

THE MINSTER, CATHEDRAL AND PRIORY CHURCH OF ST GERMANUS OF AUXERRE

**ST GERMANS, CORNWALL
(DIOCESE OF TRURO)**



CONSERVATION MANAGEMENT PLAN CONSULTATION DRAFT



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1.2 Message from Martin Edwards, Chair of the Research Group

There has been a worshipping Christian community at St Germans since at least the 9th, and possibly as early as the 5th century AD, when Constantius of Lyon and the Venerable Bede tell us that St Germanus of Auxerre founded churches during his time in England. Here was the first Cathedral of the Saxon Diocese of Cornwall, famed for holding relics of the saint. The church is today the seat of a Suffragan Bishop, in recognition of this continuity and the exceptional role of this place in nurturing the Christian faith in Cornwall, England and beyond.

There can be no doubt that this is one of the major parish churches of England. The challenge of maintaining such a large historic building as a place of worship and community resource is enormous. Careful thought and discussion with the community and all who care for this place will be necessary to face this challenge, and to make the most of the opportunities which a fresh look at the church building and its place in St Germans and the surrounding area, the Deanery and Diocese may bring.

Responding to this challenge, and building on its long and rich history of service, we hope, with the help of God, to develop the building as a church fit for the challenges of the 21st century. To make this vision a reality, we will seek to help:

- (a) Foster an open spiritual environment to allow people to grow in their relationship with God and with each other.
- (b) Build on the tradition of St Germanus as a key figure in building the faith in Cornwall and England in difficult times
- (c) Develop the church building in an economically and environmentally sustainable way to better serve these purposes and the wider community, exploring suitable complementary uses for the building

This Conservation Management Plan (CMP) is a timely and vital document bringing together information regarding these actual and potential religious, cultural and social activities at St Germans. The CMP will be used as a means to reappraise and revitalise the church building and its surroundings, and to serve the needs of all members of the community who love and use the church. A new chapter in the history of the church of St Germanus is about to begin; let us put aside the problems of the past, and move forward together in hope.

I would like to thank the Bishop for his support, and the other members of the research committee looking into the future use of this church, and the Church Buildings Council for all their hard work in helping to produce the CMP.

1.3 Executive Summary

The church of St Germanus is one of the oldest historic parish churches of Cornwall, the site of Christian worship since at least the 9th century and almost certainly earlier. The present church building itself is more than 800 years old in parts, and preserves more original Norman masonry in its powerful and iconic west front than any other Cornish church; indeed, this is a rare survival anywhere.

It is one of the oldest buildings in Cornwall still in use for its original purpose, the others all being also churches. Its exceptional architectural, art historical, archaeological, and historic importance is recognised in its Grade I listing, and its central role in the St Germans Conservation Area, and as part of the Lower Tamar Area of Outstanding Natural Beauty. The church should therefore not be seen as an isolated historical monument, but understood within its wider human and natural environment, and as an asset for the local and wider community.

The former cathedral church, rebuilt by the Normans to serve a large priory and also to function as the parish church, has proved problematic for the parishioners since the Reformation due to its sheer size; one of their first acts was to pull down the monastic choir, as was the case in so many places, as it was superfluous to their needs. In recent years the congregation has found it difficult to support the building, and has formally questioned its future as a parish church in its present form.

With this in mind, this document has been compiled in order to act as a catalyst for developing the church building as a community and cultural asset as well as a place of worship; as a place to learn about the history of Christianity in Cornwall, and the rich local heritage of this place and area; and as a cultural centre, a place to enjoy music, literature and art, working together with Port Eliot and other stake-holders to offer a world-class attraction.

The CMP gives the parameters in which this can happen. The task is to develop a vision and make it into a reality by harnessing energy within the community, with diocesan and national support. The aim is not only to respect the significance of the building and site and the values attached to it by the people of St Germans, but to enhance it, to make it better, to unlock its dormant potential.

2 INTRODUCTION

The **Conservation Management Plan** (CMP) for the church of St Germanus was compiled in January 2012 by Dr Joseph Elders, Major Projects Officer of the Church Buildings Council (CBC) on behalf of the diocese, at the invitation of the Bishop. The document has been compiled with advice and input from the Diocesan Advisory Committee (DAC), the CBC, and members of the Research Group set up by the Bishop and chaired by Martin Edwards. The Group's members were Christine Edwards (no relation), Bob Foulkes, Richard Hopper, David Watson, and the Revd Julie Millar and Revd Peter Sharpe, Rural Dean.

A Development Group was formed by the Bishop in January 2012 to take the Research Group's proposals forward, again headed by Martin Edwards, with support from the diocese and CBC, building on the information collected in the CMP.

It was written to act as a catalyst for improving the accessibility, use, and social and educational value of the church and site, as a place of Christian worship and mission and as a community resource. The CMP will be of value in providing appropriate and dynamic policies and direction for day to day management of the site as well as higher level needs and projects. It is an important document for evaluating short-, medium- and long-term programmes of work. These might involve applications for grant-aid from English Heritage, Cornwall County Council, the Heritage Lottery Fund, the CBC and other sources. Preparation of a CMP is a prerequisite for (or advantageous towards) receiving grant aid for most of these.

The CMP follows the guidance published by the CBC in 2007. As this document stresses, a CMP on a major church is "a useful tool for recognising and reconciling tensions that may arise between the necessary life of the worshipping community and the significance of the place, and to help the church and its community to transcend these in order to develop and grow."

Conservation management and planning are increasingly understood to be crucial to the beneficial use and guardianship of important historic structures and sites. CMPs are designed to describe a place and its community and define its significance. They then go on to assess the vulnerability of the place. Finally they establish policies to ensure the long-term protection of the place, and the retention (or if possible enhancement) of its significance.

The objectives of this CMP are therefore to:

- **Understand the church building and site and its use by the community** by drawing together information including documents and physical evidence in order to present an overall description of the place through time. This includes a brief description of the church and site today, how it is used and perceived, and identifies areas for further research.
- **Assess its significance** both generally and for its principal components, on a local, national and international level.

- **Define vulnerability and potential** by identifying issues affecting the significance of the site and building remains, or which could affect them in the future, and how threats can be mitigated, and potential realised.
- **Develop management policies** to ensure that the significance of the church and site is retained in any future management, use or alteration. If possible this significance should be enhanced through implementation of these policies.

Status of this document:

This Conservation Management Plan essentially summarises what is currently known about the church and site, and bases its evaluation of significance, vulnerability, potential and management policies on this summary. Observations have been made which attempt to interpret what can be seen and what has already been written and collated in the light of current understanding. Several histories of the church have been written, notably the recent revision by the Victoria County History on which this document leans heavily. Copious records also survive in the CBC's own files.

No original research has been undertaken for the compilation of this document, but suggestions have been made regarding areas where such work might in future be most advantageously directed. Key amongst these are the questions regarding the early development of the church.

The CMP is not a closed document, but should be regularly consulted, checked, corrected if necessary, and updated. It should have a close relationship to other key documents, notably the Inventory and the Quinquennial Inspection reports.

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3 Understanding the Place and Community

This section seeks to describe the place and to put it within its environmental, archaeological, historical, religious and social context. The information is summarised within the CMP itself, more detail is given in the Appendices and in previously existing material, to which reference is made.

3.1 The Location and Setting of the Church

St Germans is a very attractive large historic village, set within rolling countryside on the south coast of eastern Cornwall. It is 10 miles within the Cornish border with Devon west of the Tamar, and close enough to Plymouth to commute, as many people do. The main line trains from London to Penzance stop here, and the A38 runs close by.

The village is bisected by a narrow winding road. It is divided into a historic settlement around the church and snaking down to the Quay, and a later settlement around the railway station. The area of the civil parish is 10,151 acres (4,108 ha), and it has a population of around 1,400. The old village consist of mostly stone-built cottages, a large number of which are listed monuments, including very fine 16th-century almshouses (Grade II* listed) near the railway station.

The large and handsome ancient church of mottled granite with its distinctive twin west towers (National Grid Reference: SX 359 577) stands at the eastern edge of the historic village, but is rather hidden from view below the road (Church Street). It is built into the bottom of a steep bank, the north bank of the spur, exactly where the

river flood plain begins. There is a row of attractive stone houses on the other side of the road. There is still a pub a short distance to the west, the Eliot Arms, and adjacent to it a community run small post office and shop. There is an attractive quayside with private sailing club.



The church seen from the south

This is an Area of Outstanding Natural Beauty. The River Tiddy (a tributary of the Tamar) broadens into an estuary to the east of the village, a designated Site of Special Scientific Interest. The name Port Eliot is well chosen, as the river originally (and probably up to the late 18th century landscaping) came close to the present house, explaining the location of the church and priory. The contours of the land and differential growth patterns give clues to the original course, and could be the subject of an interesting study, which is beyond the parameters of this document.



1888 map of St Germans

The village is set on the eastern end of a high east-west ridge or spur between this estuary and the rest of the Looe peninsula to the south and west, which is very popular with tourists. There are many caravan parks and hotels along the attractive coastline.

Lych-gate and railings

A lych-gate on the north roadside announces the presence of the church. This is a Grade II listed monument in its own right, built in 1902 in Greenstone coursed rubble with limestone dressings and a timber roof covered in slate. The heavily buttressed entrance has a Tudor arched gateway with hoodmould, with wrought iron gates across the entrance, granite benches. This was designed by the architect James Piers St Aubyn.

The cast iron railings are set into a low stone wall run east from the lych-gate along Church Street, with fluted stanchions and urn finials, and middle and top rails with trefoil finials – also Grade II listed. There are gratings at the top of the bank within this fence, beneath which is a service tunnel which ran east-west here and comes out under the lych-gate as a tunnel-vaulted passage.



The lych-gate seen from the west, these temporary struts now removed

Cars and small vans can pass with care through the lych-gate, descending via a steep tarmac loop to a parking space adjacent to the west end of the church at the foot of the bank. Others would need to park in the village, or the large car park to Port Eliot. This unsatisfactory access is one of the major problems which this CMP seeks to address.

Port Eliot House

Port Eliot is a fine Neo-Classical Grade I house directly to the north of the church, remodelled by Soane with Gothick detailing which mirrors details of the church, for example the small octagonal turret on the south-west corner. This emphasises the historical connection and visual symbiosis between these two buildings.

It still incorporates parts of the Medieval Priory, including the probable line of the north range opposite the church, with the cloister garden between, now a lawn. This also has a service tunnel with gratings, running east-west near the house. This must have done considerable damage to archaeological remains when it was dug, if any remained following the exhumation of the graves in the area in the early 19th century.



Port Eliot seen from the church roof, looking north across the park towards the estuary

As noted above the 17th- and 18th-century house is built around a Medieval core. The remains within the house include at least one complete Norman wall with cusped lancet loops in what are now the cellars, apparently forming the south wall of the north range of the Priory, parallel to the church. This could be the subject of another fascinating study.

The house is open to visitors this year from Saturday 12th March to 16th June and 20th June to 7th July 2011. The park was the setting for the Elephant Fayre annual music festivals of the 70s and 80s, and since the last few years an important literary festival has been held here, this year on 21st July. Details at <http://www.porteliot.co.uk/>.

The park

The rather grand Tudor entrance (not the public entrance, which is some distance to the west, outside the village) is a short distance to the west of the lych-gate. The house is set within a large landscaped park designed by Humphrey Repton of more than 180 acres, including a rhododendron garden, a maze, orangery, and arboretum, with views across the estuary framed by a Brunel railway viaduct. It contains the Deer Park of the Priory, to the west in the loop of the river.

English Heritage's Pastscape web site states: "The base of 'Friars' or 'Fairy' Cross, was found by Ellis in the middle of the 'Round Plantation' in Port Eliot Park, from details given by Henderson. He considers it to be in situ, and Henderson says that it must have marked the northernmost bound of the old borough of St Germans, close to the old road from St Germans to Tideford, which skirted the south side

of Round Plantation. The base, almost perfectly preserved, lies partly buried."

The park is listed Grade I on the English Heritage Register of Parks and Gardens of Special Historic Interest in England, completing the impressive array of designation.

There is no doubt that for the visitor to the house and grounds, the church is a significant part of the attraction, an integral and defining part of an ensemble of great quality and beauty.

The churchyard

The land to the east and north side of the church is laid out as gardens, so one can normally access the west and south sides of the church only. The north side was a burial ground until the early 19th century, when the memorials were removed to create the present lawned garden between the church and house. A new burial ground was opened to the west on the other side of the road with memorials from that time, some older ones were probably moved here. This is itself now closed and somewhat overgrown in places, an atmospheric place terraced up the hill overlooking the church.

As noted above there is a small car park outside the west door, and the west boundary here is formed by iron railings and a gate, often locked. Apart from this, the curtilage as currently understood consists of land to the south within the railings and east wall. The gas tank and a water tap are situated here. More research into the history and status of the curtilage is necessary.

There are a number of mature conifer trees on the mounds directly to the south and west, where bones have

reputedly been found during works over the years.

The churchyard east wall runs north to meet the church south-east corner, overshadowed here by large beech trees. There is a rather dilapidated stone bier house against the east boundary wall.

3.2 The church and the community

The role of the church in the community has changed several times since the construction of the original church (whenever this was), but it has always been closely involved with it. This was from the beginning a high profile foundation, closely bound up with the history of the historic parish and borough of St Germans. The date of origin of the first church building is unclear but there has certainly been a church on the site for 1200 years, and very possibly longer.

The church is located at the historic heart of St Germans, and the village and area could scarcely be imagined without it. As stated in *the State of the Historic Environment Report 2002* produced by English Heritage in that year: "The church is usually the oldest and most important listed building in a settlement as well as an icon for community memory and a focus for social activity."

This description fits the church of St Germanus well. The church belongs very much to the people of St Germans and the surrounding area, not just to the regular worshipping community.

Throughout its existence each generation has made its mark on it. Many generations of villagers are buried there, and the monuments inside

the church are an eloquent reminder of hundreds of years of community life.

The first church of which we have specific information was apparently a Minster. These were not just churches, but home to a community, with a mixture of lay folk and priests, acting as a mother church to others within a huge parish. There would often be a number of ecclesiastical and domestic buildings within a defined precinct. A market often developed adjacent to the Minster, which provided the focus for more permanent settlement. The Minster served as Cathedral of Cornwall from the early 10th to early 11th century.

The building probably served the dual function of priory and parish church from the re-founding of the Minster in the 1100s as an Augustinian priory of regular canons. After the Reformation it was given to the village as its parish church, a gift which was viewed with some suspicion. The monastic choir fell into disuse and had to be demolished. The size of the church has continued to cause problems to the present day.

The church community today

Today the church functions as a Church of England parish church within a group parish of four churches. It is by far the most significant in terms of heritage and also the largest of the four. St Germans is in the Diocese of Truro and the archdeaconry of Bodmin (one of two in the modern diocese), and the deanery of East Wivelshire.

The group parish PCC is responsible for the fabric of the building and the curtilage, which is at the moment is not well defined, particularly on the west and north sides. The Church Commissioners are the Lay Rectors of

the chancel, and responsible for repairs within certain parameters. There is a Priest-in-Charge who ministers to the group parish and lives in St Germans (Quay Road). The Old (Georgian) Vicarage is now a private house, listed Grade II, on Old Quay Lane.

The church is in regular use for worship, and is normally open throughout the day. The church is also used for concerts and other events. Welcome leaflets are available, and a guide book (which could be revised) is provided in English. The footfall is high, and the church welcomes a large number of visitors each year. The parish has gone to considerable trouble to illustrate the history of the church, with information boards in various places explaining monuments etc, although these look a little jaded. This could all be improved, and visitor numbers increased.

Other churches and places of worship in St Germans

A Medieval leper hospital was documented in 1309, probably run by the Priory. It is thought to have been some distance downstream from the Priory.

The nearest Anglican churches are within the present group parish, as follows:

Tideford St Luke: Small Grade II Victorian church. Designed 1845 by George Wightwick. Coursed greenstone rubble with limestone dressings. Slate roof with raised coped verges to chancel. Nave and chancel, with south porch to nave and north vestry to chancel. Perpendicular and Y-tracery. Inside, the nave has 4-bay hammer-beam roof rising from stone corbels. Stepped chamfered 4-centred arch to chancel. Pointed arched door to

north vestry, with doorway giving access to pulpit by chancel arch. Chancel windows have busts as stops to hood moulds. Fine Norman font, from chapel of St Luke near Bolventor. Large churchyard with monuments from the 18th century, one war grave. 1 mile north-west.

Hessenford, St Anne: Grade II church built 1832, rebuilt 1871 to designs by J P St Aubyn. Slatestone rubble with limestone dressings. Slate roof with crested ridge tiles. 4-bay aisled nave with gabled south porch and west spirelet, 2-bay chancel with north vestry, used as organ chamber. Early English lancet style, plain whitewashed interior, arcades with plain columns with 4-centred arches. Stained glass, stone pulpit of 1902 and gabled stone reredos. Church hall and burial ground. 2 miles west.

Downderry St Nicholas: Grade II church, built c 1900. Slatestone rubble with limestone dressings. Slate roof with crested ridge tiles and cross finials. Nave and chancel in one, with south porch and circular south stair tower leading to lower room; north organ chamber. Early English Gothic style with lancets. Inside the nave and chancel continuous 8-bay roof with scissors trusses. Painted brick walls. Modern kitchen and toilets. Near the sea front, churchyard laid to grass on north side, no burials. 5 miles south-west.

Other denominations

There is a small Methodist chapel in the village to the west of the church on the other side of the road, a simple neo-Classical building of 1903 replacing an earlier one of 1838.

People and place; personalities associated with the church and St Germans

The first named historical figure who can be associated with the place is of course St Germanus. We know about him from several secondary sources such as Bede, but mainly from the Hagiography written by Constantius of Lyon. He relates that Germanus was sent in 420AD with Lupus, Bishop of Troyes (who supposedly was a friend of Constantius and his source) to combat the Pelagian heresy. Germanus, it is said, defeated the Pelagians with his superior oratory, and went on to lead British forces and found churches before returning to Auxerre.

The south chapel, a very high quality architectural space which has been compared to contemporary parts of Exeter cathedral, was apparently built in the 1350s or 1360s to house relics of St Germanus translated from Auxerre brought back by Sir Nicholas Tamworth, although the Lanalet Pontifical recorded that some relics were held there in the 10th century (VCH).

The first recorded (and rather shadowy) Bishops of Cornwall in the early 900s had their seat at the church, which can fairly be described as a cathedral (although not perhaps the only one) at this time. Bishop Conan is often described as the most notable and the least shadowy of these, perhaps appointed as the leading Bishop of Cornwall by King Athelstan around 926 as part of his efforts to create a united England.

John of Cornwall, Johannes Cornubiensis or Johannes de Sancto Germano was a Christian scholar and author of "*Eulogium ad Alexandrum Papam III, quod Christus sit aliquis homo*" and teacher, recorded as living in Paris in the late 12th century. Little is known of his life. From his name he may have been a native of St Germans.

Bishop Bartholomew Iscanus was responsible for refounding the decayed Minster in the late 12th century as an Augustinian priory for regular canons (as opposed to secular canons serving the Minster). His motives for doing this may be related to the connection to St Germanus, and /or because of the strategic importance of the area in the still relatively new Diocese of Exeter.

The present 10th Earl of St Germans, Peregrine Nicholas Eliot, was born on 2 January 1941. He married Lady St Germans in 2005. The family has owned the house and estate since 1564. In 1784 Edward Eliot was made Lord Eliot, 1st Earl of St Germans.

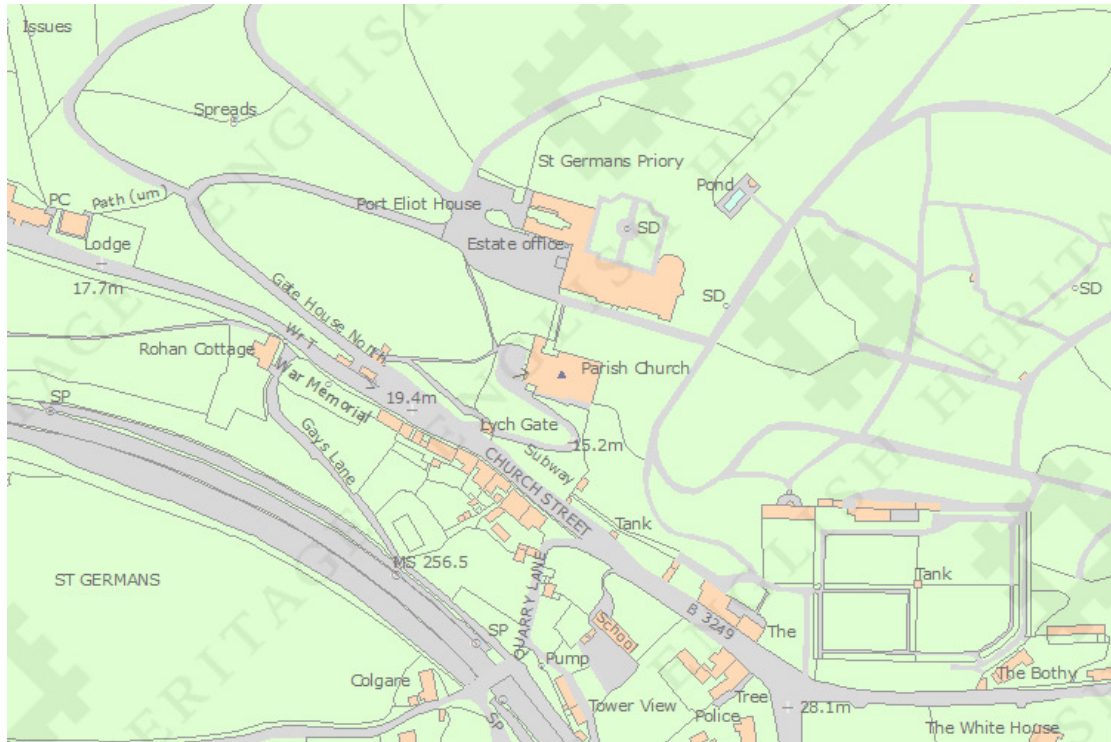
Sir William Moyle donated the Almshouses around 1583, which were converted to separate dwellings in the 20th century. He is buried in the church, his tomb chest is in the vestry.

John Soane and Humphrey Repton were two of the leading landscape designers and architects of their time, the late 18th and early 19th century.

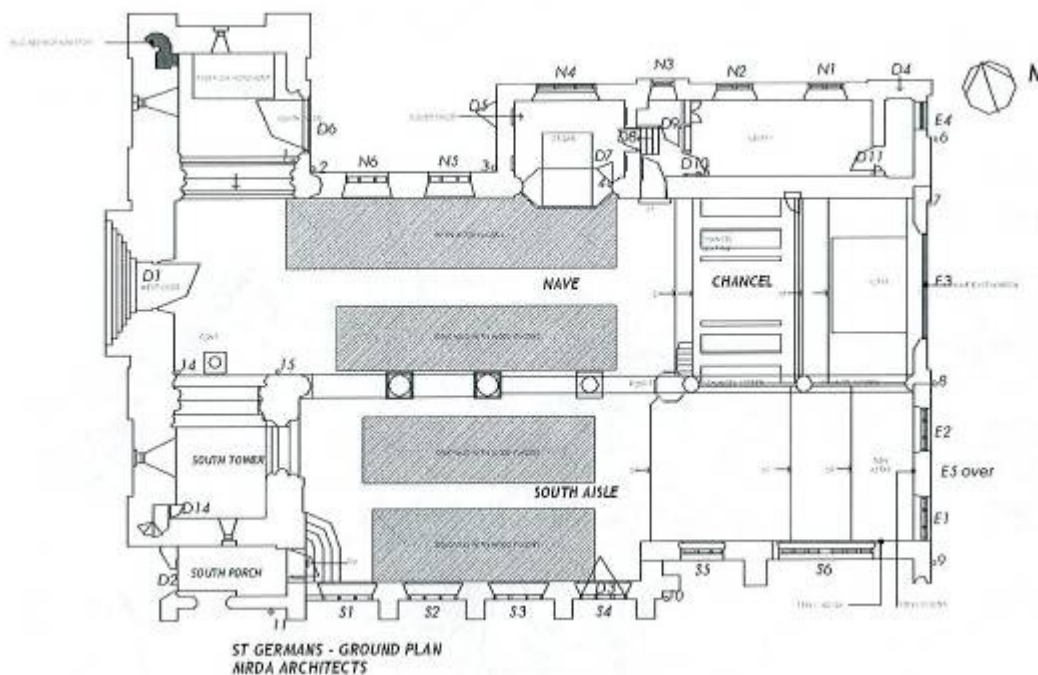
The prominent local Victorian architect Piers St Aubyn oversaw the restoration of the church.

3.3 Description of the buildings and site

This section gives a brief summary of the history of the church and village, with more detail in the appendices. It proceeds to describe the church and churchyard as they are at the time of writing, attempting to be as comprehensive as possible without going into great detail.



Map of St Germans, from English Heritage list description, church at the centre



Plan of the church (by MRDA architects, 2010)

3.3.1 The history and archaeology of St Germans and the church

Summary: The following is based mainly on the VCH entry and the National Monuments Record. It is meant as background information only.

Prehistoric -Roman

There are a number of scattered findspots of flints along the coast and estuary and Bronze Age barrows are known in the area, though none in the immediate vicinity of the Priory site. There has been much landscaping around the church and house but stray finds from all these periods are possible. There is little evidence for Iron Age occupation in the immediate vicinity, some Romano-British material has been found.

Early Medieval

The site is of exceptional potential for the archaeology and history of the Early Medieval period and reference should be made to the Historic Environment Record and contact made with the County Archaeologist if any development of the site or building is being considered.

The archaeology and history of this place is complex and not fully understood. There are certainly gaps and inconsistencies in the received story including layers of tradition and cumulative supposition that must be viewed with scepticism, and this Conservation Management Plan aims to enhance our knowledge of this important place, while exploring its potential for the future.

To begin with the dedication. St Germanus of Auxerre was a Gaulish Bishop, reportedly sent to Britain in the early 5th century after the Roman military withdrawal to combat Pelagianism.

A Minster may have existed at St Germans from the 7th or 8th century, and this is traditionally held to be on the site of a church founded c 430 by St Germanus himself (Bede mentions that he led troops and founded churches, a common enough assertion in his works), for all of which there is as yet no archaeological evidence. There are several other churches with this dedication, mostly in the South-West and the other “Celtic fringes” of Britain, notably the possibly contemporary Cathedral of Peel St Germans, Isle of Man.

It is not clear if this area was at any time part of the West Saxon diocese of Sherborne. A Bishop is recorded elsewhere in Cornwall in the 9th century, possibly at Bodmin. However, by the 920s the church emerges from its foggy beginnings. The ‘Lanaled Pontifical’, a 10th-century manuscript mentions a site called ‘Lannaled, a famed and universally known place, where the bones of Bishop Germanus are preserved’, and this was almost certainly St Germans. It was clearly eminent among the handful of churches known from the South-West at that time.

Excavations in the late 19th century at the eastern end of the present church may have found part of this Saxon building in the form of a rectangular foundation protruding from the current east wall of the chancel (previously the Late Medieval nave), but this is unclear; the excavations were

undertaken by the present Lord Eliot's Grandfather, and obviously not to modern standards. Apparently a part of a tessellated floor was found 45.70 metres (states EH Pastscape - should this be feet?) from the east window. Again this needs to be checked archaeologically.

The church is likely to have been a Minster (*Monasterium*) before the Norman Conquest served by canons, than a monastery of monks. The very large historic parish (once the largest in Cornwall) may be a reflection of the previous Minster status, and of course as the seat of the Bishop.

Conan was, according to William of Malmesbury writing in the 1120s, created the leading Bishop of Cornwall by King Athelstan around 926 as part of his efforts to create a united England. Lying just west of the Tamar at what may have been the border region between Wessex and Cornwall, this was a strategic location which partly explains the continuing importance of this place for the emerging English Church and State.

The site of an Episcopal manor house is thought to have been at Cuddenbeak, an area developed for the railway when this came to St Germans. A house in this area still bears the name.

The see of Cornwall was united with Crediton in the 1020s as this development gathered pace, and by 1050 absorbed into Exeter diocese, where Cornwall remained until the creation of the Diocese of Truro in 1877. There has been a Suffragan Bishop of St Germans since 1905, in recognition of the iconic status of this place for the region.

Medieval

St Germans was recorded in Domesday as a Medieval Borough with a market in 1066, but ruined by competition with Tremanton, developed by the Norman Robert, Count of Mortain as it was more easily defensible (there is a motte), by 1086.

The perhaps decayed Minster was refounded for Augustinian canons by Bishop Bartholomew Iscanus between 1161-84 (his term of office), and this is the earliest date for the fabric of the present church – not even a fragment of identifiable Saxon work has survived, unless the small foundation outside the east wall of the chancel is archaeologically confirmed as such. It was one of only three Augustinian Priors in Cornwall, with Bodmin and Launceston.

Along with many churches in the Diocese of Exeter it was “consecrated” in 1261 by Bishop Branescombe during a tour of his diocese near the beginning of his ministry; this need not by analogy with these other churches relate to a major building programme.

This is an assumption which has led to much false dating, such as at Ottery St Mary (Diocese of Exeter), see Sampson 2009. There is in fact little of the latter part of this century in the extant fabric at St Germans, and it seems to be merely an assumption that the lost chancel was of this date (see below). The 13th-century windows and octagon of the north-west tower, for example, may be earlier, and it would be better to see this as a building campaign continuing from the 1160s onwards.

The priory owned manors in St Germans, Landrake, Lambets, and Tinnel, and properties including Landulph and Launceston Castle, as well as the advowson of several

churches including Morval and South Petherwin. We have records of the names of most of the Priors, and of various disciplinary measures undertaken by the Bishops, though nothing exceptional is recorded (see the VCH 2010).

The south chapel was added in the middle of the 14th century (see the developed Geometric tracery), traditionally for the translation of an arm bone of St Germanus in 1358 from Auxerre by Sir Nicholas Tamworth.

In the 15th century, probably during the office of Bishop Lacey (1420-50) whose arms appear within the church the nave and aisle were given Perpendicular windows and parapets, and the upper stage of the south-west tower remodelled (was it once an octagon like the north tower?). The aisle was widened at this time, and the south-west porch added.

St Germans became known for pottery production at this time, attested archaeologically from kiln sites in the village.

The Reformation

The Priory was dissolved in 1539 and stripped, the remains given or sold to John Champernowne, a Devon squire of the noted dynasty. These include a well-preserved vaulted Medieval undercroft within the present house, which still exists, and the southern part of the house at least seems to preserve part of the ground plan of the north range of the priory.

It would appear that the north wall of the present house preserves the line of the north range along the cloister. The scar of the south cloister walk pent roof can still be seen in the west face of the north tower.

His son Henry sold the estate to John Eliot, a gentleman of St Germans, in 1564. St Germans was a Parliamentary Borough at this time, sending two MPs - a situation only changed when these archetypal "rotten boroughs" were stripped of this right in 1832.

The church was offered to the village, a gift which they were initially not eager to accept because of its sheer size. The advowson (patronage) was transferred to St George's chapel, Windsor, where it still resides, although such decisions are made with the diocese. The original long (55ft) monastic chancel collapsed or was taken down in 1592, perhaps due to lack of need now this was a parish church.

It is traditionally held that this collapse caused the south arcade to be rebuilt up to the west bay with granite piers in a neo-Norman style at this point, though this theory may need to be tested by more research.



Print from the Skeat collection in the CBC file, c1850?

18th and 19th century

Edward Eliot was made Lord Eliot, 1st Earl of St Germans in 1784, the property is still owned and lived in by

the dynasty. The parkland surrounding Port Eliot was landscaped by Humphrey Repton (his "Red Book" survives) in the 1790s and the house and stables remodelled by Sir John Soane around 1802. The north aisle was demolished and rectangular windows were apparently inserted into the blocked up north wall.

The north transept and lobby (later vestry) was added for the Eliot family pew in 1803, it is not clear if Soane was also involved with this, though it is highly likely. St Germans had at this time become an estate village.

The railway came to St Germans in 1859 and this led to a major expansion of the village around the station and goods yard. The population peaked in 1861 at 2,842 persons.

There was a major restoration of the church in 1888-94 by the architect James Piers St Aubyn (in partnership with Henry J Wadling) who had an office in Devonport, and had designed nearby Hossenford St Anne in 1871. There was also a railing around the west porch doorway, removed at some point since the 1950s, and replaced by the present iron fence and yew hedge further out.

This work was paid for by the Earl. The windows of the north wall, as noted above apparently square windows of the early 1800s, were replaced with the present Gothic Decorated windows. The floor was dropped some 18 inches, giving even access from outside to the nave but providing a sheer drop from the south porch.

The later work (1902-4) undertaken by St Aubyn (it must have been by his partner Wadling as St Aubyn died in 1895) appears to have been partly

funded by Albert Burton, when the walls were scraped, and this revealed the remnants of the Norman clearstorey and other details. The box pews shown in a photograph in the church must have been removed at this point at the latest, an application to the ICBS for a grant for re-seating was refused in 1894. The organ was installed in the north transept. This is the date the walls, lych-gate and railings to the south curtilage were added.

There was a serious fire in 1966 which gutted the organ chamber and charred the roof, destroying the organ. A new one was installed and the roof ceiled and plastered. There have been several campaigns of repair and restoration since, including recent roof repairs part funded by English Heritage and repairs to the lych-gate, and the church is generally in very good order and well presented.

The parish boundaries and parochial structures have been amended several times in the past and are about to be reviewed again at the time of writing.

Timeline: the salient dates in the development of the church.

c 420 St Germanus in England.
Romano-British church at this location? No convincing evidence

800s: Church mentioned as a Minster (Lanaled)

c 930 Conan Bishop of Cornwall has his seat here, from Athelstan

1066-88: Norman Conquest, St Germans in the hands of Robert, Count of Mortain, half-brother of the Conqueror at the time of the Domesday survey.

1161-84: Priory re-founded for Augustinian canons by Bishop Bartholomew Iscanus of Exeter

13th century: North tower rebuilt as octagon?

c 1350-70: The chancel is probably rebuilt and lengthened, the south aisle widened with east chapel built to house relics of St Germanus brought from Auxerre by Sir Nicholas Tamworth in 1358. St Germans becomes a place of pilgrimage

1536-40: Reformation, Dissolution of the Priory, which is given to John Champernowne. Monastic buildings stripped and converted

1592: Demolition of chancel.

Late 18th-century: Reordering and refurbishing of interior with box pews. Landscaping of park by Repton and renovation of Port Eliot by Soane.

1802-4: North aisle demolished and new Eliot family pew added. Churchyard north of church cleared of burials and landscaped as lawn.

1887-94: Alterations and restoration by J P St Aubyn. Box pews removed.

1902-4: Further works including lych-gate.

1966: Fire in the organ chamber, then rebuild of organ

2000: Organ and vestry renovated

2011: Repairs of lych-gate

3.3.2 Description of the church today

Ground plan: Nave and chancel in one, twin west towers with porch between, south-west porch set in the angle and leading into south aisle, south chapel. North organ chamber in transept, and vestry adjacent.

Dimensions: Nave 30m (102ft) long, 9m (30ft) wide, wider south aisle.

Building materials: Cornish granite rubble, greenstone and sandstone dressings, Delabole slate roofs over timber roof structures. The western doorway is traditionally said to be carved from Elvan (a Greenstone) quarried at nearby Landrake towards Saltash, although the new VCH (2010) says it is Hurdwick stone from Tavistock in Devon. Beer stone is also used.

3.3.3 Description of the exterior

There can be no doubt that this is one of the major parish churches of England. It is arguably the most famous ancient church in Cornwall (although not the largest - Bodmin and Liskeard are larger), and as noted above was once the cathedral of the Saxon Diocese of Cornwall. The church preserves more original Norman masonry in its powerful and iconic west front than any other Cornish church, and this is a rare survival anywhere.



The great Norman west front

The twin towers provide considerable vertical emphasis when seen from the park, and the sheer size cannot fail to impress the visitor. One does immediately wonder if the west door within the impressive and completely unrestored Norman doorway could not be used as the main access, as originally intended. Access here is level, by contrast with the south porch entrance (see below). The reason may be draughts, birds and insects, but there may be solutions to this.

The doorway is set within a shallow gabled porch, the doorway arch almost takes it up completely and consists of seven orders, with muscular chevron and eroded floral patterns to the hoodmould. The west nave facade above the porch has three round-arched lights with nook shafts below a string course under the gable, the middle of which is larger. There is also a lancet each side of the porch gable, presumably to light the internal gallery which once connected the towers.

The south west tower has three stages, with string courses and embattled parapets, flat pilasters to the second stage, and round arched lancets; 2-light 4-centred arched bell-openings with cusped lights (dating to the rebuild of the 15th century) and wooden louvres, and clock faces to north and south, dated 1781.

The north-west tower is also of three stages, with clasping buttresses at first and second stage rising to the top octagonal stage with embattled parapet and pointed lancets to each face. The lower stage has a round-headed lancet, and internal east door in greenstone with stepped rounded arch and jamb shafts. 19th-century door with strap hinges.

A long mound where the Medieval north aisle was can be seen parallel to the nave wall, and the gable scar, or scars, of the north aisle and cloister walk can be seen in the exposed east wall of the tower. The north side of the nave and chancel has embattled parapets, the nave has two 3-light windows with Perpendicular tracery. Embattled parapets also to the transept and vestry.

The south aisle also has an embattled parapet and weathered buttresses, and 4-light windows, all with 4-centred arches, upper tracery and hood mould. The south chapel has a Tudor arched door to the west bay, then a pointed 3-light with Decorated tracery and east of this two 3-light windows within square frames.

Two 3-light Perpendicular style windows pierce the east wall, and there is an upper 3-light similar window, clearly a later addition within a brick frame; it has been suggested that this was a window brought from the north aisle, moved here after this was demolished around 1802. It can be seen in a photograph in the church which also shows the box pews, so it probably predates St Aubyn's works.

The chancel east wall (old east end of the nave) has a 5-light east window with transom, all trefoil-headed lights with Perpendicular tracery, 4-centred arch and hood mould, put in after 1592. Beyond this wall the foundations of the chancel and within this a small protrusion thought to be the chancel of an earlier church can be seen, this area now landscaped into a garden and with a large dove cage.

The gabled south west porch parallel to the west end of the south aisle has a moulded cornice and embattled parapet. 4-centred arched door to south

with hoodmould. Within there is a 13th-century stone coffin laid on the stone floor. The ceiling is a stone sexpartite rib-vault, of high quality. 4-centred arched west doorway to the church with quatrefoils in spandrels, roll-moulded with hood mould; mask gargoyles. This space is rather damp with green mould growth.

3.3.4 The Interior of the church:

The architectural features (those things which are fixed) are described first, followed by brief descriptions of the movable furnishings and fittings.

A sign on the internal south porch door warns you that there are six steps inside, but nothing could prepare you for the bear-trap within, six narrow but deep stone steps plummeting down to the floor below. If there have been no injuries to date, then this is very fortunate. Again, it seems very strange that the great west door which has level access is not always used. This door should be a fire escape (adapted for disabled access - lift?) only. Holy water stoup by west door from porch.



The south aisle looking west

This is a complex church, even more so than one would guess from the exterior. The walls are bare, with the exception of the north transept which is plastered, probably applied after the

1966 fire. Looking west, the south-west tower has a just-pointed Transitional arch to the aisle, with round columns with fluted abaci, clustered columns to east and north, but round-arched entrances to the tower bases. Stepped Transitional arch with clustered columns from the nave to the west porch.

There are doorways in the inner faces of the towers to allow access to a lost gallery which used to connect them, as noted above lit by two lancets either side of the porch gable. The south-west tower preserves a Norman stone staircase up to half way, the only one in Cornwall and rare anywhere. This leads to a ringing floor with ringing boards and clock mechanism case (an attractive room), and up to the belfry and out onto the parapets.

The Rysbrack monument (see monuments below) is installed in the base of the north-west tower behind original railings. This has had at times a ladder and other materials stacked against it. Above the ceiling here the tower is an empty shell up to a ceiling at parapet level, housing the boiler which blows hot air into the nave through an ugly vent. Inside the tower, one can see that the octagon stage is carried on squinches.

Scars from at least two pent roofs can be seen in the west (internal) wall of the south tower, the west end of the south aisle. These presumably relate to the narrow 12th-century and wider 14th-century aisle roofs, before the aisle was widened again in the 15th century.

On each side of the west door are painted panels depicting Moses and Aaron, by Pierce of Truro, late 19th-century. These could do with being lit to display them, as they are very fine pieces.

Looking up, the nave and chancel in one (this was originally just the nave of the priory church) with late 19th-century waggon roof, the south aisle roof similar. 7-bay arcade of round piers with fluted abaci, 4-centred arches, the three arches to west stepped and of ashlar, the others moulded; similar columns with stepped arch to north transept, formerly to the family pew, now organ chamber, with the pipes displayed to the nave.

One square 12th-century clearstorey window with chevron jambs survives above the south arcade, unusually located between the arches of the two western bays, the only original Norman bays. The break in the arcade at the east jamb of the next, lost opening is very clear. There are 20th-century open-backed chairs in the nave, standing on boarded pew platforms. Wooden platforms used as staging during concerts are laid on top of these when not in use. Some ledger slabs in the alleys.



The Lady Chapel looking east

The south aisle has the arms of Bishop Lacy on one of the carved corbels. There is a single Medieval bench with Misericord in the south aisle, depicting (supposedly) a local character called Dando punished for hunting on a Sunday, otherwise chairs. Fragments of the rood screen with key, sword and

shield are fastened to the south door to the Lady Chapel.



The misericord carving of a hunt

Good traceried Victorian screen, possibly by Harry Hems, between the chancel and Lady (south) chapel at the east end of the south aisle, which is of very high architectural quality, solidly 14th-century despite restoration. Between the two east windows is a crocketed and cusped niche with a Victorian figure of the Good Shepherd. The floor is of chequered marble (Paignton stone). East piscina with ogee hood, sedilia adjacent with gabled crocketed hood and Medieval tomb recess with ogee hood.



The chancel looking east

The chancel has an attractive mosaic floor (being restored at time of writing with funds from the Church Commissioners) and choir stalls with richly moulded ends, and panelling all around the east and north walls enclosing a stone frieze depicting the

Last Supper as a reredos. Fine stained glass in the large window above provides a fitting setting for the High Altar.

A pointed door to the west of the organ chamber leads to the vestry, which contains a fine chest tomb with black marble slab to John Moyle died 1661, and the wooden figure of St Anthony brought (c1500) from Port Eliot.

3.3.5 Furnishings and fittings: all c 1890 unless otherwise noted.

Altar: Altar tables of oak with spiral legs, 17th-century in chancel, Gothic table in Lady Chapel, 19th-century.

Reredos: Oak panelling in the chancel, enclosing a stone frieze depicting the Last Supper. Given 1935 by the Countess of St Germans as a war memorial.

Pulpit: Beer stone hexagonal pulpit with traceried panels and moulded base with granite colonettes around, all 13th-century style. Donated by Alfred Burton.

Lectern: Brass eagle, 1893.

Font: A badly damaged (apparently thrown into the north tower and later rescued) font of c1200 with square bowl, Saltaire crosses(?) to the faces. Plain columns around central drum, Victorian base.

Stained glass: Chancel 5-light east window has stained glass dedicated 1896, designed by E Burne-Jones and produced by Morris & Co. Individual figures of saints to each light, clearly rendered. A very fine and important window. Also other late 19th/ early 20th-century glass to the side windows.

Good Victorian stained glass to the Lady Chapel and at the west end and north aisle by Fouracre & Sons and Burlisson & Grylls, research ongoing. Mostly dedicated to members of the Eliot family and previous incumbents.

Monuments: A fine collection, only the most important are listed here. Pre-eminent is the Rysbrack monument in the north-west tower base (originally in the south aisle), to Edward Eliot, 1772, of national artistic significance. This is one of Rysbrack's earliest commissions in England. The Earl is shown in Roman dress, and has typically short legs.



The Rysbrack monument in the north tower space – not its original location

Marble sarcophagus to Susan Countess of St Germans, 1830.

In nave: slate tablet with acrostic inscription in Latin to Ionhannes Minister, 1631; marble tablet to Walter Moyle, 1701; pair of marble monuments with broken pediments and pilasters, to John Glanville, 1735 and Elizabeth Glanville, 1748.

In south aisle: marble ledger stone to Ann Eliot, 1723; monument by Westmacott, to John, first Earl St Germans, 1823; slate ledger stones to Richard Boger, 1733 and Sarah Nanjulian, 1778. Royal Arms dated 1660 in south aisle. Eliot arms in nave.

Bells: 4 bells of 1775 by J Pennington. 3 by Mears & Stainbank of 1913, one by John Warner of 1984.

Clocks and dials: Fine clock mechanism in the south tower, repaired with CBC grant in 2004. Large 18th-century sundial against the base of the north transept, missing its gnomon.



The clock mechanism

Organ: Original organ built 1896 by Hele & Co, but seriously damaged by fire in 1966. Rebuilt by George Osmond afterwards. A fine instrument.

Communion plate: Not inspected. Flagon of 1724, almsdish of 1766, and much later plate, all of high quality.

Registers: Since 1590, held in Cornwall Record Office. Much lost in the Blitz when Exeter was bombed.

Communion rails: Oak rails, Victorian.

War memorials: See reredos above, also framed Roll of Honour. The main village war memorial is a cross located to the west of the church across the road.

Miscellanea: Photographs of church, late 19th- and early 20th-century, watercolours, and other photographs and drawings, in the church. A Cope

in a glass case, given by the Eliot family some years ago.

Wooden figure of St Anthony, c 1500, brought from Port Eliot, in vestry.

The condition of the fabric and churchyard

Based on the latest Quinquennial Inspection Report by Margaret and Richard Davies Associates of London, January 2010. The church is generally in reasonably sound condition. A programme of minor works and maintenance is recommended, including repairs to rainwater goods, removing vegetation and repointing the boundary walls and other cementitious areas. There are signs of damp to the north tower and elsewhere, and roof repairs may be necessary in the near future, holding repairs are in hand.

The lych-gate had serious subsidence problems which have been monitored since an EH report in 2000. Repairs have now been affected.

In terms of security and safety, the church is kept open, and manned. No valuables are kept on location except under lock and key. There is level access without steps to the main entrance, no steps to nave, and ample space for manoeuvring wheelchairs. There are some loose mosaic tesserae in the chancel, although this is quite minimal and is being addressed with funding from the Church Commissioners.

4 Assessment of Significance

Medieval churches and churchyards such as that of St Germans are of enormous interest and research potential, not only for the historian, archaeologist, and architectural historian and art historian but for everybody interested in local and national history, rich in material resources for understanding the past.

A church has stood here as a beacon of continuous Christian mission for more than a thousand years, placing worship at the very centre of St Germans life. Churches are by no means static or frozen in time, indeed the fact that they have been subject to constant change throughout their history makes them all the more important and fascinating. In order to manage this change responsibly, it is necessary to define the relative significance of every aspect of the church and churchyard within its local, regional and national context. This relative significance is articulated thus, following Kerr (1994) and the CBC guidance (2007).

- **Exceptional** – important at national to international levels.
- **Considerable** – important at regional level or sometimes higher.
- **Some** - usually of local value but possibly of regional significance for group or other value (eg a vernacular architectural feature).
- **Local** - of local value
- **Negative** or **intrusive** features, ie those which actually detract from the value of a site, for example a concrete boiler house adjacent to a medieval church.

4.1 Statutory Designations:

The church building with its fixed contents is of **exceptional** significance as a major medieval church with a complex architectural, archaeological and art historical development and history, recognised in its Grade I listing. Date listed: 26th January 1968.

The south churchyard railings and lychgate are listed **Grade II** in their own right, which are of **some** significance.

The church is within the St Germans Central Conservation Area, and is of **exceptional significance** as an integral and defining part of this. The area is also part of the Tamar Valley Area of Outstanding Natural Beauty and the estuary is a Site of Special Scientific Interest.

There is a **Tree Preservation Order** (TPO) on the large oak tree south-west of the south tower. Other trees (fir, walnut, two rowans and two yews) have no TPO, but they are in a Conservation Area and therefore subject to similar controls.

There are presently no other statutory designations beyond those given above.

4.2 A detailed breakdown of what is of significance:

One of the great parish churches of England, and arguably the most important in Cornwall, of exceptional architectural significance and landscape value, and of exceptional historical and archaeological significance. The site is of potentially exceptional significance, especially seen in the context of the adjacent house and the remains of the Priory and earlier church and monastic buildings.

Social, religious, community

The church is of **exceptional** significance as a focus and centre for mission and worship for the congregation, parish, Diocese, and for the Church of England. It is the major physical manifestation of the durability of the Christian faith in this place.

The church is of **exceptional** significance as a symbol of civic identity and pride in the history and cultural continuity of St Germans, being together with the other churches one of the largest and oldest buildings still used by the community (and for the original purposes).

The church and churchyard are of **exceptional** significance as a landmark visual feature in the village of St Germans, and an important component part of the St Germans Conservation Area. It is visible from the road and from the railway line....

St Germans is a major tourist attraction in its own right, with the church contributing greatly to the attractiveness of the village and area. It is therefore of **exceptional** significance as an attraction for the tourist industry and economy of St Germans and the Looe peninsula, Cornwall, Devon and wider region.

The significance of the church for our understanding of medieval liturgy

The architecture and arrangement of any church are dictated primarily by the liturgical rites which take place within and around it. The form of the church building is therefore of **exceptional** significance for our understanding of the evolution of a medieval church in terms of its liturgy. The basic plan form, particularly the south chapel built for the veneration of the relics of St Germanus, is of exceptional significance. More research into these issues could add considerably to our understanding.

The significance of the church for our understanding of Post-Reformation liturgy

The evidence for this exists only in the form of illustrations of the interior dating to the 18th and early 19th centuries, and accompanying descriptions, which is of **some** significance for our understanding of the liturgy of this period.

The significance of the liturgical developments of the 19th and 20th centuries

The remnants of the Victorian scheme is in itself of **local** significance as an example of the liturgical fashion of the late 19th century, and of the work of J P Aubyn.

Musical significance

The organ is of **considerable** significance as a fine modern instrument with excellent tonal qualities, which exploits superb acoustics within the church.

The bells are a fine ring of eight of **some** significance, part of a long tradition of bell-ringing here and considered one of the best rings in Cornwall.

The **considerable** significance of music to the parish and its worship is illustrated by the fact that the church is a favoured concert venue for community choral events, for major and small instrumental performances and during festivals, and it is intended to increase this use in conjunction with the Port Eliot Festival and other events.

Ecological significance

Together with the Port Eliot estate and as part of the AONB and SSSI the church in its surroundings is of **exceptional** ecological significance.

Archaeological significance

The church building itself is of **exceptional** archaeological significance. Despite the changes including window and fabric replacements, much original fabric remains.

The Medieval woodwork within the church, particularly the misericord and sections of the rood screen, is of **considerable** archaeological significance.

The buried remains of the earliest church phases which lie within the churchyard and settlement are of **exceptional** archaeological significance for the early medieval period.

The anticipated archaeological deposit depth under the church and churchyard varies from 1.50m to over 3.00m. The churchyard therefore preserves a relatively undisturbed area of below-ground stratigraphy of **exceptional significance**, due to the possible surviving underground evidence relating to the Saxon church and priory. Although nothing remains of the fabric above ground of the Anglo-Saxon church(es), the probable existence of foundations and underground remains of these on the site, particularly within the church, contributes to its archaeological potential.

There is also potential for the existence of Sub-Roman (including possibly a church and cemetery), Roman or prehistoric remains. The potential for such remains would raise the significance, already defined as **exceptional**, still further if confirmed.

The site is of **considerable** archaeological significance as a burial ground used for at least 900 years, regarding its potential for the study of human remains and burial practice over this long period. The location of burials is unclear, but seems to include areas to the north and west of the church.

Historical significance

The evidence represented by the church and site is therefore of **exceptional** importance for the development of Christianity in Cornwall and England as an early Minster, Cathedral, Priory and parish church.

Within the church the intramural monuments are of **considerable** historical significance in themselves for the understanding and research of local and social history, recording the clergy, dignitaries, families and beneficiaries (particularly the Eliot dynasty) of the church and village. The War Memorials are of **local** significance.

Art Historical significance

The Medieval and 17th-century monuments are of **exceptional** art historical significance, as is the altar table. The Victorian and later furnishings and fittings are of **local** significance, with the exception of the Morris / Burne-Jones stained glass window which is of **considerable** artistic significance.

The font is of **considerable** significance as example of late 12th-century carving.

The Medieval woodwork within the church, particularly the misericord and sections of the rood screen, is of **considerable** art historical significance.

Generally, the 18th-20th century wall monuments and ledger slabs are of **some** or **considerable** art historical significance for the development of funerary art and lettering during this period.

The 17th- and 18th-century liturgical items are also of **considerable** art historical significance.

Architectural significance

The Norman west towers and west porch with doorway and the other components of the western part of the church. are of **exceptional** architectural significance.

The south chapel is of **exceptional** significance as an outstanding example of the Perpendicular style of the mid 14th-century in Cornwall, of the highest quality, despite later alterations and restorations.

The plan form of the church is of **considerable** significance for the development of monastic and parish churches

The remaining work of 1890-1905 by J P St Aubyn is of **some** significance.

5. ASSESSMENT OF VULNERABILITY AND POTENTIAL

5.1 Issues affecting the church and possible solutions:

General

The status quo is unsustainable. Change is in the best interests of the church, facilitating visual, aural, physical and other means of access to the church and to the Gospel, but this is not enough. A much wider and far reaching offering of the building through community discussions and input is a vital and necessary step.

Facilities

The absence of toilet facilities and adequate catering arrangements is a major constraint on the use of the church; an unsightly portaloos is wheeled in when there are major services or concerts, which is highly inappropriate. Heating, lighting and advanced audio needs must be addressed. A modern and sensitive update of all aspects is urgently needed. Failure to adequately address these issues will make the church more vulnerable through reduced attendance and limited potential for complementary use.

Fabric

The fabric of the church is in general in excellent condition, but some fabric consolidation and replacement may be necessary on a rolling basis, along with new lighting and heating. These works have the potential to impact on the significance of the fabric, furnishings and fittings if not carried out with due care and consultation.

Health and safety

An issue which increases the vulnerability of the church in this respect are the perceived demands of recent legislation. Health and Safety Regulations have made it more difficult for volunteer labour to carry out a variety of routine tasks. This means that expensive equipment such as scaffolding may need to be hired for high level works. The recent emphasis on conservation-led maintenance and repair also mitigates against volunteer involvement, as specialist (and increasingly, accredited) expertise is required for jobs previously done by laymen, or by building firms with limited experience of working with historic materials and fabric. There are, however, various grant-aiding organisations which can help in this respect, on which the DAC and CBC can advise.

Risk management

All heritage assets are exposed to losses from disasters such as fire and flood, but historic buildings and their contents are particularly vulnerable to such damage. The church is especially vulnerable to fire damage because of the extensive use of timber in its structure as well as in its internal fixtures and fittings. Damage may be caused accidentally or deliberately. The fire in the organ chamber in the 1960s proves that this is a real risk.

Equally, however, buildings and collections are also extremely vulnerable to damage from inappropriate fire safety regimes, protective works and equipment. A **Disaster Management Plan** (for which the CBC is developing guidance), and regular reviews of the safety equipment and procedures, should be instituted.

The most urgent priority is to address the main access into the church. The south porch with its six steps is not an appropriate public entrance.

Access

The Disability Discrimination Act is generally, and to some extent erroneously, perceived as a difficulty for churches, necessitating instant reactions and change. The concept of reasonability in this context has yet to be tested, but knee-jerk reactions to perceived problems generated by this legislation can be damaging. This is not seen as a major problem at St Germans. Again, use of the south-west porch internal door with its steep stairs into the south aisle should be actively discouraged. Otherwise there is level access without steps except to the south chapel and chancel, and ample space for manoeuvring wheelchairs, but it should be noted that all kinds of disability are included and this is not just about wheelchair access; such things as large print books and an audio loop fall within the remit of the legislation.

The access to the building from the road above is also a major problem, one of the most difficult issues facing the church. The only means of vehicular or pedestrian access at present is through the narrow lych-gate, which is not wide or high enough for many vehicles, including standard transit vans, which makes delivery difficult. Once this has been negotiated, there is a steep path with a tight bend which doubles back to the west end of the church, with parking space for perhaps three cars within iron railings separating the churchyard from the park.

Improving this through using the Port Eliot car parks, which is dependent on the goodwill of Port Eliot, or in some way making the lych-gate more easily traversable is necessary.

Summary evaluation of the present position:

As a famous historic church in an attractive village and area for tourists, there is a very large number of visitors, and 1450 people live in St Germans and the immediate surrounding area. The church is in good structural and decorative condition, is beautiful and fascinating, has excellent acoustics and rudimentary facilities. However, there are weaknesses which make the church's position vulnerable:

This building as it now exists is not viable for sustainable, 21st century use:

- it has poor pedestrian access, particularly for the physically disabled;
- it has extremely limited vehicular access [through the lych-gate];
- it has extremely limited parking for any vehicles that can negotiate the access; and very limited parking outside the lych-gate;

- its portable toilet is unsightly and not readily usable by the disabled – apart from the total lack of privacy for its approaching users;
- its heating system is expensive and ineffective;
- there is only one safe route for normal personnel access to, and egress from, the building;
- the building is not well-served [if at all?] by public transport passing the building.

In order to resolve the immediate shortcomings, the following are needed:

- good access for pedestrians, passenger vehicles and public transport/minibus;
- parking and manoeuvring space for a sensible number and variety of vehicle types;
- safe, multiple routes of emergency egress from the building;
- proper toilet facilities;
- support of services to provide water, drainage, electrical power, heating power;
- easy access for maintenance to all facets of the building.
- in order to make it possible to resolve the immediate shortcomings, the following are needed:
 - good, pro-active relations between the Church community and its various neighbours and stakeholders, territorial and ecclesiastical;
 - the will and the energy (in all the parties) both to perceive that various solutions are possible and, in addition, the legal, financial and practical enabling to implement an agreed solution;
 - the leadership to develop and maintain the motivation to effect a sustainable solution

Assessment of potential for change:

The church building is in very good condition, and inherently sustainable in terms of its materials. If it is to continue in use for worship, complementary uses and forms of community engagement may need to be found or better exploited, whether a Friends Group, tourism, cultural offerings, etc. The church must be seen as a part of the ensemble with Port Eliot and the park and the village itself, and the location is extremely attractive. There may be more potential in this large church than is currently realised.

To achieve this potential, sustainability is needed in various aspects:

- (i) Human sustainability – sufficient in amount, capability/skills, and motivation;
- (ii) Financial sustainability – capital and revenue;
- (iii) Energy/environmental sustainability.

In these respects, it may be instructive to read this excerpt from the Saltash Gateway Action Plan http://www.saltashgatewaycic.co.uk/CSAP_Plan/CSAP_PLAN.pdf:

“In the parishes the increase in population – as high as 40% over the past 20 years in St Germans, for example - has not always been matched by the provision of adequate health, recreational and employment opportunities.

With over half the estimated working population of the area commuting ‘over the bridge’ each day to work, and even larger number looking to Plymouth for much of their shopping and entertainment, the economic leakage from Saltash Gateway into the Plymouth economy is high.

If action is not taken to reverse this trend and strengthen the sustainable local economy we could be well on the way towards becoming just an impoverished dormitory area for Plymouth. The fact that, against the wishes of its inhabitants, the area has been included in the ‘Plymouth Urban Area’ for spatial planning purposes highlights this danger – (although inclusion in that planning area may also bring benefits).”

This is the social and economic context for the development of this building – a challenge, but also an opportunity. It must also be remembered that St Germans is on the edge of the Looe tourist area, so looks both ways – east to Plymouth, the local urban centre, and west to Cornwall and its rural tourist attractions. This is a dichotomy with a long history, and may indeed account for the original choice of location in the 1st millennium.

The proposed way forward

To solve these problems and grasp the opportunities, the Development Group intends to work on development plans to re-order the church, creating space and facilities for use of the church by wider sections of the community, and perhaps for one or more major user; however an options appraisal regarding these needs is still in its infancy at this stage. The options include various legal models, whereby the status of the church within the diocese and deanery may change. These changes will be considered in consultation with all the stakeholders, first and foremost with the present PCC.

These plans may include complementary or alternative use of large parts of the interior, but retaining at least the chancel for regular worship. Initial ideas which have been mooted for development of the building include:

- Development of the north tower space, providing toilets and possibly access to the roof for a viewing platform
- Development of the south tower space for a kitchen / servery
- Development of the space between for a glazed welcome vestibule (allowing west door to be main access)

- Development of the nave to provide a flexible space suitable for large services but also music concerts and art exhibitions / cultural events
- Development of the south chapel to provide an educational facility explaining the history of the church and its role in history and Christianity in Cornwall, focusing on key figure of St Germanus
- Development of the south aisle for a related facility explaining the history of St Germans and Port Eliot (oral history project?)
- New environmentally sustainable heating and lighting and reducing the running costs and Carbon Footprint of the church will be explored (see Appendix 1).

Following this necessary options appraisal phase, a development plan will be devised and funding will be sought. This programme of works is to be carefully considered with full consultation and is to be completed over several years.

5.2 Potential areas of conflict:

Changes in patterns and styles of worship may lead to vulnerability in terms of change to the internal order of the church, particularly its furnishings and fittings. As in so many cases, the successive Victorian and later reorderings responded to the liturgical fashions of the time and may not be considered suitable for the forms of worship practised by the present and future congregation, as well as other complementary uses. This can lead to a conflict of differing values, as changes to the interior of the church to further mission and worship and new complementary uses may at times clash with conservation issues.

The outline development proposals outlined above will also have a potential effect on the appearance, fabric and use of the building. This will require early and open consultation with the relevant secular and ecclesiastical regulatory and advisory bodies. Development can only be successful in the context of partnership with a number of stakeholders – the local community whether they worship at the church or not, Lord and Lady Eliot, the pub and shop, the parish and local authorities, etc. Only in this way can the potential for conflict be mitigated or removed.

This CMP will help the various partners to identify such issues and address them at an early stage.

5.3 Impact assessment of any current proposals:

This section will be revised (this is of course true of the entire document) as any proposals for change are articulated in more detail.

The current ordering has been articulated as of **local** significance, as an example of Victorian liturgical arrangements as interpreted by a leading architect of the period, St Aubyn. Little of Aubyn's reordering in fact survives following successive changes to the interior in the 20th century. A new look at the interior could enhance its

appearance and significance. There is a great deal of flexibility, as there is no fixed seating in the nave, south aisle and south chapel.

The south aisle and chapel have been considered as the space for a visitor heritage and education centre within the church. The impact on the interior, sight lines and spaces would have to be carefully evaluated if such a scheme were to be successful. New floors might need to be considered, and some form of permeable division between the various areas and activities might be needed.

The tower spaces also offer great potential, particularly the north tower, which at the moment houses the Rysbrack monument. This is not its original location, but any movement of this monument and use of this space would obviously have an impact which must be evaluated. Provision of toilet facilities, for example, would require an outlet and some form of container in the churchyard, which would have to be carefully thought through. Similarly, providing access to the upper floors of the north tower, perhaps for a viewing platform and to improve access to the roofs, would need evaluation.

Archaeological stratigraphy relating to the earlier phases of development of the church may survive at a shallow depth, which must be taken into account in the provision of modern facilities. As necessary archaeological assessment should be carried out, which might involve both non-invasive (perhaps Ground Penetrating Radar) and invasive (test trenching) work. This work should enable the development of a Mitigation Strategy to minimise damage, delays and cost. Advice from the DAC and its archaeological adviser will be sought at an early stage in any planning.

6. MANAGEMENT POLICIES

This section sets out the policies that have been identified during the process of preparing the CMP as required for retaining and enhancing the significance of this major church and site in the face of its vulnerability. These policies will be fully evaluated with those responsible for the management of the church; since who these may be is not clear at the moment as pastoral reorganisation or changes to the status of the church are possibilities, the phrase “relevant partners” has been used.

Policy 1: To create a mechanism for a Review Procedure of the CMP itself. Our knowledge of places like major churches is constantly increasing, and of course the church and site and its environment are also in a constant state of change. The CMP will provide a framework for managing information, to which new information can be added as it arises. An obvious solution is to bed the Review Procedure into the Quinquennial Review process, to ensure that the document continuously evolves and remains accurate and useful. The maintenance of the CMP as a digital document allows this to be done at minimum cost and effort; printed copies will be produced after each major review.

Policy 2: To retain the church as a place of worship. This may involve development of the building and site, and changes to its use and legal status. Advice and support will be sought from the Diocese, the Church Buildings Council and other partners and organisations, including English Heritage and the local authority.

Policy 3: The relevant partners will use the adopted Conservation Management Plan to assist them in managing the historic environment of the church of St Germanus, its churchyard and associated structures and features. Management decisions will be taken in accordance with the principles and policies set out in the CMP.

Policy 4: The relevant partners will develop a strategy for the sustainable care of the building and site, which will enable a strategy for funding the repairs to emerge. Such funding will be energetically sought, with advice from the Diocese, the CBC, English Heritage and the local authority.

Policy 5: The relevant partners are determined to enhance the ambience and retain the heritage of St Germans and will adhere to modern building conservation principles. Maintenance and repair of this major historic building will be carried out using appropriate materials and techniques which are not damaging to its historic fabric and character. The relevant partners will take care to make appropriate decisions and use appropriate materials so as to avoid visually intrusive features in and around the church.

Policy 6: The relevant partners are mindful of its obligation to the congregation, the local community and its many visitors to provide access for all. The relevant partners will explore potential for better public access where this is appropriate and not in conflict with existing (or possible future) uses.

Policy 7: The relevant partners will explore other appropriate related or alternative uses for all or parts of the building eg for community purposes, and for concerts, exhibitions etc especially if a degree of income enhancement can be achieved.

Policy 8: Safety, security and inclusion:

Policy 8a: The relevant partners will commission a **Disability Audit** to ensure compliance with the Disability Discrimination Act 1995 (the terms of which came into force in 2004). A disability audit should be made by a qualified person, and its recommendations considered by the relevant partners. It puts the statutory obligation on the relevant partners to consider all disability issues and take ‘reasonable steps’ to eliminate discriminatory arrangements. This should be done as soon as possible. Once this is done the relevant partners will seek to implement its recommendations so long as these are acceptable in conservation terms and do not involve negative impact on or intrusion into significant fabric (including visual intrusion).

Policy 8b: The relevant partners will ensure the protection of the building, including interior fixtures and fittings integral to the design and function of the building, from fire, lightning, and other safety and security hazards, undertaking specialist safety audits and risk assessments to best current practice as necessary. This should include provision for staff and contractors to receive appropriate and adequate induction and on-going training. The relevant partners will also work on producing a **Disaster Management Plan**, to help ensure that in the event of a disaster they can respond with preparedness and in the most effective ways. The CBC has issued guidance on this.

Detection and alarm systems need to be kept serviced and up to date. Training, close co-ordination and co-operation with the Fire Brigade are essential prerequisites of successful disaster prevention. A realistic appreciation of protective measures might suggest that the building be separated into zones. Evacuation procedures in the event of an emergency when the church is in extensive use, eg major services, concerts etc should be developed and appropriate training given.

Policy 9: Periodically review the statutory requirements and constraints governing the management of the church and site with the help of the Archdeacon and DAC, particularly in the light of the proposed Heritage Protection Review and Heritage Protection Agreements with English Heritage and the local authority. If necessary, short guidance notes to be circulated to relevant partners and other interested parties so that all are fully aware of necessary procedures.

Policy 10: The relevant partners will make strong representations to the appropriate planning and strategic bodies on all issues and proposals that might affect the relevant partners directly or indirectly, making use of the material in the CMP.

Policy 11: There are various aspects of the church and its furnishings and fittings which would benefit from research into the possibilities of proactive conservation techniques. The DAC and CBC should be approached for advice and possible funding.

Policy 12: Visitor management is an issue in terms of outreach. The parish will continue to provide guides and keep the church open during daylight hours for visitors. The printed guidebooks will be reviewed and updated according to the information in the CMP and as part of the Quinquennial review process and/or when

new information becomes available.

Policy 13: Archaeology policy.

Policy 13a: The church and churchyard have been defined as being of exceptional archaeological significance. The policy of the relevant partners is to protect and if possible enhance this significance. The guidance set out in ADCA 2004 and Elders 2005 will be followed.

Policy 13b: The policy of the relevant partners in regard to human remains and their archaeology is to follow the procedures laid down by the Church of England/ English Heritage 2005 guidance document.

Policy 14: The relevant partners will work in the long term with the architect and potential external partners such as English Heritage and university departments towards developing and maintaining a comprehensive database (in hard copy and digital formats, with appropriate storage locations and environments) of accurate records for the interior and exterior of the church and the area surrounding including:

- Site plan, floor/roof and ceiling plan
- Building services layout
- A geophysical survey of the floors within the church and the whole churchyard would greatly increase knowledge of the development of the church, priory and village, while providing useful information regarding possible future development of the building and site.
- A fabric typology survey (internal and external) identifying original fabric and subsequent phases of repair/restoration graphically, photographically and in text
- A new archaeological excavation of the old chancel (voluntary project)

Policy 15: The relevant partners will encourage diversity of habitat in areas of open space where this is appropriate. Be aware of lichen on walls and monuments and protected species (especially bats, but not apparently present) and legal requirements in this respect.

Policy 16: The relevant partners will take into account in all its policies the need for environmentally and economically sustainable development and management, and will consult the DAC regarding playing its part in “Shrinking the Footprint” of the church in terms of its environmental impact. The Environmental Audit (Appendix 1) will be kept up to date.

7. BIBLIOGRAPHY AND SOURCES

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Archaeological work in churches and churchyards: 2002. Available on the ADCA web site at <http://www.britarch.ac.uk/adca/documents/ADCAGuidanceNote1.pdf>

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Appendix 1 Environment Audit

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A1.1 Purpose of this Appendix

The purpose of this Appendix is to provide the background and support information for comments and recommendations made in the body of the CMP concerning aspects of the church management plan relating to the environment.

A1.2 Rationale for an appendix concerning ‘the environment’

Why does the environment matter to this – or to any – ‘Church Management Plan’?

Anglicans worldwide have long been concerned with environmental issues. ACC-6¹ stated that the fifth mark of mission is:

‘To strive to safeguard the integrity of creation and sustain and renew the earth.’

This Appendix proposes a way forward that addresses the fifth mark of mission by providing ways forward that support it.

Its approach is to devise an action plan that seeks to minimise the Carbon Footprint caused by the building and its infrastructure using as the basis of its approach the aims and criteria of *Shrinking the Footprint*², (‘StF’) the Church of England’s national campaign in support of the fifth mark of mission, while supporting also the first four marks of mission.

Shrinking the Footprint’s Carbon reduction target is 80% by 2050 (in line with Government commitments), with an interim target of 42% by 2020.

This Appendix addresses only the infrastructure of the building. It does not address the impact on the Carbon Footprint of *the activities of those managing the building*, nor does not attempt to address the causes or consequences for the overlaid Carbon Footprint caused by *those using the building* because that future usage – or, more probably, collection of usages – is not, as yet, sufficiently well defined.

In a series of ‘next steps’ paragraphs, this appendix recommends a way forward for development of the building that is in tune with the environment and is, by good providence, also in tune with the overall ambitions of the CMP for financial sustainability.

A1.3 Scope

This section lists the aspects of ‘the environment’ deemed to be within scope of this Annex from the perspective of the Carbon Footprint and describes the approach to be taken in the remainder of the Appendix to reduce that footprint.

These aspects are within scope:

- (i) Heat, light and power – type and amount of energy required and supplied; its cost and its StF ‘Carbon Footprint consequence’; relationship between energy usage and building usage;
- (ii) Toilets and the opportunities for reduction of the Carbon Footprint in handling of effluent and waste.

¹ ACC-6 – The sixth Anglican Consultative Council: see <http://www.anglicancommunion.org/communion/acc/>

² See: <http://www.shrinkingthefootprint.org/>

The approach taken in the remainder of the document is to consider each aspect within the scope in terms of (a) the current situation; (b) the possible options; (c) the proposed way forward to explore the options, including the suggested criteria that should be used to evaluate them in order to form a recommendation for various projects within an overall development proposition.

A1.4 Heat, Light and Electrical Power – the present situation

The present situation concerning heat, light and electrical power is described here. A summary of current operational energy costs concludes this section.

A1.4.1 Heat

Space heating for the main church areas is provided by a system comprising two large blown-air heaters: one is situated in each tower at a high level. Heated air from each heater is carried via a short, large duct into the church, also at a high level). One of the heating units draws its input air from within the building, with a small proportion drawn from outside to avoid staleness. This unit is more efficient than the other which, for practical reasons, draws all its input air from outside the building.

The heat energy is provided by burning liquid petroleum gas (LPG) from a storage tank situated within the curtilage, accessible from the road. The fuel is piped under pressure from the tank to each heater. Each heater can be used separately.

The fans and control system for this system are powered by mains electricity.

The amount of use this system gets is limited by three distinct factors:

- (i) its ineffectiveness – the hot air from the heating units enters at a high level and (although louvered down) does not naturally circulate effectively to the (considerably lower) level of the occupants. In an attempt to drive the hot air down to occupant level, two three-bladed fans have been installed at ceiling level in the main aisle. This mechanism is said not to work well;
- (ii) it is noisy: blown air is inherently noisy: the more air that is moved, and the faster its velocity of movement, the greater the noise. To be quiet it must be moved slowly – and then its heating effectiveness is proportionately diminished. This system is deficient also in this respect.
- (iii) it is expensive: the high (and rising) cost of the LPG fuel deters use of the system except, typically, for periods funded by specific payment, for example to warm the building before a concert where that charge has been built into the fee charge for the facility. It is said to take 3-4 hours to warm the space in moderately cold weather. In severely cold weather it is said not to be effective however long the pre-heat.

A positive observation concerning the building's heating characteristics is that once warm it does retain its heat well, provided the great west door remains closed!

A1.4.2 Light

All lighting is electrical. The main lighting is by Sodium vapour lamps located at the foot of the roof structure – 10 in the nave and chancel and 8 in south aisle and chapel. Other lights are distributed around the interior of the building to fulfil specific functional requirements.

The Sodium vapour lamps are effective in terms of the level of illumination they provide but are aesthetically unpleasant, causing a cold, colorimetric effect.

Apart from the unpleasant colorimetric aspect, there is a high level of intrusive glare from the lighting diminishing the visibility of architectural features.

A1.4.3 *Electrical Power intake and distribution*

The main electrical power feeder into the building is 230V, three-phase, fused at 100A in each phase. The circuit distribution is by MCBs. The intake and distribution wiring is apparently in good order.

A1.4.4 *Current operational energy costs*

A summary of the present annual energy usage and costs is verbally-stated to be this:

Electricity: 1,720kWh/year, costing £660 per year;

LPG (gas): 'used less than would be desirable due to high cost: for 8 hrs in 2010 at £125/hour: say, £1,000 per year.

These current costs and usage of both types of energy are not representative of the usage that would prevail if lighting and heating had not been 'managed down' vigorously in order to control cost to a tolerable level.

A1.5 *Space heating and Lighting – a development proposal*

This section lays out some proposals for development of a new approach for space heating and lighting.

These proposals are offered for consideration and further investigation: although all technology proposed is current and valid, further detail along with corroborative evidence from other locations is needed from specialists to substantiate the proposals.

A1.5.1 *Space heating – approaches for heat distribution and heat source*

As outlined above, the shortfalls of the present system are that it is said to be: ineffective, noisy and costly. Furthermore, the energy sources are both fossil-based and cause a high level of carbon emissions.

These proposals for development suggested here are considered to be effective, quiet and low cost in operation; furthermore they are not novel: they are already in use in comparably-sensitive buildings elsewhere.

In outline, the proposed system for space heating uses under-floor heating using piped warm water heated by a boiler (or equivalent) situated either in the old boiler room under the Organ or in an alternative external location within the curtilage. The existing floor-level pipe ducts, running from the boiler room to most areas of the church, will be reused. If the external location is selected, a new duct would be required to connect to the existing.

Under-floor Heating

Under-floor heating (UFH) using warm water is a proven effective technology and offers the most sympathetic fit with a building of this character. Three constructional approaches have been identified for further investigation:

The first approach would create a complete new raised floor throughout the nave areas. This new raised floor would contain the necessary insulation, piping and floor surface, overlaid across the existing floor (which would, of course, need infilling below the 'pew-platforms').

Choir, Chancel and Lady Chapel areas – which are stepped up from the nave floor level and also have floor surfaces of some interest – would be excluded from this treatment and would need an alternative source of space heating, such as conventional hot-water radiators or some other form of space heating. Or an overlaid structure confined to the seated areas – in effect, a new, heated ‘pew-platform’ – might be appropriate if the raised floor level in those discrete areas could be tolerated.

In this approach (for the entire nave and possibly the choir, chancel and Lady Chapel areas) it would be impossible to avoid introducing new steps at some edges of the new, overlaid nave flooring structure. A very careful health and safety impact assessment would be needed, but it should be noted that there are already several such steps caused by the various platforms.

The second approach would avoid any new stepped edges (and would remove all pew-platform and other existing ad hoc changes of floor level) by maintaining the existing floor level. The new under-floor heating structure (insulation, piping, floor surface) would be recessed into a cavity created below the several pew platforms. (Provided its depth is no greater than 350mm, we have been assured that there would be no archaeological concerns.) The finished floor surface would then be flush with the existing solid nave floor throughout but the heating would operate only in the area of the old pew platforms.

Choir, Chancel and Lady Chapel areas would – as in the first approach – be excluded from this treatment and would similarly need an alternative source of space heating. It should be noted that in this second approach the existing solid-floor walkways between the pew platforms and the other walkways would remain as now, untreated and unheated.

A third – more radical – approach would be to excavate throughout the entire nave (to, say, 350mm depth) to create a completely-new, heated floor while maintaining the existing floor level. This would be the most effective solution in terms of both practical usage and heating effectiveness.

Choir, Chancel and Lady Chapel areas would – as in the other two approaches – be excluded from this treatment and treated using one of the approaches suggested above.

Each of these three approaches (for under-floor heating of the Nave) has both benefits and drawbacks. Specialist advice is needed to collect and present evidence from other users’ experiences of actual installations of under-floor heating in order to clarify – with local consultation – which of these approaches is likely to be the most effective overall in the St Germans situation. A particular benefit could be that the areas provided with UFH could be selectively zoned and heated according to requirement – even to the extent of adapting the behaviour of an audience or congregation to sit where it is warm!

Particular attention will be needed to provide easily-used control systems appropriate to the mix of users, ensuring that smart metering focuses users’ attention on its efficient and economical use, zone by zone.

Specific assurances would need to be sought from any installer that the entire structure would be absolutely silent: noisy, creaking, pipes under the floor would be unacceptable!

The standards and guidelines published by the Underfloor Heating Manufacturers' Association provide an assured approach.

Heat source

Two alternative renewable heat sources are the more obvious candidates to drive the UFH: bio-mass or heat-pump (ground-source – 'GSH' and/or air-source – ASH). A third possibility that should be explored is Combined Heat and Power (CHP) using a renewable fuel source such as bio-mass.

The efficiency of bio-mass or CHP systems can be enhanced by including a substantial thermal store to reduce boiler on/off cycling. This would sit between the heat source and the UFH system, with appropriate controls to enable efficient automatic operation.

(a) Bio-mass boiler

An appropriately-sized bio-mass boiler would be situated in the old boiler-room under the Organ or in an external location, nearer to the fuel store.

Tutorial: a bio-mass boiler is like a conventional solid-fuel boiler, but in place of, say, coal uses a wood-sourced fuel, pelletised to ease handling and enable automated control of the boiler.

The pelletised fuel could be stored in a location within the buildings curtilage (probably near the road, possibly using part of the existing tunnels) and channelled from that storage using air-blown or vacuum/suction transport within a pipe.

Boiler waste gases could be channelled to the outside air via the old boiler chimney. This boiler would produce heated water at a temperature suited both to conventional radiators and also – by an automated mixing arrangement – to the much lower temperature needed by the under-floor system. A bio-mass boiler is defined to be a renewable source of heat and – under the government's Renewable Heat Incentive (RHI) scheme³, announced on 10 March 2011 – attracts the recently-introduced Renewable Heat Incentive (RHI) payment for every unit of heat generated.

(b) Ground-source Heat-pump

A ground-source heat-pump of suitable heating capacity – as for the boiler – could be situated in the old boiler-room under the Organ.

Tutorial: A ground-source heat-pump (GSH) extracts heat from the ground (at around 10C). This involves either burying a horizontal 'snake' of piping over quite a large area – probably not appropriate to this situation with its archeological sensitivity; or drilling a number of vertical boreholes to a depth of around 300m. The extracted heat is converted by the GSH to deliver heated water at between 30 and 50C for use within the building. This temperature is good for under-floor heating, but not high enough for conventionally-sized radiators (which are normally rated at 85C for full output). However, over-sized radiators can be used.

The input power source for GSH is mains electricity. Depending on exact working conditions, for every unit (1kWh) of electricity input a GSH can deliver 3.5 – 4kWh heat-equivalent output.

³ Renewable Heat Incentive (RHI) scheme; DECC;
http://www.decc.gov.uk/en/content/cms/meeting_energy/Renewable_ener/incentive/incentive.aspx

A GSH is defined to be a renewable source of heat and – under the government’s Renewable Heat Incentive (RHI) scheme⁴, announced on 10 March 2011 – attracts an RHI payment for every unit of heat generated.

(c) Air-source Heat-pump

An air-source heat-pump of suitable heating capacity could be located in the tunnels under the bank to the south of the church, with a duct to carry the heated water to the church building.

Tutorial: An air source heat pump extracts heat from the outside air in the same way that a fridge extracts heat from its inside. It can extract heat from the air even when the outside temperature is as low as minus 15° C.

There are two main types of air source heat pump system: air-to-water and air-to-air. (Air-to-air is not appropriate for this location.)

An air-to-water system distributes heat using warm water. Because heat pumps work much more efficiently at a lower temperature than a standard boiler system, they are more suitable for underfloor heating systems or larger (over-sized) radiators, which give out heat at lower temperatures over longer periods of time. [The Energy Saving Trust - energysavingtrust.org.uk]

At present, the government’s Renewable Heat Incentive (RHI) scheme does not include air-to-water heat pumps for non-domestic sectors. DECC will be considering how they can include all air source heat pumps for all sectors in the RHI from 2012. [decc.gov.uk]

(d) Combined Heat and Power (CHP)

Tutorial: ‘Combined heat and power (CHP) is the simultaneous generation of usable heat and power (usually electricity) in a single process. The electricity is generated on or close to your site, allowing you to capture and use the resulting waste heat for site applications.’ [Source: Carbon Trust]

There are a number of issues concerning CHP as a possible heat source: first, a CHP system generates electricity also and the ‘base load’ for both heat and electrical load needs to be supported for a substantial period in the year – the Carbon Trust cites a figure of 4,500 hours per year. This equates to just over 12 hours per day for every day of the year.

On the other hand, the technology is developing fast: micro-CHP is targeting domestic installations and ‘packaged CHP’ systems are available for small community and industrial installations.

The question is prompted: could CHP be a viable solution if shared with the Port Eliot Estate? Economies of scale and diversity of demand could make CHP a good choice.

A widely-scoped, specialist study of the possibilities of CHP (using a renewable source of fuel) is needed.

RHI Payments

RHI Payments differ between the eligible technologies for the heat source and the application also must be eligible. Example rates, published by DECC on 10 March 2011, stated to be applicable to public buildings are:

⁴ Renewable Heat Incentive (RHI) scheme; DECC;
http://www.decc.gov.uk/en/content/cms/meeting_energy/Renewable_ener/incentive/incentive.aspx

'Small biomass' [using solid biomass technology] | less than 200kWth
Tariff rates: Tier 1: 7.6 p/kWh | Tier 2: 1.9 p/kWh

'Small ground source' [using ground source heat-pump technology]
Tariff rate: less than 100kWth: 4.3 p/kWh
100kWth and above: 3.0 p/kWh

Air-source heat-pump: [not yet eligible for RHI; to be decided in 2012]

'CHP': the heat output component would be treated under RHI according to the fuel source, e.g. biomass; the electrical output component would be eligible for Feed in Tariff payment but some restrictions apply.

These tariff rates are set by government to ensure a sufficient payment incentive over time to make the scheme attractive to new capital investment and thereby bring about the transition from use of fossil-fuel energy to the generation of renewable energy.

Inflation-linking: These tariff rates are set at 2010 rates and when implemented will immediately be subject to an RPI uplift of 4.8% and thence uplifted annually by RPI for the 20-year contractual span of the RHI scheme. i.e. once an RHI contract is in place, the RHI payments are assured by government, with annual RPI uplift, for the contract period of 20 years.

Renewable Heat Premium Payment (RHPP)

The one-off Renewable Heat Premium Payment (RHPP) may also be available, in addition to Renewable Heat Incentive (RHI) payments. However, payments are relatively small and the scheme ends 31 March 2012.

<http://www.energysavingtrust.org.uk/RHPP>

Next steps – heat distribution and heat source

Specialist advice must be sought to:

- (i) collect and present evidence of actual church UFH installations and of the various possible heat sources – bio-mass, GSH, ASH and CHP – in order to guide the selection of the overall approach likely to be the most effective;
- (ii) assess noise levels of the various options and the likely impact of that noise for the organist while playing at the organ console;
- (iii) do the detailed work on system design parameters; investigation of costs and benefits to enable comparison of alternatives, leading to a recommendation of the preferred complete system;
- (iv) prepare purchase specifications and invitations to tender and advise how best to manage the supply contract/s.

A1.5.2 Lighting – a development proposal

As has been mentioned in the body of the CMP, a new lighting system is desirable.

Therefore, as part of the overall infrastructure development, and once the usage plan becomes clear, a specialist study of the lighting requirements should be commissioned to recommend options for new lighting, along with appropriate technology and control systems.

A1.6 Toilets – a development proposal

The present single chemical toilet, located externally in the area to the west of the church (supplemented when necessary by additional portaloos) is not a sustainable solution in any respect – chemicals are heavy in emissions by virtue of their manufacture; they create toxic waste; and their disposal is equally problematic environmentally. And, aesthetically, this approach is an eyesore.

An appropriate and functional toilet facility is one of the essential requirements for St Germans. There have been previous initiatives but all have all foundered.

Provision of a new facility would present an opportunity to consider the use of either:

- conventional toilets with a sustainable sewerage waste disposal system such as an anaerobic digester that could be used also to handle grey-water waste from any new kitchen facility* (outside the scope of this appendix);

Rainwater harvesting could provide the water supply for toilet flushing if a conventional approach is selected.

* It should be noted that a supply of mains water would still be required for potable use in any new catering/kitchen facility.

- composting toilets.

A1.6.1 Next steps – Toilet facility

A study is required of all the possible options and locations to create a new facility.

This study must take into account:

- (i) earlier initiatives to provide a permanent toilet facility and the reasons for their demise;
- (ii) the projected requirement, with an assessment of optimum number of toilets for different styles and degrees of building usage;
- (iii) the most appropriate technology for each scale of requirement, noting the extent and location of excavation to form any necessary waste disposal system and the access implications for any associated disposal transport;
- (iv) options for location of the toilet facility;
- (v) an impact assessment on the archaeological sensitivity of the site for the recommended approach.

The study process will include consultations with all interested parties and make recommendations.

A1.7 Switching to a 100% green energy supplier

One of the environmental decisions commended by Shrinking the Footprint for early action is to switch electricity supplier to a 100% sustainable supplier such as Good Energy.

However, it is recognised that until new funds are available this may not be a possible action, in which case the recommendation is that this switch of supplier is given early attention as soon as new funds become available.

A1.8 Other development opportunities for renewable energy

In this section we consider other possibilities for bringing generation of renewable energy into the St Germans development program. These are not essential for the immediate redevelopment but should be assessed for inclusion in funding bids.

A1.8.1 Electricity - Solar PV

Of the available electricity-generating technologies using natural resources – solar pv, wind, hydro – only solar pv has any possibility of being applicable on this site.

The extent to which solar technology may be exploited is constrained by the technical considerations of:

- (i) shading – determined by the building itself (South tower) and the height of the ‘shading horizon’ determined by other buildings and trees within the 270 degree traverse of the sun at the summer solstice;
- (ii) the physical state of the roof structure;
- (iii) the planning approval process, given the likely objections due the various merits of the church.

The detail that follows takes account of (i) above, assumes that (ii) can be accommodated with sufficient funding; and that (iii) can be overcome – at least in favour of a partially-obscured installation.

In common with many churches, St Germans has broadly south-facing roof slopes of substantial area. If some or all of this roof area were to be populated with solar photovoltaic (PV) panels, then the Church could take advantage of the return from the government-supported Feed in Tariff (FiT) scheme which – for installations by accredited installers – offers RPI-linked rates for all energy generated and energy exported to the national grid, guaranteed for a 25-year contract term. These FiT rates are designed to deliver, through the life of the contract, a reasonable rate of return on the capital invested – typically between 7 and 10 percent.

This table (based on estimated parameters given below*) shows the capacity, the output and the FiT income using the rates applicable since April 2011. The overall benefit would require a full survey by one or more accredited suppliers and would be dependent on the appropriate permissions.

Solar PV panels overlaid on existing roof	No. of Panels (each, say: 1m x 1.5m)	Capacity (kWp) (at 210W/panel)	Estimated generation** (kWh/year)	Applicable FiT Tariffs: Generation Export April 2011 (p/kWh)	FiT income/year (£/year)
Main Aisle	16	3.36	3,150	43.3 3.1	
South Aisle	50	10.50	9,380	37.8 3.1	
Total	66	13.86	12,530		£4,150

Further income is available from savings in energy used while being generated. A typical domestic estimate is that 50% of generated power is used directly. The actual usage in this setting would depend on the particular building usage pattern – the more usage during solar generating hours (i.e. sunny daytime), the greater the actual reduction in purchased imported electricity.

* The design parameters used in these calculations are [estimated to be]:

Ridge length: 26m

Aisle width: 9m

Roof slope angle: 45 degrees

Roof orientation: 15 degrees west of South

Main roof slope shading angle: 11 degrees (shaded by ridge of South Aisle roof*)

South aisle roof slope shading angle: 11 degrees (shaded by the Southern horizon*);

* the shading situation is probably worse than this: a professional survey is needed.

** An accredited software calculator tool has been used to estimate the annual generated output: <http://re.jrc.ec.europa.eu/pvgis/apps3/pvest.php>

Solar PV – Capital outlay

The capital outlay to install such a system might be between approximately £3.5 - 5k per kWp, say £48 - 70k plus an undetermined additional cost for installation for this listed building and for electrical system adaptations.

Loans may be available from various sources to offset this capital outlay; but grants may prejudice eligibility for FiT payments.

Solar PV – Summary

Solar PV at St Germans – while certainly carrying a high green ‘image’ value and waving a bold flag in the cause of the fifth mark of mission – has to contend with hard issues:

- (i) it has a low estimated capture efficiency due to the high level of shading, not least from the building itself – thus a high capital cost would be incurred for a system with a relatively low efficiency of generation;
- (ii) the roof structure is of uncertain quality: its strength and longevity are unknown;

- (iii) a very high risk of generating contention and confrontation in the public process of approval. Given that the Group’s approach is to attempt to heal and bind up wounds both historic and contemporary, to propose solar PV may be unproductively divisive.

Conversely, Solar PV may be revisited at a future point when, say, capital costs have dropped, output efficiency (W/sqm) improved, the roof has been refurbished and public acceptance of solar PV has positively changed.

To decline to install Solar PV now is not to prejudice a future installation when its benefits will be better appreciated.

Next steps – Solar PV

For the reasons summarised above, the environmental advisers’ recommendation is – in the first instance – not to proceed with Solar PV.

The singular merit of this approach is that it can form a positive part of the overall proposition, demonstrating our good judgement in the face of local concerns!

A1.8.2 Domestic Hot Water’ (DHW)

A source of hot water is desirable for a toilet facility, would be useful in a sacristy and is essential for a catering/kitchen facility.

Depending on the scale of expected use, the alternative means of supply are summarised in this table:

Approach	Environmental position	Cost	Criteria for selection or rejection
Electrically-heated, in-line (on demand)	Each of these approaches is ‘Green’ in its operation if the electricity supply has been switched to a 100% green supplier	Capital: lowest Revenue: pro rata to use	Cheapest to install
Electrically-heated, with stored hot water		Capital: higher Revenue: pro rata to use	Better for a high peak-demand usage pattern, e.g. with several toilets and a kitchen
Solar Thermal, roof-mounted system, with stored hot water		Capital: highest Revenue: ‘free’ with sun, say, 30% plus; beyond that: pro rata to use.	Beneficial during sunny weather; would handle a high peak-demand usage pattern, e.g. with several toilets and a kitchen. However: <ul style="list-style-type: none"> • Highest capital cost • Possible roof location/siting difficulties • Likely planning approval issues

Next steps: Domestic Hot Water (DHW)

The design and cost of DHW should be included in proposals and funding bids. The approach selected and the system scale should be appropriate and proportionate to the facilities being provided for the anticipated level and type of usage.

A1.9 End Note

This Appendix has, considered only those environmental aspects that relate directly to the building infrastructure. We have offered various ‘next steps’ propositions that together make for a way forward.

There are many other matters of environmental concern that have not been included in this Appendix, particularly those relating to the activity of managing the building and using it. For example, the provision of services and personal transport usage are two such matters.

Rather than detail all other possible matters here, what we propose is that as a new support community forms itself around the whole redevelopment proposition, we should trust that community to raise its own specific concerns to further protect the environment and to build on the foundation created by this Appendix to the overall Conservation Management Plan.

A1.10 Annex 1 – Document history

File ref:	Title	Author	Date	Comments
CMP_Annex-Environment-draft_V02-2011-0613.doc	Annex to CMP: Environment Audit	Richard Hopper CEng, MIET	13 June 2011	Completed first draft, following visit to Church with Ruth Watkinson. For Group review.
[Annex 1 to CMP]	Annex to CMP: Environment Audit	Richard Hopper CEng, MIET	22 Aug 2011	Revisions following further study