J Taylor
Ecology Consulting

St. Mary's South Hayling, Hampshire.

Bat Appraisal

An ecological appraisal of the potential of the construction of the proposed north room to affect any bats that may be present in or in the vicinity of St. Mary's Church, Hayling Island.

Report for

Alan Hoad
St. Mary's Church,
105, St. Mary's Road,
Hayling Island,
Hampshire.
PO11 9DD

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J Taylor Ecology Consulting
4 Testbourne Court
Whitchurch Hampshire
RG28 7HZ
Phone 01256 892640
Mobile 07519 924 679
jonathan@jtaylorecology.co.uk

www.jtaylorecology.co.uk

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1.0. Summary

The site was inspected by Jonathan Taylor BEng(Hons) MSc MIEEM on 9th March 2012 during fine weather conditions. Jonathan has over 15 years experience as a professional ecologist and an expert knowledge of bat ecology and legislation. This report relates to the circumstances observed at that time.

A bat scoping assessment was carried out on the church and churchyard, which consisted of a physical inspection of the internal and external elevations of the church. In addition, a physical inspection of the structure and condition of all the trees within the vicinity of the proposed working area was undertaken to assess their potential to support roosting, foraging or commuting bats. The value of the wider area was also assessed for any foraging or commuting potential. The assessment was based on the guidance included in the Bat Conservation Trusts Bat Surveys - Good Practice Guidelines (Hundt L 2012) and Bat Workers Manual (JNCC 2010).

Evidence from the survey confirmed that the church was in use by pipistrelle bats *(Pipistrellus spp*.). A single fresh dropping was found, and a number of older droppings, suggesting that the interior of church is in by use by only a small number of bats.

However, no bats or evidence of bats was identified in the area of the northern elevation that will be affected by the proposed construction of the north room. In addition, the area lacked roosting features and openings that could be used by bats to access the interior of the church. Hence the area of the northern elevation that will be affected by the construction of the north room is considered to offer low potential for roosting bats.

No evidence of bats roosting was identified in a single common yew tree (*Taccus baccata*) that will be affected by the construction of the north room. However it may offer some value to foraging bats, although it is unlikely to be significant given the number of similar trees in the immediate surrounding area. The tree was assessed as having a low to negligible value for roosting bats.

Although the area affected by the construction of the north room is considered to offer low potential for use by bats, it should be acknowledged that bats are highly mobile and may move between different roost sites throughout the year, and the condition of building may deteriorate creating new suitable roosting features. Hence it is recommended that a precautionary method of working is be followed, should it be necessary to remove any roof tiles or undertake work to the eaves to join the new north room to the northern elevation of the church.

Although the yew tree is considered to have a low to negligible value to roosting bats, as a precaution it is recommended that the ivy is removed from the tree, and that the tree is sectionally felled and the limbs lowered to the ground.

Therefore, it is considered that the proposed activities are highly unlikely to result in an offence under the Conservation of Habitats and Species Regulations 2010 (as amended) or Wildlife and Countryside Act 1981 (as amended) provided the mitigation provided in this report is adhered to.

2.0. Introduction

2.1. Background

J Taylor Ecology Consulting were commissioned by Alan Hoad of St. Mary's Church, Diocese of Portsmouth, to undertake a bat appraisal of St. Mary's Church, 105 St. Mary's Road, Hayling Island, Hampshire, PO11 9DD (approximate central OS grid reference SU 721000). The appraisal was required in conjunction with the submission of a planning application for the construction of a self contained north room adjoining the northern elevation of the church building.

The proposed development will involve the relocation of a number of graves, the felling of a single common yew and will join to the main church building through an existing door. The proposed building comprises of a two storey octagonal structure with toilet and washroom facilities. This report relates to planning application APP/11/01738.

2.2. Site Context

St. Mary's Church is located at Gable Head within South Hayling, to the west of Church Road approximately 6 km to the south of Havant Town Centre, in Hampshire. The area of the proposed development is immediately adjacent to the northern elevation of the church building, within an area of the churchyard. The proposed working area is approximately 9m by 9m, and necessitates the removal of a single mature yew tree. The proposed site access is from Church Road along the footpath adjacent to the northern boundary of the churchyard, with a lay down and storage area in a disused area of ground adjacent to the northern boundary.

The working area is typical of an established church graveyard, comprising managed rough grassland between established stone gravestones. There were occasional areas of longer tussock grass, particularly adjacent to the occasional collapsed gravestone. The yew tree within the development site was estimated to be approximately 150-200 years old, and is 7-8m in height. The tree is also subject to a Tree Preservation Order.

The site is bordered to the north by low density residential properties off Katrina Gardens. Further to the north are further low density residential properties, running parallel with Church Road. Immediately adjacent to the site and to the west are a number of arable and pasture fields, bordered by intensively managed hedgerows. Further to the west and northwest are a series of both mobile and touring caravan parks. The site is bordered to the south partially by the garden of a residential property off Church Road, and the remaining by an arable field. Further to the south of the site is the residential area of Gable Head with associated shops and commercial premises along Church Road. Beyond Gable Head lies South Hayling centre, with the sea front and Solent beyond.

The site is bordered to the east by Church Road, which is a single carriageway road running from the main bridge at Langstone to the eastern sea front. Beyond the road to the north east of the site is a comprehensive school, Hayling College, which consists of mostly traditionally built structures with associated car parking and municipal landscaping. To the south east of the site lies the Church Hall and Office, with residential properties beyond.

Photographs of the site are provided in Appendix 9.1 together with a plan showing the location of the trees within the churchyard in Appendix 9.2. In addition, a plan of the proposed development is provided in Appendix 9.3.

2.3. Pre-existing information on the site

A survey was conducted by a Natural England volunteer bat worker, Nik Knight, in July 2010 prior to some proposed work within the Church (Adebisi 2010). The work involved replacement of the under floor heating system, installing a new floor in the nave, and electrical wiring and lighting work. The survey was prompted following the discovery of a dead adult male pipistrelle (*Pipistrellus spp*.). The survey confirmed that both pipistrelle and long-eared bats (*Plecotus auritus*) use the Church following the discovery of droppings on window sills and the chancel floor. The location of any roost or the roost types were not ascertained from the results of the survey. However a number of possible entry locations were identified into the roof and tower, particularly on the north and south elevation of the Church. It was identified that bats could enter the roof space under tiles on the lower roof on the south side, and around timbers under the eaves and through slatted windows directly into the bell tower.

A method statement was prepared relating to the proposed work to minimise the risk of impact on any bat that might be present at the time. The method statement recommended that work to the floor and heating system should be undertaken during July and August, and that potentially disturbing activities be minimised. For the electrical installation and lighting work, it was recommended that, as the roof of the nave and chancel may support summer roosts, that the work is carried out between mid September and the end of October, or during April and May. In addition it was recommended that all site workers were briefed on the potential presence of bats, and work should stop should a bat be discovered.

The work was completed in accordance with the recommended time frame and no bats were discovered during the work.

No other survey work was identified in relation to bats within the boundary of the church. However, a comprehensive desk study was undertaken as part of this assessment, and biological records of all previous bats surveys undertaken within 2km of the church was obtained from Hampshire Biological Information Centre (HBIC).

2.4. Purpose

The purpose of this ecological appraisal is as follows:

- to identify the potential presence of bat roosts and/or bat activity within the church, and to assess the value of habitats within the churchyard for commuting and foraging bats, in order to assess the likely impact the construction of the proposed north room would have on any bat species that may be present within the area;
- to identify any associated potential ecological constraints relating to bats arising from construction of the proposed north room;
- to identify appropriate mitigation measures in relation to the above;
- to identify opportunities for ecological improvement.

3.0. Methodology

3.1. Desk Study

A desk study was undertaken to identify the presence of any statutory designated wildlife sites within 2km of the proposed development site, and non-statutory designated sites within 1km. The search focussed on any potential designated sites that are known to support populations of bats. In addition, a search was undertaken for records of bats within 2km of the proposed development site.

The following resources were consulted:

- The Multi Agency Geographic Information for the Countryside (www.magic.gov.uk) for information on UK and European designated wildlife sites.
- The National Biodiversity Network (www.nbn.org.uk) for records of known populations of bats.
- Hampshire Biodiversity Information Centre (HBIC) were consulted for information on previously recorded bat populations within 2km of the proposed development site, in addition to the location and details of statutory or non-statutory designated wildlife sites.
- The UK Biodiversity Action Plan (www.ukbap.org.uk) for information on National priority habitats and species.
- Hampshire Biodiversity Partnership (www.hampshirebiodiversity.org.uk) for information on Hampshire BAP species.

The desk study is valuable in identifying past records and nature conservation designations. Understanding nature conservation issues within the wider area helps in the assessment of the ecological value of the site, the habitats and species that the site may support. However, desk study data is not likely to be exhaustive and is intended mainly to set a context for the study. It is therefore possible that records of bats not identified during the data search do in fact occur within the vicinity of the proposed development site.

3.2. Field Survey

An assessment of the site was undertaken by Jonathan Taylor BEng(Hons) MSc MIEEM on 9th March 2012 during fine weather conditions. Jonathan has over 15 years experience as a professional ecologist and an expert knowledge of bat ecology and legislation.

A bat scoping assessment was carried out on the church and churchyard, which consisted of a physical inspection of the external elevations of the church. Where possible and where access was available, a physical inspection of the internal elevations of the church was also carried out. In addition, a physical inspection of the structure and condition of all the trees within the vicinity of the proposed working area, taking into account their age and species, was undertaken to assess their potential to support roosting, foraging or commuting bats. The value of the wider area was also assessed for any foraging or commuting potential.

The purpose of the survey was to establish the potential for bats to be present, either roosting within the church or trees within or adjacent to the working area or foraging within the development area. The assessment for bats was based on the guidance included in the Bat Conservation Trusts Bat Surveys - Good Practice Guidelines (Hundt L 2012) and Bat Workers Manual (JNCC 2010).

The interior and exterior of the church building, and the trees within the vicinity of the proposed working area, were inspected for potential bat use by searching for and examining;

- bat droppings on the floor and walls of the buildings, or within a tree beneath a hole, cavity or split;
- feeding remains (particularly butterfly & moth wings) usually on the floor of buildings;
- evidence of urine staining around possible roost entrances;
- insects (especially flies) around a hole;
- areas cleared of cobwebs;
- scratch marks around a hole, caused by bat claws;
- oily stains around possible roost entrances;
- suitable entry and exit points on the outside of the building or tree;
- other evidence of bat activity such as droppings, smells, sounds, carcasses or meal remains;
- suitable features that could be utilised as a bat roost such as crevices, holes, fissures and arboreal ivy;

High powered binoculars were used to assess the external elevations of the church building and each individual tree within the vicinity of the working area. A torch (500,000 candlepower) was used to illuminate the dark recesses inside the church and an endoscope used to carefully inspect any features of potential value to roosting bats where accessible was possible.

3.3. Evaluation Methodology

The likelihood of bat presence was assessed against the criteria below, based on the results of the survey undertaken and an evaluation of existing data provided by the desk study and previous reports.

Negligible – while presence cannot be absolutely discounted, the site includes very limited or poor quality habitat. The building or defined section of the building has no suitable features capable of supporting roosting bats, with no suitable entry points, or a single skin and no roof void. They tend to have high interior light-levels, and little or no insulation. Trees contain no features suitable for roosting bats, such as loose bark or obvious cracks or fissures. The trees are immature or semi-mature specimens with a small girth, or species which do not tend to form fissures such as sycamore. The site may also be outside or peripheral to a known bat population and the surrounding habitat is considered unlikely to support foraging or commuting bats.

Low – on-site habitat of poor to moderate quality. No evidence of bats found during the survey. The building or defined section of the building has limited features for roosting bats, such as shallow crevices or gaps in brick or block work pointing. Such opening may be in locations which may be subject to large temperature fluctuations, or be constrained by external obstacles or lighting. The building may be surrounded by poor or sub-optimal bat foraging habitat. Trees on site contain limited features suitable for roosting bats with some ivy cover or some loose bark but no obvious cracks or fissures.

Moderate – on-site habitat of moderate quality, providing all of the key requirements for bat presence, but no evidence of bats found. Local returns form the data search with some suitable surrounding habitat. However the likelihood of occurrence may be limited due to small habitat area, habitat severance or levels of disturbance. The building or defined section of the building has some features

which are suitable for roosting bats, which are of brick or stone construction with a small number of features of potential value to roosting bats, such as loose roof or ridge tiles, gaps in pointing, gaps under fascia boards, and/or warm sealed roof-spaces with under-felt. These may be used as occasional or transient roosts in the summer, but are unsuitable for large colonies. Trees on site contain some features suitable for roosting bats such as cracks or fissures or large amounts loose bark, and are predominantly semi-mature or mature specimens.

High – on-site habitat of high quality but no evidence of bats found. Local records suggest the site is within/peripheral to a national or regional stronghold. Good quality surrounding habitat and good connectivity. The building or defined section of the building has a large number of features or extensive areas of obvious potential for roosting bats. They are located in sheltered locations with a stable temperature regime a number of suitable bat-access points, and could be suitable for a maternity roost. Tree contains features that are highly suitable for roosting bats, such as woodpecker holes, large cracks or crevices, and may have a hollow trunk.

Confirmed Roost - Presence confirmed from the current survey or by recent confirmed records. The building, defined section of the building or tree were found to contain conclusive evidence of occupation by bats, such as bat droppings.

3.4. Limitations

Conditions were good at the time of the survey with particularly mild weather at the time of the survey and not considered to pose a constraint to the survey. It is acknowledged that general bat activity is lower in mid March; however it is considered that the preceding mild period will have been sufficient to encourage some post hibernation foraging activity.

The exterior was thoroughly inspected using high powered binoculars at the time of the survey, including the south porch and north transept. Internally, the nave and chancel roof were inspected again using high powered binoculars and a section of the eastern chancel roof was inspected from a ladder. However it was not possible at the time of the survey to internally inspect the tower, due to access issues. This is not considered a significant constraint to this appraisal due to the distance and elevation of the tower from the working area.

It should be acknowledged that bats are highly mobile and may move between different roost sites throughout the year. In addition, new features such as cracks, crevices or openings may appear at any time. Hence the results of this survey are considered to be valid only at the time the survey was conducted.

No other constraints have been identified.

4.0. Results and Ecological Baseline

4.1. Desk Study

4.1.1. Statutory Designated Sites

The following statutory designated wildlife sites have been identified within 2km of the proposed development site. Details relating to these sites are provided in Table 1.

Table 1 – Statutory sites identified within 2km of the site.

Site & Designation	Grid Ref (closest point within search area)	Brief Description	Approximate distance (m) and direction from site
Solent Maritime (SAC)	SU 727008	The Solent encompasses a major estuarine system on the south coast of England with four coastal plain estuaries (Yar, Medina, King's Quay Shore, Hamble) and four bar-built estuaries (Newtown Harbour, Beaulieu, Langstone Harbour, Chichester Harbour).	975m NE
Chichester and Langstone Harbours (SPA and RAMSAR)	SZ729 999	Large, sheltered estuarine basins comprising extensive sand- and mud-flats exposed at low tide. The mud-flats are rich in invertebrates and also support extensive beds of algae. The basin contains a wide range of coastal habitats supporting important plant and animal communities and is of particular significance for waterbirds.	785m E
Gutner Point (LNR)	SU733 013	Grassland, saltmarsh and inter-tidal mudland extending into Chichester Harbour.	1750m NE
Langstone Harbour (SSSI)	SU710 005	Langstone Harbour is a tidal basin which at high water resembles an almost landlocked lake. At low water extensive mud flats are exposed, drained by three main channels which unite to make a common and narrow exit to the sea. The harbour includes one of the largest areas of mixed saltmarsh on the south coast.	1255m WNW
Chichester Harbour (SSSI)	SZ730 999	A large estuarine basin in which at low water extensive mud and sandflats are exposed, drained by channels which unite to make a common exit to the sea. The site is of particular significance for wintering wildfowl and waders.	805m E
Sinah Common (SSSI)	SZ716 988	Sinah Common SSSI comprises a complex of maritime habitats which extend for over 2km eastwards from the south-western extremity of Hayling Island, Hampshire. Sinah Common supports brackish communities overlying wet sand, on the site of old mineral workings.	1315m SSW

Sites of Special Scientific Interest (SSSI) are sites of national nature conservation or geological importance and are declared under section 28 of the Wildlife and Countryside Act 1981.

Special Protection Areas (SPA) are sites of international importance for birds and are designated under the EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (the Habitats Directive).

Special Areas of Conservation (SAC) are sites of international nature conservation importance and are designated under the EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (the Habitats Directive).

RAMSAR are Wetlands of International Importance designated under the Ramsar Convention. The Ramsar Convention is an international agreement signed in Ramsar, Iran, in 1971, which provides for the conservation and good use of wetlands. The UK Government ratified the Convention and designated the first Ramsar sites in 1976.

4.1.2. Non-Statutory Designated Sites

The following non-statutory sites were identified within 1km of the proposed development site. Details relating to this site are provided in Table 2. Sites of Importance for Nature Conservation (SINC) are selected by a Local Sites Panel comprising representatives from Natural England, Hampshire and Isle of Wight Wildlife Trust and Hampshire County Council Ecology Group. This designation is applied to all known sites which meet the selection criteria. These sites are non-statutory and are protected through the planning system.

Table 2 – Non- statutory sites identified within the vicinity of the site.

Site	Designation	Brief Description	Location	Grid Reference
Saltmarsh Lane E	SINC 6B	Designated as the site supports a population of dark-bellied Brent goose (*Branta bernicla bernicla*) which is a UKBAP species.	950m W	SU71100000
Landfill Meadow	SINC 6B	Designated as the site supports pale flax (Linum bienne) a county scarce species.	980m WNW	SU71300050
South of Daw Lane H	SINC 6B	Designated as the site supports a population of dark-bellied Brent goose (*Branta bernicla bernicla*) which is a UKBAP species.	600mNW	SU71700060
Hayling Secondary School Playing Field	SINC 6B	Designated as the site supports a population of dark-bellied Brent goose (*Branta bernicla bernicla*) which is a UKBAP species.	150m E	SU72500020
Pound Marsh B	SINC 6B	Designated as semi-natural coastal and estuarine habitat which supports a population of dark-bellied Brent goose (*Branta bernicla bernicla*) which is a UKBAP species.	800m NE	SU72590089
Mill Rythe Lane Saltmarsh	SINC 4A/6B	Designated as the site supports a population of dark-bellied Brent goose (*Branta bernicla bernicla*) which is a UKBAP species.	990 NE	SU72700100
Tournerbury Farm A	SINC 6B	Designated as the site supports a population of dark-bellied Brent goose (*Branta bernicla bernicla*) which is a UKBAP species.	500m ENE	SU72900030
Tournerbury Farm B	SINC 6B	Designated as the site supports a population of dark-bellied Brent goose (*Branta bernicla bernicla*) which is a UKBAP species.	500m ENE	SU73200020

SINC – Site of Importance for Nature Conservation .The aim of the selection process is to identify sites that support the most important habitats and species in Hampshire.

4A/6B	Semi-natural coastal and estuarine habitats which regularly supports a significant population of a species which has a restricted distribution or has substantially declined in population or range	6B	The site regularly supports a significant population of a species which has a restricted distribution or has substantially declined in population or range

The full SINC designation criteria and be found at http://www3.hants.gov.uk/hbic-sinccriteria.pdf

4.1.3. Bat Species Records

A review of the National Biodiversity Network (NBN) and data provided by Hampshire Biodiversity Information Centre was undertaken to identify any historic records of bats within the vicinity of the development site. Results were limited to those that were 20 years old or less. Details relating to these protected species are provided in Table 3.

The closest bat sightings were for pipistrelle and brown long eared bats within the church grounds (SU722000). It is likely that these records relate to the survey undertaken by Natural England's volunteer bat worker in July 2010. There are also a number of records within the 1km grid square (SU7200) of the church.

Table 3 – Records of bats identified within 2km of the site

Species	Protection Status	Record Details
Serotine *(Eptesicus serotinus)*	A, B, C & D.	Single record at SU72 00
Bechstein's Bat *(Myotis bechsteinii)*	A, B, C & D.	16 records in total SU70 00
Brandt's Bat *(Myotis brandtii)*	A, B & D	Single record at SU70 00
Daubenton's Bat *(Myotis daubentoni)*	A, B & D	Four records at SU70 00
Whiskered/Brandt's Bat *(Myotis mystacinus/brandtii)*	A, B & D	6 records at SU70 00 Single record at SZ72 98
Natterer's Bat *(Myotis nattereri)*	A, B & D	10 records at SU70 00
Pipistrellus *(Pipistrellus)*	A, B & D	Four records at SU70 00, and single records at, SU722 000, SU726 000, SZ713 997, SZ715 993, SZ724 986, SZ725 992, SZ725 999, SZ728 986, and SZ733 989.
Common Pipistrelle *(Pipistrellus pipistrellus)*	A, B, C & D	Single record at SU70 00 and SZ730 991
Soprano Pipistrelle *(Pipistrellus pygmaeus)*	A, B, C & D	Single record at SU70 00
Plecotus *(Plecotus)*	A, B & D	Single record at SZ716 994
Brown Long-eared Bat *(Plecotus auritus)*	A, B & D	Twelve records at SU70 00 and a single record at SU722 000

A. **Conservation (Natural Habitats) Regulations 2010** – Offence to damage, destroy or obstruct access to any place a bat uses for shelter or protection, whether it is occupied by bats at the time or not, or to disturb a bat whilst it is in such a place. It is also an offence to intentionally or recklessly kill, injure or handle a bat, or to possess a bat whether dead or alive.

B. **Wildlife and Countryside Act 1981 (as amended) Schedule 5 (Full)** – Intentional killing, injuring, taking, possessing, disturbing and selling (including parts and derivatives) as well as damaging, destroying or obstruction any structure or places of shelter or protection are prohibited.

C. BAP Priority Species in Hampshire

D. **BAP Priority Species within the UK.** The UK Biodiversity Action Plan lists Priority species for conservation in the UK. The species list was reviewed and extended in 2007. The list of Species of Principal Importance was originally published under Section 74 of the Countryside and Rights Way Act 2000, and carried forward into the NERC Act 2006. It is referred to in PPS9 and other guidance.

4.2. Field Survey Results

4.2.1. General

The church was in good condition and had been subject to significant internal and external renovation and maintenance work in the recent past. Internally, the floor in the nave and chancel had been replaced recently, with the replacement of the under floor heating system, and electrical wiring and lighting work. Externally, the pointing in the stone work throughout the building was well maintained and in excellent condition, as was the roof and flashing.

4.2.2. Building Survey - Exterior

The proposed north room is located to the north of the church building, adjoining to the northern elevation accessed through an existing door. As a result of the self contained design of the proposed north room, the area of the new building that will be attached to the northern elevation of the church is little more than the width of the existing door, minimising the impact on the existing church wall. The area around the proposed north room on the northern elevation was carefully inspected for signs of bats or bat use. The pointing in the stonework was in excellent condition throughout the entire northern elevation, with no cracks or crevices present. In addition, the nature of construction of the church wall results in a lack of wall cavity, eliminating the possibility of crevice dwelling bats roosting within a wall cavity.

The roof and roof tiles were again in excellent condition, with no slipped tiles evident anywhere on the main roof of the church. The flashing was also in good condition and generally flat against the tiles. However, there were two missing tiles and a single slipped tile on the roof of the north transept on the western side. These were carefully inspected and no signs of use of bats were identified, such as staining or entry marks, and were covered with cobwebs at the time of the survey. However these openings were considered to be broadly suitable for crevice dwelling bats. Close to the ridge on the main nave roof were a number of lines of vented tiles running along the length of the roof. These were again thoroughly inspected with high power binoculars and no signs of bat use were identified at the time of the survey. However there is some potential for them to be used either by crevice dwelling bats, or as an entry point to the interior of the church.

The eaves on the nave and north transept roof were examined. No enclosed soffit was present, with the roof rafters exposed under the eaves. The joints between the roof rafters and the stone wall were pointed and sealed, with the upper sections under the eave filled in with render. There was also evidence of roof felt under the tiles on the roof. Hence there was little opportunity for crevice dwelling bats to utilise the eaves for roosting, or to enter the church through the eaves.

There was a metal mesh, of approximately 25mm square grid, on all the windows throughout the church, and all window glass was intact. The church tower contained a louvered opening/ window on each side above the apex of the nave. It was confirmed by the Church Warden that there was no mesh behind the louvers, allowing access to the interior of tower and the chancel roof space. The louvers were inspected from the ground by high powered binoculars, and no sign of use of bats was identified. However the distance and bright sunlight made this assessment inconclusive.

The southern elevation of the church, which is dominated by a mesh covered stained glass window, was in good condition, with pointing intact throughout and no points of entry identified. The roof bargeboards were intact and located on the edge of the roof battens. The battens and exterior rafter was exposed with no soffit present, with the joint between the wall and eave rendered and intact, offering no possibility of entry. The western elevation was of similar construction, with no point of entry identified.

The southern elevation, on the far side of the church to the proposed development, was of identical construction and condition to the north elevation. The stonework pointing was in good condition throughout and the roof tiles intact and in place. The same vented tiles running along the length of the roof were present, and although considered to offer some potential for crevice dwelling bats, they were carefully examined and no sign of bat use identified.

The main entrance porch is located on the southern elevation, which consisted of an apex roof with felt underlying clay tiles and with wooden walls. The interior of the roof was of open construction and provided no cavities or openings for roosting bats. However, a single swallow (*Hirundo rustica*) nest was identified. On the southern elevation of the tower roof, there were a number of wooden boards missing that should seal the wall to the eaves. Although difficult to identify from the ground, this may provide an opportunity for entry into the tower roof, although this was unable to be confirmed due to the distance and bright sunlight.

4.2.3. Building Survey - Interior

The interior of the building was surveyed. The floor, walls, window sills, and furniture were inspected for any signs of bats, in particular droppings or feeding remains. Particular attention was paid to areas that were at a higher level or not subject to regular cleaning. No signs of bats were identified. The roof was inspected from the ground using high powered binoculars, and again no signs of use by bats were identified. A section of the chancel roof was available for aerial inspection at the time of the survey via scaffolding, as lighting was being installed along in the chancel roof. The southern section of the underside of the roof and wall lintel was examined. A number of old pipistrelle bat droppings were identified on the wall lintel, which had been there a period of time and were covered in dust and cobwebs. In addition, a single pipistrelle dropping was found on the wall immediately below the wall lintel, which was relatively fresh. Hence in line with the previous survey undertaken by the Natural England volunteer bat worker, pipistrelle bats were confirmed to be using the church (Adebisi 2010).

4.2.4. Tree Survey

A single yew tree will require removal to facilitate the proposed construction of the north room. The tree is estimated to be approximately 150-200 years old, based on a previous arboriculture assessment in October 2008 (Rushforth 2008), and the presence of a grave immediately adjacent to the tree which dates from 1810, which had to be moved to allow the tree to grow. The tree is estimated to be 7-8m in height and is subject to a Tree Preservation Order (T11 on the plan in Appendix 9.3).

The tree had some dense ivy cover, although not sufficient to prohibit a thorough examination. As is typical with yew trees, the trunk showed some contortion, which resulted in a number of small and shallow crevices. Where accessible these were very carefully inspected with an endoscope, and no evidence to suggest use by bats was identified. All were subject to rain intrusion arising from the upward angle of the emergent branches, creating a damp crevice which is considered unsuitable for use by bats. In addition, although bats are known to use yew trees, particularly very old yew trees, they are not generally favoured by bats due to their inherent structure and toxicity.

The trees in the vicinity of the proposed development were also assessed, although they will not be directly affected by the proposed development. There was a semi mature oak (*Quercus robur*) and cherry (*Prunus spp.*) which was assessed as having a negligible value to roosting bats due to their age and structure. The remaining trees within 50m of the development site were yew trees, and of similar age and structure of the yew that would be affected by the proposed development. None of the trees were identified as having features of potential value to roosting bats and were assessed as having a low to negligible value to roosting bats.

4.2.5. Wider Area

The development area is located on the northern section of the churchyard and is surrounded by trees which offer some suitable foraging opportunities. Residential properties lie further to the north and to the south which are subject to noise and light disturbance from Church Road and unlikely to be utilised by bats for foraging. To west of the church and the development site lies arable and pasture fields, bordered by intensively managed hedgerows. This offers good foraging opportunities and connectivity to the wider area, and particularly to the extensive sand and mud flats of Langstone Harbour SSSI, and a number of SINC sites including Saltmarsh Lane and Landfill Meadow, all of which offers good foraging and roost opportunities for bats. To the east of the site there is some connectivity across Hayling College towards the School Playing Field SINC to Pound Marsh SINC and Mill Rythe Lane Saltmarsh SINC, and beyond to Chichester Harbour SSSI.

5.0. Legislative and Planning Context[1]

5.1. Legislation and Policy

5.1.1. The Conservation of Habitats and Species Regulations 2010

The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. All bat species are listed under Schedule 2, Regulation 39(1) as a European protected species.

39.—(1) It is an offence–

(a) deliberately to capture or kill a wild animal of a European protected species;

(b) deliberately to disturb any such animal;

(c) deliberately to take or destroy the eggs of such an animal; or

(d) to damage or destroy a breeding site or resting place of such an animal.

(2) It is an offence to keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European protected species, or any part of, or anything derived from, such an animal.

(3) Paragraphs (1) and (2) apply to all stages of the life of the animals to which they apply.

5.1.2. Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive). All UK native species of bats are listed under Schedule 5, and receive full protected under Section 9 (1,2,4a & 4b, 5).

Section 9(1) – intentional killing, injury or taking.

Section 9(2) – processing and controlling.

Section 9(4a) – damaging, destroying or obstructing access to any structure or place used by the animal for shelter or protection.

Section 9(4b) – disturbing an animal whilst it is occupying any structure or place used for shelter or protection.

[1] Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the Appendix.

Section 9(5) – selling, offering for sale, possessing or transporting for sale or advertising for sale of any live or dead animal, part of or derived from.

5.1.3. Biodiversity Action Plans

The UK Biodiversity Action Plan (UKBAP) (Anon, 1995) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with all listed species/habitats having specific action plans defining the measures required to ensure their conservation. All UK native bats species are listed as National BAP species, and have comprehensive Action Plan in place with associated targets for conservation.

Regional and Local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels.

5.1.4. Planning Context

The Biodiversity Action Plan species which the Government expects to be considered in planning applications are those listed in Section 41 (in England) of the Natural Environment and Rural Communities Act 2006. These are the species found in England which have been identified as requiring action under the UK BAP, and hence includes all UK native bat species.

Planning Policy Statement 9 (PPS9) and its accompanying document ODPM 06/2005 sets out current government policy on biodiversity and nature conservation. This places a duty on the Planning Authority to make the effect of a development on protected species (and habitats) a material consideration when considering planning applications. PPS9 also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within a development.

6.0. Ecological Evaluation and Identification of Potential Impacts

6.1. Evaluation

Evidence from this survey, in addition to that conducted by the Natural England volunteer bat worker, confirms that the church is in currently use by pipistrelle bats. As only a single fresh dropping was found, and a number of older droppings, it appears that the interior of church is in by use by only a small number of bats. Although no evidence of use of the church by brown long-eared bats was identified from this survey, evidence of use was discovered during the previous survey and hence they may still use the church. In addition, based on the results of the desk study, it is also considered likely that a number of bats species are present within the wider area surrounding the church.

Based on the lack of crevices and openings within the walls and under the eaves of the church on all elevations, it is considered that bats are likely to be accessing the interior of the church either through the louver opening in the tower, or through the vented tiles on the nave roof. No opportunities were identified for crevice dwelling bats to be roosting within the interior walls of the nave or chancel of the church, due to the absence of a wall cavity and intact nature of the stonework pointing, although there is some limited potential in the chancel roof.

Although it was not possible to inspect the interior of the tower at the time of the survey, is it likely to be the optimal location for any bats roosting in the church, due to direct exterior access to the tower through the louvered vents. In addition, the potential for access through the tower into the chancel roof space, make it suitable for brown long-eared bats, which need interior flight space in the vicinity of their roosts.

No bats or evidence of bats was identified in the area of the northern elevation that will affected by the development. Based on the lack of roosting and access features this area, together with the distance from the tower, the area of the northern elevation that will affected by the proposed development is considered to offer low potential for bats.

The single yew tree that will require removal to facilitate the proposed construction of the north room had a number of small and shallow crevices, which were subject to rain intrusion arising and considered unsuitable for use by bats. No evidence of bats roosting in the tree was identified, although it is likely to offer some value to foraging bats; however this is unlikely to be significant given the number of similar trees in the immediate surrounding area. It is considered that the tree has low to negligible value to roosting bats.

6.2. Site Status Assessment

The tower of the church, interior of the nave and the chancel is likely to be providing roosting opportunities for a small number of bats, notably pipistrelle and brown long-eared bats. There is also a potential for a small number of crevice dwelling bats to use the vented roof tiles or the missing and slipped tiles on the roof of the north transept. Hence it is considered that these parts of the church are of value to the local bat population. The churchyard, trees and immediate surrounding area is also likely to offer some value to foraging bats.

In relation to the proposed development of the north room, the area of the north elevation of the church that would be affected by the proposed development is considered to offer low potential for bats, and hence is unlikely to offer any value to the local bat population.

6.3. Potential Impacts

Short Term Impacts

No bats or evidence of bats was identified in the area of the northern elevation that will affected by the development. Hence it is considered highly unlikely that the proposed development will result any direct impact on either roosting bats or bats accessing the interior of the church. However, there is the potential for some disturbance to occur during the construction of the north room, to bats that use other parts of the church building.

Although the yew tree is considered as having low to negligible to low value to roosting bats, it is likely to offer some value for foraging bats. Hence the loss of the yew tree is likely to have a low but negative impact on foraging bats in the short term.

Long Term Impacts

It is considered that, in the long-term, there should be no negative results from the development relating to bats, providing that the mitigation and enhancement measures proposed below are implemented.

7.0. Recommendations for Further Surveys, Mitigation and Enhancement

7.1. Recommendations for further work

Given the absence of suitable features within the area of the northern elevation that will affected by the development, no further survey work is considered necessary in relation to the proposed work.

However, should the design or footprint of the proposed north room significantly change, or a considerable time elapses before construction work commences, a further survey may become necessary.

7.2. Proposed Mitigation

It is recommended that the following mitigation is implemented.

- The working area should be clearly defined and protected by Heras fencing (or similar) to protect the adjoining areas.

- During construction activities disturbance, particularly noise and vibration, should be minimised. Low noise and low vibration machinery should be chosen, and work should only be carried out during normal working hours. Generators or other similar equipment should be sited as far from the church building as possible. This is to minimise the potential for disturbance on bats that may be using other parts of the church.

- Although the area affected by the proposed development is considered to offer low potential for use by bats, it should be acknowledged that bats are highly mobile and may move between different roost sites throughout the year, and the condition of church could deteriorate creating new suitable roosting features. Hence it is recommended that a precautionary method of working is be followed, should it be necessary to remove any roof tiles or undertake work to the eaves to join the new north room to the northern elevation of the church.

  The working area should be inspected by a qualified ecologist and the roof removed by hand to minimise the likelihood of killing or injuring bats. The roof tiles should be carefully removed by hand. Any hanging tiles, eaves, or lead flashing should also be dismantled by hand. If bats or signs of bats are discovered, further work to that building must cease until an ecologist consulted is for further advice.

- Work should be undertaken whilst bats are active, which is generally between March and October. Work during the winter months is not recommended, but if required should only be undertaken under favourable weather conditions (when the temperature is above 10ºC and dry). This is to minimise the risk of mortality of bats if they are discovered.

- If possible, the use of artificial exterior lighting of the proposed north room should be avoided to eliminate the potential impact on bats. If this is not possible, low level, directional low pressure sodium lighting is recommended, with only the minimum light levels required to meet health and safety standards used. Research has found that bats are sensitive to artificial lighting and that excessive lighting can delay bats from emerging, thus shortening the time available for foraging, as well as causing bats to move away from suitable foraging grounds or roost sites to alternative dark areas (Jones 2000). Lighting should be directed to where it is needed with

minimal light spillage. This can be achieved by limiting the height of the lighting columns and by using as steep a downward angle as possible and/or a shield or hood that directs the light below the horizontal plane (Jones 2000; Hundt L (2012)). Artificial lighting should not directly illuminate any potential bat roosting features or habitats of value to foraging or commuting bats.

- All site staff should be briefed on the potential presence of bats, and be made aware that bats may be present, particularly under roof tiles or within cracks and crevices. They should also be briefed on the legal protection afforded to bats, and instructed to stop work immediately should a bat be discovered and to report it to the site manager and ecologist.

- Although the tree is considered to have a low to negligible value to roosting bats, as a precaution it is recommended that the ivy is removed from the tree, and that the tree is sectionally felled and the limbs lowered to the ground. The cut timber should then be left for 2 -3 days before being removed to allow for any bats to escape. If bats or signs of bats are discovered, further work to the tree must cease until an ecologist consulted is for further advice.

- It is recommended that a minimum of two replacement yew trees are planted within the churchyard to mitigate for the loss of the yew arising from the development. Ideally these trees should be planted in a location that allows for maximum use by foraging and commuting bats.

7.3. Ecological Enhancements - Bats

- Bat boxes such as Schwegler summer bat boxes (e.g. 1FF, 1FS, 2F and 2FN) and Bat bricks or bat tubes (e.g. Schwegler woodcrete Brick Box Type 27 for bats or 1FR Bat Tubes) could be installed within the new building to provide artificial roost sites for crevice dwelling bat species.

7.4. Other issues

The area of the proposed north room is generally suitable for common reptiles, due to the presence of rough grassland, refugia and suitable basking and foraging opportunities, particularly around the gravestones in poorer condition. All common native reptile species receive legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), making it an offence to intentionally or recklessly kill or injure these animals.

To minimise risk of encountering reptiles, it is recommended that a destructive search is undertaken by a qualified ecologist between March and September inclusive, when reptiles are active, immediately prior to vegetation clearance. All suitable reptile refugia within the working area should be searched by the ecologist and removed from the working area. Once all suitable refugia have been removed, any areas of long grass or scrub should be cut down using a hand held strimmer to 200mm above ground level. By removing suitable habitat, should any reptiles be present they would be displaced from the working area into the suitable adjacent habitat. The site should then be left a number of days for any reptiles to move away. Once suitable reptile habitat within the working area has been removed, construction activity can commence. Should any reptiles be found within the working area during the construction period, all work at that location will be stopped until the reptiles have moved away from the site.

The yew tree offers suitable habitat for nesting birds. All nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended). Therefore, the removal of any habitat that could support nesting birds must take place outside the bird-nesting season (mid March to August inclusive).

Where vegetation removal cannot be achieved outside bird nesting season, all vegetation clearance should be carried out under the supervision of an on-site ecologist. This will ensure that checks for wild

nesting birds, their eggs, nests or young are undertaken before work is permitted to commence. Should nesting activity be detected, all work at that location should stop and be rearranged until all young birds have fledged or nesting activity ceases.

8.0. References

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Mitchell-Jones, A.J. & McLeish, A.P. [Eds.] (2010) *The Bat Workers Manual* (4th edition). Joint Nature Conservancy Council, Peterborough.

Stace, C. (1997) *New Flora of the British Isles* (2nd edition). Cambridge University Press, Cambridge.

www.magic.gov.uk (Accessed 26/3/2012)

www.nbn.org.uk (Accessed 26/3/2012)

Web addresses for access to full UK legislation and policy text:

Conservation of Habitats and Species Regulations 2010: http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1

Habitats Directive: www.europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0043

Birds Directive: eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en

Wildlife and Countryside Act 1981: www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

Countryside and Rights of Way Act 2000: www.legislation.hmso.gov.uk/acts/acts2000/20000037

Natural Environment and Rural Communities Act 2006:
http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

National Parks and Access to the Countryside Act 1949:
http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga_19490097_en_1

Planning Policy Statement 9: www.communities.gov.uk/documents/planningandbuilding/pdf/147408

9.0. Appendix

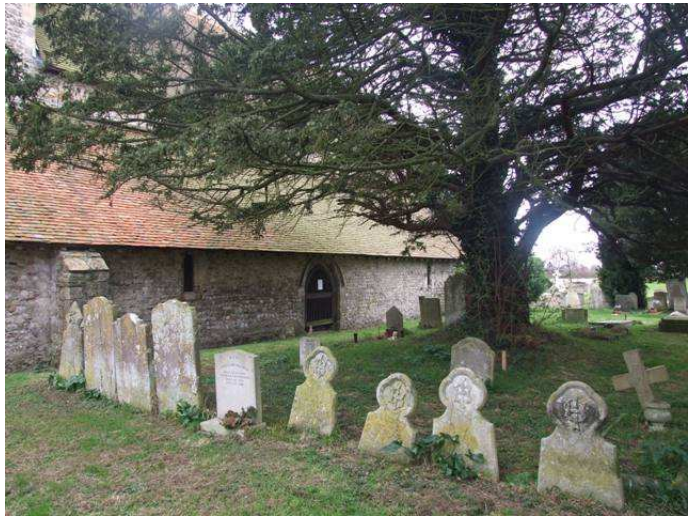
9.1. Site Photographs



Photograph 1: View of the proposed working area and north elevation.



Photograph 2. Looking south towards the working area.



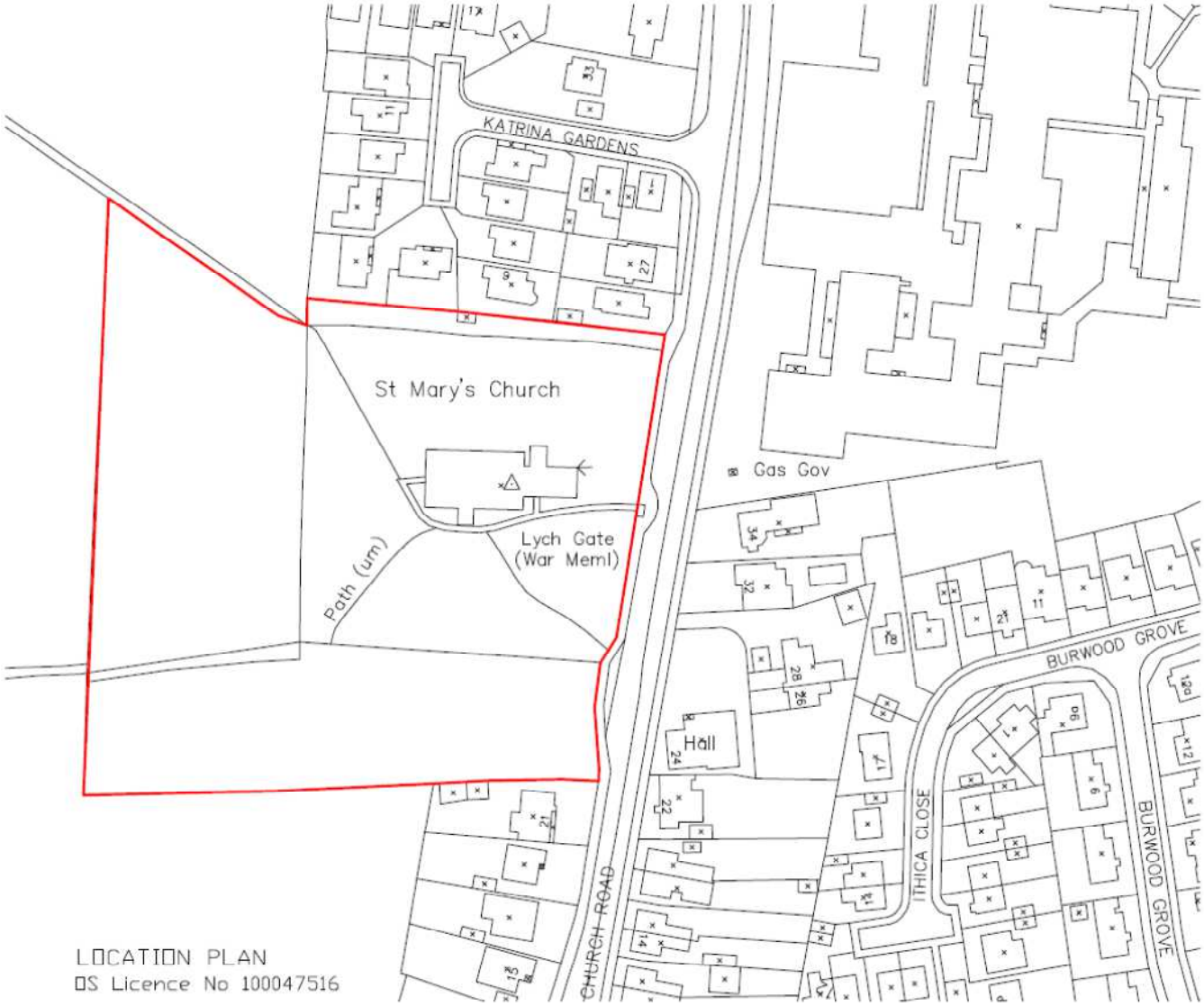
Photograph 3: View of the working area looking southwest.



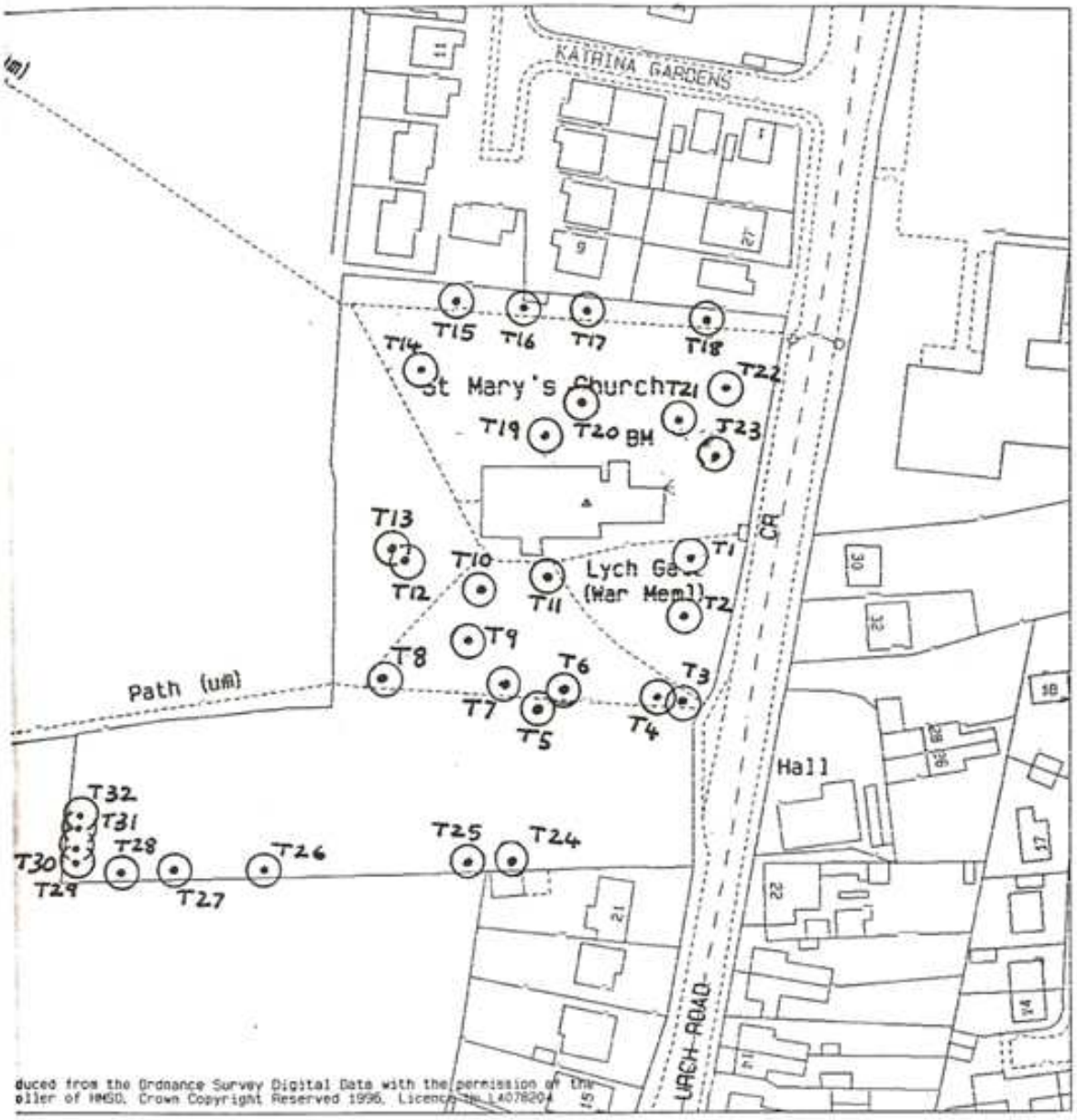
Photograph 4. View along the north elevation of the church.

	
Photograph 5. View of construction of the eaves with exposed rafters.	Photograph 6: The north transept with the slipped and missing tiles evident.

9.2. Site Location Plan



9.3. Tree Location and Preservation Order Plan

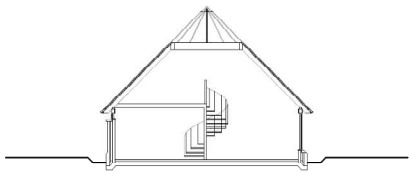


T1, T23	BEECH	Fagus sylvatica
T2-T4, T6-T8, T11-T20, T22	YEW	Taxus baccata
T5, T9	OAK	Quercus spp.
T10	CHERRY	Prunus spp.
T21	IRISH YEW	Taxus baccata var. fastigiata
T24, T25	MONTEREY PINE	Pinus radiata
T26-T32	PINE	Pinus nigra var.

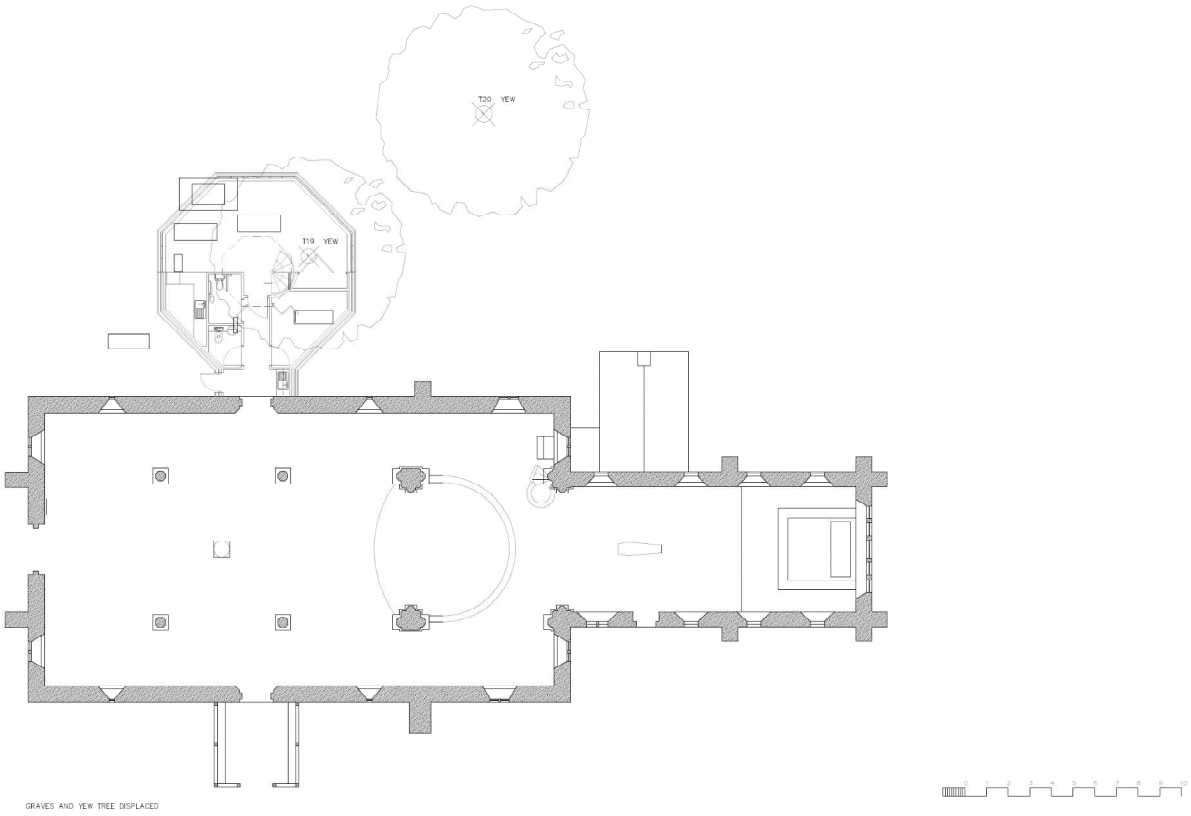
9.4. Proposed Site Plan



SOUTH ELEVATION – PROPOSED (viewed from link)



SECTION – PROPOSED



GRAVES AND YEW TREE DISPLACED