

# THE CHURCH OF ST PETER, WALPOLE, NORFOLK



## BAT MANAGEMENT PLAN

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DOCUMENT HISTORY				
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## THE CHURCH OF ST PETER – WALPOLE, NORFOLK BAT MANAGEMENT PLAN

### 1.0 EXECUTIVE SUMMARY

1.1 Philip Parker Associates Ltd have been instructed to undertake bat surveys and provide advice for mitigation/management options at the Church of St Peter, Walpole, Norfolk as part of the Heritage Lottery project (HLF). This report provides a summary of the surveys undertaken and mitigation/ management options to be considered.

1.2 Surveys at the church were undertaken as follows:

- 27<sup>th</sup> May 2021 (emergence)
- 12<sup>th</sup> July 2021 (emergence)
- 13<sup>th</sup> July 2021 (re-entry)
- 11<sup>th</sup> August 2021 (emergence)

1.3 The 2021 surveys confirmed the presence of the following:

**Soprano pipistrelle** – Peak count of 88 bats recorded on the 11<sup>th</sup> August 2021. The bats moved between roosts in the south aisle and the nave roof timbers (predominantly in the south aisle where the roost moved on each survey). The bats largely accessed via the north aisle eastern window with small numbers over the southern and western doors.

**A proven maternity roost but of a smaller scale compared to many others in Norfolk churches and therefore of local value.**

**Common pipistrelle** – Peak count of 11 bats recorded on the 12<sup>th</sup> July 2021. Roosting within the nave and north aisle roof timbers across the surveys. Mainly accessing over the western door with smaller numbers over the southern door and north aisle eastern window.

**Likely day roosts given the spread of roosting locations, but a small maternity roost cannot be completely discounted.**

**Brown long-eared** – Peak count of 3 bats recorded on the 11<sup>th</sup> August 2021. Roosting within the chancel roof timbers but also the aisles across the surveys. These accessed via the north aisle eastern window.

**Likely day roost of local value.**

1.4 Mitigation options presented for consideration are as follows. These were discussed at a meeting with the PCC, the church architect (Katie McAndrew of Hutton and Rostrom) and Diana Spencer of the Bats in Churches Project to find a set of potential solutions for consideration. The main comment at the meeting was the positioning of any pole within the churchyard which would require careful consideration. Following the meeting, David Galloway (PCC) stated that the canopy over the kitchen had been discounted as they would prefer a full exclusion.

1.5 The use of ultra sound and rafter boxes in the south aisle was not discussed at the meeting but has been added as an additional proposal.

a) **Manage the bat impacts**

Protecting vulnerable items inside the church by covering vulnerable items of significance within the church (eg brasses, south aisle screen, kitchen, organ pipes

b) **Create no-fly zones within the church**

The use of acoustic deterrents has been considered to deter bats from flying in certain areas. This is unlikely to be successful as the items of significance are spread across the church. The principal roosting area is in the south aisle and nave whilst the principal access is in the north aisle. However, the use of a deterrent in the kitchen area as an interim measure may be worth considering. It should be noted that they can only be used at certain times of the year.

c) **Create alternative roosting areas externally on the church and exclude bats from the church.**

Proposals include a heated bat box over the north aisle east window utilising the existing principal access, rafter boxes in the south aisle at the location of the existing roost areas (additional proposal) and provision of new access points through the south aisle wall, boxes on the south aisle buttresses to mirror the structure of the church and a separate pole mounted maternity box

d) **Bat nights and interpretation**

1.6 The Bats in Churches Project have limited funds to be able to advise with this mitigation but will provide links to external funders who may be able to assist further. Philip Parker, through the Norfolk Bats in Churches Project, will be able to provide further assistance into the future.

## 2.0 INTRODUCTION

### 2.1 GENERAL

Philip Parker Associates Ltd (via Wildwings Ecology) have been instructed to undertake bat surveys and provide advice for mitigation/management options at the Church of St Peter, Walpole, Norfolk as part of the Heritage Lottery project (HLF) by formulating a Bat Management Plan (BMP).

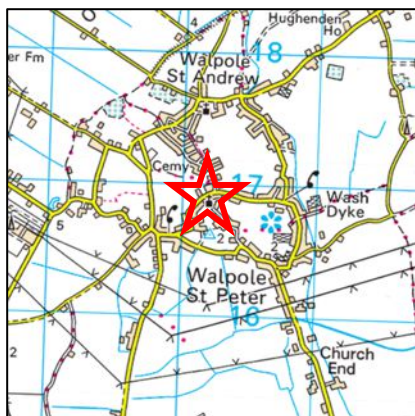
2.2 The brief for the project states that the BMP should include the following:

- Full ecological report with a summary of bat survey data and a complete picture of how bats are utilising the church.
- Floor plans of the church, internal and external photographs, roost locations, and entry/exit points identified for each species.
- Assessment of the heritage impacts caused by bats. Please reference the Statement of Significance and any associated reports on the impact of bats on church heritage.
- Presentation of all bat management options considered and the reasons why non-favoured options were rejected. Favoured option to be presented in detail and, as far as possible, fully costed (including all works and monitoring).
- A record of meetings, consultations and responses presented to the PCC, Diocesan Advisory Committee or Churches Conservation Trust, Historic England, architect, heritage organisations etc.
- Details of licensing requirements and justifications under the BICCL.

2.3 This report provides the information as required by the Bat Mitigation Plan.

### 3.0 SUMMARY OF EXISTING INFORMATION RELATING TO BATS AT THE CHURCH

3.1 The church of St Peter, Walpole, Norfolk is located at OS Map grid reference; TF 50213 16879.



**Figure 1 – Location plan**  
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Ordnance Survey



**Figure 2 - Aerial photograph**  
Imagery © 2021 GeoEye, Getmapping plc,  
Infoterra Ltd & Bluesky

### 3.2 HISTORY OF BAT USE AT THE CHURCH OF ST PETER, WALPOLE

A physical and Stage 1 Investigation Works have been previously undertaken at the church in 2011 to provide advice as part of the repair works to the chancel. These were followed up by a single emergence and re-entry survey. A summary of the bat evidence is given in Table 1 below.

**Table 1 A summary of surveys undertaken at the Church of St Peter, Walpole, 2011- 2021**

Date	Survey Type	Coverage	Species	Location
19 <sup>th</sup> April 2011	Stage 1 Investigation Works	Internal	1 Pipistrelle sp	Gap between the timber roof and the chancel arch (chancel side) Dropping concentrations were confirmed adjacent to some of the timber uprights and also on the wall tops, suggestive of some roosting activity
31 <sup>st</sup> August 2012	Emergence	External and internal	Soprano pipistrelle	Main access through north-eastern missing windowpane Secondary access over west tower door
			Common pipistrelle	Main access through north-eastern missing windowpane Access through south door and west tower door

Date	Survey Type	Coverage	Species	Location
				1 bat roosting externally in the pinnacle door on the south-eastern corner of the nave
1 <sup>st</sup> September 2012	Re-entry	External and internal	Soprano pipistrelle	2 roosting within the north-eastern corner of chancel  Main maternity roost at east end of south aisle roof  Few bats roosting in nave roof  Main access through north-eastern missing windowpane
			Common pipistrelle	1 externally roosting into south-eastern pinnacle  Access through north-eastern missing windowpane  1 bat roosting internally

3.3 The above surveys were followed up by a pre contract meeting on the 26<sup>th</sup> September 2012. A concentration of bat droppings suggesting a current roosting area internally within the south-western elevation of the north aisle near to the kitchen at the western end of the north aisle were noted.

3.4 Overall, the activity surveys undertaken on the 31<sup>st</sup> August and 1<sup>st</sup> September 2012 recorded a peak count of 55 soprano pipistrelles and 7 common pipistrelles, the main access through the eastern window in the north aisle with a smaller number over the west door. There did not appear to be any pattern in bat use (i.e. mixed species through each location).

### 3.5 LIGHT TOUCH SURVEY

In 2017, the church was put forward as one of the additional churches for the Light Touch Survey and was accepted. The Light Touch Survey was undertaken at the church on the 20<sup>th</sup> September 2017 by Philip Parker Associates to determine the overall impact of bats on the significance of the church, determined through the identification of species through evidence i.e. droppings and utilisation of the building by bats through identifying likely access points and roost sites.

## 4.0 2021 SURVEY METHODOLOGY

### 4.1 GENERAL

Surveys during 2021 were carried out at the church by a team of experienced surveyors, on each occasion led by a licenced bat worker. Surveys were carried out as far as possible following the guidelines given in the Bats in Churches Class Licence.

4.2 This sets out the minimum number and timing of surveys required, as follows:

4.3 At least one dusk survey should be carried out in each of the survey periods identified below with each survey completed at least two weeks apart. In addition, one dawn survey should be carried out in the first period – this can be carried out immediately after the emergence survey.

- Survey 1 May to mid-June
- Survey 2 Mid-June to end July
- Survey 3 August to mid-September

4.4 The timescales were followed apart from the dawn survey being undertaken after the second emergence survey due to the late spring.

### 4.5 SURVEY EQUIPMENT

Surveys have been carried out through the use of the following equipment:

**Table 2 Survey methodology for the 2019, 2020 and 2021 surveys**

Equipment Type	Equipment specifics	Notes	Analysis
Infrared cameras	<b>Infrared cameras</b> Canon XA-10 (2019 - 2021) Canon XA-11 (2019 – 2021) Canon XA-30 (2019 – 2021) Canon XF-400 (2020 – 2021) <b>Thermal imaging camera</b> Guidetrack pro 19	Attached to a rigid tripod for stability (various makes)	Files processed and saved in Photos for MAC programme and saved on 4TB external Western Digital Drives  Videos analysed using Quick Time Player
Infrared lights	A minimum of 2 no infrared lights were used per camera (140 led)	Set on brackets attached a rigid tripod (various makes)	
Additional lighting	Clulite CB2 (million candle power) with additional red filter	Used to provide additional illumination on the preliminary survey and on activity surveys where it is certain it would be an impact on the bats	



Equipment Type	Equipment specifics	Notes	Analysis
Hetrodyne detectors	Batbox Duet detector x 4 Batbox Griffin x 1	Each surveyor was equipped with one or other of these detectors to enable audible monitoring of the bats during the course of the survey	
Static detectors	Anabat Express detector	Each surveyor was equipped with an Anabat Express detector to enable later checking of any recorded data	Calls analysed using Analook or Insight
Camera	Olympus TG5 camera	Used to record images on the preliminary survey	
Binoculars	Leica 8 x 40	Used to inspect for evidence and roosting sites on both the preliminary and activity surveys	
Thermometer	ETI- Hygro - Thermo Pocket sized hygrometer	Used to provide accurate temperature and humidity readings	

#### 4.6 SURVEY METHODOLOGY

Surveys have been undertaken on the following dates using the following surveyors (see Table 3).

#### 4.7 Surveyors who took part in the surveys are listed below. Where the surveyors are licensed, their licence numbers are given.

- Philip Parker 2015-14467-CLS-CLS
- Karl Charters 2015-13353-CLS-CLS
- Naomi Parker 2018-34600-CLS-CLS
- Kate Garner
- Rebecca Easter
- Lisa Gabriel
- Polly Godfrey (placement student)

**Table 3 Summary of surveys undertaken**

Date	Survey Type	Surveyor	Start and finish time	Weather
27 <sup>th</sup> May 2021	Emergence survey	Philip Parker Rebecca Easter Polly Godfrey Karl Charters Kate Garner	20:45 – 22:45	<b>Weather –</b> Dry, warm, still, 10% cc, BF1  <b>Start</b> Ex - Temp – 16c Ex - Humidity – 60%  <b>Finish</b> Ex - Temp – 13c Ex - Humidity – 75%

Date	Survey Type	Surveyor	Start and finish time	Weather
12 <sup>th</sup> July 2021	Emergence survey	Philip Parker Rebecca Easter Kate Garner Polly Godfrey Emily Parker	21:04 – 23:04	<b>Weather –</b> Dry, warm, still, 100% cc, BF1  <b>Start</b> Ex - Temp – 19.8c Ex - Humidity – 56%  <b>Finish</b> Ex - Temp – 15.9c Ex - Humidity – 80%
13 <sup>th</sup> July 2021	Re-entry survey	Philip Parker Kate Garner Rebecca Easter Polly Godfrey Emily Parker	03:00 – 05:00	<b>Weather –</b> Dry, warm, still, 100% cc, BF1  <b>Start</b> Ex - Temp – 193.9c Ex - Humidity – 81%  <b>Finish</b> Ex - Temp – 12.8c Ex - Humidity – 93%
11 <sup>th</sup> August 2021	Re-entry survey	Philip Parker Lisa Gabriel Karl Charters Kate Garner Polly Godfrey	20:13 – 22:13	<b>Weather –</b> Dry, 50% cc, still, BF1  <b>Start</b> Ex - Temp – 19.8c Ex - Humidity – 50%  <b>Finish</b> Ex - Temp – 17.6c Ex - Humidity – 62%

4.8 During the surveys, surveyors were typically located as follows (as shown on Drawing D2):

**Internal**

- Between one to three surveyors internally.

**External**

- One surveyor to the west of the tower covering the door;
- One surveyor to the south-west covering the porch door;
- One surveyor to the north-east covering the north aisle window.

4.9 **Survey constraints**

There were no constraints to the survey.

## 5.0 2021 SURVEY RESULTS

5.1 The results of the 2021 surveys are summarised in the following table and illustrated on Drawing D2 (preliminary ecological appraisal), D4 (activity survey summary) and D5 (summary of roosting and access locations).

**Table 4 Survey results**

Date	Type of survey	Species Roosting	Species, number and description
27 <sup>th</sup> May 2021	Emergence	Common pipistrelle Soprano pipistrelle Brown long-eared	<p><b>Common pipistrelle</b> 8 common pipistrelles were recorded roosting internally at the west end of the north aisle (R5).</p> <p>8 exited the church via A1, 10 via A2 and 2 via A3.</p> <p><b>Soprano pipistrelle</b> 86 were roosting in the church</p> <p>70 soprano pipistrelles, roosting within the timbers towards the west end of the south aisle (R1), 1 soprano pipistrelle roosting at eaves level on the north elevation (west end) of the south aisle. An additional 15 soprano pipistrelle were recorded roosting in the nave but not every individual location was recorded</p> <p><b>Access</b> 80 soprano pipistrelles accessed the church from A1, 5 from A2 and 1 from A3</p> <p><b>Brown long-eared</b> 1 brown long-eared bat was recorded roosting within the chancel (R9). This bat exited the church via A1</p>
12 <sup>th</sup> July 2021	Emergence	Common pipistrelle Soprano pipistrelle Brown long-eared	<p><b>Common pipistrelle</b> 15 common pipistrelles were recorded roosting internally, mainly in the north aisle (R4) but some also in the nave. 5 emerged via A1 and 6 over the west door and 4 over the south door</p> <p><b>Soprano pipistrelle</b> A total of 82 soprano pipistrelles roosting in the church, 59 of which were recorded roosting internally within the timbers towards the north of the south aisle (centrally) R2, 23 were additionally recorded roosting within the nave roof timbers (including near the base of the tower and chancel arch) (R8) although not every roosting location could be recorded.</p> <p>73 soprano pipistrelles accessed from A1, 4 from A2 and 5 from A3.</p> <p>4 bats re-entered by the end of the survey</p>

Date	Type of survey	Species Roosting	Species, number and description
			<p><b>Brown long-eared</b> 1 brown long-eared roosting at the west end of the south aisle towards the southern eaves. Also 1 brown long-eared roosting within a beam at the eastern end of the south aisle</p> <p>Both of these bats exited the church through the eastern end window of the north aisle</p>
13 <sup>th</sup> July 2021	Re-entry	Common pipistrelle Soprano pipistrelle	<p><b>Common pipistrelle</b> An aggregate of 11 bats entered the church during the course of the survey period, 4 via A1 and 7 via A3. During this period bats were constantly leaving and entering, some will still have been in the roost</p> <p><b>Soprano pipistrelle</b> An aggregate of 73 entered the church during the course of the 2 hour survey, 71 via A1 and 2 via A3. During this period bats were constantly leaving and entering, some will still have been in the roost</p> <p><b>Brown long-eared</b> 2 brown long-eared accessed the church via the north aisle, east window before roosting in the chancel</p>
11 <sup>th</sup> August 2021	Emergence	Common pipistrelle Soprano pipistrelle	<p><b>Common pipistrelle</b> 7 bats roosting behind several beams in the north aisle (R7), 3 accessed via A1, 2 via A2 and 2 via A3.</p> <p>Towards the end of the survey, 3 bats had re-entered the church via A2, one of which went to roost in the north aisle.</p> <p><b>Soprano pipistrelle</b> 90 bats were recorded roosting in the church, 67 soprano pipistrelles recorded roosting within roof timbers at the north-eastern end of the south aisle (R3), the remainder scattered in various locations in the nave and base of tower (R8)</p> <p>88 soprano pipistrelles exited via A1, 1 via A2 and 1 via A3.</p> <p><b>Brown long-eared</b> 3 bats emerged from roof timbers in the the chancel (R9), 1 had a night roost at the ridge at the east end of the nave (R8). Only 1 bat accessed the church (A1).</p>

## 5.2 SUMMARY OF THE BAT SURVEYS

The following table sets out a summary of roosts for each species for 2021.

5.3 Across the surveys three species of bats were identified: soprano pipistrelle, common pipistrelle and brown long-eared. In terms of roost types, the numbers of bats recorded indicated the following;

- Soprano pipistrelle - maternity roost – peak count of 90 on the 11<sup>th</sup> August 2021;
- Day roosts of common pipistrelle (peak count of 20 on the 27<sup>th</sup> May 2021) although the presence of a small maternity roost cannot be completely discounted;
- Day roost and night roost of brown long-eared (peak count of 3 on the 11<sup>th</sup> August 2021) – likely day roost.

**Table 5 Summary of activity**

Species	Date	No	Roost locations	Access points
Common pipistrelle	27 <sup>th</sup> May 2021	20	Mainly north aisle but also occasional in nave	A1 8 (40%) A2 10 (50%) A3 2 (10%)
	12 <sup>th</sup> July 2021	15	Mainly north aisle but also occasional in nave	A1 5 (33%) A2 6 (40%) A3 4 (27%)
	13 <sup>th</sup> July 2021	11 (aggregate over 2 hour survey period)	Mainly north aisle but also occasional in nave	A1 4 (37%) A2 0 (0%) A3 7 (63%)
	11 <sup>th</sup> August 2021	7	Mainly north aisle but also occasional in nave	A1 3 (42%) A2 2 (29%) A3 2 (29%)
Soprano pipistrelle	27 <sup>th</sup> May 2021	86	Mainly south aisle but also some in nave	A1 80 (93%) A2 5 (6%) A3 1 (1%)
	12 <sup>th</sup> July 2021	82	Mainly south aisle but also some in nave	A1 73 (89%) A2 4 (5%) A3 5 (6%)
	13 <sup>th</sup> July 2021	73 (aggregate over the 2 hour survey period)	Mainly south aisle but also some in nave	A1 71 (97%) A2 0 (0%) A3 2 (3%)
	11 <sup>th</sup> August 2021	90	Mainly south aisle but also some in nave	A1 88 (98%) A2 1 (%) A3 1 (1%)

Species	Date	No	Roost locations	Access points
Brown long-eared	27 <sup>th</sup> May 2021	1	Chancel	A1 1 (100%) A2 0 (0%) A3 0 (0%)
	12 <sup>th</sup> July 2021	2	South aisle	A1 2 (100%) A2 0 (0%) A3 0 (0%)
	13 <sup>th</sup> July 2021	2	Chancel	A1 2 (100%) A2 0 (0%) A3 0 (0%)
	11 <sup>th</sup> August 2021	3	Chancel	A1 1 (100%) A2 0 (0%) A3 0 (0%)

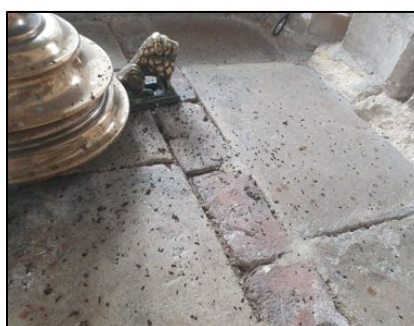
- 5.4 Note that given the Covid-19 restrictions, no attempt has been made to capture any bats to confirm breeding status.
- 5.5 It is noted that a few pipistrelles during 2021 could not be put down to species level (identified as pipistrelles) largely because they made no noise upon emergence/re-entry. These have been excluded from the above summary table.
- 5.6 Compared to bats recorded during the single 2012 survey, the soprano pipistrelle maternity roost appears to increase in size slightly from 55 bats to 91 (peak count), albeit the original surveys were taken at the end of August so it is likely that some bats will have already left the roost. Therefore, it is likely that the roost is of a similar size. The number of common pipistrelle bats appeared to remain at similar numbers to what was originally recorded (peak count of 7 in 2012 and peak count of 11 in 2021). No brown long-eared bats were recorded in 2012, so the 2021 records are the first for the church.
- 5.7 The roosting locations within the church were varied with bats emerging and returning to a number of locations (mimicking activity from 2012).
- 5.8 The soprano pipistrelle maternity roost principally roosted within the south aisle (similar to 2012) in each survey they roosted in a different location. In May, the main roost was located on the south side of the south aisle (R1), on the second survey it was centrally on the north side of the south aisle (R2) before moving again to the north-east corner of the south aisle in August (R3). Other bats were recorded roosting in the nave roof timbers (various locations R8).
- 5.9 The common pipistrelles were recorded roosting within the north aisle roof timbers (occasional elsewhere) and brown long-eared were seen to largely roost in the chancel roof timbers. No

bats were observed roosting externally (due to few suitable features) albeit that the surveys were concentrating on the previously identified access points and internal features.

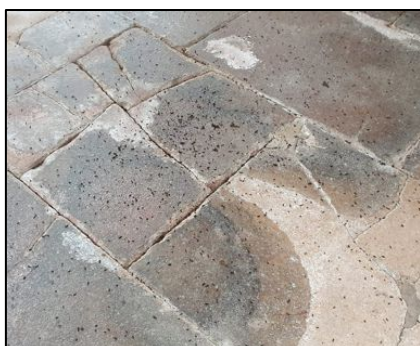
5.10 In terms of access, there was a distinct difference in the way that the three species exited / entered the church. Principally, the soprano pipistrelle maternity roost used the eastern window of the north aisle (peak count 88 bats (98% of the total) as opposed to the minor access points R2 and R3 which had emergences on the same date of 1 (1%). The common pipistrelles on the other hand appear to use the three emergence locations to a similar degree, showing little preference. The third species identified within the church; the brown long-eared, was only recorded using the eastern end window of the north aisle as an access point.



**Figure 3** – Roost location in the south aisle  
Roost R2 in July 2021



**Figure 4** – Concentration of droppings  
beneath Roost 3 at the east end of the  
south aisle



**Figure 5** – Concentration of droppings  
beneath Roost 4 close to the kitchen



**Figure 6** – Concentration of droppings  
beneath Roost 6



**Figure 7** – Concentration of droppings in the ringing chamber (R10). This was little used during the course of the surveys apart from individual bats



**Figure 8** – Primary access A1 via the north- east north aisle window. The painting below the access suffers some damage from bat droppings and urine.



**Figure 9** – Secondary access A2 via the western tower door



**Figure 10** – Secondary access A3 via the southern porch door



## 6.0 IMPACT OF THE BATS ON THE HERITAGE OF THE CHURCH

- 6.1 The survey of the church has highlighted the bats roosting at the church, their roosting sites and their access locations.
- 6.2 The Bats in Churches Project commissioned a Statement of Significance prepared by the Bats in Churches project (visit date 16<sup>th</sup> June 2020). This report highlights the heritage of the church and considers the impact that the bats are having upon it. The findings of the statement is shown below and is illustrated by photographs of the features and where appropriate the impact the bats are having.
- 6.3 The report states the following :
- The church has never failed to elicit superlatives. For Simon Jenkins, it was ‘the Queen of the Marshlands...St Peter’s is to west Norfolk what Salle is to the east, a church for the connoisseur of this noble county’. He gives it five stars, one of only eighteen of his thousand best churches to be awarded that accolade, and the only one in Norfolk. In a county of magnificent medieval churches, John Betjeman considered it ‘perhaps the finest’, and this view was also shared by H. Munro Cautley. Pevsner & Wilson went further and thought that ‘Walpole possesses one of the most impressive churches of its date in the country’ and Alec Clifton-Taylor concurred: ‘Among village churches it would not be easy to find a more beautiful example of the style than Walpole St Peter in Norfolk [...] It is the ensemble ... which offers such a wonderful and, once seen, unforgettable aesthetic experience’. The fact that (the tower apart) it was rebuilt in one almost continuous programme gives it a degree of architectural cohesiveness not common in medieval English parish churches. This architectural unity combined with its cathedral proportions, exquisite carved detail and wealth of furnishings give the building undoubted **high archaeological, architectural and historical significance**. This is reflected in its Grade I listed status, a category enjoyed by only about 2.5% of listed buildings. All surviving medieval fabric partakes of this high level of significance, while the later roofs of the chancel and south aisle are of **moderate to high significance**. The listed churchyard monuments and war memorial are of **moderate to high significance**, while the lychgate is of **moderate significance**.*

6.4 The report identifies that it is the ensemble that makes the church so important, but if items are to be considered individually, the following gradings for the furnishings are as given. The report also grades the level of bat impact on each item and the overall significance of the damage. The following is taken from the Significance table presented in the report. The higher the number the greater level of bat impact (5 being the highest and 1 being the lowest).

#### Items of high significance

- Roof structure (3)
- Seating chancel (2)
- Rood screen (3)
- Parclose screen (4)
- West nave screen (4)
- Pulpit (3)
- Lectern (3)
- Seating (Nave and aisles) (4)
- Font (2)
- Font cover (2)



**Figure 11** - The nave roof is of high significance. It is difficult to tell what impacts the bats are having due to the scale



**Figure 12** – Rood screen dado between the nave and chancel. This showed a moderate level of bat evidence from bats flying over.



**Figure 13** – South aisle medieval pews have a relatively high level of bat impact due to them being positioned in the main roosting areas within the church



**Figure 14** – Font and cover has relatively low levels of bat impact



**Figure 15** – Pulpit – High  
Significance has moderate levels of bat impact



**Figure 16**- Eagle Lectern –  
Moderate levels of bat urine damage



**Figure 17** – Damage to the top of the screen in the north aisle. This is close to R3. This appears to be death watch beetle damage but the presence of bat urine which could enhance humid conditions for death watch is notable.

- 6.5 The following furnishings are of **moderate to high significance**: (4)
- Wall surfaces (4)
  - Nave chandelier (3)



**Figure 18** – Bat urine damage on the chandelier

6.6 The following are of **moderate significance: (3)**

- Floor surfaces
- Wall monuments
- Floor memorials/brasses
- Altar/communion tables



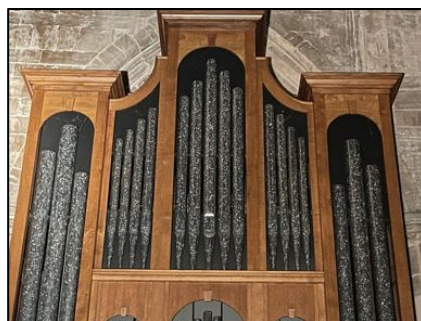
**Figure 19** – Brass on altar in the south aisle showing significant bat urine damage being located close to the roost



**Figure 20** - Urine damage on the ledger stones, some fresh but lots of historical damage

6.7 The following are of **low-moderate significance: (2)**

- Copy of *Jesus in the Temple*
- Organ



**Figure 21** – Urine damage on the organ pipes



**Figure 22** – Location of painting below bat access R3 has bat droppings on it due to the access above

6.8 The Statement of Significance concludes that whilst the impact from the bats is not generally severe, it is widespread and given the number and quality of the furnishings within the church, it is recommended that management works are undertaken.

## 7.0 MITIGATION/MANAGEMENT RECOMMENDATIONS

- 7.1 The numbers of bats using the church has never been significant compared to other churches (even in 2021 when a peak of 90 soprano pipistrelles were recorded). However, the locality of the bat roosts using the church and their movement of roost sites throughout the year makes artefacts within the church vulnerable to damage from the presence of bat droppings and urine. The below mitigation measures take into account the Statement of Significance of artefacts, aspirations of the church representatives (as detailed within the Light Touch Survey, 2017) and results from the bat activity surveys to best benefit the protection of the church interior and conservation of the bat roosts present.
- 7.2 The proposed mitigation recommendations fall into two distinct categories; manage the bats within the church by providing protection to various elements (the easiest and preferred option) or excluding the bats permanently from the interior of the church and provide alternative roosting sites. Mitigation options for consideration are therefore as follows:

### 7.3 OPTION A – MANAGING THE BAT IMPACTS WITHIN THE CHURCH

Limit the impacts that the bats are having in the church by protecting items that are showing significant damage.

#### 7.4 **A1 Covers**

The use of covers to some items (eg brasses on the altar in the south aisle and perhaps the eagle lectern) which would protect them when not in use but could be easily be removed for use by visitors for photographs. This method has been used successfully in other churches. Further advice on such covers could be provided by the Bats in Churches Project.

#### 7.5 **A2 Deflector board**

One item showing particular damage is the screen in the south aisle which is located very close to Roost R3 over which the bats are frequently flying/swarming. Much of the damage does appear to be death watch beetle but beetles favour damp conditions, which could have been enhanced through the deposition of bat urine. Discussion with the church includes the provision of a deflector board which could either be placed on the top of the existing structure or hung just above from chains to mirror other items within the church (e.g. the chandelier).

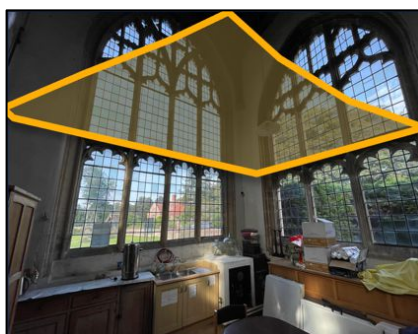


**Figure 23** – Location of deflector board, possibly hung by chains over the rood screen

### 7.6 **A3 Kitchen**

Although not of significant architectural merit, the PCC have raised concerns about bat droppings landing on the kitchen (which is currently open to the north aisle). Although bats do not appear to be roosting over the kitchen, they do roost close by on occasions (R4) and frequently fly over depositing urine and droppings. Previous consideration had been given by the PCC to erecting a solid screen over the kitchen but it was not possible to agree a design of this with the PCC as the tracery of the windows at the western end of the north aisle occurs at different levels and therefore the Diocesan Advisory Council (DAC) were concerned about the visual impact when viewed externally.

7.7 The alternative option of a canopy was discussed at the meeting with the PCC as this has been a favoured option at several other churches. Such a canopy can be removed for cleaning or during the period when the bats are not active (e.g. the winter months). Designs are currently being assessed by the Bats in Churches Project and will be made available to the PCC at Walpole as soon as possible for consideration along with costings. Footnote – in a discussion with David Gallway on 30<sup>th</sup> October 2021, it was confirmed that the PCC would not likely pursue this option if they worked towards managing the bats outside of the church.



**Figure 24** – Location of canopy over the kitchen to protect from droppings

7.8 At the Light Touch Survey undertaken in September 2017, one specific impact that was identified is that of bat droppings falling down the organ pipes. Following the meeting with the PCC on the 28<sup>th</sup> September 2021, it is understood that measures have already been undertaken to prevent this from happening by attaching gauze to the top of the organ pipes. Diana Spencer was able to provide a photograph of this.



**Figure 25** – Organ pipes with gauze over (© Edward Otter)



**Figure 26** – Detail of the gauze with dropping on the top

7.9 The use of acoustic deterrents had been considered within the church to try and deter the bats from flying in certain areas. One such deterrent is shown in Figure 27. However, given the fact that bats roost in various locations and are accessing via three separate locations and the deterrents can only be used at certain times of the year, it is unlikely that they could be used effectively without impacting on the bats significantly to contain the bats in certain parts of the church. This option has therefore been discounted for the moment for general management in the church but it might be an option to try in the kitchen area.



**Figure 27** – Transonic pro ultrasonic high frequency acoustic deterrent

7.10 Apart from trying to manage the bats within the church (which would be the preferred and cheapest option), the option for excluding the bats has also been considered. Options for this are presented below. This appeared to be favoured by the PCC from a bat perspective

## **B PREVENTING THE BATS ACCESSING THE INTERIOR OF THE CHURCH**

7.11 From experience, bats are often more tolerant of changes to their access points than to their roost sites.

7.12 At Walpole, the bats are using three access points into the church, the presence of parapets around most of the roofs means that bats accessing at eaves level is very difficult for them.

### **7.13 B1 North-east window bat box**

The principal access A1 is at the east end of the north aisle so one option would be to construct a bat box over the window to intercept bats coming into the church.

7.14 The box could be of a bespoke multi-layered design, but it might also be possible to purchase an off the shelf heated bat box and incorporate it into a specially designed housing. That would be designed to match the fabric of the church.

7.15 The box would be multi chambered to provide a variety of roosting conditions. They should also be fitted with a thermostat to prevent over-heating and to allow temperature control. The box would also be provided with a bird box type camera connected to a hard drive to allow its use to be monitored.



**Figure 28** – Heated purpose-built bat box above north-eastern north aisle window. Ideally, this would go in the inside of the window so the bats can access via the existing tracery



**Figure 29** – Large colony heated bat box that could be incorporated into a housing and form the basis of a new roost

7.16 Initially, the bats would be allowed to come through the box and access the church, to allow them to become habituated to the changes. The use of the box would need to be monitored via the installed cameras. After a season, the access from the box into the church would then be blocked meaning the bats should be contained and hopefully roost within the box. It would be accessible from beneath for cleaning to prevent a build-up of droppings.



### 7.17 B2 South aisle/porch boxes

As a backup plan and to provide further external bat roosting opportunities, consideration has also been given to installing two bat boxes on the southern elevation of the church by the porch and tower. Contact has been made with Greenwood eco-habitats who are able to build purpose-built boxes out of a mixture of polystyrene and cement. These can be made to measure and coloured to match the existing stonework. Possible locations as shown below on buttresses to the porch and tower which would gain solar heating for much of the day thus maintaining appropriate conditions for breeding. An initial quotation for such boxes is included in Section 8.



**Figure 30** – Multi-chambered Kent type maternity box mounted to the south of the tower on the south-east corner of the south aisle buttress



**Figure 31** – Multi-chambered Kent type maternity box mounted on the buttress of the porch

### 7.18 B3 South aisle bat box

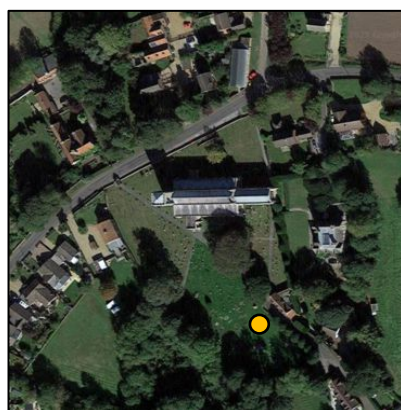
The option of maintaining a bat roosting location on the south aisle (i.e. a bat box under the slope of the roof close to R1 and providing a new access through the wall) was not discussed at the meeting with the PCC or the architect but is presented in this report. Rafter boxes could be constructed in the location of the roost and as an alternative access provided through the wall. It is not certain how practical or acceptable this would be to the DAC (requires further discussion).



**Figure 32** – An example of a rafter box at Thornham Church. Initially this is left open but after a year it will be connected to the access at the eaves

#### 7.19 **B4 Bat pole**

Further enhancement could be provided by installing a pole (6-7m high) in the churchyard to see if bats might use this. It is assumed that a pole in full view of the church would not be acceptable and therefore a location in the south-east corner of the churchyard has been suggested. This would be of a similar size to the existing war memorial and could be erected close to it (in a section of the churchyard that is partly being set over for nature conservation). 3 no multi chambered Kent type maternity bat boxes which have been shown to be very effective in supporting pipistrelle roosts would be attached to the pole. The example shown is at Mintlyn Crematorium in King's Lynn. The downside of this location is that it is away from the direction that most of the bats fly (east from the Access A1) so it might be difficult for the bats to find. Whilst accepting this as an option at the original Light Touch Survey Meeting, concern has now been raised by others on how this might impact on the war memorial. A positive aspect is that the mitigation could be put in place without registration under the BiCCL and the boxes will be easy to monitor and self-cleaning as they are open to the bottom.



**Figure 33** – Possible location for pole mounted boxes (orange circle)



**Figure 34** – Example of bat boxes erected onto a pole

#### 7.20 **C EXCLUSION OF BATS FROM THE CHURCH**

Assuming the bats are shown to utilise the new bat box in the north aisle after 2 years all access points can then be permanently blocked up. This effectively means the door access A2 and A3. This would need to be undertaken carefully and in such a way that the exclusions remain viable, particularly on the south door where the door is used on a very regular basis. Monitoring would be undertaken to ensure bats remain absent in the church (but remain present in the provided mitigation).

#### 7.21 **FACULTY AND PLANNING**

Discussion with the Ely DAC confirms that the installation of bat boxes as part of a bat management programme does not need a faculty approval but given the prominent location on

the south wall of the church (B2) they are likely to require an Archdeacons Licence. (List B). It is understood that wiring (as required for the heated bat box) is also likely to require List B approval.

7.22 It is likely that the incorporation of bat rafter boxes in the south aisle and provision of new access through the south aisle access would require a faculty.

7.23 It is assumed that the provision of deflector boards and the canopy over the kitchen will require a faculty although this has not been confirmed with the DAC pending a decision on the design.

7.24 It has been confirmed in relation to other churches that the installation of the proposed bat pole (Option A) will require planning permission and a faculty.

7.25 In addition, the pole location in the churchyard may need some input from an archaeologist due to the location of graves etc.

7.26 **LICENSING**

In terms of the mitigation proposals, the use of covers will not require registration under BiCCL. The proposed deflector boards and canopy over the kitchen may not require registration (depending on the design) as they are unlikely to impact directly on the way that the bats use the church.

7.27 The provision of the bat pole and wall mounted boxes will also not require registration as they are not impacting on any recorded bat roosting or access areas.

7.28 The provision of the bat box over the R1 and subsequent blocking of R2 and R3 will require registration as will the use of any acoustic deterrents.

7.29 **INTERPRETATION**

The idea of interpretation material was discussed at the meeting with the PCC. It was agreed to be a good idea to provide a bespoke poster in the church informing visitors of the bats present, the impacts they are having and the measures being taken to mitigate their effects on the fabric of the church. BiCCL can provide this.

7.30 The bat night (17<sup>th</sup> September 2021) proved to be a great success with 85 people attending and approximately £300 was raised for church funds. It was one of the better attended events at the church this year. The Norfolk Bats in Churches project would be happy to organise other events at the church as part of any community engagement, but it is suggested that these are held earlier in the summer (late June/early July) when the peak numbers of bats are likely to be present. This could be a way of raising funds on an on-going basis through the presence of the bats which could help with their management. It was also help with on-going monitoring.



**Figure 35** – Bat night at Walpole in September 2021

## 8.0 WORK SCHEDULE

8.1 The timescales, responsibility and costings for the various mitigation options set out in Section 7 above are set out below. This assumes that the works would commence in the next season (2022). The costs for monitoring are based on 2021 costs. It might be that significant cost savings could be made on the monitoring if volunteers from the local bat group were able to assist in the surveys.

**Table 6 Draft Work Schedule**

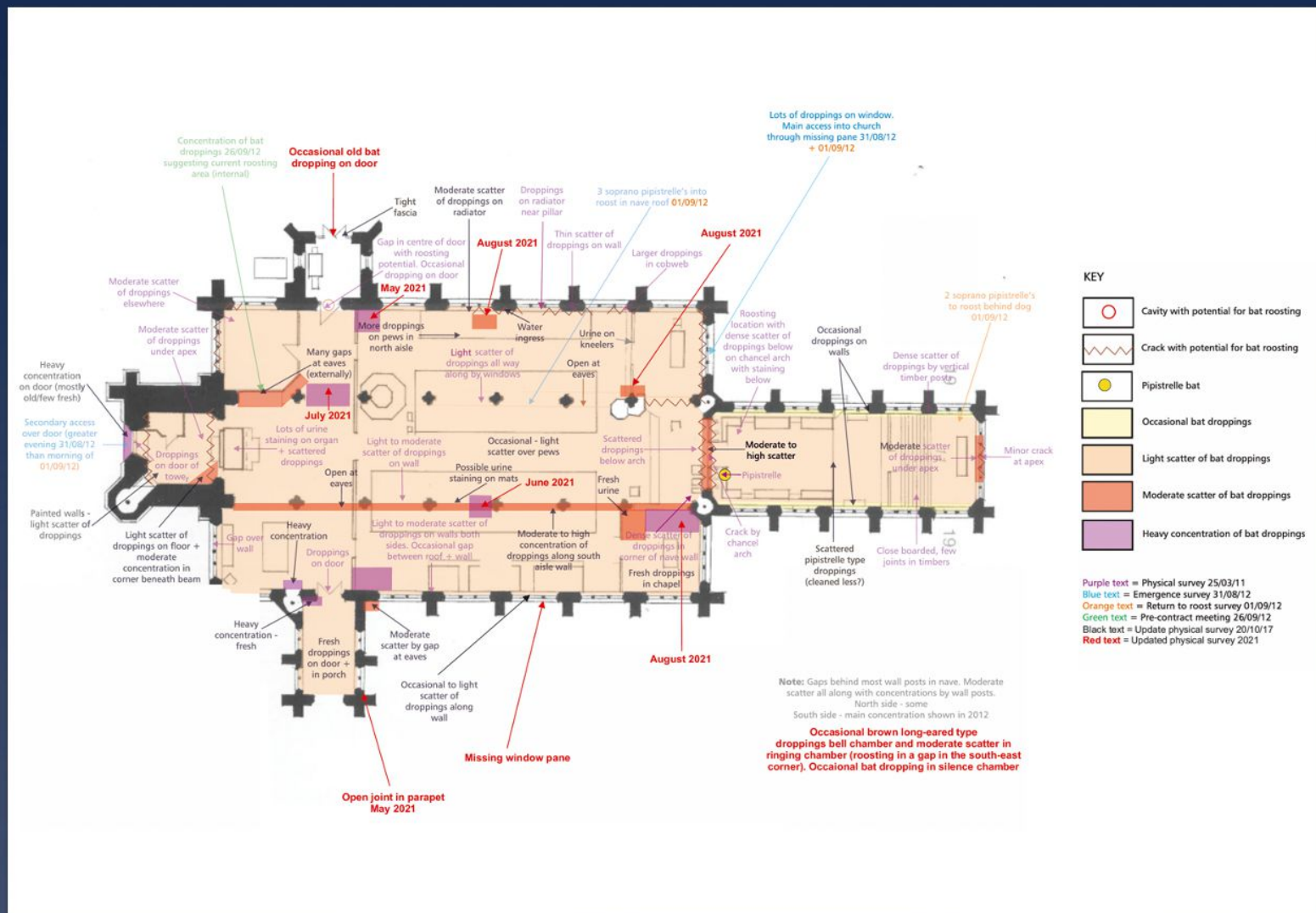
Mitigation Option	Year	Period	Description	Who	Capital cost (plus VAT_)	Survey cost (plus VAT)	Faculty	Planning permission
A1	?		Covers to brasses etc	BiC Project	FOC			
A2	?		Deflector board to the south aisle screen	Church? Contractor?	£1000 depending on what is used		Yes?	
A3	?		Canopy over the kitchen	?	?		Yes?	
	2021/22	Winter	BiCCL application	Licensed ecologist	£600			
B1	2022	April 2021	Bat box over the east north aisle window including electrics and camera	Contractor Ecologist Electrician	£3-£4,000 estimated depending on the design		List B	
B2	2021/22	September	South aisle rafter boxes	Contractor Ecologist	£1500		Yes	
B3	2022	April	Boxes by the porch	Contractor Ecologist	£1000		List B?	
B4	2022	Summer	Bat Pole and Boxes	Contractor Ecologist	£1200		Yes	Yes
Monitoring	2022	June July	Monitoring survey	Ecologist		£2400		
Monitoring	2022	Monthly (May – Sep)	Camera survey	Ecologist		£1000		
Monitoring	2022	Dec	Licence return	Ecologist		£450		

Mitigation Option	Year	Period	Description	Who	Capital cost (plus VAT_	Survey cost (plus VAT)	Faculty	Planning permission
Monitoring	2023	June July	Monitoring survey	Ecologist		£2400		
Monitoring	2023	Monthly (May – Sep)	Camera survey	Ecologist		£1000		
Monitoring	2023	December	Licence return	Ecologist		£450		
C	2024	April	Exclusion of bats from the church	Contractor Ecologist	£500 (west and south doors)			
Monitoring	2024	Monthly (May – Sep)	Camera survey	Ecologist		£1000		
Monitoring	2024	June July	Monitoring survey	Ecologist		£2400		
Monitoring	2024	Dec	Licence return			£450		
Monitoring	2025	Monthly (May – Sep)	Camera survey	Ecologist		£1000		
Monitoring	2025	June July	Monitoring survey	Ecologist		£2400		
Monitoring	2025	Dec	Licence return	Ecologist		£450		
Monitoring	2026	Monthly (May – Sep)	Camera survey	Ecologist		£1000		
Monitoring	2026	June July	Monitoring survey	Ecologist		£2400		
Monitoring	2026	Dec	Licence return and final report	Ecologist		£2000		
					<b>£9,800</b>	<b>£20,800</b>		

## 9.0 REFERENCES

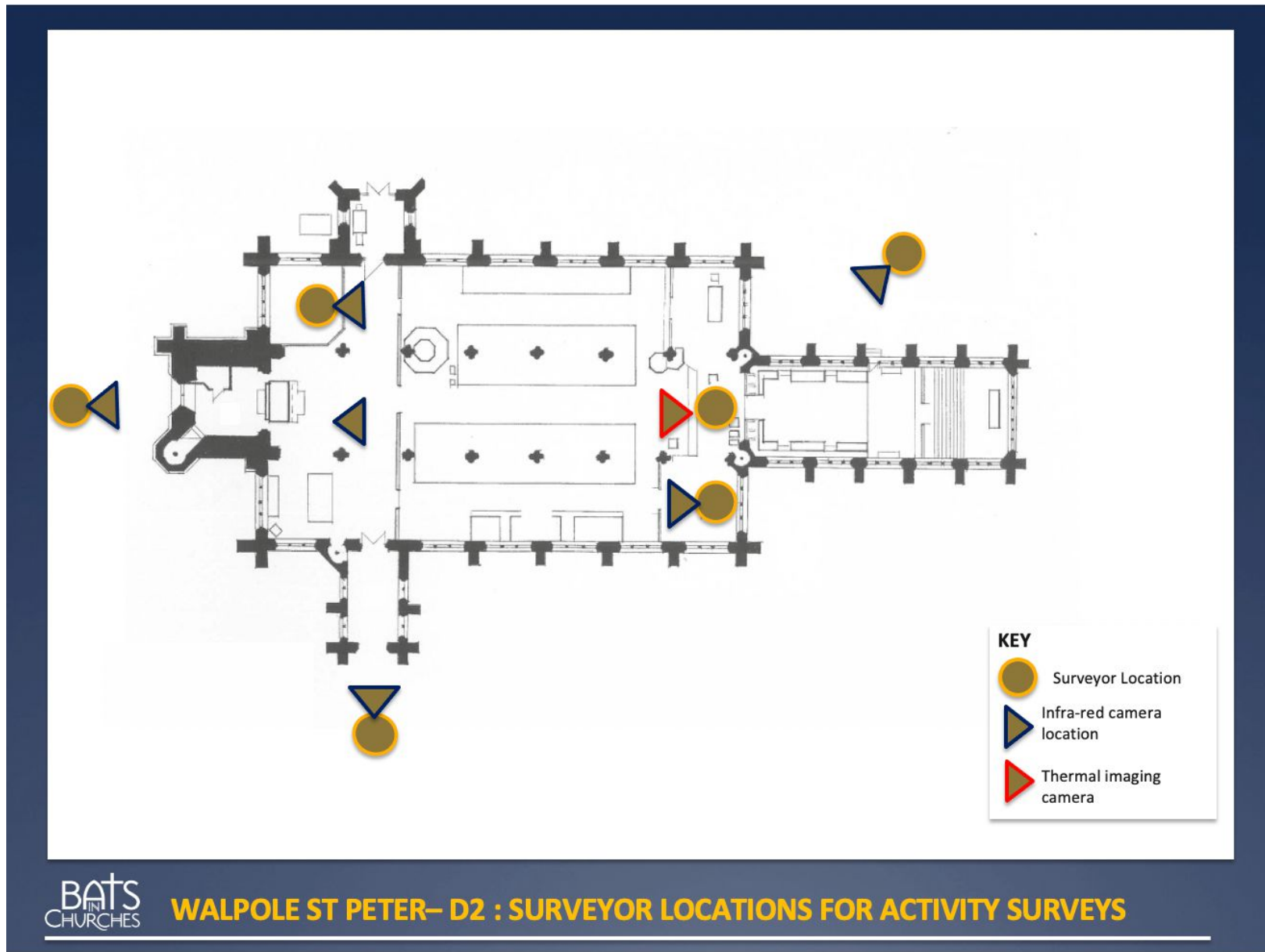
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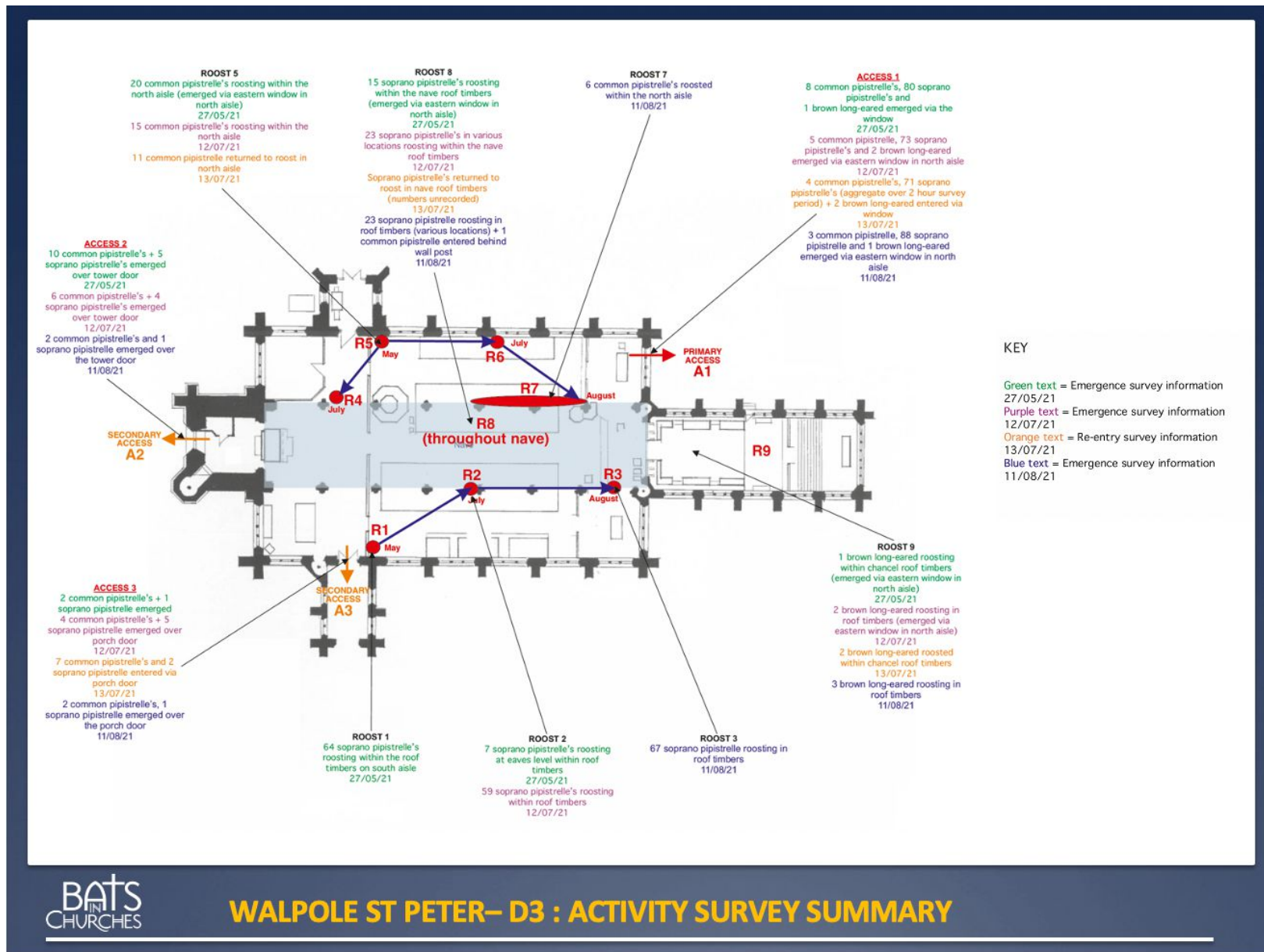
**DRAWINGS**

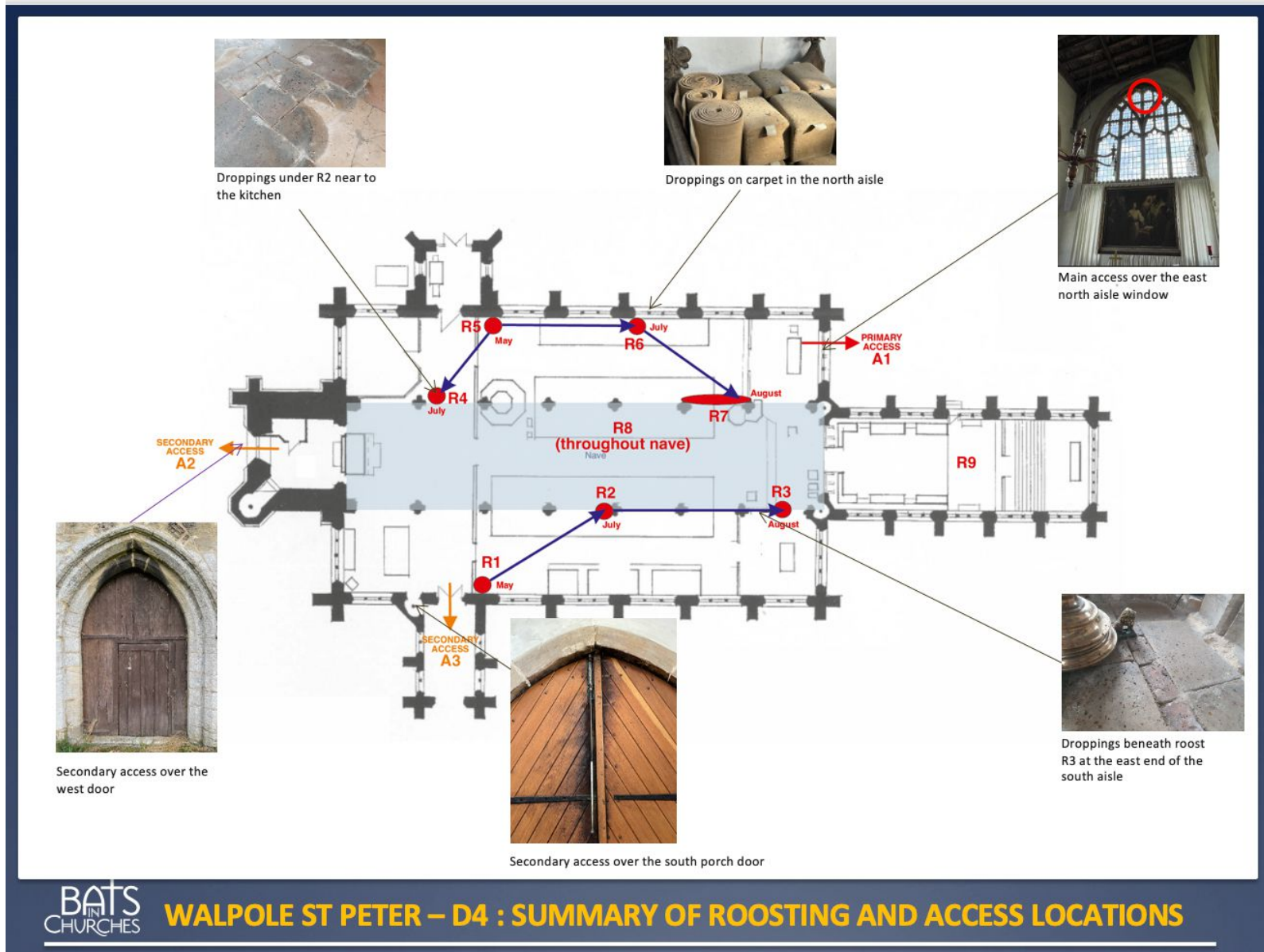


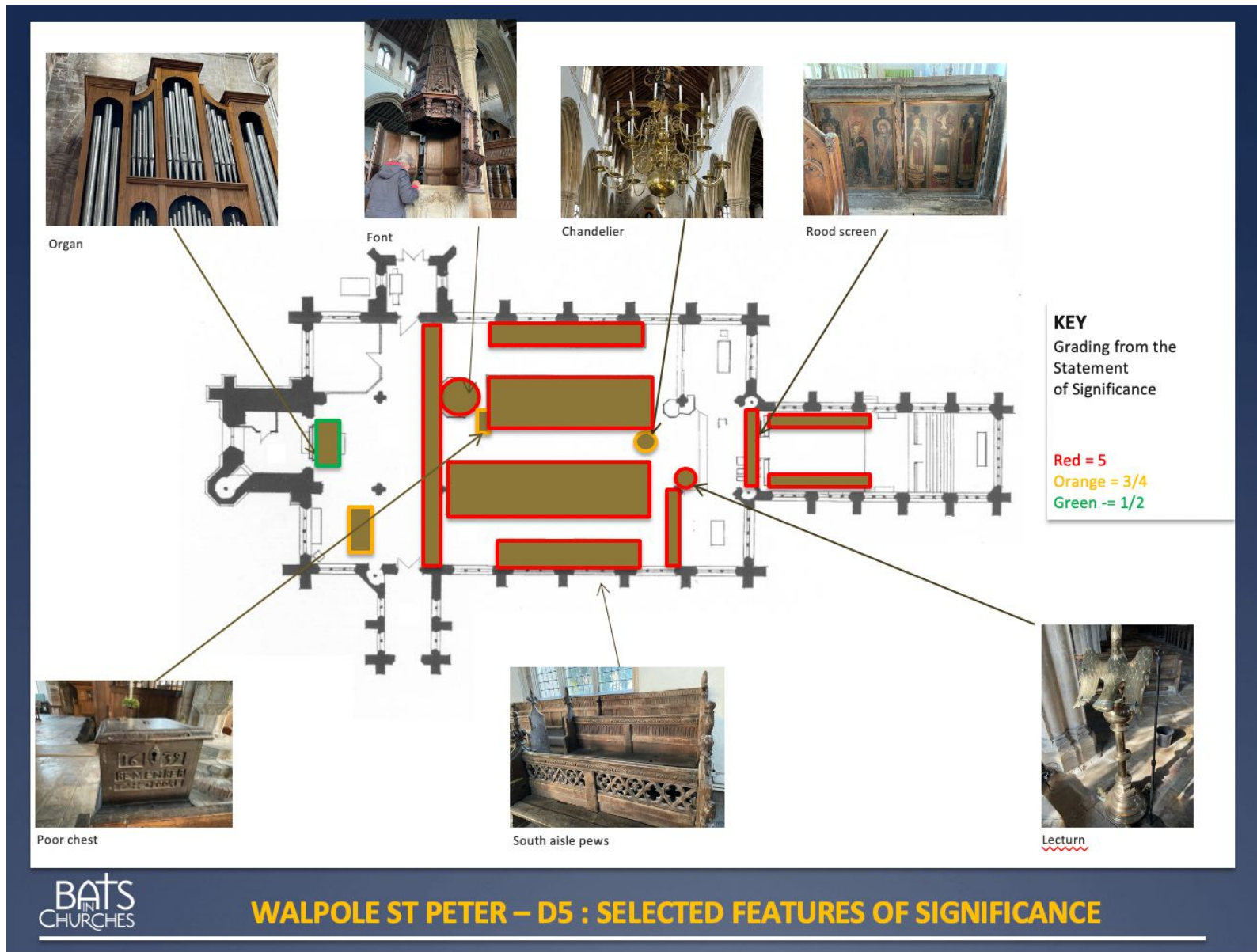
**WALPOLE ST PETER- D1 : PHYSICAL SURVEY 2021 UPDATE**











Seasonal canopy over the kitchen  
 Alternatively, consider the use of acoustic deterrent to prevent bats flying over the kitchen (as long as does not impact on R4)

Monitor the effectiveness of the covers to the organ pipes

Heated bat box over the north-east window

Interpretation

Boxes by the porch

Example of Possible south aisle rafter box at Thornham Church

Deflector to the screen

Tree and pole mounted boxes

**BATS**  
 IN  
 CHURCHES

**WALPOLE ST PETER - D6 : MITIGATION OPTIONS**

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