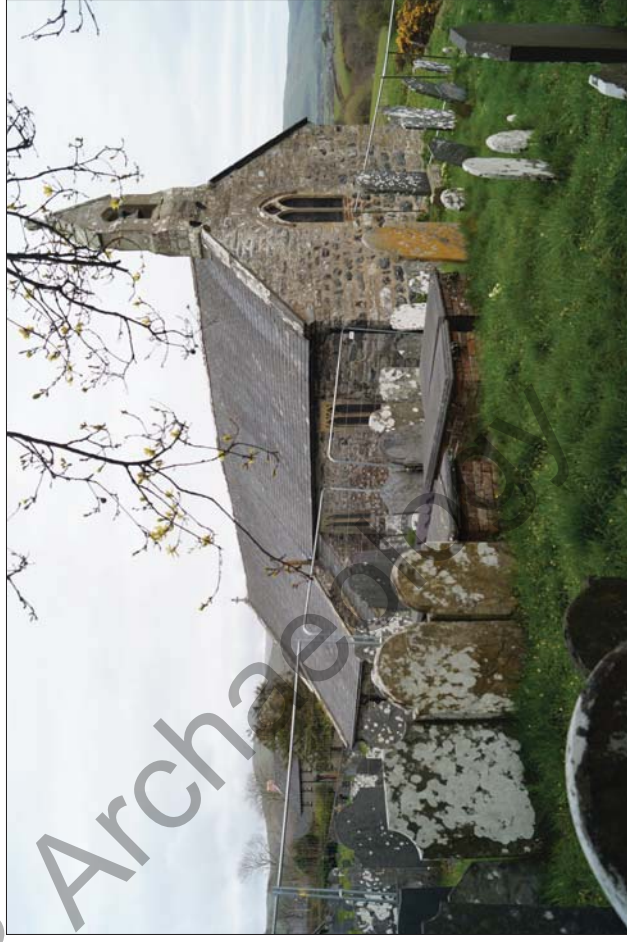


Plate 12. Llanegryn Church West & North Facing Elevations

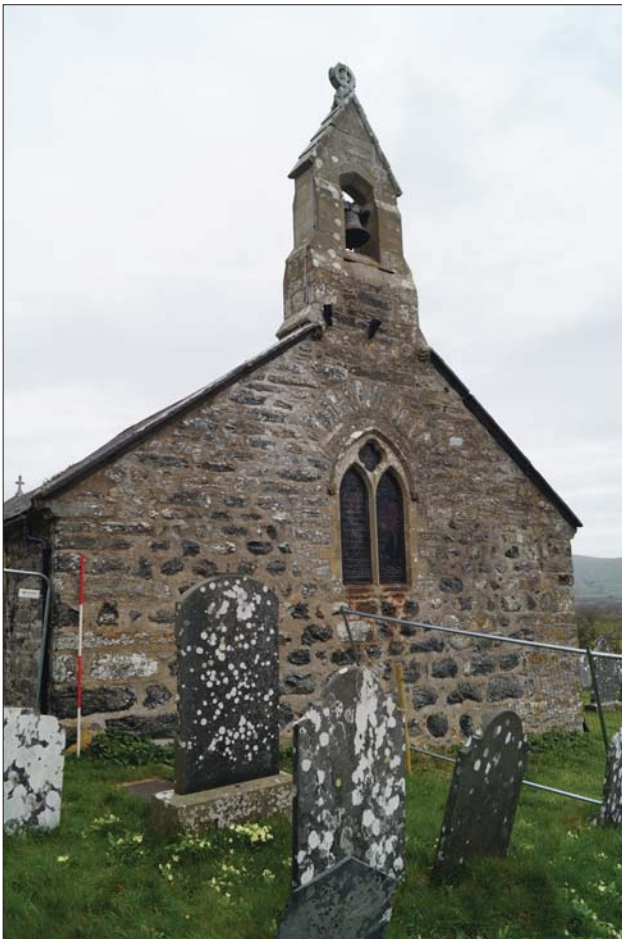


Plate 13. Llanegryn Church
Western Gable Elevation

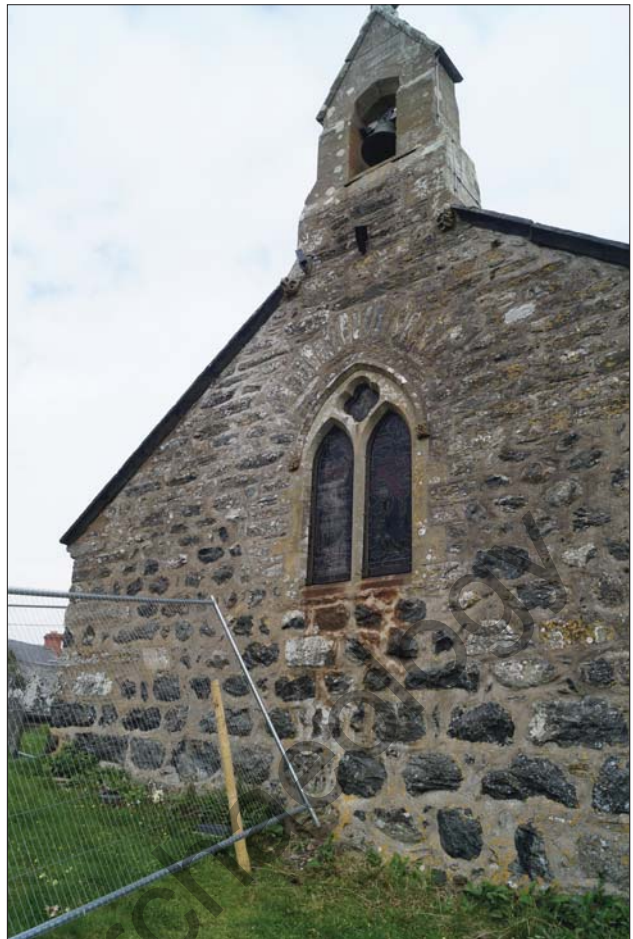


Plate 14. Llanegryn Church
Western Gable Elevation

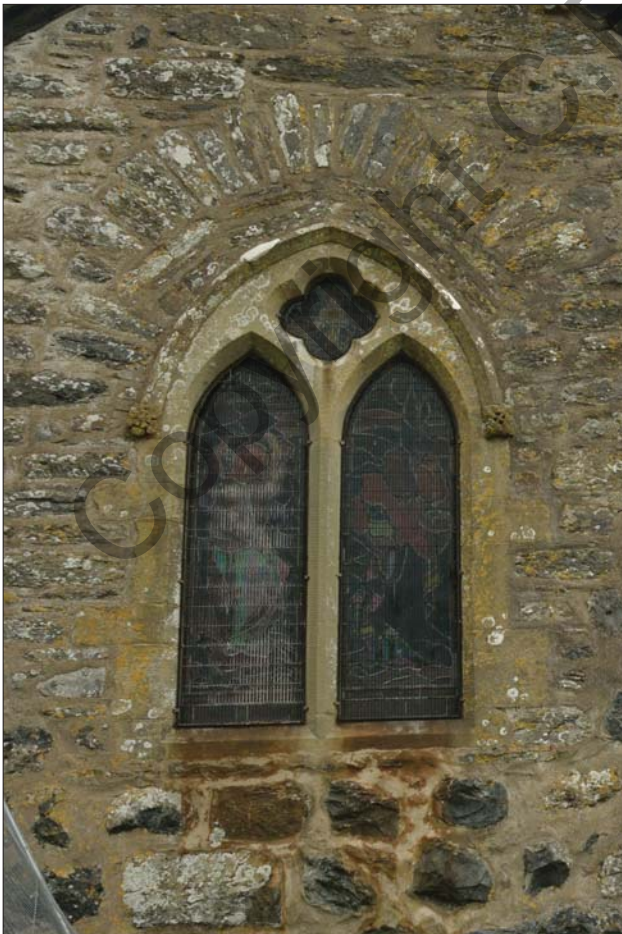


Plate 15. Llanegryn Church
Window in Western Gable



Plate 16. Llanegryn Church
Western Gable - 19th Century Bell-cote



Plate 17. Llanegryn Church Western Gable



Plate 18. Llanegryn Church North Facing Elevation



Plate 19. Llanegryn Church North Facing Elevation



Plate 20. Llanegryn Church North Facing Elevation



Plate 21.Steps into Boiler House



Plate 22. Llanegryn Church North Facing Elevation Showing Vestry



Plate 23. Llanegryn Church North Facing Elevation Showing Vestry



Plate 24. Llanegryn Church Vestry - North & East Facing Elevations



Plate 25. Recently Renovated Outbuilding Now in Use as Toilet



Plate 26. Recently Renovated Outbuilding Now in Use as Toilet

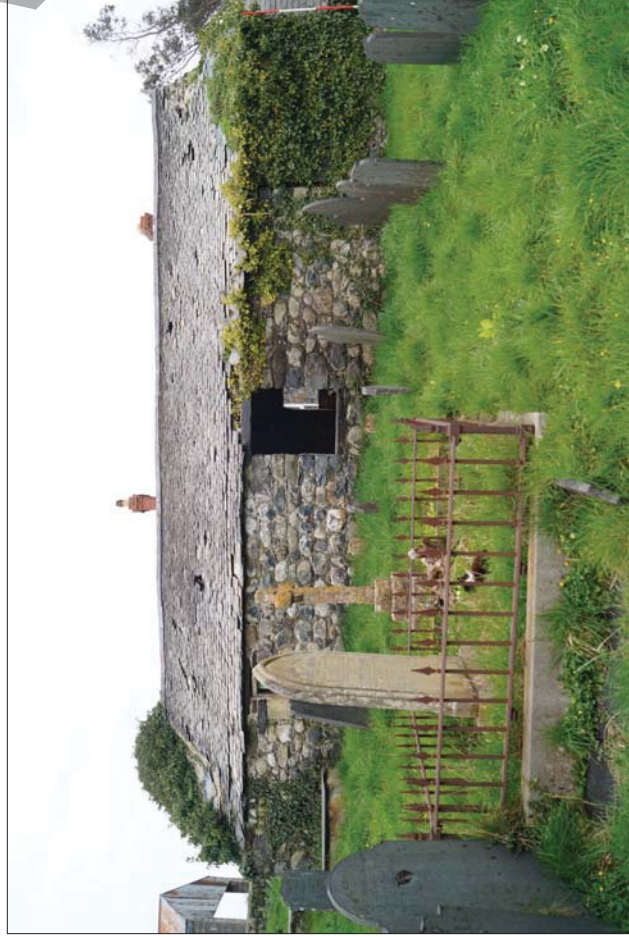


Plate 27. Rear Elevation of Farm Outbuilding Backing onto Graveyard



Plate 28. Stonework from Church Incorporated into Farm Outbuilding



Plates 29 - 32. Llanegryn
Church Porch Interior Details
Showing Church Door
And Roof Timbers



Plate 33. Llanegryn Church Interior Facing Rood Screen and Altar



Plate 34. Llanegryn Church Interior Facing West



Plate 35. Llanegryn Church Altar



Plate 36. Stained Glass Window and Marble Memorials Above Altar



Plate 37. Llanegryn Church Interior Facing Rood Screen and Altar

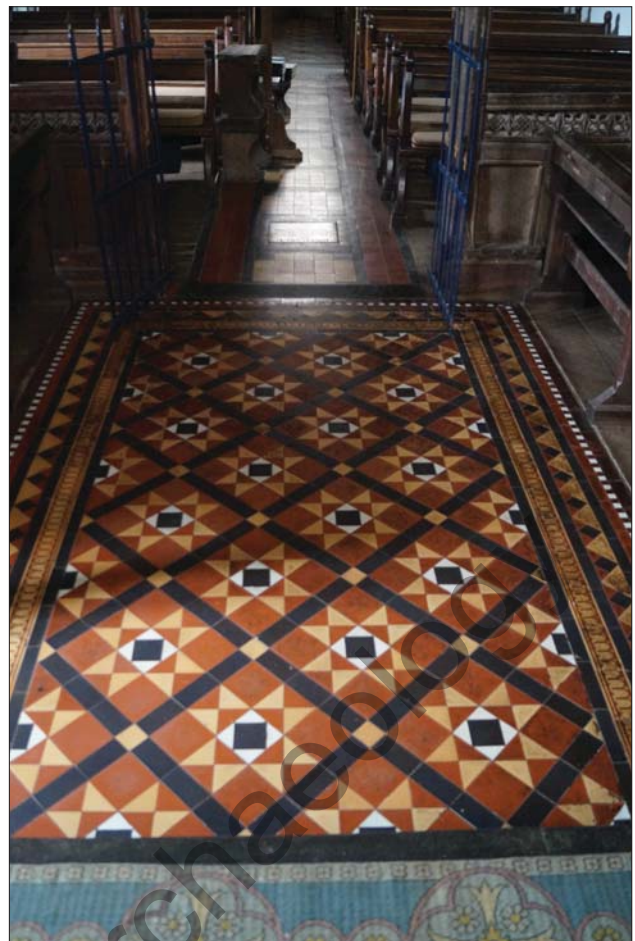


Plate 38. Llanegryn Church Interior - Nineteenth Century Floor Tiles in Chancel



Plate 39. Llanegryn Church Interior - Nineteenth Century Floor Tiles in Chancel

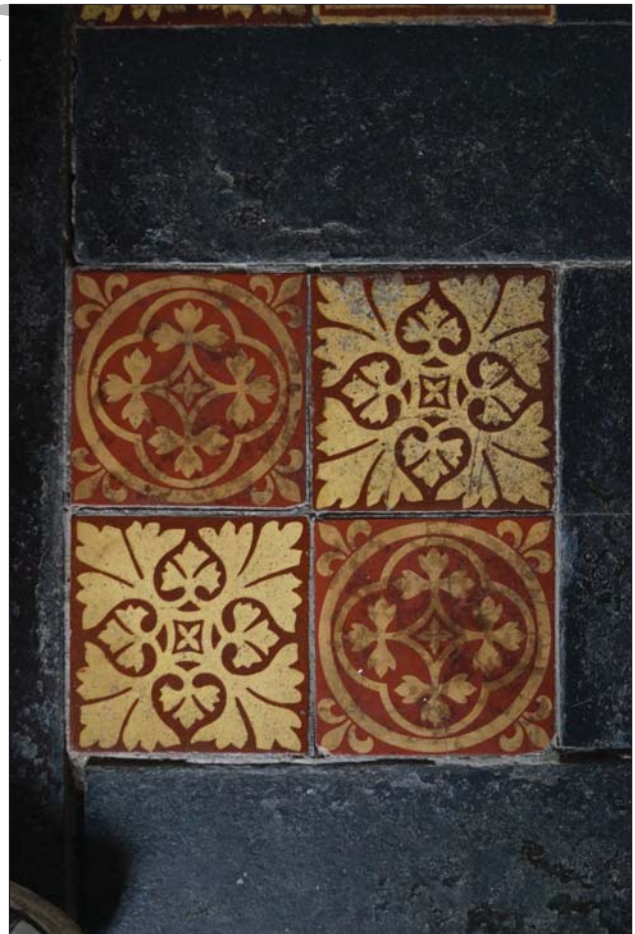


Plate 40. Llanegryn Church Interior - Slate & Nineteenth Century Floor Tiles in Chancel



Plate 41. Vestry Interior Facing East-
Vestry was Added in 1876



Plate 42. Vestry Interior Facing West-
Vestry was Added in 1876



Plate 43. Vestry Interior Doorway
Leading to Rood Loft



Plate 44. Vestry Doorway
Leading into Church



Plate 46. Barrel Vaulted Ceiling in Chancel



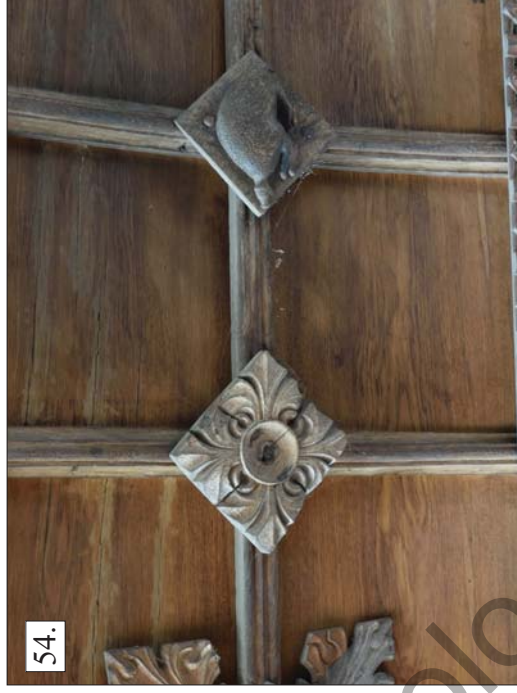
Plate 48. Barrel Vaulted Ceiling in Chancel



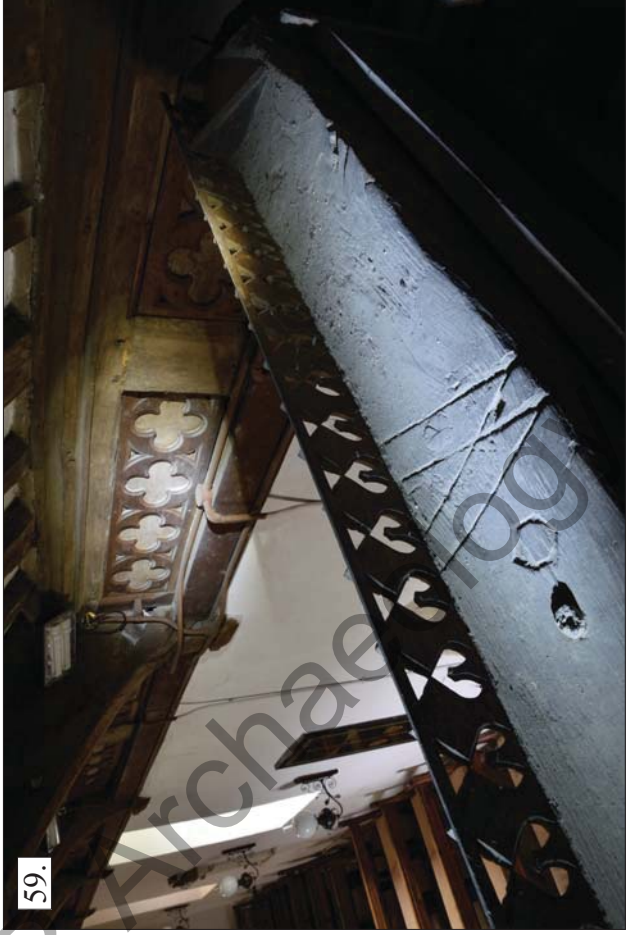
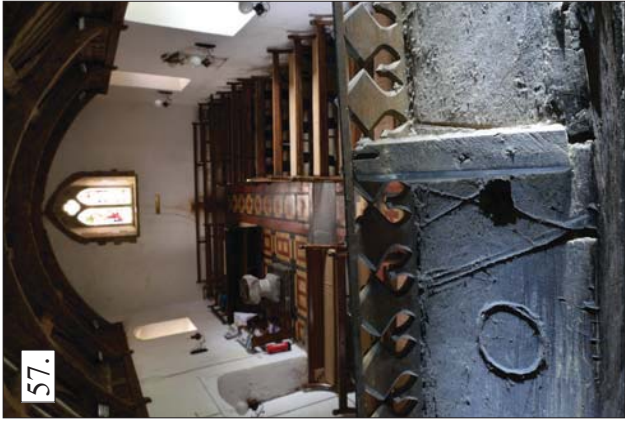
Plate 45. Barrel Vaulted Ceiling in Chancel



Plate 47. Barrel Vaulted Ceiling in Chancel



Plates 49 - 54. Rood Screen Decorative Details



Plates 55 - 59. Graffiti and Possible Carpenters Marks on Rood Screen Loft



Plate 60. Decorated Bench Pew in Llanegryn Church



Plate 61. Decorated Bench Pew in Llanegryn Church



Plate 62. Stone Font Believed to Pre-date the Current Llanegryn Church



Plate 63. Stone Font Believed to Pre-date the Current Llanegryn Church

It was not the intention of this phase of works to provide a detailed phased description of the church but to create an extensive visual record. Detailed analysis of the building itself will form a key element of the further works planned for the building.

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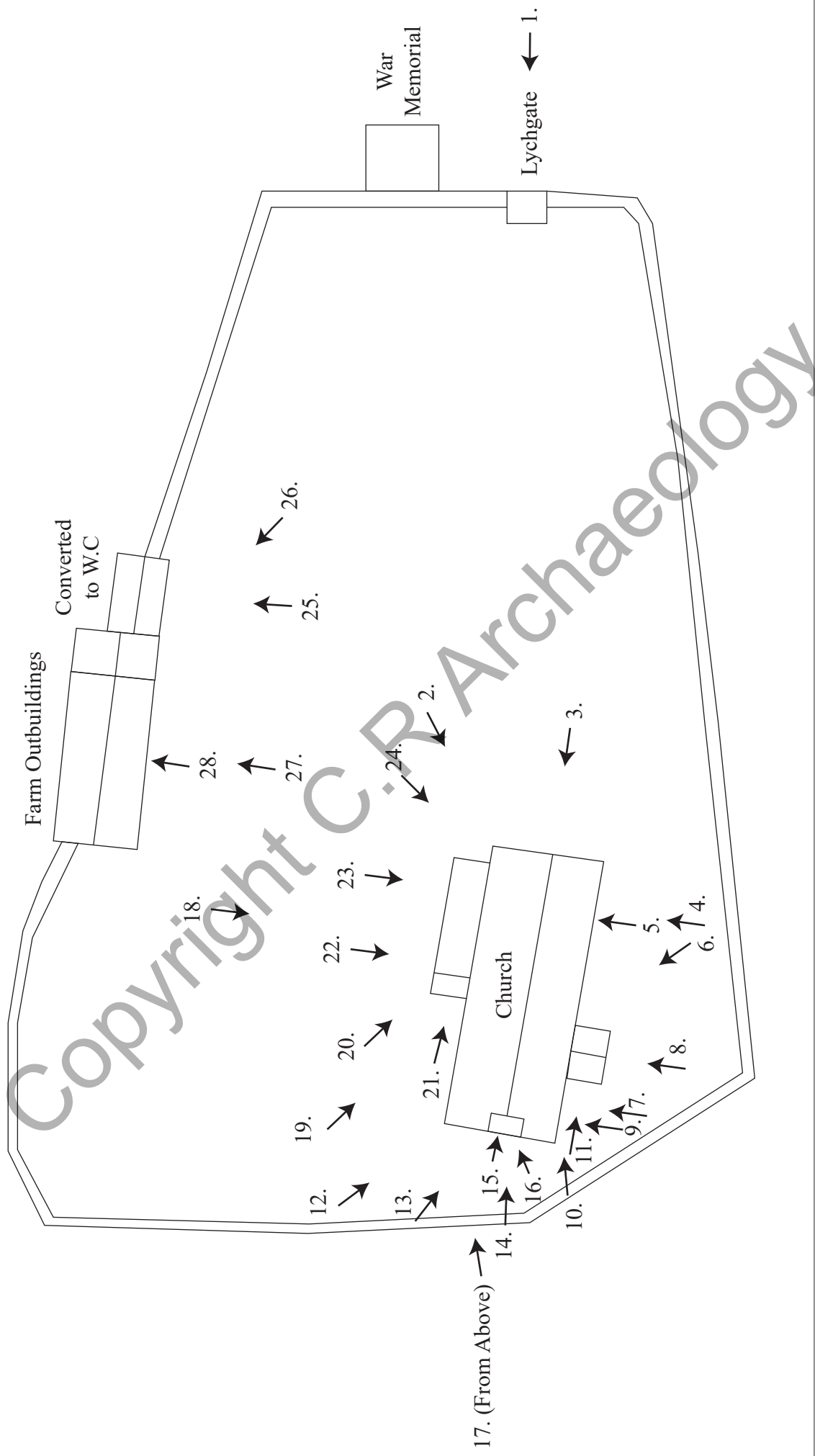
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www.bgs.ac.uk

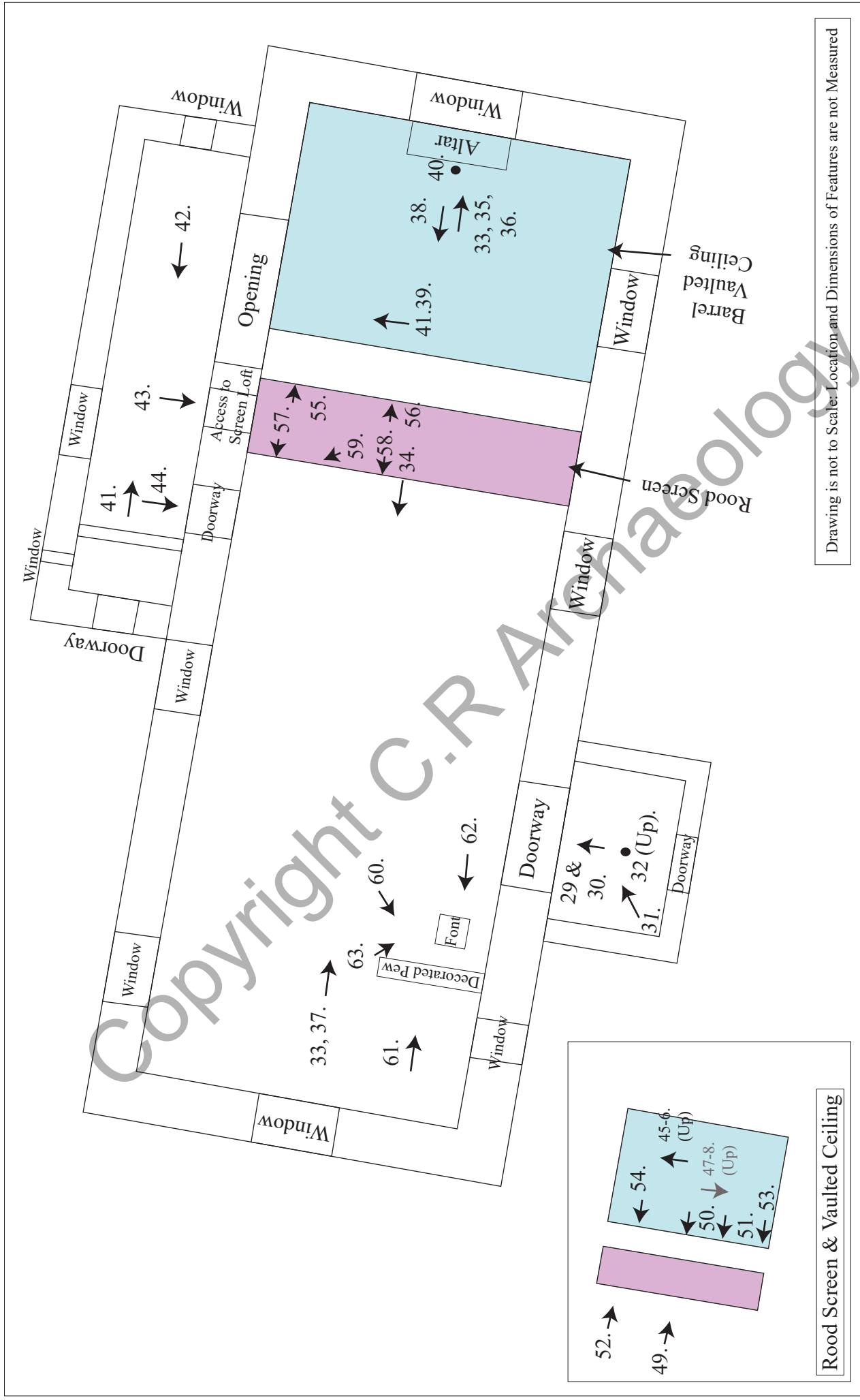
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www.coflein.gov.uk

www.pipedia.org/wiki/A_Short_History_Of_Clay_Pipes



Appendix A. Location and Direction of Photographic Plates (Exterior)



Appendix A. Location and Direction of Photographic Plates (Interior)