Bats in Churches

Final Evaluation

Issued 5th November 2023 version 1.1

Made possible with Heritage Fund

Contents

Version Control

Date	Version	Change
5th September 2023	1.0	First issue – incomplete, rough draft
5th November 2023	1.1	Complete draft

Glossary of Terms

BCT	Bat Conservation Trust
BiC	Bats in Churches
BiCCL	Bats in Churches Class Licence
Capital Heritage	Classification of mitigation where faculty not required e.g. protective cover for an artefact
Capital Minor	Classification of capital mitigation measure <£10,000
Capital Severe	Classification of capital mitigation measure >£10,000
CCT	Churches Conservation Trust
DAC	Diocesan Advisory Committee
EASA	Ecclesiastical Architects and Surveyors Association
NBMP	National Bat Monitoring Programme
NLHF	National Lottery Heritage Fund
PCC	Parochial Church Council
Programme	The overarching set of projects delivering the BiC objectives
Project	A time-limited activity undertaken at a church within the Programme
Stream 2	Classification of churches where capital mitigation measures originally proposed but where there was insufficient funding to pay for mitigation
SPAB	Society for the Protection of Ancient Buildings

Executive Summary

Introduction

The Bats in Churches (BiC) programme, supported by the National Lottery Heritage Fund (NLHF) between 2018 and 2023, sought to transform human/heritage-bat conflict in a meaningful sample of churches across England. Different approaches were trialled to understand what worked and what challenges remained.

This report was produced by 20 Degrees and Arcadis as the final in a series of evaluations of the BiC programme between 2020 and 2023. It drew on findings from programme monitoring information and primary research conducted by the evaluation team since 2020.

Main conclusions

The programme achieved the headline objective it set out to do. Most outputs were achieved or exceeded. There was strong progress towards all outcomes identified in the programme logic model. The findings identified examples of human/heritage-bat conflict transformed through capital mitigation projects, measures to protect artefacts or particular areas of church buildings, and education (engagement). The BiC programme created space and time for dialogue and explanation, ensuring all sides of the debate had an opportunity to be heard and their perspective understood. In the most effective examples, increased knowledge and understanding developed into sympathy and ultimately empathy. This created an environment in which practical solutions could be developed for the benefit of church heritage, people and bats. The findings suggested greater chances of conflict transformation success where professionals (ecologists and church architects) had key attributes, which were characterised as the *right team*:

- Empathy for the position of others
- Worked in a timely manner
- Collaborated with others to achieve affordable, practical solutions.

A key finding was that capital mitigation projects were expensive and typically unlikely to completely separate bats from church heritage/people while still enabling bats and people to use the same building. Nevertheless, there were a minority of examples where this objective was achieved. The older the building and the more complex the architecture, the less likely capital mitigation projects would be completely successful. At the very least, the findings suggested iterative approaches

to mitigation were likely and bats could take more than one maternity season to adapt to a mitigation.

The changed emphasis from 2021/22 onwards from finding capital solutions that effectively separated bats from people/heritage to finding affordable mitigation approaches to improve the protection of artefacts / church fabric and wellbeing of church people was well-judged. The findings indicated simple interventions such as light-weight vacuum cleaners, long-handled brushes and periodic cleaning of churches by professional cleaners, or in some instances bat groups, youth groups or community volunteers, were effective and affordable.

The findings suggested the combination of practical solutions combined with education (public engagement) was effective. When cleaning of bat mess became manageable for congregations, minds became more receptive to the education aspect of the programme. For some, this translated into recognition by churches that the bats could be an asset. The findings identified examples of churches where bats became part of the core mission of the church, either as a means of outreach or in pursuing ecological commitments or as a theme for fundraising events.

The reach of public engagement by the programme was both varied and significant. Support for local events was an important factor in helping project churches feel their concerns were being taken into account and to understand how they could use the presence of bats in their churches to their advantage. Work with schools and youth organisations sought to influence young minds and their carers. Media coverage was extensive. It reinforced community initiatives at a local level and reached mass audiences through national TV, radio, magazine and newspaper coverage.

Capacity building was a key element of the programme's work. It was discernible in the recruitment and training of volunteers plus the training of professionals. While there were positive examples of new volunteers recruited to clean and support churches, in the main cleaning workshops largely supported those that were already committed to maintaining their churches. The heritage cleaning films and guidelines offer the prospect of positive legacy from this aspect of the programme.

Significant volumes of volunteers were trained to take part as bat surveyors. The commitment of the many citizen scientists contributed greatly to an improved understanding of where bats were using churches across England. The relatively

smaller groups of those trained as VBRVs and those continuing to take part in the NBMP from 2023 onwards may lead to a significant on-going programme legacy as they continue to support churches and gather evidence of changing populations over time, respectively.

While the COVID-19 pandemic caused delays in capital mitigation works and stopped community-based public engagement in 2020/21, in all likelihood the learning from pandemic response measures led to greater programme reach. The original programme conceived public engagement largely in terms of events at individual project churches. While this approach did take place successfully, the pandemic forced an online approach also. The team soon realised this opened engagement events to national, rather than local audiences. This led to *BiC Live*, for example, one of many features of the programme that had not been conceived as part of the original application to NLHF. This translated equally to training, albeit some elements of training provision adapted more readily than others to online techniques. The order of magnitude difference in attendance volumes of bat surveying (online) versus cleaning workshops (on-site) highlighted this finding. Online training also opened the offer to a significantly enlarged professional community. A professional development workshop of an hour or so online was significantly more accessible for ecologists and church architects than an option requiring extensive travel and loss of a day's work attending a physical event.

The programme sought to build a body of evidence to inform future development. The guidance and case studies of mitigation works form a useful written body of evidence of what does (and does not) work in particular situations where bats live in churches. Efforts to disseminate these findings through conferences, professional fora, specialist publications and the programme legacy website were positive and might be expected to stimulate engagement with that body of evidence in the short term.

The body of evidence of bats in churches across England was improved notably by the programme. Understanding was enhanced about geographical spread, species of bats using churches and aspects of churches and their surrounding landscapes affecting the likelihood of bats using churches. Again, efforts to disseminate these findings through conferences, professionals journal articles, professional fora and the programme legacy website were positive.

Innovation was an embedded feature of the BiC programme, not least because NLHF supported an England-wide programme where community engagement was undertaken remotely by a relatively small team. The findings suggested the approach was successful. This may provide a helpful template for future geographically widespread projects. While this delivery model may be transferrable, the recruitment of a particularly capable, committed and energetic team was undoubtedly a key success factor for the BiC programme also i.e. the model was an enabler but the right team was necessary to make the programme a success.

There were several examples of programme innovation. The Bats in Churches Class Licence (BiCCL) was trialled and found to be largely fit for purpose. Evidence was gathered during the programme to inform the situations where it might be used to best advantage beyond the lifetime of the programme. Similarly, *catch trays* and protection *sails* were trialled and identified as viable mitigation measures in instances where bats mess was largely concentrated in areas under roosts. Innovation also featured in the engagement work of the programme. As examples, the touring *On a Wing and a Prayer* art exhibition, *The Little Church Bat* book and the Bats in Churches Challenge badge were all conceived during the lifetime of the programme and stemmed from interests and strengths of volunteers and BiC team members. Similarly, as noted already, extensive use of online training and engagement events were a positive response to the COVID-19 pandemic which ultimately provided much greater programme reach than would have been the case if planned face-to-face events had predominated.

The BiC programme stands out, in part, because of its focus on establishing a substantial legacy. This focus can be attributed to the members of the BiC steering group and delivery team. Many aspects of legacy have been noted within these conclusions already. However, the strong organisational relationships developed between programme partners should be highlighted. These relationships were sometimes forged in adversity, particularly in the early years of the programme, and are a testament to the commitment of the partners to the central goal of conflict transformation.

A series of lessons learned from the evaluation led to 34 recommendations. Recommendations were split by audience: BiC partners (collectively and individually), churches, bat groups & bat workers, ecologists and church architects.

Acknowledgements

This final evaluation was undertaken by Dr Alun Hughes, with the support of Sam Woodward and Tawny Clark of 20 Degrees Consulting Ltd, and Alison Powell of Arcadis. It drew on reports of previous years where Dr Nick Downs of Arcadis was a contributor also.

They were grateful for the help and support of the BiC team in providing responses to all of their requests for information in a timely fashion and with good grace and humour.

Their thanks go to representatives of churches, bat volunteers, DAC Secretaries, ecologists, church architects, members of communities attending church events, partner organisations and wider stakeholders for freely giving up their time to contribute their insights to inform this evaluation over the period 2020-23.

Note on confidentiality

All participants in our evaluations took part on the understanding that their feedback was confidential. All quotations, except where explicit authorisation was given, are anonymised and references to interviewees and survey respondents are made using the gender-neutral terms of they and their in order to promote anonymisation.

Figure A1 – The BiC team at the Flying to the Future conference on 14th September 2023 as they shared lessons learned from the programme

Source: Lisa Worledge @BattyLisa

1. Introduction

Tensions between users of churches where bats roost and conservation bodies were well-rehearsed by the time the Bats in Churches (BiC) was submitted to the National Lottery Heritage Fund (NLHF) for support in 2018[1]. While congregations and church wardens focussed on bat faeces and urine on the fabric and furnishings of a sacred place, conservation groups, supported by law, sought protection for species lacking natural habitat due to human activity. The question of how these two seemingly opposing views could be reconciled was considered for years.

A pivotal meeting was held at Lambeth Palace in 2010 to begin the process of groups with differing perspectives listening to the views of others. In 2011, Natural England established a working group on Bats in Churches which developed into the partnership of this Bats in Churches project supported by the NLHF. Key studies were led by Bristol University between 2011 and 2015, funded by DEFRA and Historic England[2]. These led to a better understanding of what damage was actually being done to historic churches by the presence of different species of bats. They also provided an evidence base for the efficacy of different types of mitigation.

A one-day conference in Coventry in 2016 considered the findings of the two studies led by Bristol University. This led directly to the Bats in Churches NLHF application and the current Bats in Churches programme between November 2018 and October 2023.

A summary of the Bats in Churches project may be found in Figure 1. It is reproduced from the Bats in Churches Conservation Action Plan (CAP). 102 churches were identified from Cornwall to Cumbria and Herefordshire to East Anglia[3]. The 20 churches where the presence of bats was most disruptive were expected to benefit from full bat management plan development and

[1] For example, Hales, J. (2014). Bats in Churches: Objective Assessment of Associated Damage Mechanisms. *Archaeology International*, 17, 94-108

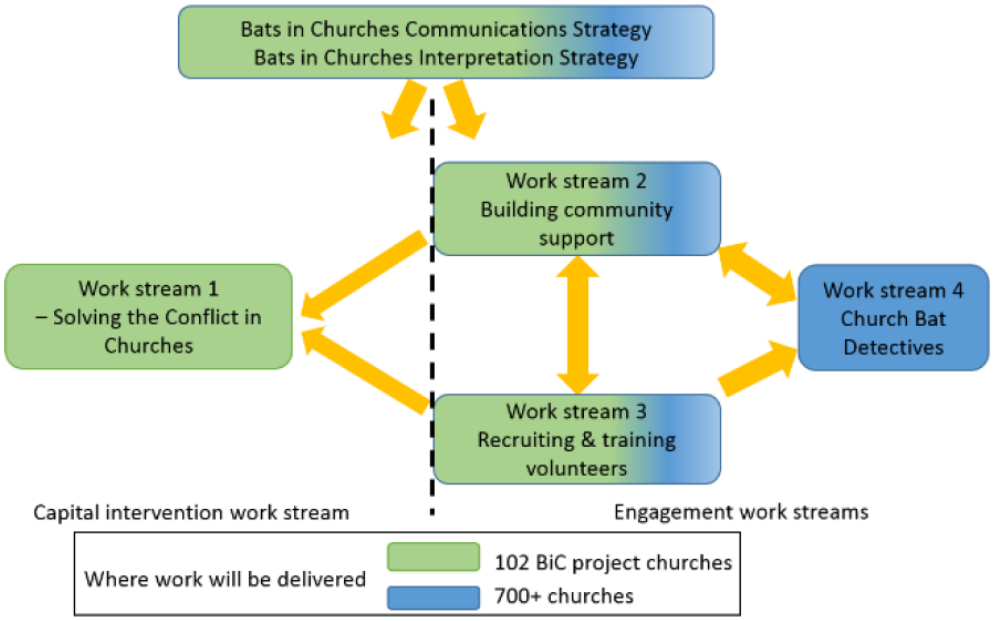
[2] Zeale, M, Stone, E, Bennitt, E, Newson, S, Parker, P, Haysom, K, Browne, W.J, Harris, S and Jones, G. (2014). Improving mitigation success where bats occupy houses and historic buildings, particularly churches – Final Report. DEFRA project WM0322 available at https://randd.defra.gov.uk/ProjectDetails?ProjectId=17863 Accessed 10th August 2023.
Packman, C, Zeale, M, Harris, S & Jones, G (2015). Management of Bats in Churches – a pilot. English Heritage Research Project: 6199 available at https://historicengland.org.uk/research/results/reports/redirect/15751 Accessed 10th August 2023.

[3] Bats in Churches Conservation Action Plan, p15

implementation[4]. The remaining 82 churches would be offered 'advice and simple, affordable capital solutions'. Over 700 churches would be involved in a large-scale citizen science project – Bat Detectives. Overall, the project was expected to:

- benefit 111,000 people through community-led engagement activities
- enable over 12,000 people to directly access the project through engagement activities
- develop the knowledge and skills of over 1,545 volunteers
- enhance the knowledge of over 100 heritage specialists of dealing with bats in historic buildings
- develop a network of 1,800 conservation volunteers willing to support churches and bats.

Figure 1.1 – Overview of the Bats in Churches project



Source: Bats in Churches - Conservation Action Plan p33, figure 7 schematic showing the work streams, strategies and their inter-relationships

This is the final evaluation in a series of independent evaluations undertaken by 20 Degrees Consulting and Arcadis. It draws upon the findings of three previous annual evaluations, contributing additional findings since the previous report of November 2022.

[4] Ibid, p73

This report follows the general structure of figure 1.1, to consider programme activities, albeit communications and interpretation activities were placed within consideration of Workstream 2 – Building Community Support. Legacy formed a separate chapter before progress towards the logic model outcomes (see annex A) were considered. The final chapter draws conclusions, highlighting lessons learned and makes recommendations for the key stakeholders in the programme. Progress towards the NLHF's Approved Purposes is considered explicitly within the conclusions.

2. Methodology

This final evaluation synthesised the findings of the three previous years of evaluations. A further set of findings drawn from the reflections of the BiC team and the programme Steering Group was added, plus evidence from the programme monitoring system. Desk research provided a theoretical framework for human-bat (wildlife) conflict transformation.

A mixed method approach continued, drawing on a mix of monitoring information and primary research applying multiple methods. The logic of the programme continued to be explored, based on the logic model reproduced in annex A.

In line with previous years, the BiC team provided access to all monitoring and management information via Sharepoint.

Table 2.1 summarises the primary research conducted throughout the lifetime of the project.

A sample of interview topic guides, from the 2023 wave of interviews, are reproduced at annex B.

Table 2.1 – Primary research

Sample group	Year	Research method	Number approached	No. responses (Response rate)
BiC delivery team	2023	Interviews (1-2-1)	9	9 (100%)
	2022		8	8 (100%)
	2021		7	7 (100%)
	2020		8	8 (100%)
Steering Group members	2023	Interviews (1-2-1)	6	6 (100%)
	2020		5	5 (100%)
Primary church contacts (annual church survey)	2022	Survey	101	70 (69%)
	2021		108	66 (61%)
	2020		89(1)	74 (83%)
Primary church contacts (follow up of respondents positive about bats in 2020 annual church survey)	2021	Interviews (1-2-1)	34	24 (71%)
Longitudinal church sample – case studies	2022	Interviews (1-2-1)	18	14 (78%)
	2020		18	15 (83%)
Volunteer bat roost visitors	2020	Interviews (1-2-1)	4	4 (100%)
Programme ecologists	2021	Interviews (1-2-1)	13	9 (69%)
Church architects	2021	Interviews (1-2-1)	13	9 (69%)
Bat survey volunteers	2022	Survey	326	68 (21%)
Bat group representatives	2022	Interviews (1-2-1)	6	3 (50%)
Follow up to sample of respondents to bat volunteer survey	2022	Interviews (1-2-1)	8	6 (75%)
Wider stakeholders e.g. DAC secretaries	2022	Interviews (1-2-1)	7	3 (43%)
Engagement and training events – bat evenings,	2020-2022	Observation visits	9	9 (100%)

church cleaning workshops, schools work, art installation launch, training				
Participants at engagement events		Informal interviews 1-2-1	237	32 (14%) (32%)[(2)]

(1) At the time of the survey there were 18 churches allocated to the longitudinal sample group, so 90 remaining within the population of programme churches. One church had such limited engagement with the programme that the engagement officer had not been able to make an initial visit. At the request of the engagement officer this church was not approached to participate in the survey until it was clear whether the church was going to withdraw from the programme.

(2) 138 attendees attended a virtual bat evening in 2020 and 9 at a virtual training session in 2021, so there were 147 participants at events observed where there was no opportunity to open up evaluation discussions. Allowing for this would lead to an effective interview rate at engagement events of 32%.

Consequently, the primary research findings were drawn from 162 interviews with 121 individuals, 278 survey responses from 166 individuals and observation of 237 individuals at 9 events.

3. Workstream 1 – Solving the Conflict in Churches

3.1 Introduction

A recurring finding of the evaluation was that church communities did not dislike bats *per se*, but did dislike the damage and disruption caused by faeces and urine when bats flew within areas of the church used by people and / or where sacred or heritage features were located. Consequently, multiple strands of activity were attempted within the programme:

(a) Physically separating bats and people / heritage
(b) Using education to bridge the divide between supporters of churches as places of worship and/or heritage and supporters of bats.

3.2 Capital works

Capital works funded by the BiC programme were split into three categories:

- Capital severe – works in excess of £10,000 in value, seeking to improve large areas or all of a church interior. Bats surveys required. Some of the most expensive capital works cost c.£87,000.
- Capital minor – works costing less than £10,000, seeking to improve large areas or all of a church interior. Bat surveys required.
- Capital heritage – works to protect specific monuments or artefacts. Typically, these were covers or shelves and bat surveys were not required.

Table 3.1 provides a brief categorisation of the 31 capital severe and capital minor projects carried out by the programme (including four from the pilot project). Categorisation was according to the following key:

Key

Success – Church community reportedly happy with results of mitigation and bats using mitigation
Partial success – Mess or nuisance caused by bats reduced or church community reportedly happy with mitigation but bats not using mitigation
On-going challenges – Mitigation did not work, mitigation work delays or initial success reversed.

Table 3.1 – Results of capital severe and minor projects (September 2023)

Success	Partial success	On-going challenges
All Saints, Braunston-in-Rutland, Leicestershire	All Saints, Low Catton, Yorkshire	St Edmund, Egleton, Leicestershire
St Andrew, Coston, Leicestershire	St Margaret of Antioch, Wellington, Herefordshire	Holcombe Old Church, Somerset
St Lawrence, Radstone, Northamptonshire	St Mary the Virgin, Pembridge, Herefordshire	St John the Baptist, Cold Overton, Leicestershire
St Margaret, Saxlingham, Norfolk	All Saints, Swanton Morley, Norfolk	St Remigius, Dunston, Norfolk
St Pega, Peakirk, Cambridgeshire	St Lawrence, Willington, Bedfordshire	St Mary, Gayton Thorpe, Norfolk
St Wenappa, Gwennap, Cornwall	Holy Trinity Collegiate Church, Tattershall, Lincolnshire	Holy Trinity, Great Hockham, Norfolk
St Morran, Lamorran, Cornwall		St Peter, Guestwick, Norfolk
St Paul, Chacewater, Cornwall		St Margaret, Hardwick, Norfolk
St Nicholas, Elmdon, Essex		All Saints, Thornham, Norfolk
St George, West Grinstead, Sussex		All Saints, Toftrees, Norfolk
		St Mary the Virgin, Wiggenhall, Norfolk
		St Mary the Virgin, Weatherden, Suffolk
		St Nicholas, Stanford on Avon, Northamptonshire

The findings of table 3.1 were drawn from a combination of the BiC monitoring system and interviews with members of the BiC team, with additional findings cross-referenced with feedback from church representatives in the 2022 church evaluation survey. Greater detail can be found at annex C.

The most striking feature of table 3.1 was only a third of capital mitigation projects being categorised as successful at the end of a five year programme. The 2021 evaluation noted a need for iteration of capital works typically because bats found new access points to the church or there was a need for patience if the bats left and

did not use the mitigation initially[5]. Indeed, three of the 10 successful projects were only declared successes in summer 2023, following monitoring surveys.

While table 3.1 was an objective view of the extent mitigations were successful, the 2022 evaluation included a subjective view of success. Church warden sentiment was gathered in the annual church survey to understand whether disruption due to bats increased or decreased[6]. Where a capital intervention had taken place, three times as many churches reported a reduction in disruption relative to those reporting an increase. By comparison, where no capital intervention had taken place, 1.4 times as many churches experienced an increase in disruption relative to those experiencing a reduction.

Figure 3.1 – Local newspaper celebrating programme success

Source: Northants Live, 12 December 2021

[5] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp13-15

[6] Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p24

By 2023, it was apparent that even *success* was not necessarily a final position. As an example, the 2021 evaluation identified the mitigation at St Mary's, Gayton Thorpe as a relatively straight forward exclusion, albeit the bats had found a new access point at that time[7]. In early 2023 the view was the problem had been solved, but by July 2023:

> "It *was looking good until a few days ago. Then bats found their way in and a week ago there were 300 bats in there, more than ever."*
> Member of BiC team

By contrast, St Lawrence, Radstone was classified as a successful mitigation in 2021, a partial success in 2022 when the bats stopped using the mitigation, but re-categorised as successful in 2023 when the bats returned[8].

Review of the capital mitigations (annex C) suggested *success* was most likely where:

- A church's architecture allowed bats to be contained completely in a roof space with no access points into the main body of the church from the roof nor the exterior, or
- Church representatives had no expectation of excluding bats and were content with reduced mess or mess confined to specific areas of the church.

Partial successes tended to equate to the bats leaving the church because they did not adapt to the mitigation or there was a reduction in bats gaining access to the main church, with accompanying reduction in mess or nuisance. As the example of St Lawrence, Radstone suggests, partial success in 2023 may yet translate into a successful categorisation in future years in cases where bats decide to use the mitigation.

Projects with on-going challenges were associated with a variety of factors:

[7] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p14

[8] The project team have a theory that the particularly high temperatures experienced in summer 2022 when surveying took place caused the bats to migrate to a wood where it was cooler.

- The architecture of the churches meant that it was not possible to contain bats within roof voids such as to completely separate bats from people / heritage
- The age of the buildings meant that they were inherently porous e.g. cracks in walls, under doors or in windows, enabling bats to find new access points when previous main access points were blocked
- People caused delays in works e.g. ecologists or tradespeople, or church communities decided not to adopt potential mitigation measures, for a variety of reasons ranging from aesthetic concerns to cost.

These findings were consistent with the findings of 2021, suggesting patience was needed in trying to deal with bats in churches[9]:

- An iterative approach was often necessary, with mitigations requiring amendments and new access points opening up in these largely medieval buildings
- Bats can take years to develop confidence in a mitigation and adopt it.

Early evaluation findings indicated *bat behaviours can change over time and the cost of interventions do not necessarily correlate linearly with the scale of bat issues*[10]. A review of the cost of capital mitigation projects can be found at annex F. The average total cost of a capital mitigation project was £43,087 but total costs ranged from £10,372 to £134,530 for projects involving capital works plus professional fees. It was notable that some of the more costly projects yielded partial successes, whereas one of the least costly projects yielded success for an investment of £15,687. More precisely, this example was classified as a success as the church was satisfied (as will be seen in case study 8.1) but may have been classified as an *on-going challenge* by other church wardens. If that latter view was taken, the least costly capital mitigation project yielding success was £18,764.

The overall finding from annex F was of no correlation between cost of mitigation and the likelihood of success. Factors such as architecture and the extent that buildings allowed access for bats were greater determinants of success. Expressed

[9] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p15

[10] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p28

differently, the more complex the architecture and the more porous a church building was to bats, the less likely success would be delivered, and so the more expensive a mitigation would be due to iterative professional fees and capital interventions.

> *"Money definitely doesn't equal success with [mitigation projects in] churches at all, and probably in a number of places. But that's been really obvious that throwing money at the problem will not necessarily lead to a good outcome. And in fact, in some cases it really leads to disappointment."*
> Member of BiC team

> *"I'm thinking Cold Overton. We're talking five/six years of endless surveys, endless scaffolding, endless attempts to keep them [bats] contained in the boxes in the ceiling, and it hasn't worked. I suppose it's that understanding that it's often not possible to make a church bat proof, but that things can be done to help deal with the droppings and the urine."*
> Member of BiC team

Affordability became a key feature in the minds of the BiC team from 2021 onwards[11]. At this time the full extent of capital mitigation costs became apparent and sat alongside an evolving understanding that churches were effectively individual voluntary sector organisations, typically financed by a relatively small and aging congregation. This coincided with surveys and bat management plans being commissioned for 25 stream 2 churches, with the cost of any mitigations falling on these churches.

It was widely reported at this time that church attendance and consequently finances fell notably as a result of the COVID-19 pandemic, with a minority of churches recovering to pre-pandemic levels of support by 2023[12].

[11] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p15

[12] Church of England Parish income was 14% lower (in real terms) in 2021 than 2019 – Church of England (2023) Parish Finance Statistics 2021. Available at https://www.churchofengland.org/sites/default/files/2023-03/parish-finance-statistics-2021.pdf. Accessed 22nd August 2023

Onsite church attendance was 78% of 2019 levels in 2022, with an additional 11% attending online – Diocese of Oxford (2023) Post-Covid-19 Trends, Patterns and Possibilities. Available at https://oxford.anglican.org/post-covid-19-trends-patterns-and-possibilities.php. Accessed 22nd August 2023

"There was enough funding for assessment but from parishes point of view all that said was, 'we know more about bats and what they need', but didn't get us any further forward in dealing with them or the issues they create for a worshipping community. And you're asking a very small church community to pay £80k-£100k to sort it out."
DAC Secretary

By July 2023, almost none of these 25 churches had implemented a capital mitigation. The programme monitoring system tended to indicate the church lacked sufficient funds to implement, for example:

"Eave boxes on S [south] side of Lady Chapel. Close off other access points. £5,000-10,000. No funds so on hold."
Monitoring system notes – St Mary the Virgin, Clothall, Hertfordshire

Nevertheless, there were a small number of instances where work was being planned and paid for by the local congregation, typically where works were relatively minor. An example was St Peter's, Netherseal, Derbyshire where bats were entering the main body of the church through a clock weight opening. The church intended to automate the clock and seal the hole. A bat box was installed to enhance the tower as a roost.

With affordability in mind, the programme experimented with lower cost interventions, learning from early *wins* such as St Andrew's, Coston, where removeable trays or shelves were positioned underneath roosts to reduce mess in the church and make cleaning a more manageable, planned activity. *Bat sails* were trialled in St Mary Magdalene, Brampton, with apparent success. The approach was subsequently suggested as an option for St Andrew, Whissendine, a *stream 2* church.

Figure 3.2 – Brampton – Bat sail (left) and two bat sails in situ (right)

Source: BiC monitoring system

The accessibility of the bat sails is illustrated at https://youtu.be/wfjLn1g9bTg (62 seconds)

A further category of capital works was *Capital Heritage*. Typically, these were instances where one or two heritage features needed protection as the bat issue was not significant enough elsewhere in the church to justify the cost of full bat exclusion, if that was even possible given the architecture of the building. Capital heritage projects tended to be significantly more affordable and easier to implement, given they did not require bat surveys nor bat licences. Table D.1 in annex D summarises Capital Heritage projects.

Reflecting on the capital works, members of the BiC team suggested the likelihood of successful capital mitigation projects tended to be limited to a relatively small range of scenarios:

> *"On the whole, these big mitigation projects have a slim chance of success, unless there are very specific criteria…The only time we're recommending doing mitigation is in very specific circumstances, like Braunston, where they are coming in at one place and roosting there. And it was a matter of just blocking a few existing gaps. We didn't move the access, we didn't move the roost, they were pipistrelles…and it was just a matter of containing them where they had always been. Or alternatively, if you're going up and you're spending a*

million putting your roof back on, then actually it's probably worth having a think about it and doing something like Swanton Morley...We've spent all this time and all this money blocking. There's been a bit of strong wind and a pane of glass has fallen out in the clerestory and suddenly there's a gap back in the church again."
Member of the BiC team

3.3 The Bats in Churches Class Licence

The BiCCL was developed to address gaps in other bat licences which did not take account of the particular needs of churches. Ecologists recognised the need to manage bat populations within churches where they were impeding the use the buildings for their primary purpose[13]. In their experience, demonstrating a proven need for a bat mitigation licence on health & safety or public interest grounds prior to BiCCL was not possible to protect church artefacts nor to mitigate human-bat conflict. Consequently, they agreed with the need for a BiCCL to fill such gaps.

The opportunity to trial different approaches through the BiCCL was a motivator for some ecologists engaging in the BiC programme. Other classes of bat license were viewed as prescriptive by some, so the opportunity to be more innovative was welcome.

Ecologists reported the training to secure a BiCCL was very beneficial. Although the formal training element was considered comparable to other training courses attended, the key benefit was the generally high level of experience of other participants and consequently the high level of peer learning that took place.

"I found it really interesting to be in a room with a lot of very experienced bat people and Natural England and all the cards were on the table and we had some really fantastic discussions about licensing and bats and good practice."
Ecologist

Feedback about the BiCCL varied in emphasis. Some ecologists felt they had good engagement from Natural England and appreciated the opportunity to be treated as a professional rather than given a highly prescribed licence. In that sense, the BiCCL

[13] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p16

was fit for purpose. However, others questioned whether the BiCCL would survive beyond the lifetime of the BiC programme as costs were viewed as unaffordable for many churches, given the requirements of number of surveys and, for example, radio tracking of some species.

One ecologist summarised these latter thoughts:

"I would query whether so much survey work was necessary. We've done more surveys than we'd normally do, then the church might not want to do mitigation. Three surveys is enough to characterise the issue in these churches, especially when they've had several in the past.

Less surveys would give more room in the budget to actually do the mitigation. We've done all these surveys at one church only to say we can build a bat loft and clean the church more. Did I really need to do so many surveys to suggest something the church can't pay for, and to recommend them a better disinfectant? If all they're able to afford is cleaning equipment and draping covers over things anyway, the money from surveys could be better spent on those mitigation efforts."
Ecologist

Feedback of this type was a feature of the findings of 2021 and reportedly aligned with direct feedback to the BiC team, shaping their thinking about the importance of affordability for churches from 2021 onwards.

Table 3.2 illustrates the extent that the BiCCL was used to undertake capital mitigation projects. This emphasised again the need for churches to consider affordability before seeking a BiCCL. A caveat to this was raised by a member of staff at Natural England:

"We are changing the requirements of the BICCL to make it more flexible in terms of surveys and monitoring, which would reduce the survey costs in many cases, bringing it line with our regular licences. It is also worth being clear that the majority of the works done under the BICCL would not be permitted under a normal mitigation or ESP licence and so could not have gone ahead at all."
Representative of Natural England

Table 3.2 – Attrition between BiCCL surveys and BiCCL use

No. BiCCL survey churches	56
No. churches where capital works undertaken	34
No. churches where capital works undertaken and BiCCL used	23

Source: BiC monitoring system

Nevertheless, the programme team indicated one church outside the BiC programme was applying for a BiCCL at the time of the final evaluation. This resonated with the BiC team members' view of the BiCCL:

> *"We have had agreement with licensing [Natural England] that the class license has shown it can be used effectively. I think it will really only be used in quite specific situations, where it's a complex church and they understand the risks and there's a bit of funding and they might want to emulate something specific that we've done at Bats and Churches."*
> Member of the BiC team

3.4 Beyond capital works

Early findings of the evaluation were that church users rarely disliked bats, rather they disliked the mess and nuisance caused by bats. Moreover, they resented the way their concerns about increased cleaning workload were dismissed with suggestions that the needs of bats were more important than their needs to preserve churches as sacred spaces[14]. This was summarised in a quotation in the 2020 evaluation:

> "*"We had no hope before and were becoming despondent. This is the first time someone seems to be caring about our situation. All we want is someone to assist and enable us to both live well together side by side, rather than being the second fiddle and considered unimportant."*
> Churchwarden

[14] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp44-45

A case study in the 2020 evaluation report illustrated that the attitude of authority figures towards the plight of church users sometimes caused greater frustration than the bats *per se*[15]:

Case study 3.1 – The attitude of authority

A narrative inquiry approach was used as part of each interview conducted with a representative of churches selected for longitudinal study. Interviewees were asked to describe the impact of the bat problem on their church.

Analysis of the transcript of the case study interview revealed a response to this question lasting for 7 minutes 30 seconds. Within this time the interviewee described the impact of the bats on the church for only 12% of the time, while the remaining 88% of time was spent talking about the interviewee's dealings with government bodies, officials and ecologists. It described frustration that the church's problem was not given any serious consideration until the issue was escalated to a Cabinet Minister.

At the end of the response, the interviewer suggested the interviewee was more frustrated with people and organisations than bats, prompting the following response:

"We're not particularly hostile to the bats. We don't want to see them obliterated. We just want to see them moved. You're absolutely right – the prime irritation was with DEFRA and Natural England. There's a palpable sense of disappointment that we've not been able to make any progress."

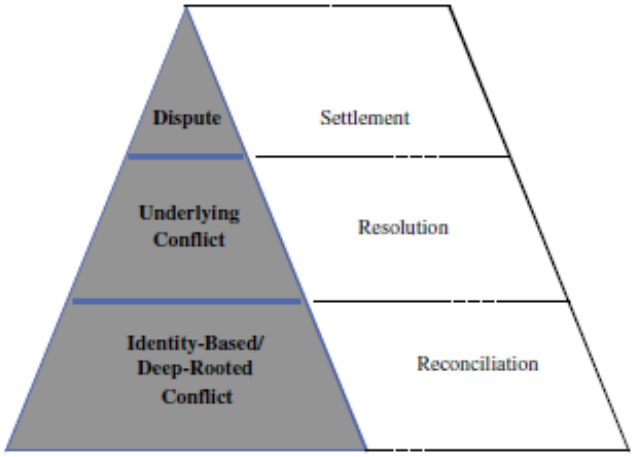
The above aligned with wider literature on human-wildlife conflict. Madden & McQuinn proposed a hierarchical model of human-wildlife conflict, summarised in figure 3.3[16].

[15] Ibid, p45

[16] Madden, F. & McQuinn, B. (2014) Conservation's blind spot: The case for conflict transformation in wildlife conservation. *Biological Conservation* 178, pp97-106. Available at https://doi.org/10.1016/j.biocon.2014.07.015. Accessed 23rd August 2023

Figure 3.3 – Model of human-wildlife conflict

Source: Madden & McQuinn, 2014



The first level of conflict is the 'dispute'. In the context of the BiC programme, it is the presence of bats causing a mess or nuisance for the church. If the bats and people / heritage can be separated from one another, the dispute may be settled.

However, Madden & McQuinn suggested, *Conflicts can exist solely at the dispute level, but more typically a dispute is also the surface expression of deeper levels of conflict. A narrow focus on the 'dispute' level explains, in part, why conservation practitioners are sometimes surprised that conflict remains or even escalates after the problem appears to have been 'settled*.[17]

This leads to a second level of conflict, which would be a history of unresolved disputes. In the case of the BiC programme, this may manifest itself as a church being told previously that they could not do anything to exclude bats from their church (reduce the mess or nuisance) by ecologists, bat group members or representatives of authority e.g. a local authority officer or a Natural England representative. This might imbue the dispute with significance that might not be obvious, perhaps feelings of helplessness or a rejection of the validity of their situation. Madden & McQuinn went further to suggest, *The importance of this history may be further obscured because the participants themselves may find it easier to focus on and articulate a specific, concrete, economic, or physical loss, than to express more complex social or psychological issues (e.g. resentment about how*

[17] Ibid, p101

past decisions by authorities were made that may exacerbate the meaning of a new incident).[18]

A yet deeper layer of conflict was proposed also. *The third level of the model—identity conflict—involves values, beliefs, or social-psychological needs that are central to the identity of at least one of the parties involved in the conflict.*[19] Madden & McQuinn went on to cite Burton, '*when the non-material identity needs of a people are threatened, they will fight. In these cases, the disputant(s) feel that the stakes are so high that they are willing to take extraordinary measures to win*. [20] Case study 3.1 illustrates an example where an apparent problem with bat mess escalated to a complaint to a UK Government minister. Another example during the lifetime of the BiC programme was a written suggestion by the Bishop of St Albans that removing bat protection from heritage buildings was a Brexit opportunity. Consideration of the significance of church buildings to church wardens surveyed as part of the 2020 evaluation suggested the deeply personal links felt for the church buildings, hinting at the feeling of identity linked to the church buildings and heritage:

- Sacred spaces for worship and fellowship
- Places of peace and tranquillity
- Places of shared experiences and memories for family and community
- Focal points for the community
- Loved built heritage
- An unbroken link with the past for families and communities[21].

Although this human-wildlife conflict model was not the basis of the original BiC programme design, the findings through the evaluation suggested the programme mapped onto the model well. Moreover, as will be considered, the way the programme was implemented fitted Fadden and McQuinn's proposed solution to

[18] Ibid

[19] Ibid

[20] Burton, J.W. (1984) Global conflict, Wheatsheaf, Brighton, p12

[21] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p47

human-wildlife conflict (or *human-wildlife coexistence* as more recent publications refer to the issue[22]) through conflict transformation.

The BiC team were observed to show patience and empathy with church users and bat advocates, necessary traits underpinning the conflict transformation approach.

A follow up interview with the church representative from case study 3.1 suggested churches equally observed this approach:

> *"They've been very agreeable and sympathetic […] It's nice to know that somebody actually cares about the problem."*
> Church representative two years on from case study 3.1

The approach yielded positive results even where capital mitigation works did not take place:

> *"They've sort of given us a new perspective on thinking about it. You know, they've helped us in the way that we deal with them, they've helped us feel more friendly towards the bats as well I think."*
> Church representative talking about the BiC team
> (Church receiving help and advice but no capital works)

The findings suggested BiC programme partners had heard and understood this point also:

> *"I think a very big point is that people who aren't listened to get angry and take to social media. Investing a bit of time in really hearing them out, saves an enormous amount of accumulated aggravation. […] People who feel that the experts are not blocking them, but investing time in finding out what can be done, that creates some really much more constructive stories."*
> Member of the Steering Group

As the BiC team gained understanding of the affordability issue of capital mitigation projects, as discussed in 3.2, they considered very low-cost interventions which

[22] Gross, E.M., Jayasinghe, N., Brooks, A., Polet, G., Wadhwa, R. & Hilderink-Koopmans, F. (2021) A Future For All: Human-Wildlife Coexistence, WWF, Gland, Switzerland

nonetheless demonstrated to churches that their concerns were understood and being taken seriously. Examples were offers of professional cleaning of churches or purchase of lightweight vacuum cleaners after noting that elderly volunteers were cleaning their churches with heavy and often old vacuum cleaners. Cleaning workshops were often used to help churches with a small congregation to tackle a specific aspect of their cleaning. An example in 2023 was St Mary's, Edgeworth[23].

Figure 3.4 – Church cleaning workshops were a hands-on experience

St Andrew's Church, Wood Dalling, Norfolk

Source: 20 Degrees

The 2021 evaluation explored the approach not only of the BiC team but also professionals brought in to tackle individual church issues, largely ecologists and church architects / surveyors[24]. The findings pointed to the importance of *the right team* being formed to work with churches experiencing challenges caused by bats. The findings identified that *the right team* needed the following attributes to have success at conflict transformation:

[23] Bats in Churches (2023) Bats in Churches working party polishes up pews at project church. Available at https://batsinchurches.org.uk/2023/07/21/bats-in-churches-working-party-polishes-up-pews/. Accessed 26th August 2023

[24] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp15-22

- While retaining their professional integrity, team members had empathy for the positions of others
- Professional services were delivered in a timely manner
- Professionals collaborated to develop bat mitigation measures that were affordable and could be implemented practically for the benefit of bats, people and church heritage[25].

The findings made clear that the BiC programme not only attracted professionals who were interested in solving the human-bat conflict in churches but created time for meaningful discussions to take place, so that alternative perspectives could be considered.

> *"As a professional ecologist you can become very focussed on the bats and conserving the bats and doing the best for the bats. Then you start working on a project like this and you can see directly the impact that it's having on people [...] and how frustrated and powerless they feel. And it gives you a new appreciation of the other side of the story."*
> Ecologist

> *"The ecologist has generally been excellent – 'hardcore', with very set views, but really good at explaining the 'why' as well as the 'what'. We don't usually get this level of engagement with ecologists. He has been able to say clearly what has worked well and less well."*
> Church architect

3.5 Case studies

A representative sample of churches were tracked throughout the lifetime of the evaluation. A set of case studies drawn from that sample are presented in annex G. They collectively illustrate some key themes of the programme's findings, as summarised in table 3.3.

[25] Ibid, p23

Table 3.3 – Themes of the wider evaluation observable in case study sample

Theme	Present in case studies
Churches recognised opportunity of bats in the building and incorporated into their mission (commonly but not exclusively when cleaning became more manageable). Bats were turned from a nuisance into an asset.	G1, G2, G4
The issue of small and aging congregations posed a significant challenge for churches. Lack of capacity to tackle bat issues were symptomatic of this wider issue.	G3
Very old churches tend to be porous to bats due to small holes in the building fabric and gaps around doors and windows.	G5
Education was helpful in enabling congregations and visitors understand the threats faced by bats and their importance as indicator species of biodiversity health.	G6, G9, G10
Solutions to bat-human/heritage conflict were seldom quick, even if capital mitigation works to separate bats from people / heritage were possible.	G7
Well-intentioned works, for example to weatherproof a church or improve its energy efficiency, can have unintended consequences, such as excluding bats from roosts (which can lead to bats creating roosts where they may be a greater nuisance).	G8
Relatively inexpensive mitigation measures, such as pew covers and long handled brushes can provide quick and effective mitigation for a congregation's bat problems, even if a large capital mitigation proves unaffordable or simply impossible.	G9

4. Workstream 2 – Building community support

4.1 Introduction

The 2022 evaluation reported on the use of public engagement events, wider communications channels, education and interpretation to build community support. The 2022 findings are reproduced in an updated format here to provide a snapshot of progress close to the end of the programme.

4.2 Public engagement events

Table 4.1 illustrates the changes in public engagement events over time. The effect of the pandemic is clear, with the reduction of in-person events in 2020 but numbers building through 2021 and 2022 through to 2023. By contrast, the number of people attending talks grew through 2020 and peaked in 2021, illustrating the period that on-line work dominated and drew national audiences, for example to *BiC Live* webinars. There was renewed focus on talks in 2023 as part of the final dissemination of key lessons learned from the BiC programme.

Table 4.1 – Number of attendees at public engagement events (to 26 October 2023)

	2019	**2020**	**2021**	**2022**	**2023**
BiC attendance at church / village organised event e.g. Fayre	364	23	795	1,201	1,116
BiC attendance at event run by another organisation e.g. bat group or DAC	70	0	143	266	15 (12,015)++
Bat walk / event	766	282	337	415	248
Heritage event	20	10	0	150	0
Talk / lecture	166	535	1,473	144	321
BiC art exhibition	-	-	-	126	799
Programme celebration Flying to the Future	-	-	-	-	70
Total	1,386	850	2,748	2,302	2,569 (14,569)++
Grand total					9,855 (21,855)++

Source: BiC monitoring system

[++] The BiC monitoring system included attendance at Birdfair. This was attended by an estimated 12,000 people. The extent to which the BiC presence impacted on the full number of attendees cannot be estimated and unthinking inclusion of this event's participants may give an overly optimistic view of public engagement extent in 2023 relative to other years.

Table 4.1 suggests attendance at heritage-specific events appeared low relative to other events. However, this is misleading as talks / lectures included *BiC Live* webinars, some of which were clearly heritage events. In the 2023 *BiC Live* series, two of the four webinars focussed on heritage:

- Heritage Treasures in English Churches – the focus was on significant heritage treasures in some of the BiC project churches. Speakers were Dr Christina Welch (University of Winchester), Colin Vogel (All Saints Church, Toftrees, Norfolk) and Antia Dona Vazquez (Bats in Churches)
- Around Britain by Church: In Conversation with Peter Ross – This award-winning author uses church heritage stories to tell the story of Britain.

These and other webinars remained available at https://batsinchurches.org.uk/events/bats-in-churches-live-series-3/ at the time of the evaluation.

Live attendance was included in the 2023 talk / lecture category in table 4.2 but the recordings of the two webinars had been viewed 89 times, which would not have been recorded in table 4.1[26].

It was also interesting to note the extent that the BiC touring art installation, *On a Wing and a Prayer*, was a growing feature of public engagement from its launch in October 2022 and into 2023. This arose serendipitously from the BiC Engagement Officers noting the wider skills and interests of two key volunteers.

[26] The recordings were available at https://www.youtube.com/watch?v=bnOt_llu-iw and https://www.youtube.com/watch?v=E92KRYebHG0&t=3s the combined 89 views were noted on 24/08/23. The extent that each viewing was for a materially significant element of the run time of each webinar could not be ascertained.

Case study 4.1

On a Wing and a Prayer, St Michael the Archangel, Compton Martin

Ilene Sterns, the artist, and her partner Phil Atkin were present throughout the launch of the exhibition within the sanctuary of St Michael's Church, Compton Martin on 29th October 2022. They discussed the art with visitors. While the images created by Ilene provided the foundational element of the exhibition, it was complemented by a soundscape edited by Phil from the calls of five different types of bats in churches.

Both Ilene and Phil have been keen supporters of the BiC programme, undertaking more bat surveys than any other volunteers. Phil built homemade bat detectors which he sometimes gifted to churches.

Example exhibition image (left) and Phil demonstrating a bat detector (right)

The accompanying soundscape can be accessed at https://soundcloud.com/on_a_wing_and_a_prayer/batscape

Ilene worked with a member of the PCC, Jean, who was a teacher. She secured words and sentences from local school children about the bats. Ilene was so impressed by the children's contributions that she used them all.

The church put in significant effort to engage the community, using the exhibition as an attraction. Several members of the PCC were on hand to welcome visitors, with tea and cakes in plentiful supply. The launch, lasted for two hours, attracting 25

members of the community, from six children through to retired people. In context, Compton Martin had 508 residents on census day 2011[27].

Immediately following the launch, a local ukulele band was performing in the same space. It was anticipated significantly larger numbers of people would view the exhibition over the days and weeks following the launch.

Visitors to the exhibition varied from those attending the church regularly, to those that never worshipped there. This fitted with the view of PCC members that the art installation formed part of the churches outreach to the community. One of the PCC members described how the wider BiC programme had become part of the way the church undertook mission:

"Initially, the bats were making a mess, so we thought we could just bung up the holes. We discovered it wasn't that easy. There are so many ways into this church, so many cracks.

The BiC project has changed everyone's minds about the bats.

Rose [BiC Engagement Officer] did a session with the children at the local school. BiC taught us about bats and how to do the surveys. We have done bat walks in the summer. The wider church has come along with it. People are feeling better disposed towards the bats. We see them as an opportunity for mission. Our first post-COVID event was 'Batty about St Michael's'. We created a trail around the church. The local community engaged, with some 60 people coming along, from children to old-aged people.

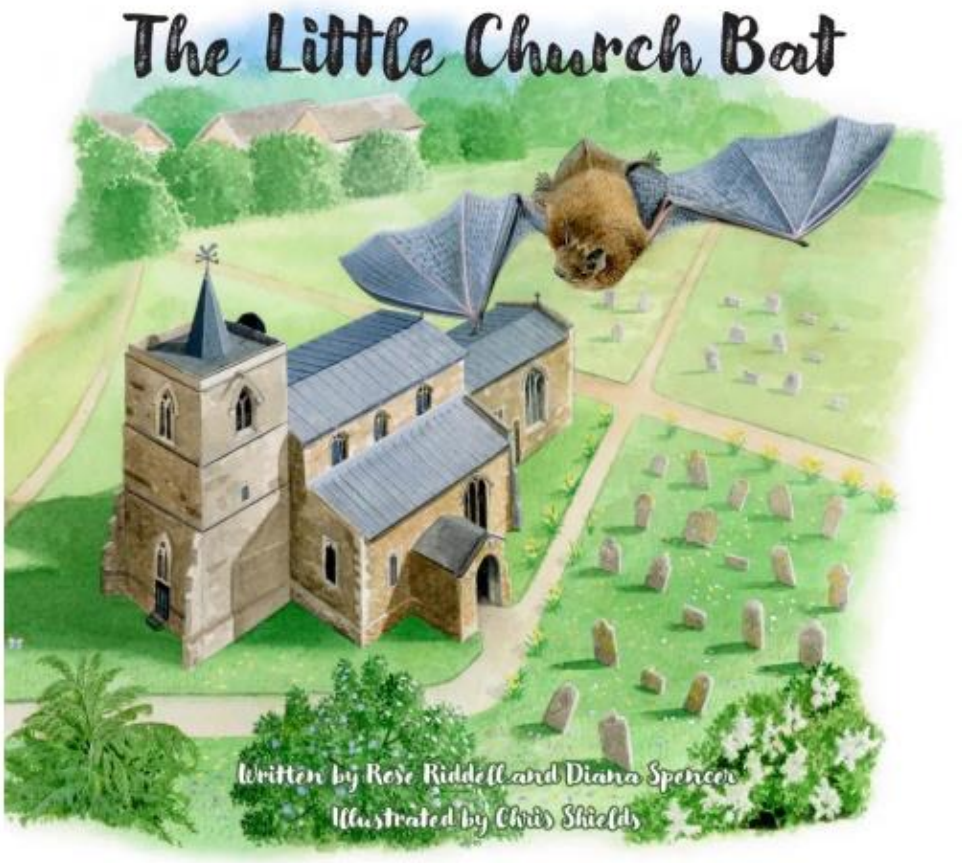
It is all about community engagement, both in the preparation and the viewing. We view as part of the way the church goes about mission."

While bat walks remained a staple of engagement throughout the programme, engagement officer effort switched more towards supporting churches in their own events during 2021/22, both as a means of reaching a wider range of people and as a statement of support for the churches. An example of how this statement of

[27] Population data for Compton Martin was accessed from the ONS through the local area profile at https://www.nomisweb.co.uk/ on 24th August 2023

support manifested in practical terms was the way the *'The Little Church Bat'* book produced by members of the project team was used. Copies were sold at church events and the proceeds donated to the churches to help their fundraising efforts.

Figure 4.1 – The Little Church Bat – cover image



4.3 Wider communication channels

4.3.1 Traditional media channels

Communication worked at multiple levels. National communication sought to raise awareness of the BiC programme and more generally bats in churches. Local communication fed into attempts to build community support.

Table 4.2 shows the spread of take up of press releases. It is likely the digital footprint is under-stated since print media publications tend to have a digital sister publication which will not have been recorded separately.

Table 4.2 – Breakdown of press release take up

Media	Example publication	2019	2020	2021	2022	2023
Newspaper – national	Daily Telegraph	4	1	2	1	1
Newspaper – regional	East Anglian Daily Times	5	0	3	12	6
Newspaper – local	Beccles and Bungay Journal	11	0	1	6	4
Digital – International	Fox News Online	2	0	0	1	0
Digital – national	Wildlife and Countryside Link	1	5	1	1	0
Digital - regional	BBC News Online	1	0	0	2	0
Digital – local	Norwich Evening News	2	0	0	1	0
Digital - specialist	SPAB blog	0	1	0	0	0
Magazine - National	BBC Wildlife Magazine	0	2	0	0	1
Magazine - Regional	The Countryman	0	2	1	4	0
Magazine - Specialist	Vidimus	1	5	4	6	2
Newsletter - local	Chignal Smealy village newsletter	3	2	1	3	0
Newsletter - Specialist	Diocesan or bat group newsletter	3	1	4	3	5
Radio - national	BBC 5 Live	0	0	0	1	0
Radio - regional	BBC Radio Essex	2	0	8	18	3
Radio - local	103 The Eye	0	0	1	1	1
TV - national	BBC One – Sunday Morning Live	1	0	1	2	1
TV - regional	BBC East Midlands Today	1	0	2	0	0
Total take up		**37**	**19**	**29**	**62**	**24**

Source: BiC monitoring system to 26th October 2023

The most striking change in 2022 was growth in regional radio and newspaper take up, a trend continued in 2023. Interest in the citizen science element of BiC received particularly strong interest from these sections of the media. This was linked to a call

in May 2022 for volunteers to survey churches during the summer period. Another story that gained traction with media outlets in 2022 was the discovery of grey long-eared bats at a church in Somerset[28].

The above illustrated wider findings in 2022 that the press were interested in volunteering and stories about bats. The majority of capital works had been completed in previous years. Iterative improvements to the mitigations were not viewed as newsworthy.

The *On a Wing and a Prayer* Exhibition continued to attract interest from local media outlets wherever the exhibition visited in 2023.

Media interest built in the final year of the BiC programme. The grey long-eared bat discovery in Somerset secured an interview on Radio 5 Live. The programme success at St Lawrence, Radstone was featured in an episode of Songs of Praise[29] and the programme's work featured on BBC Countryfile in October 2023 and in the Guardian in the same month[30].

[28] De la Mare, T. (2022) DNA analysis finds rare bat roosting in Somerset Church. Available at https://www.bbc.co.uk/news/uk-england-somerset-63470402. Accessed 26th August 2023

[29] BiC (2022) BBC Songs of Praise goes batty for Radstone church. Available at https://batsinchurches.org.uk/2022/11/28/bbc-songs-of-praise-bats/. Accessed 5th September 2023

[30] BiC (2023) Bats in Churches in the news!. Available at https://batsinchurches.org.uk/2023/10/23/bats-in-churches-in-the-news/. Accessed 29th October 2023

Figure 4.2 – National coverage of the BiC programme

Source: The Guardian[31]

Print subscriptions | Sign in | Search jobs | Search | UK edition

Support the Guardian

Fund independent journalism with £5 per month

Support us

The Guardian

Newspaper of the year

News | Opinion | Sport | Culture | Lifestyle | More

How England's churches are making an uneasy peace with the bats in their belfries

A £5m project is helping more than 100 historic churches deal with the damage caused by bat colonies

'It's safe, it's dry, there are insects in here, they can feed.' A pipistrelle bat navigates a church in darkness. Photograph: CreativeNature_nl/Getty Images/iStockphoto

High above the pews of All Saints church in Thornham, north Norfolk, a roost of soprano pipistrelle bats have made their home. The nooks and crannies of the medieval church are perfect entry points for the winged mammals, whose bodies are about the size of a thumb. In the warmer months, they emerge every evening from the rafters as darkness falls.

"They like our church," says Janet Needham, the warden, over tea and chocolate digestives in the church library.

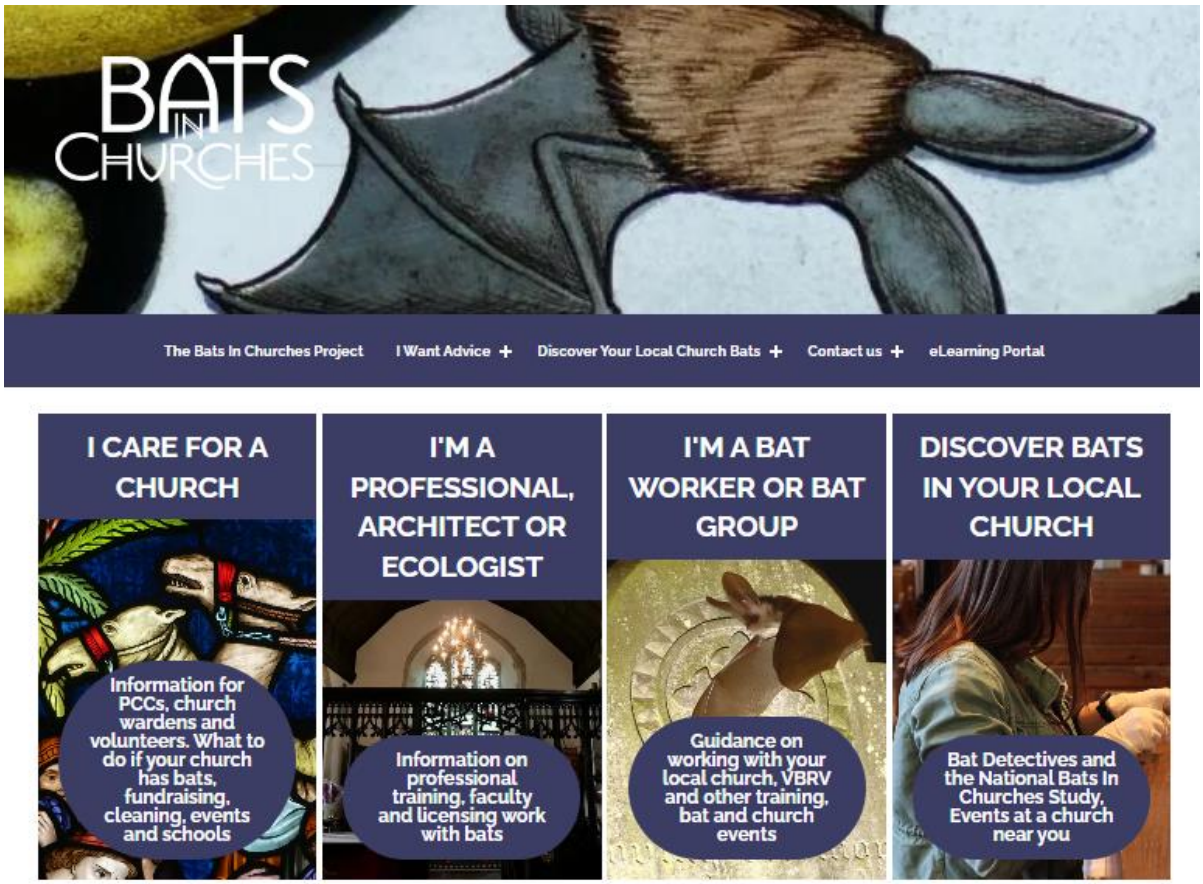
4.3.2 Digital promotion & engagement

The BiC team began to shift the programme from trialling mitigations to establishing legacy resources in 2022. With this in mind, the home page of the website was

[31] Greenfield, P. (2023) How England's churches are making an uneasy peace with bats in their belfries. Guardian. Available at https://www.theguardian.com/environment/2023/oct/09/how-englands-churches-are-making-an-uneasy-peace-with-the-bats-in-their-belfries-aoe. Accessed 29th October 2023

amended to enable easier navigation through resources depending on who was accessing.

Figure 4.3 – BiC home page – illustrating different emphases of different users



The 2020 evaluation identified growth in the resources available on the website. This trend continued from 2021 onwards. An e-learning portal was added, enabling access to online versions of seven of the most popular training events:

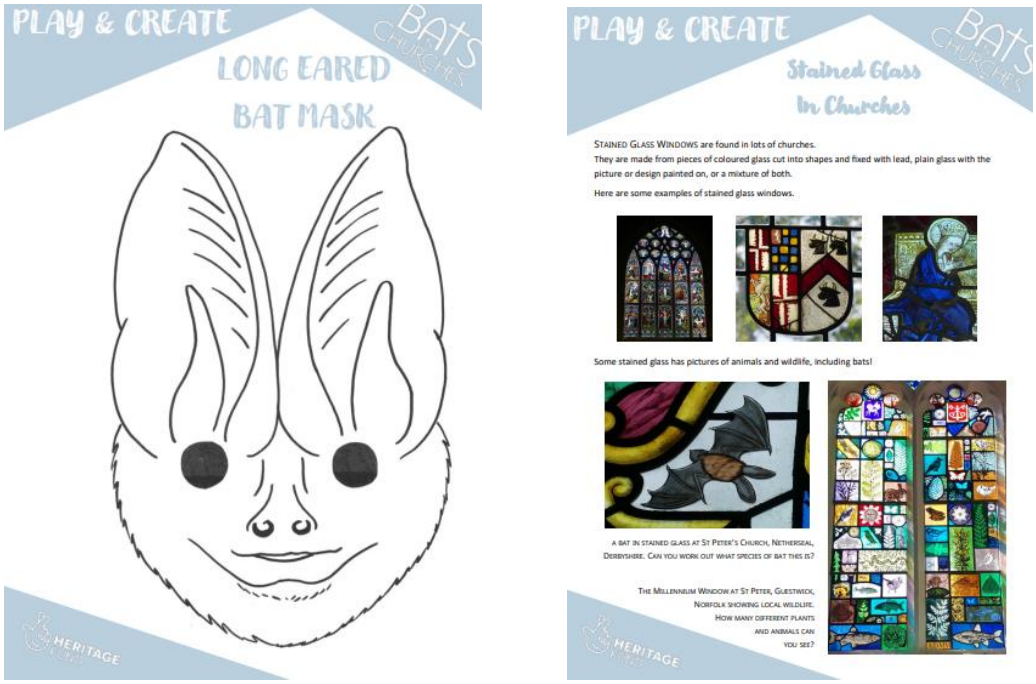
- Church cleaning guidelines
- Bat identification training+Include your Church Roost in a National Bat Monitoring Programme
- Bats in Churches Study (for those undertaking volunteer surveys)
- Creating and writing interpretation
- Planning and running events
- Working with churches
- Working with volunteers.

The first two course were added in 2023, whereas other courses were available from the portal from 2022. It was notable that the final four courses were generic enough to be used widely beyond churches with bats.

Extensive advice, guidance and resources from journal articles to case studies to spotter sheets for children was available from the website, arranged by the type of person interested in the resources:

- Those that care for a church
- Professionals, ecologists and architects
- Bat worker or bat group member.

Figure 4.4 – Example of children's resources on BiC website. Long-eared bat mask (left) and fact sheet about stained glass windows (right)



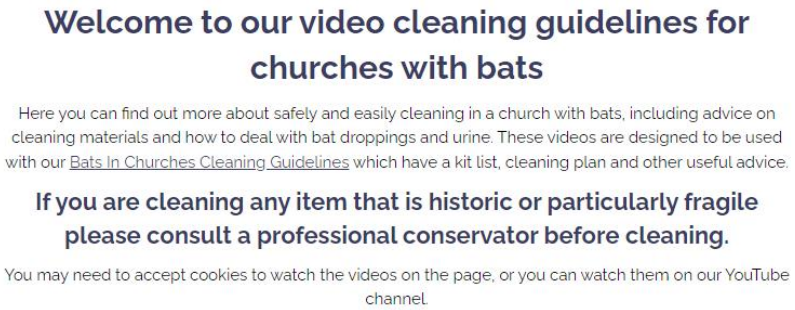
The 2020 evaluation recommended development of an e-learning resource for those seeking to clean churches with bats effectively[32]. A guidance booklet for cleaning churches with bats was developed in 2021 and revised in 2022. This was a significant piece of work and sits within the resources available for those looking

[32] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2020) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p56

after churches. During the evaluation period, members of the BiC team filmed a 36-minute guide to key church cleaning techniques. This was further broken down into shorter films for those with specific cleaning interests:

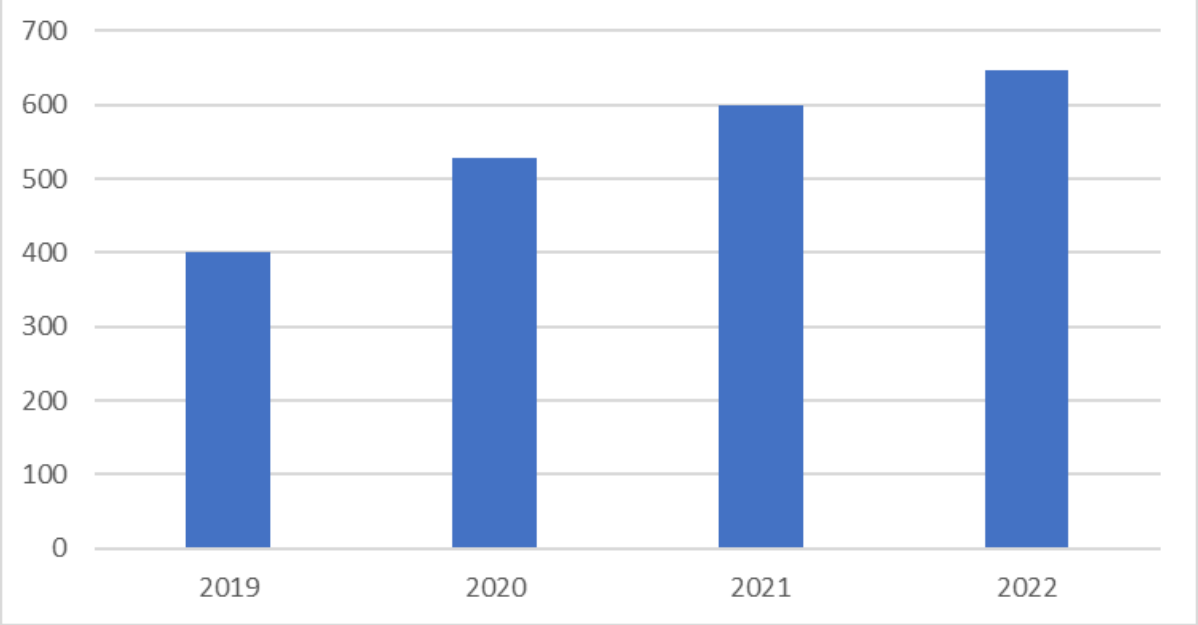
- Heritage Cleaning Introduction and Top Tips
- Heritage Cleaning Textiles
- Heritage Cleaning Metal
- Heritage Cleaning Wood
- Heritage Cleaning Stone
- Heritage Cleaning Ceramic
- Heritage Cleaning Glass
- Heritage Cleaning Books

Figure 4.5 – Heritage cleaning films



A quarterly programme e-newsletter helped drive repeat visits of interested visitors to the website. This tended to highlight forthcoming events, volunteering opportunities, news about church projects and the resources available. Figure 4.6 illustrates growth in the number of subscribers at the end of quarter 3 for each year of the programme's life. While subscriber growth was 2-3 per week from 2019 to 2020, this plateaued, with growth running at just under one new subscriber per week during 2022 (47 new subscribers) and no additional joining in 2023 to the 672 already subscribed.

Figure 4.6 – Growth in newsletter subscribers

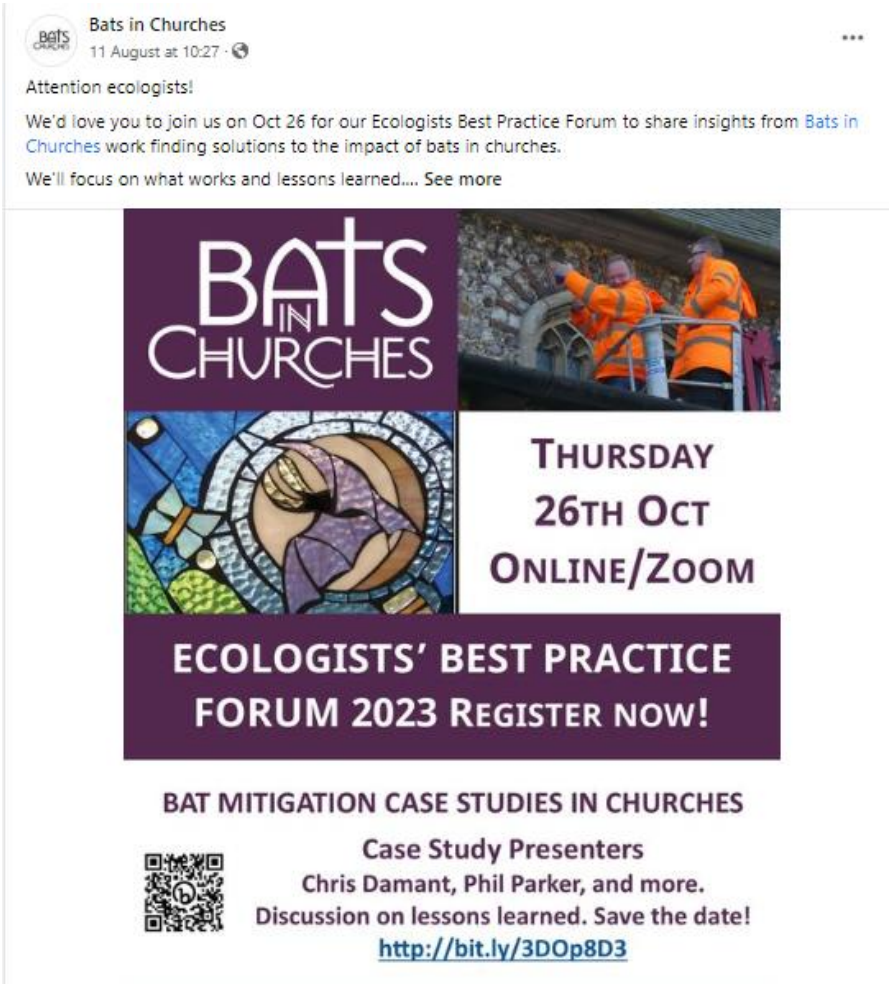


The programme continued to use Twitter (now X) and Facebook as its social media platforms. Table 4.3 provides a snapshot of following in 2021, 2022 and 2023, albeit the timing of evaluations made the intervening periods uneven. While growth in X followers diminished from an average of 40 per month from 2021 to 2022 to 14 in 2022 to 2023, growth in Facebook followers remained comparable at an average of 40 per month from 2021 to 2023.

Table 4.3 – Social media following

Platform	Followers		
	Jan 2021	Nov 2022	Oct 2023
Twitter (X)	1,588	2,471	2,640
Facebook	358	1,255	c.1,900

Figure 4.7 – Example of a Facebook post illustrating use of social media to disseminate programme findings to professionals



4.4 Education

Work to educate children about bats in churches was identified in all previous evaluation reports[33] and continued through 2023. Table 4.4 summarises the levels of engagement with schools and uniformed organisations.

[33] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2020) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp31

Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp28-31

Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd, p35

Table 4.4 - Number of participants at education events (to October 2023)

	2019	2020	2021	2022	2023
No. school sessions held	1	3	8	6	10
No. children participating	45	92	217	213	232
No. adults attending (teachers / teaching assistants)	3	7	28	20	33
No. uniformed organisation sessions held	0	0	1	3	7
No. children participating	0	0	6	48	240
No. adults attending	0	0	2	5	10

Source: BiC monitoring system

Reflecting on schools work, the Engagement Officer leading on this aspect of the BiC programme's work noted the extended impact of the COVID-19 pandemic:

> *"One school has taken me four years to actually get it organized. […] I contacted them back in late 2019 or very early in 2020. And I didn't actually get to them until this year. […] It was the COVID of course. Has been difficult, but also a lot of churn in schools, lots of teachers leaving, lots of changes to roles, that sort of thing. […] It was just a lot of disruption, which is sort of out of my control, certainly."*
> BiC Engagement Officer

Figure 4.8 – Snapshot of a school's session in North Somerset

Source: 20 Degrees

Development was completed for the BiC Challenge Badge in 2022. It was designed to be applicable to a wide range of uniformed organisations, such as Scouts, Guides and Woodland Folk but could be followed by forest schools, nurseries, Sunday Schools or even families, given it was based around universal themes of Discover, Explore, Get Involved and Play & Create. Table 4.4 illustrates how engagement with the BiC Challenge Badge gained traction from a small start in 2021 to a position where participation levels exceeded that with schools in 2023.

Figure 4.9 – Cornish Brownies Group at their local church completing the BiC Challenge Badge (left) and the BiC Challenge Badge (right)

Source: BiC monitoring system

DAC Secretaries of the 42 dioceses were approached directly with information about the Challenge Badge in early 2023. This was followed up with information about the Badge in the Church of England's regular newsletter to DACs. By the time of the evaluation, around a quarter of DAC Secretaries had indicated they were publicising the Badge within their Diocese.

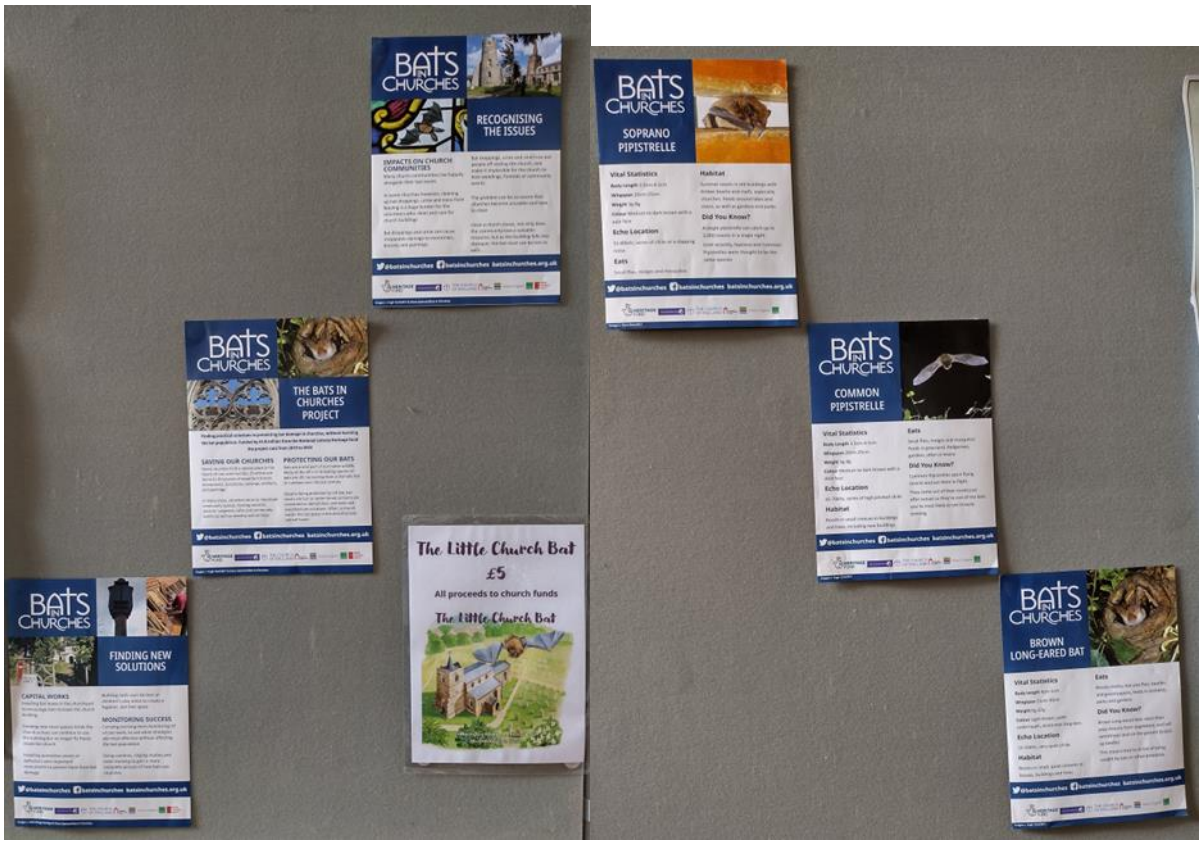
4.5 Interpretation

The 2020 evaluation described how leaflets, posters, postcards and porch notices were produced to help understanding about the BiC programme[34]. This approach continued through 2021 and 2022, albeit the purpose of interpretation evolved from generic information about the programme to specific information about bats or mitigation work at individual churches. Figure 4.9 illustrates an example of a display at Thornham, Norfolk.

[34] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2020) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp32-33

Figure 4.9 – Example interpretation display at All Saints Church, Thornham, Norfolk

Source: 20 Degrees



There were standard types of interpretation used in churches:

- Case study posters – one for each church engaged
- Factsheet posters – churches where capital works undertaken
- General introduction to the BiC programme
- Factsheet posters for each type of bat in a project church.

Extended case studies focussing on ten or so churches where there were key learning points were developed during the final months of the programme.

Where there was significant works undertaken and notable progress, permanent interpretation was produced in 2023 e.g. All Saints, Braunston, St Lawrence, Radstone and St Andrews, Coston. This interpretation used aluminium composite material which reportedly held colour well even in damp conditions.

Figure 4.10 – Examples of case study (left) and factsheet (right)

Descriptions about church mitigation / engagement experiences were updated on the BiC website within the 'Our project' section during the final month of the programme. Again, the aim was to move from the issue at churches to information about what capital work or engagement had been undertaken during the project and what impact it had on the church and bats. An example for St John the Baptist Church, Cold Overton, Leicestershire can be found at https://batsinchurches.org.uk/projects/cold-overton-st-john-the-baptist/.

4.6 Professional development

The 2020 evaluation highlighted particular attempts to engage with the heritage conservation sector, notably the Monumental Brass Society, the Church Monuments Society and the Friends of Friendless Churches[35]. At that time, the findings suggested a two-way flow of learning between the BiC team and the Heritage Conservation sector.

[35] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2020) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p37

This engagement with heritage professionals continued through 2021, with a Best Practice Forum for architects and a presentation at an EASA (Ecclesiastical Architects and Surveyors Association) webinar. *Bats in Traditional Building Training for Heritage Professionals* was delivered twice online in early 2022. An architects' best practice forum to disseminate programme learning was held on 3rd October 2023.

Similarly, Ecologist Best Practice Forums were held in 2021, 2022 and 2023 and a final forum was held on 26th October 2023. These remained online, considered to be the best way of enabling attendance from across the country. Other best practice events included training around bat management plans.

A major dissemination conference, *Flying to the Future*, was held in London on 14th September 2023. It brought together all of the different stakeholders from the programme to share lessons learned and highlight the legacy of the programme. The main talks were filmed and can be viewed at the conference tab at https://batsinchurches.org.uk/reports-and-resources/.

Figure 4.11 – Flying to the Future

Plenty of short, interesting talks (left) and time to mingle and share ideas (right)

Source: 20 Degrees

4.7 Statements of significance

This aspect of the programme sought to identify and record the key heritage features of programme churches. It was hoped this would provide evidence to help churches secure support for the preservation of key historic features in future.

Successive evaluations reported slower than anticipated progress on this aspect of the programme[36]. This was attributed to the Heritage Adviser being more focussed on capital works in 2020-21 and a change of Heritage Adviser in 2022, with an associated period of the post being unfilled. Approval was given in 2022 for the Heritage Adviser to procure external support to move forward this agenda. By the time of the final evaluation in 2023, 69 had been completed out of a total of 94[37] targeted for completion i.e. 73% to target.

[36] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p45

Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p44

[37] This is lower than the number of churches starting the project as some churches declined a statement of significance

5. Workstream 3 – Recruiting and training volunteers

5.1 Introduction

The 2022 evaluation focussed on this aspect of the programme. The 2022 findings are updated here to provide a snapshot at the end of the programme.

5.2 Recruitment and training

The 2020 evaluation noted that, "*There were two main strands of volunteering: church surveying for bats and church heritage. Volunteers for bat surveying were largely drawn from ecology interest groups, most notably bat groups. Volunteers to support church heritage were largely drawn from the local church communities.*"[38]

While the above remained largely true, progress was made from 2021 to break down some of these siloed responses. The 2022 annual church survey revealed a small number of churches where local members surveyed their church for bats[39]. The 2021 evaluation highlighted that few churches experienced any benefits from a bat survey[40] (except those where the BiC programme paid for mitigation work following the surveys). Consequently, few churches engaged in the survey element of the BiC programme. Where churches did so, they viewed their work with bats as an element of their mission, as highlighted in case study 4.1.

Similarly, a small number of examples were identified where bat groups or bat volunteers helped to clean churches[41]. A recommendation to promote this type of volunteering was accepted by the BiC team and included as key guidance on how bat volunteers could help their local church, see for example the BiC website[42].

[38] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2020) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p33

[39] Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd, Annex C, responses to question 16

[40] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p46

[41] Ibid, p35

[42] BiC (2023) Helping Your Local Church. Available at https://batsinchurches.org.uk/im-a-bat-worker-or-bat-group/. Accessed 24th August 2023

Discussions with church representatives during observation visits tended to suggest a minority of churches were supported with occasional church cleans by their local community.

Case study 5.1 – Examples of community volunteers

"*I only go to our local church on high days and holidays. The church is out of the village, up a lane on an estate. I get a party of people from the village to come and help clean the church.*"

When asked how and why people get involved, for example is it about protecting local heritage or supporting the local community?

"*There are only four [at the church] on a regular Sunday. The vicar has four parishes plus an airbase to look after. I do a lot of cajoling. Some of these people don't even clean their own houses. However, we can get up to 30 involved in an event. An example was a bat evening. That's out of a village of 200*."
Volunteer at a church cleaning workshop

"There is a rota of people willing to clean each week. Some people don't worship here. I am very happy that they come. Some are motivated by heritage and simply because they live in the village. They might sit in quiet at some point in cleaning. It needs to start somewhere." [The implication was the quiet time in the church provided a spiritual moment for volunteers.]
Church Warden

Volunteer training was a key element of capacity building undertaken by the BiC programme. An overview of the volumes of training undertaken is provided at table 5.1.

Table 5.1 – Overview of participants in training sessions (to October 2023)

Training	2019	2020	2021	2022	2023	Cumulative
Church cleaning workshop	23	8	39	30	81	181
BiC study	14	168	517	352	0	1,051
National Bat Monitoring Programme (NBMP)	0	0	41	157	323	521
Volunteer Bat Roost Visitor (VBRV)	0	0	11	14	7	32
Working with churches	0	38	87	65	0	190
Training for specialists	0	0	123	44	332	499
Other e.g. engagement training	0	15	156	13	0	184
Total	**37**	**229**	**974**	**675**	**743**	**2,658**

Source: BiC monitoring system

As commented in previous evaluations[43], the pandemic proved beneficial to volumes of participants trained as it led to a change in intended approach and accompanying significant increase in the volume of volunteers trained via e-learning. This can be seen from the volumes trained in church cleaning workshops, which were all in-person, versus BiC study sessions which were largely, but not exclusively, online. Similarly, 499 instances of specialists (ecologists and church architects) was significant relative to the target of >100, an achievement attributable to the online approach enabling greater take up.

This issue of cleaning workshops remaining in-person had been raised in successive evaluations[44]. It was common that churches in the BiC programme were remote and in-person events attracted relatively small volumes of attendees where the training had niche appeal. The publication of the guidance booklet for cleaning churches was

[43] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp35-36

[44] Ibid, p46

a positive first step in addressing this issue and creating a legacy resource[45]. The heritage cleaning films discussed in 4.3.2 were a welcome final addition to the programme's legacy resources.

The peak in training was in 2021. The evaluation team viewed this as a positive finding i.e. training took place while there was time for the programme to benefit from the capacity built, rather than *last minute* training seen within some projects to meet output targets. Indeed, training outputs were so far ahead of targets (as will be seen in table 8.1) that the programme was able to build longer term bat survey capacity as a legacy of the programme, as exemplified by the volumes of NBMP and VBRV trainees which continued into 2023. A further peak in training at the end of the programme focussed on ensuring the lessons learned from the programme was disseminated to as large a group of professionals as possible. This was in line with the programme team's focus on legacy.

Figure 5.1 – A place remained for face-to-face training

Source: Twitter @BatsinChurches, 5th June 2023

[45] The cleaning guidelines were available for download from https://batsinchurches.org.uk/i-care-for-a-church/ on 23rd August 2023

5.3 The volunteer experience

The church volunteer experience was tracked through the annual evaluation survey, typically completed by church wardens. While the 2020 survey revealed differing views, the key finding of 2020 was of the BiC offering hope to these people who loved their churches for reasons ranging from being sacred spaces to examples of local heritage to places of shared experience with family or community, as noted in 3.3.

Analysis of qualitative responses to the 2022 survey suggested people had moved beyond the hope of the early period to more polarised feelings[46]. Where mitigation interventions were successful and led to a reduction in mess or disruption, church representatives reported positive experiences. Similarly, where church representatives had identified how the presence of the bats could positively contribute to the churches' core mission, representatives reported a positive experience. However, where participation in the programme had not materially eased the burden of church cleaning nor reduced disruption, church representatives reported negative feelings. Those churches that felt they had been offered tangible support (hope) at the start of the programme but did not feel their hope had been realised tended to convey the greatest negative sentiment[47]. These churches tended to sit within two distinct groups:

- Stream 2 churches that were initially offered capital mitigation works but only received bat surveys and management plans
- Churches where an ecologist failed to deliver bat surveys in a timely manner, preventing mitigation work from progressing[48].

The experiences of the above two groups permeated the findings. For example, the disappointment of Stream 2 churches was not only apparent in findings from these churches but was echoed by bat group members who were aware of the churches' experiences.

[46] Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd, Annex C, responses to question 14 and to a greater extent question 16

[47] These responses were particularly prevalent amongst those that perceived little support from the BiC programme in responses to question 16, annex C

[48] A long-running issue of one ecologist failing to deliver bat survey results and associated management plans in a timely manner was a major issue and ended with a contract termination in 2022.

The overall balance of church volunteer perceptions of support from the BiC programme between 2020 and 2022 is summarised quantitatively in table 5.2. Given the margins of error (5% for 2020 and 7% for 2022), there was no measurable change in feelings of support over the two years. Half of respondents reported experience of support at the highest levels.

Table 5.2 – Extent that church volunteers felt that the BiC programme had provided support

	None to limited extent	Some extent	Good to great extent
2020	26%	24%	50%
2022	26%	20%	54%

Source: Responses to 2020 and 2022 church surveys

An alternative way of exploring the effect of the programme on church representatives was to consider how they felt about their church both in 2020 and in 2022. Sentiment analysis was used to classify each response as negative, neutral or positive. In general, while the question asked how people felt about their church, responses tended to refer to the state of the church, typically influenced by the perceived levels of mess or disruption caused by bats. Table 5.3 provides an overview of how these sentiments changed over the period.

Table 5.3 – Extent that presence of bats has changed church volunteers' attitudes towards their church building

Sentiment	**Number (percentage)**
Became negative	6 (11%)
Stayed negative	17 (30%)
Neutral from positive	3 (5%)
Stayed neutral	12 (21%)
Neutral from negative	8 (14%)
Stayed positive	5 (9%)
Became positive	6 (11%)

Source: Responses to 2020 and 2022 church surveys
Percentages do not sum to 100% due to rounding error

Table 5.3 suggests a quarter (25%) of respondents had developed more positive feelings towards their church buildings since 2020. This compared with 16% having

developed more negative feelings. Nonetheless, the largest segment of respondents expressed negative feelings about their building (41%) relative to 20% who were positive.

Further analysis explored whether changes in sentiment about church buildings correlated with the type of intervention i.e. capital severe, capital minor etc. Annex E within the 2022 evaluation report provided this breakdown. The most striking finding was an unchanged view of their church building by 60% of respondents, regardless of the type of BiC intervention. This was explored in 2020 and related to deep feelings of attachment to the church building based on shared experience, family and community memories, and the view that the building was a sacred place regardless of bats[49].

Beyond this, there were no strong correlations between types of intervention and changes in sentiment towards the buildings. In part, this may reflect the number of capital mitigation projects where the result could not be declared either a success or failure yet.

A short survey of bat volunteers was undertaken as part of the 2022 evaluation[50]. The majority of respondents (81%) felt their offer to undertake a bat survey was welcomed by the church they approached, whereas only 3% felt their approach was unwelcome[51]. The accompanying qualitative comments tended to suggest the BiC support '*warming up'* the church contacts for the 2022 survey was a contributor to this positive experience. The responses suggested a more mixed experience in previous years, aligning with findings reported in 2021[52].

[49] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2020) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p35

[50] Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd, Annex D

[51] Ibid, responses to question 5

[52] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p39

An indirect measure of the bat surveyor's experience of the programme was 87% being willing to survey churches for bats next year, if the opportunity arose[53]. In all probability, such a high proportion would not have considered this if they had a negative experience of the programme.

The majority (85%) of respondents having taken part in BiC survey training were well placed to comment on its effect on them as they had taken part relatively recently (2021 and 2022)[54].

[53] Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd, Annex D, responses to question 7 indicating they were definitely or potentially willing to undertake surveys

[54] Ibid, responses to question 2

6. Workstream 4 – Church bat detectives

6.1 Introduction

As figure 1.1 illustrated, this workstream built on workstreams 2 and 3 i.e. it relied on building community support to recruit volunteers and then they needed to be trained before they could engage in the programme's two key bat surveys.

6.2 Bats in churches study

There had been concerns in 2021 that the pandemic had supressed the number of volunteer-led bat surveys to such an extent that an additional survey season would have been required to achieve a statistically meaningful number of surveys[55]. The number of churches refusing the offer of a bat survey was significant[56]. However, the appointment of a fixed-term worker to proactively approach churches and secure survey opportunities in the build up to the 2022 survey season proved effective. Table 6.1 illustrates progress, including a final batch of 26 Church Bat Detective surveys which had not been included in the 2022 evaluation report.

Table 6.1 – Survey progress

	2019	2020	2021	2022	Cumulative
National Bats in Churches study	47	17	84	200	348
Church Bat Detective surveys	0	45	133	227	405
Total	**47**	**62**	**217**	**427**	**753**

Source: BiC monitoring system

The original target had been to undertake 700+ surveys. This was reduced to 500 surveys due to the pandemic, but Table 6.1 illustrates that the original target was surpassed. Originally, the programme had anticipated around 200 National Bats in Churches surveys and 500 of the lighter touch church bat detective surveys. The combination of effective promotion, training and potentially greater public awareness

[55] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp39-42

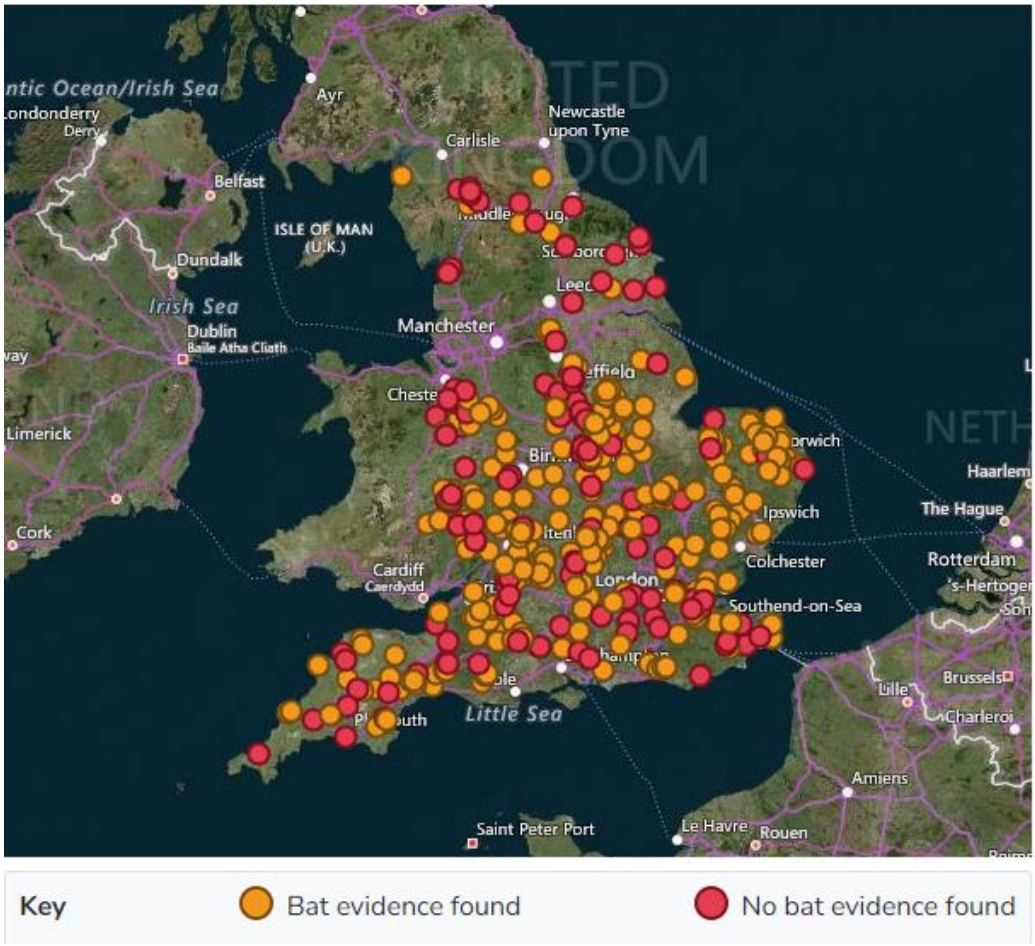
[56] Ibid, p39

of biodiversity needs in recent years may each have contributed to the higher levels of commitment from volunteers than originally anticipated[57].

Results of the bat survey analysis was published on the Bats in Churches website in an attractive and readily understandable format, with the support of an outreach grant from the British Ecological Society[58].

Figure 6.1 – Presence of bats in English churches

Source: https://batsinchurches.bats.org.uk/Results.aspx - accessed 25/08/23



[57] For example a debate about declaring a Biodiversity Emergency in the House of Lords in April 2022, accessed at https://hansard.parliament.uk/lords/2021-04-22/debates/96FFCDF9-3044-4D7C-8399-B306FCA8A4D1/BiodiversityEmergency on 23rd November 2022

[58] Bats in Churches (2023) Bats in Churches Study – Explore the Study Data. Available at https://batsinchurches.bats.org.uk/Results.aspx. Accessed 25th August 2023

Figure 6.1 provides an overview of the 753 churches surveyed by citizen scientists between 2019 and 2022 either as part of the National Bats in Churches Study (which aimed to identify any bats using the church) and Church Bat Detectives (which simply looked for bat presence in the main body of the church).

55.8% of churches surveyed showed evidence of bats using the church. The remaining 44.2% of churches showed no evidence of bats using the interior of the building during the one-off visit.

Annex E breaks down the presence / absence of bat evidence by the age of the church. Together with figure 6.1, they suggest:

- the older the church building, the more likely evidence of bats using the church were to be found, with a high likelihood of finding evidence of bats in early medieval and medieval churches, in particular
- bats were found in churches across England but there appeared to be a higher likelihood of finding evidence of bats in churches south of the Wash relative to more northerly parts of England
- there was a higher likelihood of finding bats in churches in the eastern half of England, albeit there were plenty of examples of bats in churches through western counties, such as Shropshire, Herefordshire and down through the South West.

Figure 6.2 - Species of bats identified in the study

Source: https://batsinchurches.bats.org.uk/Results.aspx - accessed 25/08/23

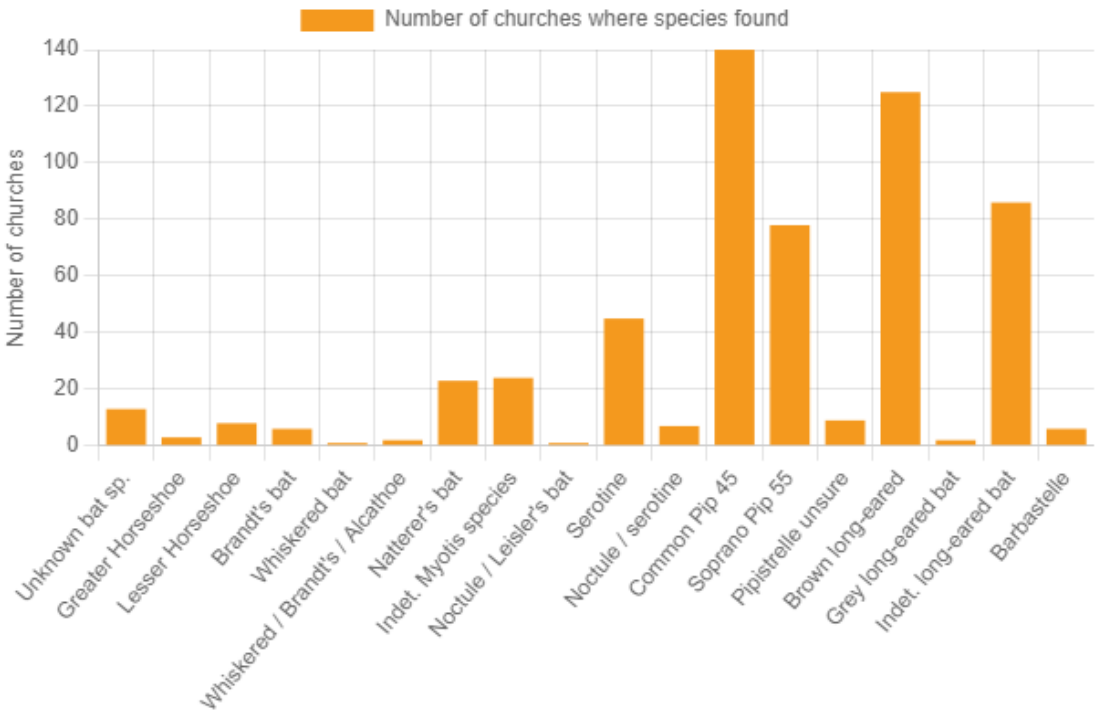


Figure 6.2 illustrates the species of bats identified in the study. There were at least 13 of the 18 bat species known to live in the UK[59]. The largest groups identified were common and soprano pipistrelles and brown long-eared bats, aligning with the findings of the programme churches (annex C). However, the study also identified rare species, such as the grey long-eared bat, underlining the importance of churches as habitats for bats in England[60].

Analysis of the survey by the BiC team revealed additional findings:

- 35% of churches where bats were found using the interior of the church were not aware of their presence

[59] Bat Conservation Trust (2023) UK Bats. Available at https://www.bats.org.uk/about-bats/what-are-bats/uk-bats. Accessed 26th August 2023

[60] BiC (2022) Rare Bat Discovered by National Bats in Churches Survey by volunteers in Somerset Church. Accessed at https://batsinchurches.org.uk/2022/10/24/bats-in-churches-grey-long-eared-bat/ on 26th August 2023

- The likelihood of bats using church interiors increases as the proportion of arable land close to the church increases, potentially because there are fewer roosting opportunities in arable landscapes
- Bats appeared to be particularly sensitive to (deterred by) lighting on the west side of churches.

> *"One thing that we definitely found, that maybe weren't expecting as much, is that there is such interest in bats in churches. And we have worked a lot with church wardens etc that were really keen to take part in the surveys. And one thing that we hadn't really appreciated was how many that there were a number of churches where they knew that there were bats but they didn't know which species of bats were using the church."*
> Member of the BiC team

Although the team had decided not to continue the citizen science surveys in 2023 as there would not have been enough time to analyse the findings and present to stakeholders, they decided to use 2023 to help interested churches find out what type of bats were using their buildings. Bat detectors / analysis equipment were loaned to interested churches. 37 CCT and Church of England churches took up this opportunity, providing an additional layer of engagement through the BiC programme and supporting churches with an interest in their bats.

Figure 6.1 – Offer of bat detector loans to interested churches

Source: Twitter @BatsinChurches, 27th April 2023

7. BiC programme legacy

7.1 Introduction

The findings identified a strong focus on legacy amongst the BiC team and steering group. This was discernible two years before the end of the programme and became more pronounced throughout the final year of the programme. As a consequence, the programme will leave a significant legacy.

7.2 Human/heritage-wildlife conflict transformed

Chapter 3 provided examples of churches where the human/heritage–bat conflict was transformed. While some instances were of people/heritage and bats physically separated by capital mitigations, other instances were more modest, protecting heritage with covers or *sails* or moving bat roosts away from key monuments, artefacts or areas of high footfall.

Equally, however, there were instances of success through educating people on either side of the church-bat divide about the perspective of the other party. A key finding of the 2021 evaluation was the importance of the BiC programme in creating time for ecologists, church architects and church representatives to listen to each other's perspectives and witness the mess caused by bats / the spectacle of bats socialising for themselves. The result was the concept of the *right team* to transform a human/heritage-bat conflict situation[61]. Members of the *right team* were professionals with the following attributes:

- While retaining their professional integrity, team members had empathy for the positions of others
- Professional services were delivered in a timely manner
- Professionals collaborated to develop bat mitigation measures that were affordable and could be implemented practically for the benefit of bats, people and church heritage.

7.3 New concepts tested

Section 3.3 explored the rationale for the BiCCL and repeated the finding of 2021 that there was a clear need for the BiCCL to enable mitigation works to proceed for the benefit of people or heritage but without negatively affecting bats roosting in

[61] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p23

churches. The decision of the Natural England licensing team to retain the licence beyond the lifetime of the BiC programme provided a significant legacy.

While the above was undoubtedly positive, the number of bat surveys required when using the BiCCL licence suggested it will only be used in a relatively small number of cases. In all probability this will be where churches access external funding for the mitigation, perhaps when the bat mitigation forms part of a substantially larger capital work, such as a new roof. Towards the end of the programme, a representative of Natural England suggested the number of surveys required for use of the BiCCL may fall in future, given the proof of the licence's efficacy had been positively tested during the lifetime of the BiC programme.

Beyond the BiCCL, specific mitigation approaches were tested. Some were relatively inexpensive and worked well e.g. trays or *sails* to catch droppings under roosts, while others were expensive and did not solve the problem. A significant body of learning was built up for the future. By the time of the evaluation organisations, such as the National Trust and English Heritage had reportedly been in touch with the BiC team to request information about *sails* and case studies of successful mitigation measures.

Interviews suggested other concepts were tested also. One interviewee reflected NLHF rarely funds such strategic projects, covering a hundred or more sites across the whole of England. The findings around mitigation works, community engagement and citizen science, for example, indicated the concept of working at such large scale had been successful and could inform future programme design.

Similarly, this was the first occasion that the Archbishop's Council had invested significant funding (£150,000 over the lifetime of the programme) in a programme run by another organisation, albeit the Church of England was a partner and some project staff were employed by the Church. Learning from this experience, the Church was open to the Bat Conservation Trust bidding into Church funding for a Church Buildings Support Officer.

7.4 Resources available

The BiC website was reconfigured through 2022 and into 2023 from a promotional tool into a resources repository. The CCT intends to maintain the site beyond the

lifetime of the BiC programme. The following was available on the site at the time of the final evaluation:

- Case studies of projects at BiC programme churches
- Advice for those who care for churches, including extensive cleaning guidelines through to guidance on fundraising
- Advice for professionals, such as ecologists and church architects, including more in-depth case studies of mitigation projects and journal articles
- Advice for bat workers and bat group members, including a guide on organising a bat walk and children's resources
- Full resources for the Bats in Churches Challenge badges for children's and youth organisations
- Guidance and support for those finding a grounded bat
- E-training courses.

While the website was an importance home for legacy resources, the BiC team acknowledged not everyone would find these resources. With this in mind, journal articles prepared to insert learning into professional domains. Findings from the citizen science bat surveys was prepared for an open access journal of the Chartered Institute of Ecologists. A 6,000 word article entitled, *What buildings professionals need to know about working with Bats in Churches*, was submitted and approved for publication in the Journal of Building Appraisal Valuation and Survey in 2023.

Effort was devoted in the final months of the programme to develop a tool or flowchart of options for churches to guide thinking about the type of mitigation that would be right for them. Ultimately, the team decided, *"There are just so many variables at work for churches to consider their next steps that it's been almost impossible to design something that's simple enough to use but still accurate enough to be helpful."* Instead, it was concluded that churches might instead follow a timeline of:

- Step 1- follow cleaning guidelines
- Step 2- look at covering individual items
- Step 3- look at covering areas of the church (ceiling/canopy/sail)
- Step 4- talk to an ecologist/bat helpline about the possibility of mitigation

Guidance was summarised in the *Help and Advice for Churches with Bats* booklet available at https://batsinchurches.org.uk/wp-content/uploads/2023/02/BiC-Legacy-Advice-Booklet-Web-FINAL.pdf.

Each programme church was offered a Statement of Significance, if one had not already been compiled. This offered an evidence base on which future conservation developments could be based.

7.5 Capacity built

Training was a key feature of the BiC programme. This was explored in 4.6 (professional development for ecologists, church architects and related professionals) and 5.2 (church and bat volunteers). The nature of these professionals and volunteers suggests that they will continue in their roles for the foreseeable future i.e. capacity built can be expected to endure into the short to medium term at least.

Efforts were made by the BiC team to transfer their knowledge to key building professionals in the Church of England and DAC secretaries. At the least, they should be aware of the Bat Helpline service, run by the Bat Conservation Trust, and the availability of resources on the legacy BiC website. Embedding advice to churches within the Bat Helpline service contract between BCT and Natural England was a direct consequence of the BiC programme.

A specific example of an unanticipated outcome for the CCT was the emergence of a cohort of volunteers to support St Peter's, Wintringham, North Yorkshire. Engagement with the BiC programme attracted around 30 local people who developed an interest in supporting their local heritage. Moreover, the bats had become an attraction, as underlined by the *Nocturnal Neighbours* fact sheet on the church's website[62]. This was an example of a recurring finding of the evaluation that some churches learned to recognise the potential to use their bats as a hook for mission, community engagement or fundraising (for example, case study 4.1).

[62] CCT (2023) St Peter's Church, Wintringham, North Yorkshire. Available at https://www.visitchurches.org.uk/visit/church-listing/st-peter-wintringham.html. Accessed 4th September 2023

7.6 Strategic relationships developed

All members of the BiC Steering Group independently highlighted how much they had enjoyed the programme and how a strong programme partnership had formed.

A pivotal point in relationship development had been in 2020 when deficiencies in programme management had escalated to unacceptable levels and the original programme manager needed to be replaced[63]. Although two partners had considered leaving the programme, the steering group members had worked through the issues and a very capable programme manager was put in place by Natural England.

> *"We have moved from a point of, you could say nervousness, you could say prickliness, you could say distrust, depending on which of those words you wanted to use to, I think, a real collaboration between organisations that previously were slightly uncomfortable. And I think all the initial sort of politeness has now been replaced with genuine respect and indeed affection for the people involved in the steering group and in the project."*
> BiC Steering Group member

References were made to strong governance within all five partner organisations, requiring approval for key or controversial steering group decisions from each of the partners. This suggested support for the partnership was not limited to individuals within the steering group but extended to wider organisational relationships.

Various members of the steering group reflected on the apparently insuperable nature of the problem of bats in churches when the programme was being designed. Strong partnership working was identified as a key enabler of the programme's successes.

Some members of the steering group were able to identify positions having changed within their or a partner's organisation as a result of the BiC programme.

> *"The concept of putting in or putting back a ceiling in a chancel that had been removed, from our point of view, that's a pretty major intervention. And yet it's*

[63] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp19-20

been done in more than one place. […] Three different regions [of Historic England] have independently come; they've applied the principles that they have to apply and they have supported those things to happen. And that seems to me to be a really good example of how better information and more of a sense of every partner listening to every partner actually comes up with a solution which is deliverable, affordable (within the confines of the budget), but also makes a building able to be used by the people who live there. And as such, that kind of enjoyment of heritage and of the natural environment, but also keeping buildings in use for the purpose for which they were intended.[…] Five years ago, you might not have thought that would happen"
Steering Group member

"I think actually everybody involved has learned from this project to be not quite so hardline about things, to be a bit more flexible. I think that's probably one of the big wins, actually that we were able to work together like that, and that everybody moved a certain distance."
Steering Group member

All Steering Group members independently identified the need to maintain the dialogue between partners beyond the lifetime of the BiC programme.

7.7 Support for the future

A recurring theme of the evaluation was churches were now the habitats of bats, given the widespread removal of trees and even barns from large stretches of rural England. This led to recommendations for conservation bodies to treat churches as bat habitats and support churches in managing the resulting mess and nuisance, potentially through support for cleaning, thereby reducing conflict[64]. Taking forward this argument, some suggested rural churches should legitimately have access to ELMS[65] funding in the future[66].

[64] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p46, and

Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p70

[65] DEFRA (2021) Environmental Land Management (ELM) update: how government will pay for land-based environment and climate goods and services. Available at https://www.gov.uk/government/publications/environmental-land-management-update-how-government-will-pay-for-land-based-environment-and-climate-goods-and-services/environmental-land-management-elm-

> *"Bats are keystone species, saving agricultural industry in pesticides. Any building housing a large colony of bats should have access to central government funding. How is it different from farmers getting a grant to maintain a newt pond?"*
> BiC team member

Action was being taken in the final months of the programme to enable support. The BiC Programme Manager was designing a legacy project proposal for NLHF consideration to support churches with heritage covers and cleaning in return for engagement with bats and their community. Support for the project was being elicited from BiC programme partners, with Historic England reportedly offering financial support and the Bat Conservation Trust offering to manage the grant allocations.

The Church of England had established its *Buildings for Mission* and *Net Zero* programmes towards the end of the BiC programme. The two newly established programmes jointly amounted to around £75,000 p.a. for a typical diocese to distribute in small grants to churches. These grants had the potential to pay for bat surveys, minor heritage protection works or professional cleaning, for example, albeit the scope of grant uses would be significantly wider than issues related to bats in churches. A further feature of the Buildings for Mission programme was a Church Buildings Maintenance Partnership which will enable participating churches to book basic maintenance work through a central website. Guidance on bats in churches was being mainstreamed into that service by the Church of England.

As noted in 3.3, Natural England will continue to support the BiCCL beyond the lifetime of the programme. In the example cited in 3.3 where a non-programme church had indicated an intention to use this class licence, Natural England had committed to supporting the training of the ecologist appointed.

update-how-government-will-pay-for-land-based-environment-and-climate-goods-and-services. Accessed 4th September 2023

[66] Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p28

8. Progress towards outcomes

8.1 Progress towards headline outputs

The structure of this chapter follows that of the outputs and outcomes set out in the programme logic model reproduced in annex A.

Table 8.1 provides a snapshot of progress at the end of the programme on 26th October 2023. Progress has been RAG rated relative to the original output targets set out in the logic model according to the following approach:

Green – Output achieved or exceeded target
Amber – Output within 15% of target
Red – Output less than 85% of target.

Table 8.1 – Progress to targets (26th October 2023)

Target	Output	Comment
20 churches with full bat management plans and mitigation delivered & monitored	20	Capital Severe (>£10k) classification
82 churches provided with advice and potentially simple, affordable capital solutions	11 capital minor completed (1 in progress) 7 capital heritage complete (1 in progress) [25 bat surveys completed] 19 bat management plans only completed 49 receiving help and advice Total: 88 churches supported	Stream 2, Priority 1-2 churches 3 churches (2 stream 2, priority 4 and 1 bat management plan only) are closing / have stopped responding to contact

94 statements of significance (revised from 102)	94 complete (100%)	
700+ churches involved in Bats & Churches study (Target revised to 500 due to COVID-19 restrictions hampering progress in 2020)	348 National Bats in Churches surveys completed 405 Bat Detective surveys completed Total: 753	
94 training interventions	98 events	
1,545 volunteer / specialist participants trained	3,157	See (1) below
1,812 skilled volunteers	>2,658	See (2) below
12,000 people engaged directly	16,669	See (3) below
111,000 people engaged indirectly	132,316	
>100 specialists with improved understanding	186	
Bats and heritage guidance published	Significant legacy resources	See (4) below

(1) There were 2,658 instances of volunteers and 499 instances of professionals trained

(2) The monitoring system was collecting numbers of skilled volunteers per event. Some of the skilled volunteers could have been counted on multiple occasions if they supported multiple activities. The monitoring system was also collecting the number of volunteers trained. It was likely some skilled volunteers were trained by the programme. The most prudent approach was to assume the number of skilled volunteers was more than or equal to the number of volunteers trained by the programme.

(3) These figures were derived from the monitoring system but are different from totals within the BiC team's progress tracker. We have defined direct engagement as the sum of the following elements within the progress tracker (in line with our 2020 report):

- No. church volunteers & professionals volunteering time (1,262)
- No. bat volunteers registered (1,089)
- No. incidences of individuals trained (3,157)
- No. incidences of engagement event attendance (9,960, excluding 12,000 attendance at Birdfair in July 2023 where the team presented)
- No. incidences of people attending education events (1,201).

Similarly, we have defined the indirect reach as the following:

- Attendance at Birdfair 2023 (12,000)
- Direct Facebook page impressions (9,492)
- Direct Twitter page impressions (87,801)
- Video content plays from website (11,024)
- Query contacts through website (350)
- Resource downloads from website (285) [data only available to 2021]
- No. newsletters circulated (9,217)
- Direct media reach from links clicked (2,147) [data only available to 2021]

The progress tracker also noted substantial indirect numbers of social media page impressions and website hits amounting to 9,882,049 page impressions. Similarly indirect media circulation figures for publications in which articles were published exceeded 179 million people when the team stopped recording in 2021. While interesting, the evaluators did not feel these reflected the spirit of the targets.

(4) Heritage cleaning guidelines booklet and films

- Technical case studies for people planning mitigation projects
- Online training courses encompassing the range of training offered during the programme
- Online advice and resources for those that care for churches, bat workers / bat group members and ecologists, church architects and associated professionals
- Bat species posters
- Bat helpline guidance for churches
- Peer reviewed journal articles to help ecologists / church architects.

8.2 Intermediate (enabling) outcomes

8.2.1 Physical and social disruption due to bats

As discussed in 3.2, there was a mixed picture of success, partial success and on-going challenges at churches where mitigation work had taken place.

Successful mitigations were listed in table 3.1. Their stories have been well publicised, for example St Lawrence's, Radstone was featured on Song of Praise[67]. The church was re-dedicated in 2022 after having closed in 2016 due to the number of bats making the church unusable.

However, less complete examples of success were more typical.

Case study 8.1 – Success but not bat-free

St Andrew's Church in Coston, Leicestershire was referred to the BiC programme in 2019 by their church architect. The church warden takes up the story of their experience:

"Prior to Bats in Churches we had a real problem with bats. The mess was really bad. Anyone who arrived at the church was confronted with a lot of mess and it was a deterrent – people were put off. It was causing damage to some of the flooring. The cost of cleaning was difficult to deal with as we're a small congregation with limited time and money.

At the time, success in simple terms was reduction of bat issues: less mess, people not being deterred from using the church, reduced cost of cleaning. So, if we could mitigate that but still have bats in the church and create support for funding and getting people into the church through bat nights etc. [that was success]."

The mitigation work undertaken at Coston was categorised within the programme as Capital Minor. A system of shelves was installed to catch bat droppings under the maternity roost in the south aisle.

[67] Songs of Praise (2022) All Creatures Great & Small, BBC available at https://www.bbc.co.uk/iplayer/episode/m001fhxs/songs-of-praise-all-creatures-great-and-small [18minutes 23 seconds to 22 minutes 18 seconds]. Accessed 25th November 2022

"They [bats] still use the church which allows us to engage with local bat groups and do bat events. … The mess is still a problem now but not as bad as it was. It is a fine balance for us of whether we exclude them or keep them, but they've been there for 1,000 years. It's about managing it and keeping it to a manageable level… We can't ask for complete, nil mess because we still have the bats, but it has been contained we just have to manage that."

The church is supported by a small congregation. Church services are only held every two months, with the annual carol service attracting some 40-45 people from the local community, the largest congregation of the year. The church warden viewed these links with the community as precious and considered the bats an opportunity to build links to a local bat group. The church recognised the challenges of sustainability and biodiversity and viewed their approach to bats as a positive contribution to the issue.

"I think we've had a positive approach to bats. Whilst it is a challenge dealing with all the mess, I think it's a balance and I think there's an opportunity here as well."

As noted in 3.2, there were instances, such as St Lawrence, Radstone, where there was apparent success in 2021 for disruption to the church but the majority of bats left their roosts in the church in 2022, only to return in 2023. This aligned with a finding of the 2021 evaluation of the need for patience with bats[68]. It was apparent bats do not like change but may well return in future years to roost in the mitigation installed in a church.

Overall, the findings of this sub-section suggested positive progress towards the outcomes of bats living safely in churches, church communities less disrupted by bats and church buildings and artefacts protected from bat interference. However, the findings indicated the path to these successful outcomes was seldom complete nor smoothly linear but more typically iterative.

[68] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p15

8.2.2 Church communities' sense of wellbeing

The 2020 evaluation identified hope as the over-riding response to the BiC programme[69]. Section 5.3 noted that by the 2022 evaluation this hope had either crystalised into progress or had not been realised.

Table 5.3 summarised perceived levels of support from the BiC programme, suggesting no measurable change between 2020 and 2022. That was an interesting finding, given the number of capital projects, church cleaning interventions and engagement events delivered in the two years between these two census points. Potentially, it may reflect another key finding of the 2020 evaluation that people strongly appreciated their concerns being heard and taken seriously by the BiC team and wider members of the bat, building or church community i.e. it meant a lot to people that someone genuinely cared about their predicament. The outcome of case study 3.1, noted in section 3.4, exemplified this.

The 2021 evaluation reported a shift in attitudes towards bats by some church wardens (and congregations) relative to the baseline position in 2020[70]. Analysis of the individual responses suggested attitudes were changed positively by:

- Capital mitigation projects completed or planned
- A reduction in bat mess or disturbance – may have been due to mitigation or a seasonal variation
- Medium-high levels of engagement with the BiC team, even if bat mess or disturbance had increased.

Conversely, a deterioration in attitudes towards bats either reflected increased levels of bat mess / disturbance or low-medium levels of engagement with the BiC team.

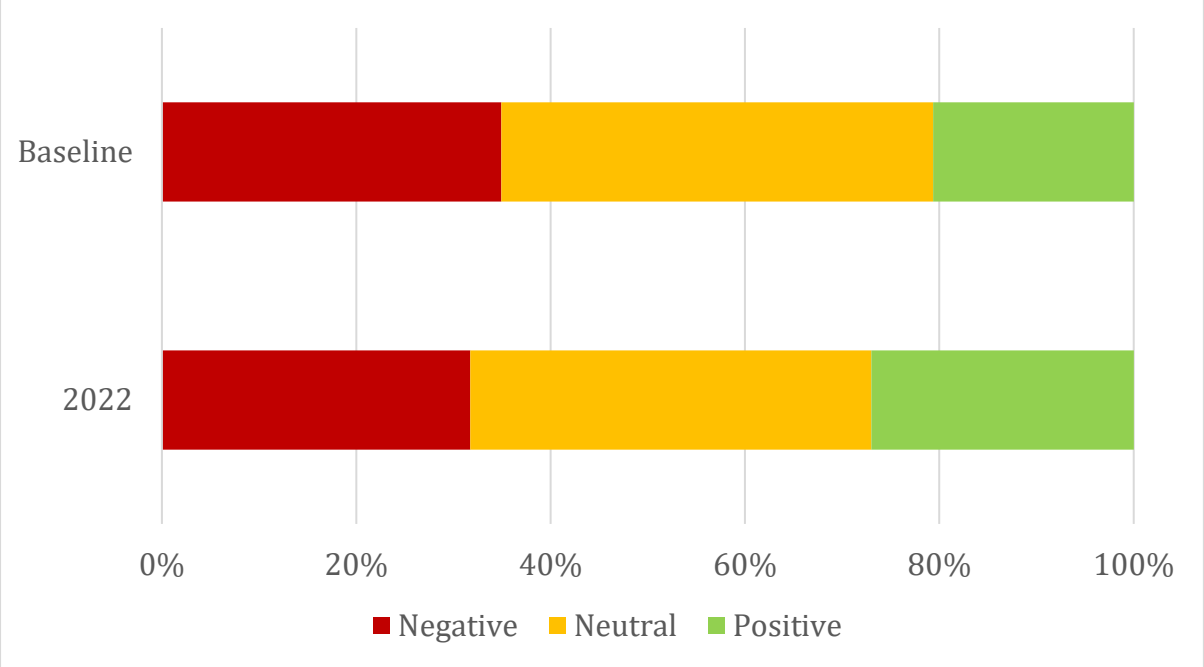
The 2022 church survey revealed a further polarisation of attitudes. The explanation of attitude shift offered in 2021 appeared to hold true.

[69] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2020) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp44-45

[70] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp25-27

Figure 8.1 is reproduced from the 2022 evaluation[71]. It illustrates the increase in positivity and decrease in negativity of church representatives' attitudes towards bats.

Figure 8.1 – Comparison of Church representative attitude towards bats relative to the baseline attitude



As discussed in the 2022 evaluation, the overall changes in attitudes towards bats by church representatives may look marginal in figure 8.1. However, this hides the detail of changing perceptions. Table 8.2 indicates 39% of respondents changed their views about bats, 24% for the better and 15% worse (rounding error accounts for difference to figures in table 8.2)

[71] Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p53

Table 8.2 – Changes in views towards bats by church representatives

Change in attitude relative to baseline	Number of respondents	Percentage of respondents
Significant decline	2	3%
Decline	9	13%
No change	43	61%
Improvement	15	21%
Significant improvement	2	3%

Percentages do not sum to 100% due to rounding error

It would be reasonable to suggest that an increase in church representatives feeling more positive about bats would translate into improved contributions to well-being amongst this group, almost a quarter of the sample. Nevertheless, this logic suggests wellbeing deteriorated for around 15% of the sample.

Case study 8.2 gives an insight into changed attitudes at a church where they could not afford a capital mitigation project but a combination of education from the BiC team and a changed mindset turned around not only attitudes towards bats but the wellbeing of the church warden. Help with the cleaning appeared to be a pivotal action contributing to improved wellbeing.

Case Study 8.2 – Coping better

A Church Warden of a Stream 2 church in Norfolk with a largely elderly congregation discussed how they could not afford to pay for a capital bat mitigation measure:

"We have to currently pay £7,000 per year for our insurance, £1,600 for the alarm system on our roof so we can get insurance that cheap. Then we also have to pay £14,000 to pay as Parish share. We're a congregation of 25-30 people at best and we're all at an age where we can't put on a giant flower festival ourselves and make £8,000 at a time."

Despite this context, the church warden was positive.

"We have a better understanding [about the bats] having gone to lectures about them. Even people who come to church, who don't come regularly, but came to the bat evening have a better understanding. We don't have any comments in the visitors' book about bat droppings anymore. We have a more structured approach to cleaning of the church. We actually started cleaning because of COVID, making sure

it was sanitised before people came in. That led to us cleaning regularly to get rid of bat faeces."

A group of around eight people now volunteer to clean the church.

"Now we're doing the cleaning every Saturday and we have a different project each week cleaning places that are hard to get to – top of cupboards one week, then tops of divides another.

In terms of the impact, now that we clean it every week it's not as much of a problem, you know psychologically because you don't see it the same. Previously, bat faeces could make you despondent to it all.

We've come to terms with living with the bats, largely because of the knowledge we've gained and the cleaning we do on a regular basis. We live with them moreso now because we clean every week before services. Visitors don't see it very often now.

When it's out of sight it's out of mind and we're dealing with it a lot better than we were before."

Across the breadth of findings it was noticeable that churches entering the BiC programme with an open mind were most likely to perceive their position improved as a result of engagement. Case study 8.3 explores the opposing mindset.

Case study 8.3 – Was success possible?

A bat group member reflected upon experience of the BiC programme at a particular church.

"At [church], the church warden was obsessed with bats, in a negative way, and appeared a bit irrational. I think having this church in the project was a waste of time.

An enormous amount of information was collected by the ecologist and was reflective of conversations with the church warden. Seven different options were put forward for the church by the ecologist. The church community didn't like any of the options and they didn't really listen.

All the project seems to have done here is to raise expectations. A lot of resources have been spent. The community wanted a more aesthetic and permanent barrier put up within the church and have been trying to pursue this through the Bats in Churches project. They came into it thinking the project could solve both their heating and their bat problems. The ecologist did a thorough job. When there are very small communities such as this, so much depends on individual views and experiences. There are no church cleaners, the issues of age and money and time are the main problems. The church wardens experience a major job to prepare the nave for any type of service and I don't think there was a willingness to deal with things."

While the church may well have had a different perspective on their position, case study 8.3 did identify a recurring finding of the evaluation that aging and declining numbers of church members, leading to declining capacity and finances, were major underlying issues faced by churches. In some instances, BiC team members identified this as the key issue facing churches and the issue of bats had been '*the straw that broke the camel's back*'. Certainly, as illustrated by case study 8.2, where volunteer capacity and energy were sufficient the bats became a less problematic issue.

Unsurprisingly, the 2022 study indicated attitude towards bats tended to be influenced by the frequency cleaning was required[72]. This underlined the importance of adequacy of support for cleaning if churches were to be more positive about bats and capital interventions were not a viable option.

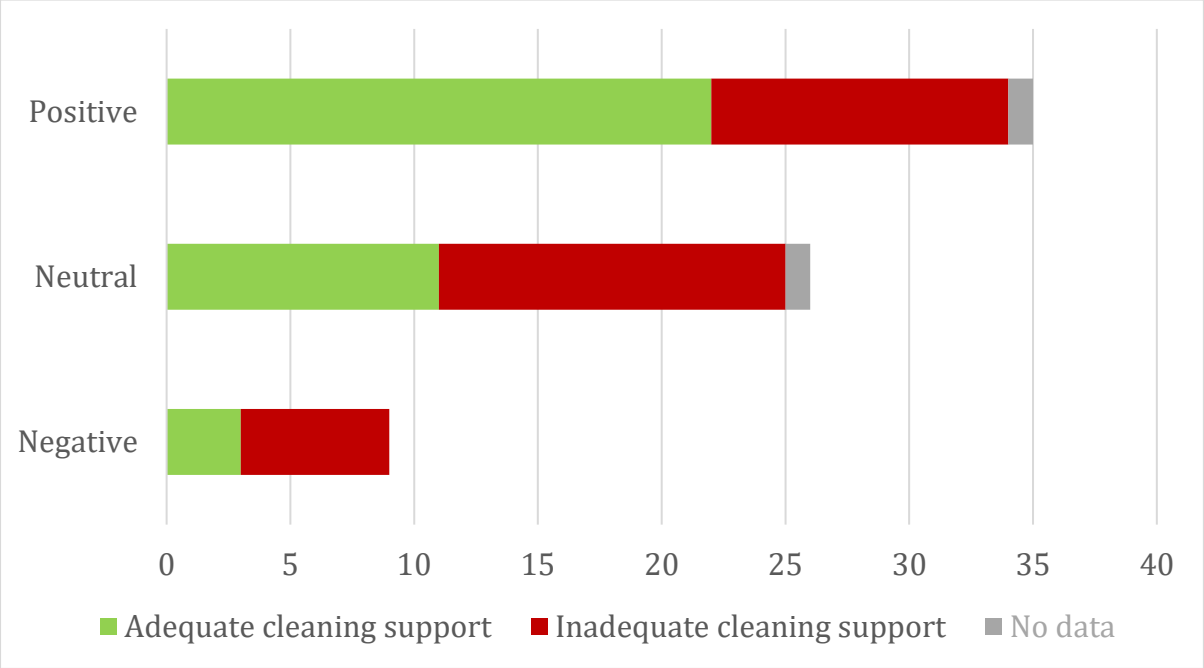
The 2022 evaluation noted the degree to which bats were viewed positively by church wardens was influenced by the availability of support to clean the church[73]. Church warden perceptions about congregational attitudes towards bats suggested the same finding[74].

[72] Ibid, p28

[73] Ibid, Annex C, comparison of responses to questions 9 and 10

[74] Ibid, Annex C, comparison of responses to questions 9 and 11

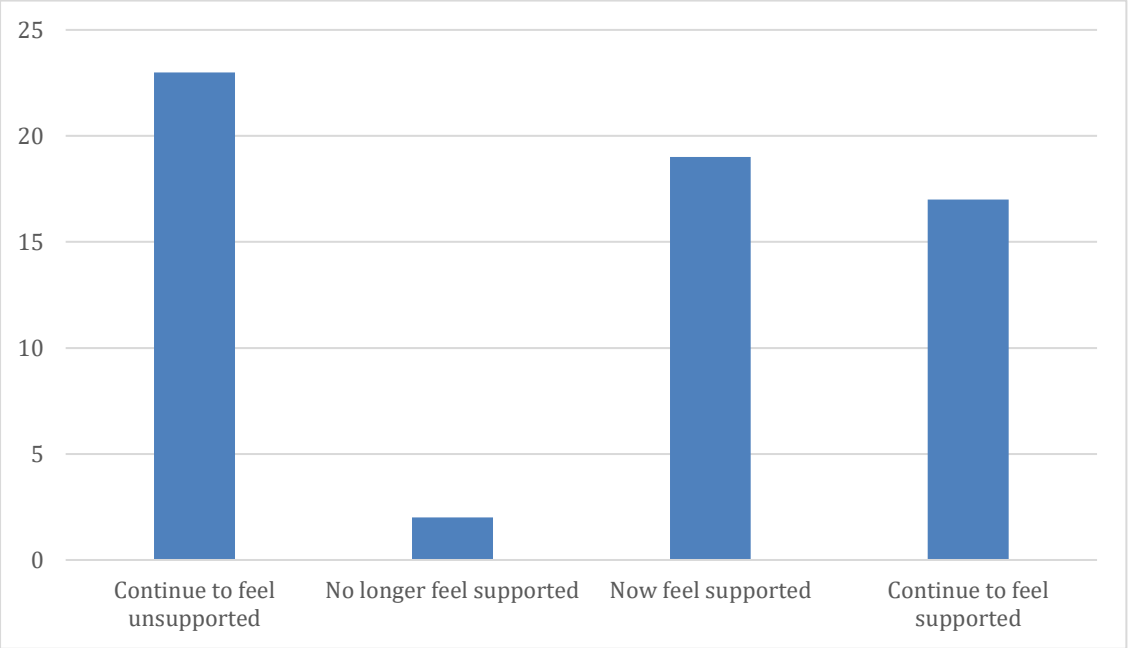
Figure 8.2 – Church warden attitude towards bats by availability of church cleaning support



These issues of adequacy of support for cleaning, small and aging church populations, plus the associated issue of finances, were recuring themes of the 2022 evaluation[75]. While the BiC could not address the fundamental issues of number and age of church members, where support for cleaning was provided, it improved morale and wellbeing. Figure 8.3 illustrates the changes in level of support for cleaning perceived by church representatives responding to the longitudinal church surveys of 2020 and 2022.

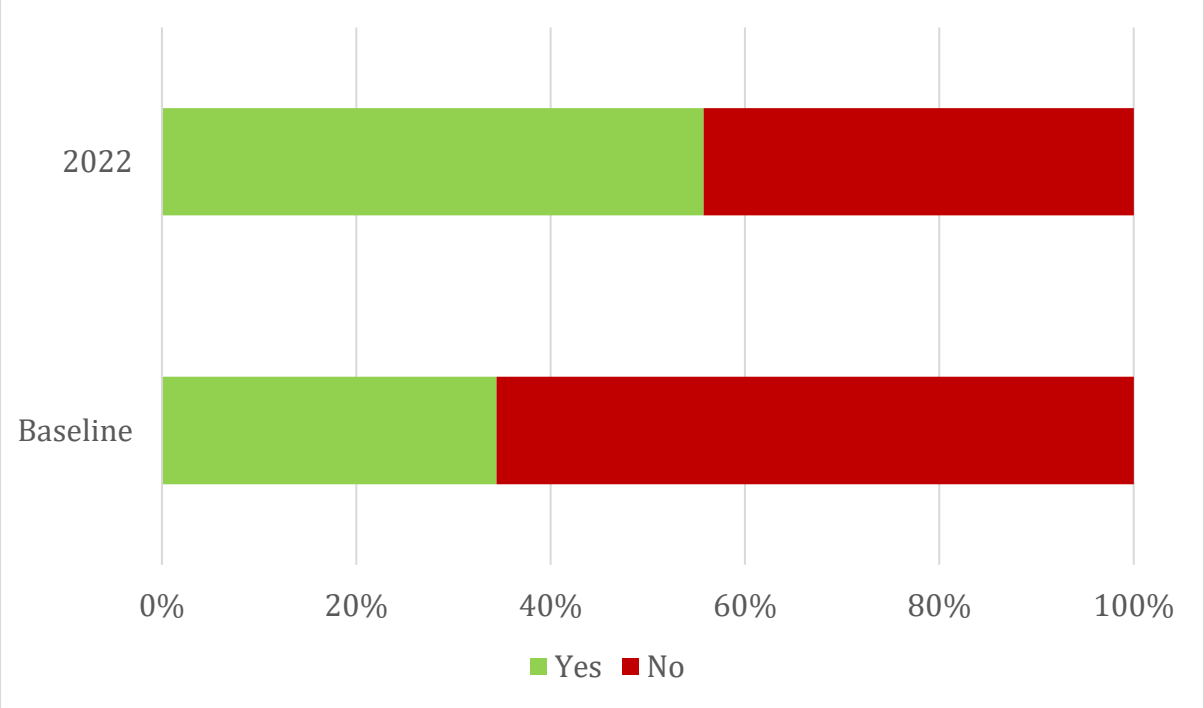
[75] Ibid, pp25-29

Figure 8.3 – Changes in levels of support for cleaning



While the issue of inadequate support for cleaning was not solved for all project churches, the growth in churches reporting they felt supported was striking. Figure 8.4 presents the overall comparison for churches that responded in 2020 and 2022.

Figure 8.4 – Response to the question 'Do you feel you have adequate support to undertake the cleaning of your church?'



The 2022 evaluation also used a modified form of the Short Warwick Edinburgh Mental Wellbeing Survey with a small sample of cleaning workshop participants[76]. The findings revealed a reduced sense of participant optimism and closeness to other people on average. This aligned with the burden of cleaning falling on a small number of people and qualitative discussions where participants voiced disappointment that there was no cleaning '*silver bullet'* that would restore their church fabric or artifacts to the way they were before being etched by bat urine. Nevertheless, overall improvements in dimensions of autonomy, personal effectiveness and hedonic perspective (happiness from relaxation, for example) were enough to ensure the overall sense of wellbeing improved for cleaning workshop participants.

The overall findings of this sub-section suggest positive progress was made towards the intended outcomes of interested communities understanding each other's priorities and working together in new ways and bats living safely in churches.

8.2.3 Body of evidence informing future work

This was largely considered in chapter 7.

Capital mitigation projects were largely completed and lower cost alternatives, such as *sails* and trays to catch droppings were tested. Consequently, the BiC team reported a greater understanding of what types of mitigation worked and in what circumstances. As discussed in chapter 3, there was an understanding that in certain designs of building, a mitigation might solve a problem in one part of the church but simply move the problem to another area. There was also an understanding that the capital costs of mitigation in some churches were prohibitive, whereas an annual budget for cleaning by an external organisation might be affordable and make the bat problem tolerable for church users.

Good practice forum events for architects and ecologists occurred throughout the lifetime of the evaluation and were the last events held in October 2023. Similarly, work to inform DAC Secretaries through speaking engagements at DAC conferences was reportedly useful in sharing good practice.

[76] Ibid, pp56-57

"We have data which says that if you approach in a given way, it probably won't work, so we can stop people wasting money in future."
Member of the BiC team

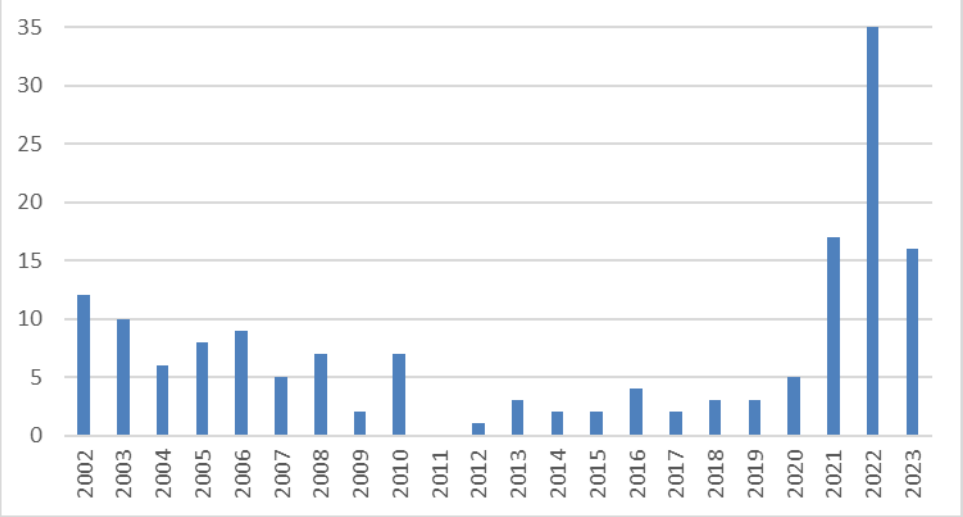
DAC Secretaries were open to such resources, acknowledging they were likely to be '*the first port of call'* for churches experiencing issues with bats when the BiC programme closed. While seminars / webinars / podcasts were welcome, written guidance to which churches could be referred were identified as of greatest help. The BiC team noted this request and produced the *Help and Advice for Churches with Bats* booklet.

The '*Flying to the Future'* conference in September 2023 was aimed at sharing lessons learned to a wide audience of DAC secretaries, ecologists, church architects, bat workers and church building officers. A film of the presentations remains available at https://batsinchurches.org.uk/reports-and-resources/.

The National Bats in Churches Survey and citizen-science bat detectives surveys had a particularly fruitful period of progress in 2022. The initial target of surveys was exceeded. This was sufficient to give an all-England view of bat usage of churches and provide insights to factors influencing use of churches for roosts, for example the age of churches, the extent of external lighting used by the churches and extent of rurality. This forms a significant body of work to inform future plans / activities. Findings were being written up for an open-access peer-reviewed journal article at the time of the final evaluation to provide the widest possible access to the findings.

The Bat Conservation Trust has maintained a record of churches where new roost sites had been reported. These records built up over a period of over two decades, providing good trend data. Figure 8.4 illustrates the number of new churches with roost sites added each year since 2002. It is clear that the years 2021, 2022 and 2023 saw a marked increase above the general trend i.e. the years that the BiC citizen science work mainly took place. Table 8.3 goes further, separating churches where there was a clear link with the BiC programme, either through involvement in the BiC citizen science work or were programme churches where roost count training took place. It demonstrates a clear link between the marked increase in churches where roost counts were recorded and involvement in the BiC programme.

Figure 8.4 – Number of new churches added to roost count per year



Source: Bat Conservation Trust

Table 8.3 – Effect of BiC programme on volume of churches added to roost count records

Number of new churches added to BCT roost count records	**Year**				
	2019	**2020**	**2021**	**2022**	**2023**
Total	3	5	17	35	16
Number of churches added with clear link to BiC programme	2	4	15	30	8
Percentage of churches added with clear link to BiC programme	67%	80%	88%	86%	50%

Source: Bat Conservation Trust

The intention was to ensure each participating church had a statement of significance. This would be recorded on the churches' heritage records and inform future work. Although some churches declined this opportunity, the majority of churches open to receiving a statement of significance had received it by the end of the programme.

Overall, the above made a contribution to all six intended outcomes because of the way it engaged so many different types of volunteers and put in place bodies of evidence that supported future decision-making about bat and church (including fabric, artefacts and furniture) conservation.

8.2.4 Restrictions on use of church buildings

The programme saw a small number of major transformations. Successes at All Saints, Braunston and St Lawrence, Radstone have perhaps been the most dramatic and best publicised. Churches that did or may have shut were open and in full use after the interventions.

> *"There were some churches who've had big interventions who are now using buildings they weren't using. […] Yeah, it's a small number, but it was always historically a small number who were the big problem. […] It was never 2,000 churches shut by bats. It was more like ten."*
> Member of steering group

However, there were other significant successes where bats accessing areas of the church used by people were significantly reduced. Examples included St Margaret's, Saxlingham, Norfolk and St Paul's, Chacewater, Cornwall.

> *The bats have been largely excluded from the body of the church and successfully housed in a bat loft.*
> *Response from St Margaret's Church, Saxlingham to the 2022 annual church survey*

> *"Bats in Churches has helped us to carry out a project that allows bats to have access to a certain part of the building but not the main body of the church, via financial assistance."*
> *Response from St Paul's, Chacewater to the 2022 annual church survey*

This suggests progress towards the intended outcomes of bats living safely in churches, church communities less disrupted by bats and church buildings and artefacts protected from bat interference.

8.2.5 Sustainable network of skilled volunteers

Training largely focussed on building capacity amongst bat surveyors and those cleaning churches, as discussed in chapter 5. However, capacity was built also in Volunteer Bat Roost Visitors. While relatively small in number (32 incidences of people trained between 2021 and 2023)[77], these individuals tend to be highly skilled,

[77] Taken from the BiC programme monitoring system

hold a VBRV bat class licence (level 1 or 2) and cover a relatively large area (at least a county, often larger areas). VBRVs are available to support not only churches but homes and public buildings[78].

It was noted in 5.3 that 87% of respondents to the 2022 bat volunteer survey were willing to survey churches for bats the following year, if the opportunity arose. This broke down into 44% of respondents intending to continue surveying and 43% being open to surveying[79]. If representative of all bat survey volunteers, this represented a maximum pool of 283 volunteers open to continuing surveying churches for bats. As a minimum, it represents 53 volunteers open to surveying. In all likelihood, the actual number of volunteers open to continuing the work lay between those two extremes. Regardless, of the actual number, this represents a significant voluntary resource available to future work and is spread across most of England[80].

Church cleaning workshops largely attracted church volunteers. Almost by definition, these people will continue to volunteer at their churches, so any improvements in their knowledge or skills gained from the sessions will sustain. Similarly, the smaller number of community volunteers attracted to clean local churches reportedly did so because of connections to their family or community heritage, rather than the influence of the BiC programme *per se*, so should sustain. Links between bat groups and churches, leading to bat volunteers cleaning churches were reported, albeit in a relatively small number of instances, throughout the lifetime of the evaluation[81]. In some instances, the links had developed over many years, preceding the BiC programme, so should sustain. Links built as a direct result of the BiC programme may sustain, if the churches and/or bat groups are proactive at maintaining contact.

[78] UK Government (2020) Become a volunteer bat roost visitor. Available at https://www.gov.uk/guidance/voluntary-bat-roost-visitor-how-to-volunteer. Accessed 29th November 2022

[79] Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, Responses to annex D, question 7

[80] Ibid, Responses to annex D, question 6

[81] For example, Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p35

The 2020 evaluation noted that bat volunteers tended to be recruited from amongst wildlife enthusiasts[82]. The 2022 evaluation noted evidence of small numbers of church people volunteering to undertake bat surveys[83]. As noted in 6.2, this was viewed as a major achievement by at least one member of the BiC team, and can be attributed as a BiC contribution to capacity building.

These findings suggest positive progress towards intended outcomes of new audiences understanding and supporting bats and churches, interested communities understanding each other's priorities and working together in new ways and changed perceptions and improved attitudes towards bats and churches from parts of society beyond bat and church communities.

8.2.6 Understanding of church heritage and bats

The 2022 annual church survey suggested church representatives had learned significantly about bats[84].

> *"[We have gained a] Better understanding of bat need and how we may be able to assist in the conservation of our church without detriment to them. [We have also gained a] Better understanding of how the church building is viewed by the wider community of the village."*
> Respondent to the 2022 Church Survey – Annex C, question 17

A survey of bat volunteers in 2022 revealed that 62% of participants had a better understanding of church buildings because of bat survey training[85]. Some went further, reporting a better understanding of the significance of the buildings to church people.

> *"I probably have a greater appreciation that people still go there to worship. I'm not a churchgoer…but the way we were trained, and what we were doing,*

[82] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2020) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p46

[83] Members of the BIC team mentioned churches where some church volunteers had engaged in the bat surveys and there was further evidence of this in narrative responses to annex D, questions 3, 5 and 8

[84] Hughes, A., Woodward, S., Powell, A. and Oliver, D. (2022) Bats in Churches – Annual evaluation report 2022, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, Annex C, responses to question 17

[85] Ibid, p98 – Annex D, response to question 3

made me remember this is a place of worship for people, not just a place where mums and toddler's go."
Bat survey volunteer

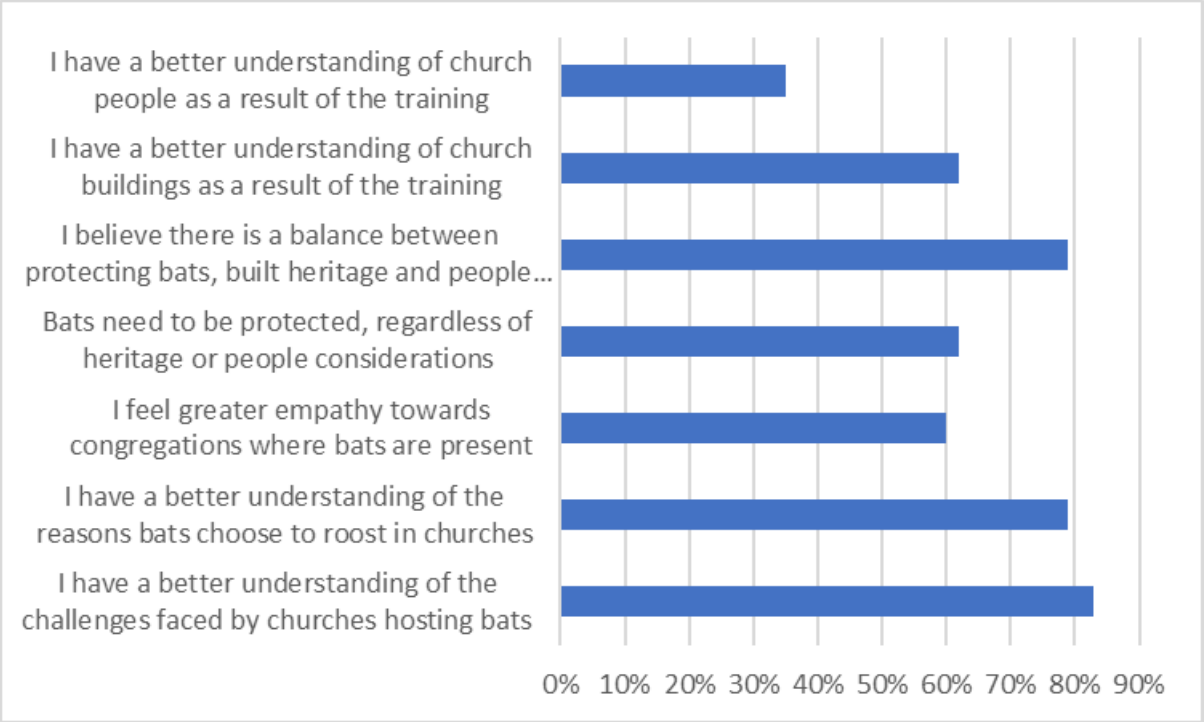
85% of bat survey volunteers responding to this 2022 survey had participated in training by BiC[86]. Figure 8.5 illustrates the extent that the training changed perceptions. It is clear that the biggest shift in understanding was in the challenges facing churches in which bats were roosting. Although, there remained a significant gap of 23% between this enhanced understanding and increased empathy for congregations, this may be because some volunteers were church attendees or bat volunteers were already empathetic through long term links with churches. That a similar sized gap (21%) was evident for those that had a better understanding of church buildings, supports these possibilities.

Figure 8.5 indicates that despite 83% of respondents suggesting they had a better understanding of the challenges faced by churches, 62% believed bats needed to be protected regardless of the effects on heritage or people. This position sits at the heart of the human-wildlife conflict as it could be interpreted as a gap between understanding and empathy towards church congregations by bat volunteers. The importance of empathy as a key factor towards resolving such conflict was considered in depth in the 2021 evaluation[87].

[86] Ibid, Responses to annex D, question 1

[87] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, pp18, 23, 44

Figure 8.5 - Percentage of volunteer bat survey respondents indicating changed perceptions as a result of the training



However, additional interview findings from a sample of respondents with this perspective revealed less polarized positions. While a minority felt the needs of bats always trumped those of people or heritage, the majority felt there was a balance, suggesting the needs of bats were best served if the building and people were protected. There was a tendency for bat volunteers to have sympathy towards church volunteers, recognising the mess and disruption that bats could bring.

> *"Churches are important parts of small communities. I don't have any religious affiliations, but I get the importance of church in terms of community and its historical aspect. So, I have sympathy for those that use the building and the importance of the church building itself."*
> *Bat survey volunteer*

Professional ecologists tended to have an initial position favouring the needs of bats over people or heritage. Nevertheless, exposure to the problems faced by churches tended to shift thinking towards a more balanced position.

> *"I was more predominantly interested in protecting bats. It's [sympathy towards congregations] only came about since being involved with an ecologist who*

does a lot of BiC work so that I've seen the real impact of large bat roosts and the damage and negativity it can cause within the church towards bats.

You can't go in all guns blazing and saying, 'bats are protected' because you've got to get them to engage positively and realise how they can protect the bats but also how it can make the church more interesting for a larger community of people."
Consultant ecologist (interviewed in capacity as a bat survey volunteer)

This ecologist was reportedly not alone with this starting position:

"There were issues of perception among some parishes that the ecologist turned up and was very excited about the bats but did not have the same degree of interest in hearing about what the issues were for the heritage of the building or users of the building. It felt as though it was skewed to starting from the perspective of bats rather than starting from the perspective of people or buildings."
DAC Secretary

The above fitted with a key finding of the 2021 evaluation that '*the right team*' required empathy if they were to move forward with a church[88].

Over the years that the evaluation team observed training and engagement events, they consistently noted people learning about church heritage and bats:

- Attendees at church cleaning events included a minority of attendees who were primarily bat enthusiasts but motivated to learn how to help the church with bats either because of their interest in bats or because they were part of the wider (village) community
- School children learned about church heritage and bats through the educational events run in churches and schools
- Members of the public learned about the church, its heritage and bats through engagement events ranging from bat walks to church fayres to the touring art installation *On a Wing and a Prayer*

[88] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2021) Bats in Churches – Annual evaluation report 2021, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p23

- Attendees at webinars, such as *BiC Live*, where more in-depth church heritage or bat topics were explored

Case study 8.4 – The mother and daughter

A mother and daughter were interviewed at the *On a Wing and a Prayer* exhibition.

The mother was part of a parish council but never attended the church. She attended the engagement event because she liked to support things in the local community. She had no prior knowledge of the church having bats. On this, her first visit inside, she thought the church was *amazing* and *clearly well kept by the people here*.

Her daughter, who appeared around 10 years old, had greater knowledge of the church. She had attended a pre-school group there and was able to point out features of the church, including a stain in the wall below a bat roost. She appeared both comfortable in the building and knowledgeable about the church environment. She also appeared to enjoy the bat-themed craft activities being run by local church people.

The above findings suggested positive progress towards intended outcomes of new audiences understanding and supporting bats and churches, interested communities understanding each other's priorities and working together in new ways and changed perceptions and improved attitudes towards bats and churches from parts of society beyond bat and church communities.

9. Conclusions and recommendations

9.1 Conclusions

"One of the reasons for doing this project was to stop church people and bat people at a local level from hating each other and regarding each other as determined to ruin their entire life. And I think from the reports that I'm getting and the feel I have from what the staff on the ground have achieved, that is no longer the case in the churches that are part of the project."
Member of the Steering Group

The programme sought to **transform human/heritage-bat conflict** in a meaningful sample of churches across England. Different approaches were to be trialled to understand what worked and what challenges remained.

The programme largely achieved what it set out to do. Most outputs were achieved or exceeded. There was strong progress towards all outcomes identified in the programme logic model. The findings identified examples of human/heritage-bat conflict transformed through **capital mitigation** projects, **measures to protect** artefacts or particular areas of church buildings, and **education** (engagement). The BiC programme created space and time for **dialogue** and explanation, ensuring all sides of the debate had an opportunity to be heard and their perspective understood. In the most effective examples, increased knowledge and understanding developed into sympathy and ultimately **empathy**. This created an environment in which practical solutions could be developed for the benefit of church heritage, people and bats. The findings suggested greater chances of conflict transformation success where professionals (ecologists and church architects) had key attributes, which were characterised as the ***right team***:

- Empathy for the position of others
- Worked in a timely manner
- Collaborated with others to achieve affordable, practical solutions.

A key finding was that **capital mitigation projects** were **expensive and typically unlikely to completely separate bats from church heritage/people** yet still enable bats and people to use the same building. Nevertheless, there were a minority of examples where this objective was achieved. The older the building and the more complex the architecture, the less likely capital mitigation projects would be

successful. At the very least, the findings indicated iterative approaches to mitigation were most likely and bats could take more than one maternity season to adapt to a mitigation.

The changed emphasis from 2021/22 onwards from finding capital solutions that effectively separated bats from people/heritage to finding **affordable mitigation approaches** to improve the protection of artefacts / church fabric and wellbeing of church people was well-judged. The findings indicated simple interventions such as light-weight vacuum cleaners, long-handled brushes and periodic cleaning of churches by professional cleaners, or in some instances bat groups, youth groups or community volunteers, were effective and affordable.

The findings suggested the combination of practical solutions combined with education (public engagement) was effective. When cleaning of bat mess became manageable for congregations, minds were more open to the education aspect of the programme. In some cases this translated into recognition by churches that the bats could be an asset. The findings identified examples of churches where **bats became part of the core mission of the church**, either as a means of outreach or in pursuing ecological commitments or as a theme for fundraising events.

The reach of **public engagement** by the programme was both varied and significant. Support for local events was an important factor in helping project churches understand their concerns were being seriously and to understanding how they could use the presence of bats in their churches to their advantage. Work with schools and youth organisations sought to influence young minds and those of their carers. Media coverage was extensive. It reinforced community initiatives at a local level and reached mass audiences through national TV, radio, magazine and newspaper coverage.

Capacity building was a key element of the programme's work. It was discernible in the recruitment and training of volunteers plus the training of professionals. While there were positive examples of new volunteers recruited to clean and support churches, in the main cleaning workshops largely supported those that were already committed to maintaining their churches. The heritage cleaning films and guidelines offer the prospect of positive legacy from this aspect of the programme.

Significant volumes of volunteers were trained to take part as bat surveyors. The commitment of the many citizen scientists contributed greatly to an improved understanding of where bats are using churches across England. The relatively smaller groups of those trained as VBRVs and those continuing to take part in the NBMP from 2023 onwards may lead to a significant on-going programme legacy as they continue to support churches and gather evidence of changing populations over time, respectively.

While the **COVID-19 pandemic** caused delays in capital mitigation works and stopped community-based public engagement in 2020/21, in all likelihood the learning from pandemic response measures led to **greater programme reach**. The original programme conceived public engagement largely in terms of events at individual project churches. While this approach did take place successfully, the pandemic forced an online approach also. The team soon realised this opened engagement events to national, rather than local audiences. This led to *BiC Live*, for example, one of many programme features that had not been conceived as part of the original application to NLHF. This translated equally to training, albeit some elements of training provision adapted more readily than others to online techniques. The order of magnitude difference in attendance volumes of bat surveying (online) versus cleaning workshops (on-site) highlighted this finding. Online training also opened the offer to a significantly enlarged professional community. A professional development workshop of an hour or so online was significantly more accessible for ecologists and church architects than an option requiring extensive travel and *loss* of a day's work attending a physical event.

The programme sought to build a **body of evidence** to inform future development. The guidance and case studies of mitigation works form a useful written body of evidence of what does (and does not) work in particular situations where bats live in churches. Efforts to disseminate these findings through conferences, professional fora and the programme legacy website were positive and might be expected to stimulate engagement with that body of evidence in the short term.

The body of evidence of bats in churches across England was improved notably by the programme. Understanding was enhanced about geographical spread, species of bats using churches and aspects of churches and their surrounding landscapes affecting the likelihood of bats using churches. Again, efforts to disseminate these

findings through conferences, professionals journal articles, professional fora and the programme legacy website were positive.

Innovation was an embedded feature of the BiC programme, not least because NLHF supported an England-wide programme where community engagement was undertaken remotely by a relatively small team. The findings suggested the approach was successful, perhaps because there was a physical focus (a church) within each community for engagement. This may provide a helpful template for future geographically widespread projects. While this delivery model may be transferrable, the recruitment of a particularly capable, committed and energetic team was undoubtedly a key success factor for the BiC programme also i.e. the model was an enabler but the right team is necessary to make any programme a success.

There were several **examples of programme innovation**. The BiCCL was trialled and found to be largely fit for purpose. Evidence was gathered during the programme to inform the situations where it might be used to best advantage beyond the lifetime of the programme. Similarly, *catch trays* and protection *sails* were trialled and identified as viable mitigation measures in instances where bats mess was largely concentrated in areas under roosts. Innovation also featured in the engagement work of the programme. As examples, the touring *On a Wing and a Prayer* art exhibition, *The Little Church Bat* book and the Bats in Churches Challenge badge were all conceived during the lifetime of the programme and stemmed from interests and strengths of volunteers and BiC team members. Similarly, as noted already, extensive use of online training and engagement events were a positive response to the COVID-19 pandemic which ultimately provided much greater programme reach than would have been the case if planned face-to-face events had predominated.

The BiC programme stands out, in part, because of its focus on establishing a substantial **legacy**. This can be attributed to the members of the BiC steering group and delivery team. Many aspects of legacy have been noted within these conclusions already. However, the strong organisational relationships developed between programme partners should be highlighted. These relationships were sometimes forged in adversity, particularly in the early years of the programme, and are a testament to the commitment of the partners to the central goal of conflict transformation.

9.2 Approved purposes

9.2.1 Approved purpose 1

Undertake capital work to reduce the physical and social impacts of bats in 102 churches. At 20 most severely affected Group 1 churches implement significant capital work interventions (such as acoustic deterrents, monitoring with radio tagging, monitoring/blocking/alternative roost space including boxes) with continued subsequent monitoring. At 82 less severely affected Group 2 churches produce bat management plans including in depth surveys to prepare proposals for future management, protection of monuments, repairs/redecoration, cleaning workshops, web cams.

Capital interventions took place at 20 of the most severely affected churches. In practice, most of these interventions involved separation of bats from people/heritage through use of bat lofts, bat boxes and use of ceiling voids, rather than use of acoustic deterrents or monitoring with radio tagging.

The BiC team worked with a further 88 churches, providing a mix of less intensive capital interventions (12 capital interventions costing less than £10,000 each), artefact / church furniture covers (8 capital heritage projects), bat surveys for 25 churches, bat management plans for 19 churches and help & advice for 49 churches.

9.2.2 Approved purpose 2

Build community support bringing together church congregations, bat enthusiasts, local people and wider audiences running at least one locally appropriate activity at each church, from a 'menu' of engagement options.

The original business plan envisaged a menu of engagement activities, such as bat walks and beer & bat evenings but an early evaluation finding was that congregations experiencing major bat problems had little appetite to celebrate bats

in their churches [89]. Instead, the team invested time in listening to church representatives to understand their issues and seek appropriate solutions. Once relationships of trust had been developed, local engagement events were held, albeit COVID-19 lockdowns delayed this aspect of the programme's work.

In the main, local engagement activities were either bat evenings held at churches with the support of programme ecologists or local bat group members, or formed part of mainstream church activities, such as summer fayres. Additional engagement events included cleaning workshops, bat survey / VBRV training sessions, educational sessions with local school children or the touring *On a Wing and a Prayer* exhibition.

9.2.3 Approved purpose 3

Recruit and train volunteers: to create a strong volunteer network to support churches dealing with bats. Training re church heritage cleaning, general bats in churches, advanced volunteer bat roost visitor.

This was rehearsed in chapter 5. A significant volunteer network was established to survey churches. While many churches may not have viewed this as directly beneficial, a recurring finding of the evaluation was that churches needed up-to-date bat surveys to inform any mitigation measures. There were instances throughout the programme where churches believed that knew where bats were accessing their church whereas surveys indicated access points were elsewhere additionally.

Direct support for cleaning proved to be interventions valued greatly by church representatives. Although there were instances where volunteers were recruited during the programme from bat groups, uniformed organisations, local communities and even programme ecologists, this was not widespread across the population of churches. Volunteers involved in cleaning churches were mainly drawn from congregations or members of the community who viewed the church as part of their heritage.

Training was a significant feature of the programme, with volumes of training exceeding targets, both amongst volunteers and professionals.

[89] Hughes, A., Woodward, S., Powell, A. and Downs, N. (2020) Bats in Churches – Annual evaluation report 2020, 20 Degrees Consulting Ltd & Arcadis Consulting Ltd, p30

9.2.4 Approved purpose 4

'Church Bat Detectives': three level volunteer programme - i) simple survey engaging 500 participants at 500 churches, ii) train 700 volunteers to undertake in-depth surveys at a representative selection of 700 nationwide churches, iii) count church bat roosts through BCT's National Bat Monitoring Programme.

This approved purpose was achieved despite COVID-19 lockdown preventing progress in 2020, and to some extent in 2021. The findings indicated a significant increase in church bat roosts entered into the NBMP.

9.2.5 Approved purpose 5

Evaluate the project and share knowledge gained at: Models of Success demonstration days, specialist stakeholder workshops, final symposium/end of project conference, published case studies and a new website. Collaborate with the Beautiful Burial Ground project, National Trust, Ride and Stride, CCT cleaning programmes.

This approved purpose was achieved. The BiC team engaged in on-going evaluation of the programme, not only with the independent evaluators but through self-reflection. Sharing of learning was a feature of the programme. Periodic ecologist and church architect fora were held. Presentations were delivered at relevant events, such as regional DAC Secretary gatherings and bat conservation conferences. The *Flying to the Future* end-of-programme conference sought to disseminate a broad range of programme findings. Learning was shared through collaboration with a wide range of organisations, from EASA to Caring for God's Acre. The programme's website has been reconfigured as a repository of programme findings and resources.

9.3 Lessons learned and recommendations

9.3.1 Programme partners

The BiC programme was significant in covering the whole of England, yet delivered community-level engagement with a relatively small, remote team. That provides a novel template in developing future programmes. A critical factor appeared to be a tangible partner (church) within each of the communities.

Recommendation 1: The programme partners (and similar organisations) should consider the BiC model of locally based groups supported by a remote team in developing geographically widespread programmes of community development.

A key finding of the evaluation was that people's issues (with bats) needed to be listened to with respect and taken seriously. In instances where people in perceived positions of authority were felt to have dismissed concerns in a cursory fashion, conflict escalated. This was in line with human-wildlife conflict theory. The BiC programme was successful because the BiC team invested time in listening to all sides of the people/heritage-bat conflict debate and was not afraid to tackle difficult issues.

Recommendation 2: Programme partners, and more widely public bodies and civil society organisations, should tackle difficult issues and not sidestep issues by trying to ignore or dismiss issues raised by particular interest groups.

The findings identified interventions with relatively modest costs, such as help with cleaning and protective covers for key artefacts, were successful at supporting churches and reducing the conflict between people/heritage and bats. At the time of the final evaluation, the programme partners were actively trying to identify funding for a follow-on programme to support these types of small-scale interventions. This would provide a significant legacy built on the learning from the BiC programme.

Recommendation 3: The programme partners should continue to explore how to best enhance their own resources with the support of one or more external funders to support bats, people and heritage in churches.

Capacity building led to key legacy from this programme. Important legacy will be the church people trained in better heritage cleaning techniques and the bat group members / bat workers who were trained in surveying. Both groups are likely to continue their work of church cleaning or participating in the NBMP or as a VBRV, given the work aligns with their demonstrable interests. Moreover, they are likely to gain peer encouragement from being part of a group.

Recommendation 4: The programme partners, and similar organisations, should ensure future capacity building takes place with people rooted in groups of like-minded people so that delivery will sustain, in all likelihood.

The media reach of the BiC programme was extensive. It engaged the full range of media channels, securing local through to national (occasionally international) coverage. This was possible as the programme was large enough to employ a dedicated communications professional, rather than rely on programme officers writing occasional press releases or social media posts.

Recommendation 5: The programme partners, and similar organisations, should consider strategic-scale programmes in future, with dedicated communications capacity, if they want to make a major communications impact for their cause.

The mix of local and national engagement activities was important to the success of the BiC programme. Local activities were a demonstrable investment in communities and helped to build trust and buy-in. National (or regional) activities provided scale of engagement for training, dissemination of lessons learned and general public education about bat and church heritage.

Recommendation 6: The programme partners, and similar organisations, should use a mix of local and national activities for future strategic-scale programmes, balancing to meet their various objectives of local influence and national engagement.

Many of the programme churches were in relatively remote rural areas. Consequently, on-site training events tended to attract small numbers of participants. Gatherings of professionals, such as ecologists or church architects particularly would have required significant travel time. The COVID-19 pandemic increased acceptance of on-line training and enabled niche interest training to draw on national audiences. This proved helpful for the BiC programme in training relatively large volumes of programme professionals and volunteers.

Recommendation 7: The programme partners, and similar organisations, should consider online training provision as a first-choice option when seeking to increase accessibility for rural or dispersed populations or in delivering niche interest training.

The BiC created a significant body of evidence, from case studies of mitigation approaches to unanticipated consequences of net zero approaches to geographical concentrations of bats in churches. Similarly, the programme created significant

resources of interest to churches, ecologists, church architects, bat groups, bat workers, schools, children's organisations and families. The legacy value of these bodies of evidence and resources relies on the BiC programme partners continuing to promote their existence.

Recommendation 8: Each programme partner should review the bodies of evidence and resources developed by the BiC programme to identify which fit with their core mission. Each partner should then develop and implement a communications plan to encourage wider engagement with the bodies of evidence and resources.

The BiC programme partners recognised the strength of the organisational relationships forged during the programme and the complementary nature of certain organisation, for example Natural England and Historic England both look after different aspects of the nation's heritage. Maximising the legacy of these relationships relies on continued dialogue and joint working. In the first instance, this can profitably be in attempts to promote use of resources and bodies of evidence developed during the BiC programme and seeking support for a legacy programme (see recommendations 3 and 8).

Recommendation 9: The programme partners should meet within six months from the close of the BiC programme and thereafter annually as a minimum. In the first instance, they should review what each partner has done to promote the bodies of evidence / resources developed by BiC, plus assess progress towards a legacy programme.

The BiC programme partners proved to be an effective, enabling partnership. Early programme management issues were tackled effectively. A new programme manager brought the right mix of skills and capabilities to lead the team and keep focus on the programme's objectives. It was recognised that BiC team members were creative and highly capable. Consequently, the BiC team were given latitude to develop new ideas and approaches to fulfil the programme's objectives. An art exhibition, a children's book and a children's challenge badge were examples of how a creative team given scope to apply their ideas enhanced the programme.

Recommendation 10: The programme partners should apply lessons of effective programme governance from the BiC programme to future projects: monitor programme management effectively, intervening early where programme

management goes off track, but balance with encouraging programme teams to bring forward new ideas and approaches to tackle the programme's objectives creatively.

The BiCCL proved itself as useful and largely fit for purpose. At the time of the final evaluation, Natural England had committed to training another cohort of ecologists in its use and were considering reducing the number of surveys required for its implementation.

Recommendation 11: Natural England should review the survey and monitoring requirements of the BiCCL in light of the BiC programme experience with a view to bringing such requirements more in line with other bat class licences, where possible.

Recommendation 12: Natural England should periodically review use of the BiCCL to determine whether periodic training of cohorts of ecologists in use of the BiCCL is necessary or whether *ad hoc* training of specific ecologists as the need arises would be a more efficient and effective use of time.

The findings identified several lessons for organisations managing historic buildings in which bats could be found. Understanding what species of bats were using the buildings and how they were accessing and using the buildings were identified as essential first steps in informing mitigation plans. Equally, there were resources for those seeking to clean heritage buildings or artefacts. While professional support was advised, basic advice and guidance was available.

Recommendation 13: The Church of England should ensure all DAC Secretaries are aware of the resources available to support churches with bats, available at https://batsinchurches.org.uk/i-care-for-a-church/.

Recommendation 14: The Churches Conservation Trust and Historic England should ensure officers managing historic churches (and similar properties) are aware of the resources available to support them with bats, available at https://batsinchurches.org.uk/i-care-for-a-church/.

The benefits of bat groups and bat workers understanding more about churches and the practical issues faced by users of churches with bats were clear in the findings.

Recommendation 15: The Bat Conservation Trust should continue to train bat groups and bat workers about churches and the practical challenges faced by people and heritage from sharing a building with bats.

The citizen science aspect of Bats in Churches generated a significant volume of data about the way bats use churches across England and how the environment surrounding churches affects church use by bats. While the BiC team sought to disseminate findings of that work through journals and conferences, making the data accessible may help future studies, potentially as baseline data in longitudinal studies. Potential avenues worth exploring would be research data repositories such as the Environmental Information Data Centre or that of an interested university. Ideally, the data would be accessible by regional environmental records centres.

Recommendation 16: The Bat Conservation Trust should consider making the BiC citizen science data available as an open dataset.

At the time of the final evaluation there were examples of bat mitigation projects that were still *bedding down* and may yet prove successful. Equally, there were examples of mitigation projects that were successful initially but then failed or faltered as new access holes opened up in the churches. Novel mitigations such as *catch trays* and *sails* were successful in the short term but will require on-going maintenance into the future. It would be helpful to evaluate the experience of programme churches in a further five years to understand how experiences evolved beyond the lifetime of the programme.

Recommendation 17: The BiC programme partners should seek to evaluate the medium-term impact of mitigation measures on churches involved in the BiC programme after the roosting season of 2028.

9.3.2 Churches

Churches experiencing issues with bats should review the help and guidance developed during the Bats in Churches programme. Working through these resources is likely to save churches both time and money.

Recommendation 18: Churches with bats should seek to benefit from reviewing the help and guidance resources available at https://batsinchurches.org.uk/i-care-for-a-church/.

While church representatives sometimes believed they knew where bats accessed their buildings, these beliefs were sometimes inaccurate or incomplete. Bat surveys were needed to clarify the situation. More generally, up to date bat surveys were important to inform bat management plans.

Recommendation 19: Churches should seek to understand their bats in advance of developing bat management plans. Building links with local bat groups may help in this respect.

The findings were clear that capital mitigation interventions tended to be costly yet could not guarantee success.

Recommendation 20: Churches should consider major capital bat mitigation works as a last resort after all other avenues of mitigation have been considered or as part of a major programme of works, for example completely re-roofing the church.

De-escalation of people/heritage-bat conflicts was achieved where project professionals with the characteristics of the *right team* were assembled: empathy for the position of others, who worked in a timely manner and collaborated with others to achieve affordable, practical solutions.

Recommendation 21: Where capital mitigation works are taken forward, churches are advised to appoint professionals (ecologists and church architects) with the demonstrable characteristics of empathy, collaboration, timeliness and a focus on affordable, practical solutions.

Even when bat mitigation projects were successful, it was apparent that position could easily change. Any extremes of weather could open up new holes in church buildings through which bats could regain access. Regular review of the building for potential access points should be built into on-going maintenance, in the same way that guttering and drainage points would be reviewed.

Recommendation 22: Churches should build in regular review of their buildings as part of their maintenance regime to prevent emerging holes in the buildings from becoming access points for bats.

While blocking holes in churches before they become bat access points would be a sensible preventative measure, blocking holes already in use as access points for bats would be illegal. Churches are advised to exercise care in carrying out Net Zero repairs or modifications so as not to inadvertently break the law. This is pertinent given the BiC programme finding that 35% of churches surveyed did not know bats used their church.

Recommendation 23: Churches should consider surveying their church for bats before undertaking any repairs or modifications to church buildings that might block holes already used by bats for access.

There were examples of churches within the programme that changed their mindset of bats as a nuisance to an asset. These churches used the presence of bats to contribute to their core mission of outreach to new communities of people or even as a hook for fundraising.

Recommendation 24: Churches may find it helpful to consider the findings of the BiC programme where churches used the presence of bats to contribute to the outreach mission of the church or help pay for maintenance of the church.

9.3.3 Bat groups and bat workers

Bat groups and bat workers seeking to work with bats in churches should review the help and guidance developed during the Bats in Churches programme. Working through these resources is likely to help understand the issues faced by users of churches and avoid conflict.

Recommendation 25: Bat groups and bat workers should seek to benefit from reviewing the help and guidance resources available at https://batsinchurches.org.uk/im-a-bat-worker-or-bat-group/.

A recurring finding of the evaluation was that church users seldom disliked bats, rather they disliked the mess caused by bats. An important way of reducing conflict between bats and people is to support churches in cleaning up the mess caused by

bats. It may be helpful if bat groups and bat workers consider churches as the habitat of bats and help clean churches as a way of maintaining that habitat and reduce conflict with other users of the building.

Recommendation 26: In order to support bats in churches, bat groups and bat workers should consider building relationships with church users by periodically helping to clean church buildings.

9.3.4 Ecologists

Ecologists seeking to work with bats in churches should review the help and guidance developed during the Bats in Churches programme. Working through these resources is likely to help understand the issues faced by users of churches and avoid conflict.

Recommendation 27: Ecologists should seek to benefit from reviewing the help and guidance resources available at https://batsinchurches.org.uk/advice-for-professionals-ecologists-and-architects/.

Affordability was identified as a key factor as to whether bat mitigation plans would be implemented by churches. If ecologists and other professionals keep in mind that churches are essentially small, not-for-profit organisations, it will help in developing bat management plans of practical benefit. Such affordable, practically implementable solutions are much more likely if a collaborative approach is taken with church representatives and church architects from the outset.

Recommendation 28: Ecologists should factor in affordability at the earliest stage when developing bat mitigation plans.

Recommendation 29: Ecologists should seek to work collaboratively with church architects when developing bat management plans.

Recommendation 30: Ecologists should start by considering whether the interests of bats and people can be met with non-capital or minor capital interventions, such as better vacuum cleaners, church furniture covers or *sails*, rather than major capital interventions.

Ecologists that worked on the BiC programme gained significant experience of bats in churches, use of the BiCCL and what works and what did not work in terms of mitigation. While the BiC sought to disseminate findings widely amongst ecologists, continuing to share personal experiences through professional networks and publications of interest to the profession, such as Roost, would be helpful.

Recommendation 31: Ecologists that worked on the BiC programme should consider sharing their learning further through professional networks and relevant publications.

9.3.5 Church architects

Church architects seeking to support churches with bats should review the help and guidance developed during the Bats in Churches programme. Working through these resources is likely to help understand the perspective of ecologists and avoid conflict.

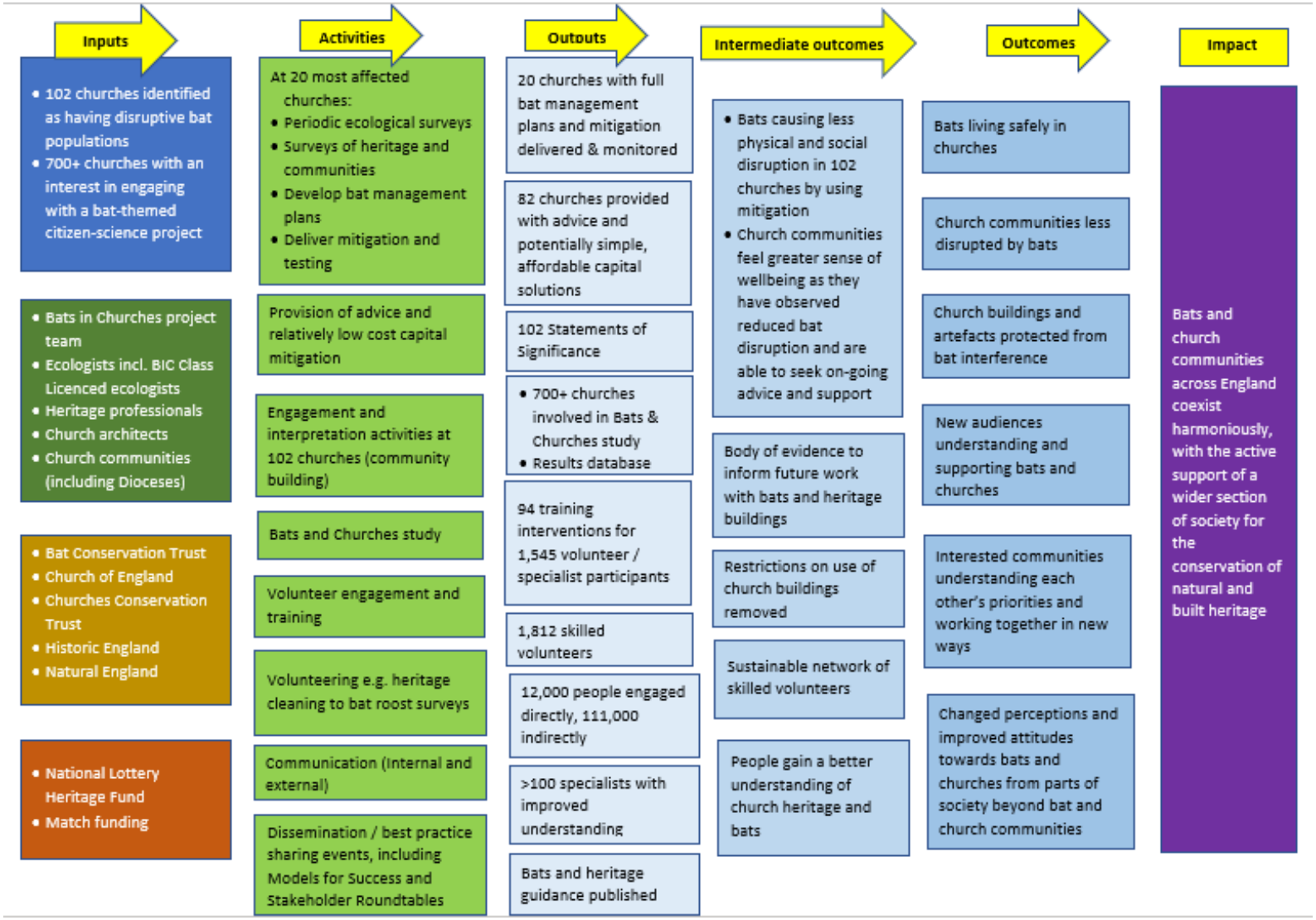
Recommendation 32: Church architects should seek to benefit from reviewing the help and guidance resources available at https://batsinchurches.org.uk/advice-for-professionals-ecologists-and-architects/.

Recommendation 33: Church architects should work collaboratively with ecologists to develop practical and affordable bat mitigation plans that support the interests of people / heritage and bats using the building.

Church architects that worked on the BiC programme gained significant experience of bats in churches and what works and what did not work in terms of mitigation. While the BiC sought to disseminate findings widely amongst church architects, continuing to share personal experiences through professional networks, such as EASA, and publications of interest to the profession would be helpful.

Recommendation 34: Church architects that worked on the BiC programme should consider sharing their learning further through professional networks and relevant publications.

Annex A – BiC logic model and underpinning assumptions



Assumptions

- There are over 16,000 church buildings in England with 12,200 nationally recognised as being of outstanding architectural and historical interest
- It is estimated that up to 6,400 parish churches in England may be used by bats
- The Bats in Churches Class Licence enables novel bat mitigation methods to be trialled
- The evidence suggests bat urine and droppings primarily degrade the finish, artefacts and monuments in church buildings rather than the fabric (although they may speed up the effects of damp on timber)
- Church buildings have had to be closed to people in the most extreme cases
- The number of volunteers maintaining church buildings are in decline as congregation sizes have declined over decades
- Free bat roost visitor advice relies on volunteers. Consequently the availability and quality of advice can be variable
- Bat roost visitors tend to prioritise the needs of bats above any other needs of heritage conservation or community needs. Church communities tend to prioritise the needs of the community above those of bats
- The Bats and Churches Study will enable a wider understanding of the impact of bats in >700 churches across England
- Bats and Churches Study volunteers (bat detectives) will form a subset of the 12,000 people engaging directly in the scheme
- The wider church community at each of the 700+ churches engaging in the Bats & Churches Study will form a subset of the 111,000 people engaged indirectly in the scheme
- There will be enhanced knowledge, understanding and approach of >100 specialists dealing with bats in historic buildings
- Professionally trained volunteers will continue to support churches beyond the lifetime of the project in a range of activities, from bat advice to heritage cleaning
- There will be a greater appreciation and willingness to accommodate the positions of other groups by bat conservationists and church communities

- The Bats and Churches survey has developed since the proposal to NLHF to include: (a) a stratified, random sample of 1,000 churches and (b) the citizen science ‘Bat Detectives’ element which is open to any Church of England / Churches Conservation Trust church. This change has not been recorded in the baseline logic model but will be included in the M& E framework to ensure it is evaluated
- Communication splits into (a) internal – partly good project management practice and partly partner relationship management and (b) external, for example press relations and social media
- The 102 heritage Statements of Significance did not feature prominently in the NLHF proposal. They were identified as outputs during the evaluation inception meeting
- The NLHF proposal has an outcome ‘Communities will have benefitted through reduced environmental impacts’. It may be the case that bat mitigation measures will have a positive impact on bats but for many a neutral impact might be the best that can be achieved. Progress against this outcome has more to do with the way partners and their contractors behave in carrying out activities primarily aimed at achieving other outcomes.

Annex B – Sample interview topic guides

Topic Guide 22 – Delivery team – July 2023

Activities / processes

1. What have been the main things taking up your time over this final year of the project?

For Engagement Officers only

2. There's been another maternity season since we last caught up. Where do each of your capital mitigation churches sit in terms of success, partial success or no success yet?

Final stakeholders for approach

3. We have talked to a wide range of stakeholders during the lifetime of the evaluation. Nonetheless, are there particular churches, bat groups, heritage organisations, architects, ecologists etc that we have missed and ought to approach?

Lessons learned / legacy

4. As you reflect back on the project, what have been the key points of learning?
5. What do you think BiC will leave behind?
6. If you were able to convey key legacy messages to each project partner what would they be? Would you have legacy messages to any other groups of stakeholders?

Close

7. Is there anything else you would like to say about the project?

Topic Guide 23 – Partners – July 2023

Reflection

1. What have been some of the stand-out successes and challenges of the project from your organisation's perspective?
2. In what ways, if any, has your organisation changed its thinking or position as a result of the project?

Lessons learned / legacy

3. Beyond the above, as you reflect back on the project, to what extent have there been other learning points from the project?
4. What do you think BiC will leave behind? What is its legacy?
5. If you were able to convey key legacy messages to your own organision, what would they be? [Prompt if necessary: does something need to be embedded in the organisation's business as usual approach?]
6. Would you have any legacy messages to any of the other partner organisations or stakeholders?

Close

7. Is there anything else you would like to say about the project?

Annex C – Overview of capital mitigation projects

Source: Combination of programme monitoring system and interviews with engagement officers.

Successful mitigations – Church community reportedly happy with results of mitigation and bats using mitigation

Church	Designation	Mitigation	Comment
All Saints, Braunston-in-Rutland, Leicestershire	Capital severe	Pilot project - Blocking holes in ceiling, confining bats to roof void	Soprano pipistrelle colony thriving but no mess in church
St Andrew, Coston, Leicestershire	Capital minor	Four bespoke shelves to catch much of the mess underneath the main roost in the south aisle	Natterer's bats – Mess from bats persists but now contained and more manageable for church community, who have always been broadly supportive of bats
St Lawrence, Radstone, Northamptonshire	Capital severe	False ceiling in chancel, enhanced tower space. Bat access to church closed Sept 2021.	Colony of 200 Natterer's bats and a smaller common pipistrelle colony. Bats used mitigation in 2021. Disappeared in 2022. Radio tracking indicated were using tower and woods. Back using mitigation in 2023.
St Margaret, Saxlingham, Norfolk	Capital severe	Enclosed upper half of north transept to create self-contained bat loft with internal roost boxes, with added external roost box and new roosting spaces in silence chamber.	Large Natterer's bats roost. Bats using mitigation and church relatively bat free.
St Pega, Peak irk, Cambridgeshire	Capital severe	Bat boxes incorporated into re-roofing of chancel (after lead roof stolen)	Maternity colony of 250-300 soprano pipistrelles. Bats using mitigation and church community reportedly delighted.
St Wenappa,	Capital	False ceiling in	Maternity roost of brown

Gwennap, Cornwall	severe	vestry and cover for stone tracery. More brown long eared bats using mitigation.	long-eared plus day roosts of common pipistrelle and Natterer's bats. Bats using the mitigation void.
St Nicholas, Elmdon, Essex	Capital severe	Shelving installed in porch to enhance roost, while access points to church blocked	Natterer's maternity colony. Two brown long-eared bats in the bell tower and church. A possible maternity colony of soprano pipistrelles and a single serotine. Appears to have worked.

Partially successful mitigation projects

Church	Designation	Mitigation	Comment
All Saints, Low Catton, Yorkshire	Capital minor	Two heated bat boxes in tower. Access from tower to nave closed. Roost retained in chancel roof void Work completed October 2022. Sealing made permanent in Q2 2023.	Bats left tower and not returned by 2023 monitoring.
Saint Margaret of Antioch, Wellington	Capital severe	Closure of four roosts, with compensatory roosts and eaves boxes in north aisle roof.	Main colony of Natterer's bats, with occasional colonies of Soprano Pipistrelle and Brown Long-eared bats. Droppings significantly reduced and church community have begun to engage more positively with the bats, for example in a celebrate nature day
Saint Mary the Virgin, Pembridge	Capital severe	Closure of roosts, with compensatory roosts and boxing in.	Main colony of Natterer's bats plus occasional colonies of common and soprano pipistrelle plus

			brown long-eared bats. Has shifted bats to other parts of the church, but away from bookstall and tapestries.
All Saints, Swanton Morley, Norfolk	Capital severe	Pilot project - Rafter boxes in chancel roof	Large roost of Natterer's bats largely using mitigation. Reduction in mess in church, with smaller number of bats finding access to the church.
St Lawrence, Willington, Bedfordshire	Capital severe	Heated eves box behind hatchment installed autumn 2020.	Brown long-eared and soprano pipistrelle bats. Mitigation worked for church community but only starting to get evidence of bats using the box in 2023.
St Morran, Lamorran, Cornwall	Capital severe	Two transept voids and a crawl way constructed and the ceiling sealed.	Main colony of brown long-eared bats, with common and soprano pipistrelles, greater horseshoe and possibly lesser horseshoe bats. The bats are not using the mitigation and some are still finding access to the main church. The project required the highest value investment within the capital programme c.£80k.
St George, West Grinstead, Sussex	Capital severe	New bat loft by reinstating the ceiling over the nave and south transept. Completed 2022.	Natterer's, noctule, serotine, common and soprano pipistrelle and brown long-eared bats plus a single Barbastelle pass recorded. The mitigation may be successful, but survey results were not available at the time of the final evaluation.
Holy Trinity Collegiate Church,	Capital severe	Pilot project - Blocking of certain	Some 1,000 bats reportedly use the

Tattershall, Lincolnshire		access points and opening another access	church, comprised of up to 7 species, including breeding colonies of soprano pipistrelles and Daubentons. The mitigation made a large section of the nave bat-free by moving activity to other areas of the church.

On-going challenges with mitigation projects

Church	Designation	Mitigation	Comment
St Edmund, Egleton, Leicestershire	Capital minor	Repairs to nave ceiling and blocked access. Completed Nov 2022.	Bats found another access. Further blocking work scheduled autumn 2023. Believed to be largest Soprano Pipestrelle colony in English church.
Holcombe Old Church, Somerset	Capital minor	Enhanced tower space for roost, opened access to nave roof void and block under door access.	Lesser horseshoe bats. Contractor did not block under door access in June 2023, as arranged. Postponed until autumn 2023.
St John the Baptist, Cold Overton	Capital severe	Internal, bespoke bat compartments. Bats still roosting inside church 2022. Further work in April 2023 to seal leaking compartments.	June 2023 monitoring showed bat numbers down and bats still making a mess inside the church. Mitigation unsuccessful.
Saint Remigius, Dunston	Capital severe	Bat boxes in the tower silence chamber for common pipistrelles. Blocking voids in nave wall tops to prevent access to church for brown long-eared bats.	Main colony of brown long-eared bats and some common pipistrelles. Limited progress from initial project ecologist. Progress appears more promising since ecologist changed.
St Mary, Gayton Thorpe	Capital minor	New roosting space in the rafters,	Over 800 common and soprano pipistrelles, one

		including relining with safe materials, adding a wall top box in the nave eaves and more boxes in the surrounding churchyard trees.	of largest colonies in Norfolk. Appeared successful until July 2023 when 300 bats appeared in the church.
Holy Trinity, Great Hockham, Norfolk	Capital severe	Four new rafter boxes in the north and south aisles in 2021.	A colony of Natterer's bats were potentially damaging wall paintings in the nave. Delays to blocking work left the effectiveness of the boxes inconclusive.
St Peter, Guestwick, Norfolk	Capital severe	Boxes in eaves of roof in 2021.	A colony of Natterer's bats were active throughout the church. Delays to blocking work left the effectiveness of the boxes inconclusive.
St Margaret, Hardwick, Norfolk	Capital minor	External bat box in churchyard and Serotine box on exterior south wall	A small number of common pipistrelles were damaging a 14th century wall painting of St Christopher. No contact from church for 2½ years. Level of mitigation success unknown
All Saints, Thornham, Norfolk	Capital severe	Bespoke bat box over the main access through the clerestory window, rafter boxes in the south aisle and external boxes on the chancel.	Roost of 200 common and soprano pipistrelles. Less bats in church. Few bats in box but some bats seem to have gone to a local wood.
All Saints, Toftrees, Norfolk	Capital severe	Four enclosed roosting boxes in the south west corner and more roosting space in the low tower.	Natterer's, soprano and common pipistrelles and occasional brown long-eared bats. Mitigation appeared to have worked, then material used to block access to church started to fall out.

St Mary the Virgin, Wiggenhall, Norfolk	Capital minor	Bat box in churchyard.	Common and Soprano Pipistrelle, Brown Long-eared, Natterer's and Serotine bats. Several mitigation options suggested but church decided to live with their bats and opt for an external bat box.
St Mary the Virgin, Weatherden, Suffolk	Capital severe	Three large bat boxes in eaves plus enhancements to porch roof void.	Brown long-eared, common and soprano pipistrelle, serotine and Natterer's bats. Some bats finding alternative access points to the church.
St Paul, Chacewater, Cornwall	Capital Minor	Containing bats to roof void by blocking access to church	c.12 brown long-eared bats. The bats have found new access points to the church.
St Nicholas, Stanford-on-Avon, Northamptonshire	Capital severe	Pilot project – Installation of eaves boxes	Natterer's bats. Church does not feel the mess caused by bats has improved

Annex D – Overview of capital heritage projects

Source: Programme monitoring system

Table D.1 – Summary of capital heritage projects

Church	**Heritage feature and mitigation**
St John the Baptist, Keyston, Cambridgeshire	Wooden cadaver, originally part of an early 15th century tomb and possibly depicting the cleric William Stukeley. One of only two surviving examples in the country. A bespoke cover was made of breathable oak and glass
St Nicholas, Chignall Smealy, Essex	Frames for wall mounted brass monuments and war memorial
All Saints, Theddlethorpe, Lincolnshire	Detailed professional conservation report, training in conservation cleaning.
Holy Trinity, Chrishall, Essex	Cover for brass effigies
Proposed / underway	
St Andrew, Blagdon, Somerset	Above the altar is a striking painting by Oswald Moser (1874–1953), The Last Supper, purchased in 1907 for the church by Lord Winterstoke. A cover for the painting has been proposed.
St Mary the Virgin, Bromfield, Shropshire	Two droppings boards above heritage features at the west end nave and the east end of the north aisle
St Nicholas, Fyfield, Wiltshire	Covers for organ and welcome desk, cupboards for bat mess-free storage
St Andrew, Hope Bowdler, Shropshire	Cloth pew covers to replace plastic sheeting
St Michael and All Angels, Loppington,	Angle hatchments away from wall - church will do this themselves. Bat box in south porch once tower scaffold in place.

Annex E – Presence / absence of evidence of bats using interior of churches by age of church

Source: https://batsinchurches.bats.org.uk/Results.aspx - accessed 25/08/23

Figure E1 – Early medieval churches

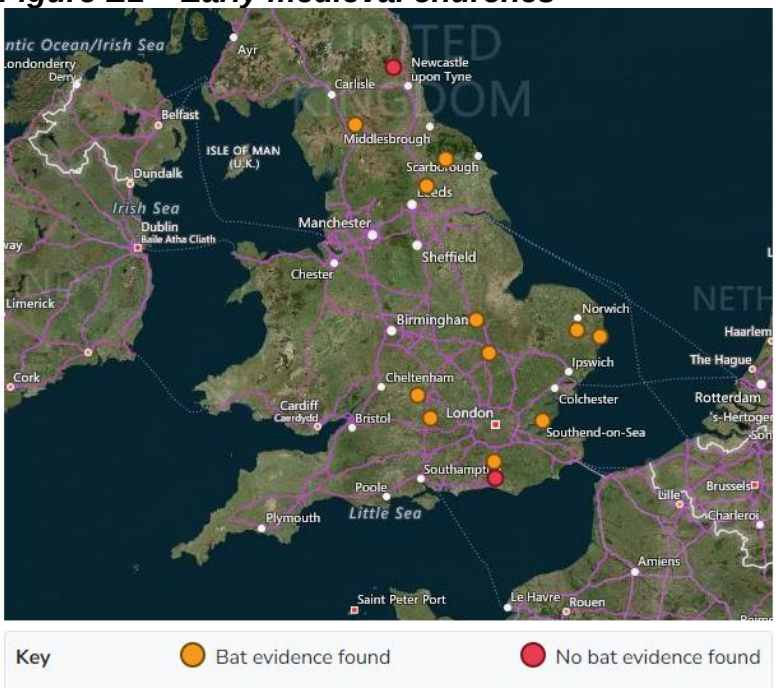


Figure E2 – Medieval churches

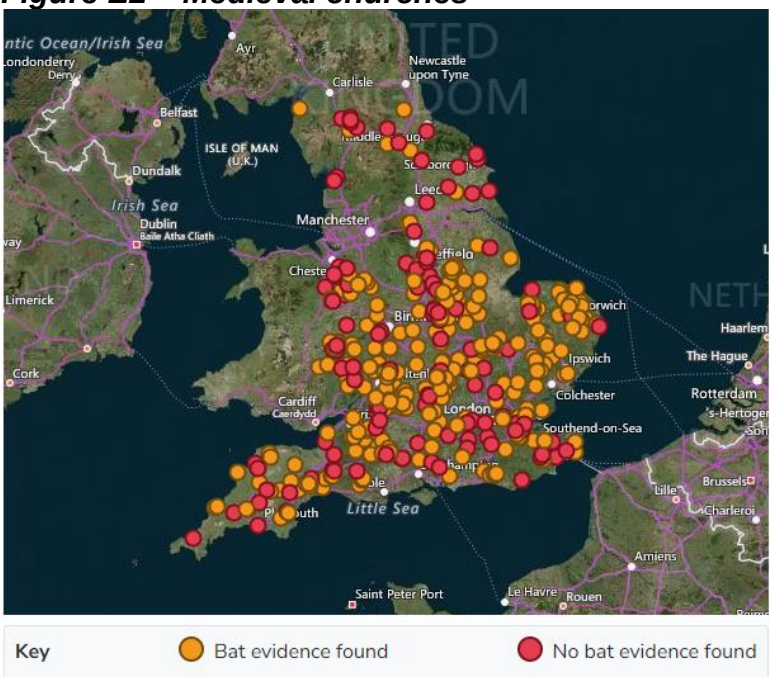


Figure E3 – Post-medieval churches

Figure E4 – Victorian / Pre-WWI

Figure E5 – Modern churches

Annex F – Summary of capital mitigation costs

Church	BiCCL used	Capital costs (£)	Ecologist costs (£)	Other fees (£)	Total costs (£)	Degree of success
St Nicholas, Stanford on Avon, Northamptonshire	Yes	-	6,881.00	-	6,881.00	On-going challenges
St Edmund, Egleton, Leicestershire	No	1,000.00	7,881.00	1,491.30	10,372.30	On-going challenges
St Mary the Virgin, Wiggenhall, Norfolk	No	744.00	11,951.50	1,435.65	14,131.15	On-going challenges
St Andrew, Coston, Leicestershire	Yes	4,419.48	9,732.20	1,535.50	15,687.18	Success
St Margaret, Hardwick, Norfolk	No	2,490.00	15,725.50	-	18,215.50	On-going challenges
All Saints, Braunston-in-Rutland, Leicestershire	Yes	6,924.48	11,840.00	-	18,764.48	Success
St Wenappa, Gwennap, Cornwall	No	2,975.51	13,994.96	2,863.60	19,834.07	Success
All Saints, Low Catton, Yorkshire	Yes	3,972.67	16,192.00	1,540.00	21,704.67	Partial success
St Pega, Peakirk, Cambridgeshire	Yes	14,555.95	14,249.35		28,805.30	Success
St Mary, Gayton Thorpe, Norfolk	Yes	5,432.18	24,574.76	600.00	30,606.94	On-going challenges
St Nicholas, Elmdon, Essex	Yes	2,904.00	26,766.04	3,070.20	32,740.24	Success
All Saints, Thornham, Norfolk	Yes	8,000.80	28,437.80	1,370.25	37,808.85	On-going challenges
St John the Baptist, Cold Overton, Leicestershire	Yes	10,327.81	28,308.81	-	38,636.62	On-going challenges
St Paul, Chacewater, Cornwall	Yes	13,606.68	25,470.00	1,445.45	40,522.13	Success
St Lawrence, Willington, Bedfordshire	Yes	20,734.23	19,389.00	3,133.55	43,256.78	Partial success
St Remigius, Dunston, Norfolk	Yes	7,229.60	37,300.00	607.50	45,137.10	On-going challenges
All Saints, Swanton Morley, Norfolk	Yes	13,453.69	31,758.72	-	45,212.41	Partial success

Holy Trinity Collegiate Church, Tattershall, Lincolnshire	Yes	31,276.08	15,454.46	-	46,730.54	Partial success
St Lawrence, Radstone, Northamptonshire	Yes	31,278.08	15,454.46		46,732.54	Success
St Margaret, Saxlingham, Norfolk	Yes	17,876.81	23,903.20	5,550.00	47,330.01	Success
All Saints, Toftrees, Norfolk	Yes	12,951.00	35,446.70	56.25	48,453.95	On-going challenges
St Peter, Guestwick, Norfolk	Yes	10,282.43	38,664.23	607.50	49,554.16	On-going challenges
Holy Trinity, Great Hockham, Norfolk	Yes	7,671.60	42,357.78	-	50,029.38	On-going challenges
St Mary the Virgin, Weatherden, Suffolk	Yes	26,080.00	36,930.90	2,613.75	65,624.65	On-going challenges
St Mary the Virgin, Pembridge, Herefordshire	Yes	4,232.00	64,532.23	2,470.00	71,234.23	Partial success
St Margaret of Antioch, Wellington, Herefordshire	Yes	10,166.65	62,403.22	859.60	73,429.47	Partial success
St George, West Grinstead, Sussex	Yes	67,816.10	20,800.50	15,851.00	104,467.60	Success
St Morran, Lamorran, Cornwall	Yes	87,211.61	40,059.55	7,258.82	134,529.98	Success

Source: BiC monitoring system

Other fees are typically church architect fees

Annex G – Case studies

Case study G1 - St Lawrence, Willington, Bedfordshire

The Church

The present church building dates from the 16th century, at which time extensive restoration or rebuilding works were undertaken by Sir John Gostwick who served Cardinal Wolsey and later, Thomas Cromwell. The northern Gostwick Chapel contains monuments and memorials to the Gostwick family, including sculptures by Maximilian Colt (master carver to King James I) and Edward Marshall. The church was restored and largely refitted in the 1870s by the architect Henry Clutton.

The church is very much seen as part of the village. There are two National Trust properties adjacent to the church (Willington Dovecote and Stables) and the three buildings all 'go together' in the eyes of the community. There are fourth and fifth generations living in the village, so strong connections have been forged over time between the church and the community.

The Bats

The church is home to a community of brown long-eared and soprano pipistrelle bats. Prior to the start of the Bats in Churches project, the bats were visible in the interior of the building, resulting in significant amounts of droppings, urine and mess that required regular cleaning.

The presence of the bats had led the church community to stop several activities, including a regular toddler group and junior choir, simply due to the extent of cleaning required and concerns about the smell in the building. The bat excrement and urine had also caused damage to the floor tiles and to other features within the church, such as the organ pipes. Although the bats were tolerated by the congregation, there was a sense of frustration that 'bats were more important than people' and impacts on the morale of volunteers responsible for seemingly endless cleaning tasks.

A heated bat box was installed in the church in autumn 2020, disguised as a hatchment and covering bat access to the interior of the church. This proved to be a success for the church relatively swiftly in terms of stopping the bats from accessing the church building with an associated cessation of bat droppings. The mitigation

was starting to show signs of having worked for the bats by 2023, with monitoring showing evidence of bats starting to use the box.

Meeting Our 'Triple Responsibility'

The vicar of St Lawrence spoke about a 'triple responsibility': to the worshipping community; to the fabric of the historic listed building; and to the wildlife that lives there. Ultimately, success from the Bats in Churches project was considered to relate to each of these areas, such that the church would be clean and no longer smell, thereby allowing church activities to continue or recommence; that the fabric of the historic building would no longer be subjected to ongoing damage; and that wildlife would have a safe place to live and would co-exist with the congregation.

The bat mitigation has shown signs of having met this triple responsibility, with no bats in the church (and no mess) whilst evidence of roosting within the bat box has been noted. Now that the problem has been tackled, the narrative has changed and more efforts are being made to improve awareness and understanding of the bats. Examples have included holding a special service on a Sunday morning to bless the bat box, a twilight walk with a hunt for bats, and an ongoing relationship with the Bedfordshire Bat Group, who have led a Saturday night bat walk.

Case study G2 - St Margaret's of Antioch, Wellington, Herefordshire

The Church

The early parts of the building are Norman, including the base of the tower. The church boasts fine medieval woodwork, with timber-framed roofs of the north aisle and the porch dating to the 14th century. The carved north aisle roof bosses include one of a 'Green Man', a pagan symbol of fertility. Notable memorials within the church include to Benjamin Tomkins who was largely responsible for developing the modern Hereford breed of cattle, and Sir Herbert Perrott, lord of Wellington Manor and a generous benefactor. The church has a core of regular churchgoers and is seen by the community as a focal point in the village, which lacks other community facilities.

The Bats

Three different bat species have been identified through surveys at the church, including a maternity colony of Natterer's bats, and occasional colonies of soprano pipistrelle and brown long-eared bats. The bats have been observed to use the church for both roosting and foraging purposes, with the result that bat droppings and urine were fairly widespread within much of the building. Cleaning the interior of the church has therefore been incumbent on members of the church community, with sheets / covers used to protect pews and other church fittings. During the spring and summer, the mess and smell inside the church was regularly described as 'appalling' and there were concerns that features such as tiles and brass would be damaged by the bat urine.

Four bat roosts were closed off by the BiC project, with compensatory roosts and eaves boxes provided in the north aisle roof. It was hoped that the bats would gradually become accustomed to the new space, following which the interior holes would be sealed off and the bats retain access only into the boxes. Acoustic apparatus was also used to assist with encouraging the bats to use the boxes.

Balancing Bats with People

The project has seen a partial success in terms of reducing the number of bats accessing the interior of the building and an associated reduction in the amount of bat droppings and urine. Support has been provided for cleaning the church, which has been welcomed. Although the congregation would ultimately like to see

complete removal of the need to cover church fittings with sheets to protect them, it was acknowledged that ‘any diminution in the amount of bat mess is positive’.

The project also led to greater understanding of the bats by members of the church community, who expressed interest in the findings of some of the original surveys into how bats were using the building, the types of bats present and their behaviours. The perception of bats as a priority for church wardens has lessened over the course of the project from high to medium. Generally, the church community have begun to engage more positively with the bats, for example in a celebrate nature day held in the churchyard in May 2023.

Case study G3 - The Parish Church of St Mary the Virgin, Salford, Bedfordshire

The Church

The Parish Church of St Mary the Virgin is a small, simple church which has been considerably altered over the years. Some of the oldest parts of the building include the nave and south aisle, which date from the 13th century, and the timbers used to construct the porch. The original steeple of the church was replaced in around 1760 with a small brick tower, which in turn was replaced in the 19th century with the current open wooden bellcote and shingled spire. Internal features of the building include a 14th century canopied tomb with a cross-legged effigy, indicating that this is an effigy of a Crusader. The building is Grade I listed.

The Bats

A full ecological survey undertaken by the Bats in Churches project in 2021 revealed that the church was home to a roost of Natterer's bats. The presence of bats, and the associated mess, within the church has led to the congregation amending their patterns and location of worship within the building. Services have often taken place in the chancel instead of the nave where the bats are primarily located.

The community has tried to improve matters by covering the pews with sheets and covering the floor with plastic sheeting in efforts to reduce the amount of time required to clean the building. Due to the size of the parish, there was only a small group of people available to clean the church, many of whom were over eighty years old. A large plastic screen was installed between the chancel and the nave, with the aim of keeping the heat in, and the bats out. This could be removed as necessary when access to the whole church was required, such as at Christmas or for funerals.

Managing Expectations of Success

At the outset of the project there was considerable interest and excitement about the prospect of resolving the issue of bats being present within the church. Members of the church community felt that they could be ‘more accepting of the bats’ knowing that help was at hand, and a WhatsApp group ‘Of Bells and Bats’ was started to keep people informed. A Bats in Churches cleaning workshop was hosted at the church which was well received and the community felt supported.

A number of bat mitigation options were discussed and presented, for example the construction of a bat loft, or lower impact options such as ‘sails’ within the church

building to catch the droppings and urine. There were some concerns from the church community about how these options might work in practice, in particular the implications in terms of cleaning (for example the ‘sails’ would need to be raised and lowered to enable cleaning to take place, something which was not felt to be suitable for the age and ability of the volunteer cleaners). There were also issues relating to the ability of the church to fund more expensive measures.

No bat mitigation measures had been implemented by the end of the project. As a result, there had been no changes in the number of bats entering the building nor the continued need for covering pews and extensive, regular cleaning. The community were progressing with plans to replace the plastic screen that divided the nave and chancel areas with a view to improving the appearance and ease of cleaning these areas. They continued to hope that a mitigation plan would be in place for the bats soon.

Case study G4 - St John the Baptist Church, Parsons Drove, Cambridgeshire

The Church

St John the Baptist Church at Parson Drove in Cambridgeshire is a Grade I listed building which dates from the 13th century. A typical Fenland church, it consists of a clerestoried nave, north and south aisles, north and south porches and a west tower. In 1873, a new church in nearby Southea with Murrow became the parish church for the whole of Parson Drove and St John the Baptist was declared redundant. The building was transferred to the care of The Churches Conservation Trust in 1974.

When the Bats in Churches project began, the church was perceived as a problem, and unloved by the local community. The unkempt exterior of the church made the overall appearance of the building seem off-putting and was even described as ‘something from the Addams family’. Things changed drastically between 2020 and 2022 with grant funding to clear the churchyard professionally and funding from the Heritage Stimulus fund to fix the church roof and make the building watertight. The changes to the look and feel of the church and the churchyard helped to bring people back and the whole character of the church has now changed.

The Bats

The church is home to both Natterer’s and pipistrelle bats, leaving bat droppings and urine staining on most surfaces within the building. The Bats in Churches project has provided support in terms of cleaning the building and providing resources to educate and inspire the local community, including guest speakers for events. Although bats continue to access the interior of the church, they have also made use of the bat boxes installed outside the building.

Making the Most of Bats

As part of the church being perceived as a more welcoming place, the building and churchyard are now increasingly being used to host community events and activities such as crafts fairs, wedding fairs, concerts and theatre performances. The creation of a nature garden in the churchyard has helped make people more aware of local wildlife, including bats. Bats have been used as a reason for getting people back to the building, with the church marketed locally as ‘the bat church’ and related events include bat walks and nature talks. A Friends Group has been re-established for the church.

With greater understanding, the views of the community about bats has changed, with people generally appearing more welcoming of bats. The presence of the bats has been beneficial in terms of helping attract people to events and the building, in turn helping with fund-raising and ultimately working towards this atmospheric and attractive church becoming financially self-sustaining.

'The church has gone from being the worst horror imaginable to the most amazing place and this has got to be down to the Bats in Churches project.'

Figure G1 – Images of St John the Baptist Church, Parsons Drove

Source: Arcadis

Case Study G5 - St John the Baptist Church, Cold Overton, Leicestershire

The Church

St John the Baptist Church, which is Grade I listed, originates from the 12th century. Major rebuilding works took place in the 13th century, although the south door and fragments of medieval paintings from the original building survive and are still visible in the Lady Chapel today. Further modifications to the church building over the centuries have included rebuilding of the chancel and the addition of a porch, clerestory and tower complete with parapet spire. In the eighteenth century, the south aisle was extended to provide a family chapel and burial vault.

Cold Overton is a small village of around 35 houses. There are no other community facilities and the church has typically been a focus for community activities and events in this rural area. This has been supported through a National Lottery Heritage Fund-supported project in 2018/19 to incorporate a kitchenette and toilet into the building together with other works which also led to the building being removed from the 'Buildings At Risk' Register.

The Bats

The church has been home to a maternity roost, typically occupied between May and September by 250 adult female soprano pipistrelles and about 20 adult female Natterer's bats, predominantly roosting among the roof timbers of the nave. Quantities of bat droppings have made the church very difficult to use and there has been concern about the potential damage bat excrement and urine may cause to the medieval wall paintings. Efforts to protect the building and make it easier for members of the congregation to clean have included removing the pews and draping sheets over the radiators and the floor.

Learning to Live with Bats

The Bats in Churches project enabled the installation of bespoke bat compartments in the nave roof, designed to enable continued access by the bats to roosting locations, but preventing access to the interior of the church. Although monitoring showed the number of bats within the church had reduced, there remained sufficient numbers to continue creating a mess requiring ongoing cleaning by the congregation. Attempts were made to 'plug the gaps' through which bats continued to access the church, however it proved difficult, given the number of gaps and voids

through which the bats can pass. This highlighted the difficulties in making an old building ‘bat proof’.

Although the local congregation were aware that success would not necessarily be ‘no bats at all’, they were hopeful for a reduction in the level of bat mess. Whilst there had been no real difference by the end of the programme, the community continued to hope for a reduction in bat mess as more gaps are plugged. The process has been used to slowly educate local people about the bats present in the church and their importance, together with methods that can be used to help clean the interior of the church.

Case Study G6 – Holy Trinity Church, Heydon, Cambridgeshire

The Church

Heydon village sits on top of a ridge with good views across Cambridgeshire to the north-west. This grade II* listed building sits at the centre of the village and dates back to the 15th century, albeit with an 1865-66 extension. Bomb damage in 1940 led to reinstatement of the north nave and aisle in 1955-56. This was completed in flint to match the remaining south aisle. However, the architect chose to build the west tower out of brick and cap with a copper roof. Internal features include items of moderate to high heritage significance. These include a medieval font and a seven-arched alabaster reredos with detached marble shafts.

The Bats

The church has recorded small numbers of Brown Long-Eared bats roosting in the chancel and flying around the transept. Pipestrelle bats have also been seen emerging from the transept.

Even with relatively small numbers of bats, the mess they create has to be cleaned away on a weekly basis. The chancel tiled floor and the choir stalls were heavily spotted with urine and the organ pipes showed urine streaks. The lectern and alter cross tended to be protected by plastic coverings, but other brass items showed evidence of etching by urine. The main heritage feature affected by faeces was the alabaster reredos.

A Reasoned Discussion

The Bats in Churches project commissioned a bat survey in 2019 to understand how bats were using the building. A resulting mitigation plan relied on the provision of a bat loft within a planned ancillary building. Until these capital works take place, when they are affordable, the congregation decided to make the best of the situation.

The Bats in Churches project has worked with the church to help people understand why the reduction in natural habitats forces bats to look to churches for sanctuary. One member of the congregation suggested they now feel, "*slightly more protective, both of the bats and the building. Both are at risk in today's world and need our help*."

Alongside education, the Bats in Churches project has provided practical help. Advice has been provided on how to clean the church and contents correctly to protect the heritage. A PA system was provided to help the church provide regular bat talks. The first bat walk in 2019 attracted over 70 people, opening up a new route to engaging a wider community who would not normally go into the church.

A church member commented on a changed attitude towards bats in their church, *"The education and information received has very much changed the way we view their presence. We are more aware of how to live alongside them comfortably and, whilst not everyone agrees, it is now a reasoned, educated discussion when the subject comes up."*

Case Study G7 - All Saint's, Toftrees, Norfolk

The Church

All Saints is a rural, Norman church with a spectacular Norman carved font of high archaeological, architectural and historical significance. It is listed Grade I and serves a parish comprised of only 16-17 houses. The church has several interesting hatchments and royal arms, original surviving altar rails, some small survivals of Medieval stained glass and a 13th century priest's door.

Suffering from damp and mould, a survey in November 2019 also reported signs of insect infestation in the south west corner, the church had to be closed until these issues could be resolved.

Bats

Toftrees is home to at least three species of bat, Common and Soprano Pipistrelles and Natterer's bats; with occasional Brown Long-eared bats also reported. There has previously been a large Natterer's bat colony in the church and although numbers have declined in recent years, the roost had a significant impact on the interior of the church.

Pilot Schemes

Over the past decade, the church has been involved in a number of bat research and mitigation projects. One was temporarily successful; although none were able to install a permanent solution, as mitigation such as acoustic deterrents, was only permitted for the duration of the research project and acoustic deterrents may cause significant declines in bat populations long term.

The church had concerns about the impact of bat activity on its heritage, and on human health. Despite several costly surveys and numerous research projects being carried out, none seemed to result in practical action. Hoping to see swift results, the church felt that their expectations were not being met. Frustration and negativity towards the bats had grown as a result.

Edging Towards a Solution

The Bats in Churches project team worked extensively with the church to resolve the situation. The church wanted a solution that would result in the bats roosting

elsewhere, although they were persuaded to consider solutions which would retain bats within the fabric of the building, providing they could not access the interior.

Four enclosed roosting boxes were created in the southwest corner and more roosting space provided in the low tower. There was a small amount of blocking work to complete at the end of the project, at which point the interior of the church should be largely bat free. Early evidence suggested the bats appeared to be adapting well to the boxes. As a result, the church was able to reopen to visitors and was seeking grants and funding to carry out further restoration and repairs.

Case Study G8 - Old Church, Holcombe, Somerset

The Church

Holcombe Old Church is situated a mile from the village, along a farm track, and surrounded by tall trees. It's beautiful setting makes it popular for filming and has featured in Poldark. The church also houses a memorial to Antarctic explorer, Robert Falcon Scott, whose father ran a brewery in the village.

The Bats

Two bat species roost at Old Church. Pipistrelles roost in the porch, without causing an issue. A small number of lesser horseshoes, thought to be a satellite roost of the large colony at Downside Abbey, had previously roosted inconspicuously in the tower. However, weatherproofing work carried out in the past had blocked access to these existing roosts. Unable to access the tower, bats had found another access point beneath the main church door, and had moved into the chancel, where their activity presented much more of a problem.

The church was concerned that the issues arising from bat activity might negatively impact upon the revenue stream from filming; an income which would effectively pay for the on-going maintenance of the church.

Managing the symptoms

When they joined the Bats in Churches project, Old Church already had an innovative solution to their bat issue. A tarpaulin, placed above the chancel, acted as a 'bat nappy'. This novel solution was something the BiC team felt could be replicated at other churches. Costs associated with using a 'bat nappy' would vary depending on the size of the roost; with emptying and cleaning being required (two to four times a year at Holcombe), and occasional replacements necessary. But, for other churches where the impact of bats was minor, this could be a relatively cost-effective solution.

Managing the cause

The bat issue at Holcombe was caused by factors which could be addressed directly, and would negate the need for the 'bat nappy'.

Bat surveys identified how bats were using the church, and, with recommendations from the ecologist, access points into the tower were re-instated and the former roost

space enhanced. Additionally, the nave roof void was opened to provide free-flying access, and bat boxes were placed on the church exterior.

Once bats were using these roosts, blocking of the access point below the main door had been planned for June 2023 under a Natural England European Protected Species license, but the contractor didn't turn up. The BiC team remained hopeful that the work would be completed in October 2023 after the maternity colony dispersed. The gap under the door was to be covered by a removeable stone cover.

Case Study G9 - St Dunstan's, Hunsdon, Hertfordshire

The Church

A large, medieval, Grade I listed church with Tudor connections. Henry VIII used the adjacent Hunsdon House as a hunting lodge. Henry's three successors are also said to have worshipped here. The church houses a superb collection of historic monuments and memorials, with Arts and Crafts architect Philip Webb believed to have designed the pews.

Worship at St Dunstan's has become increasingly challenging. The church is located nearly a mile outside Hunsdon village, on a blind bend with a 60mph limit. The decision was made to build a new chapel in the village centre, which will replace St Dunstan's for regular services.

The Bats

St Dunstan's is home to several well-established bat colonies, including a maternity roost of pipistrelles and possibly brown long-eared bats. Whilst the bats were seen by some as being 'just part of life', their activity inside the church was causing damage. Historic pews and interior monuments were being pitted by urine, and droppings required regular removal.

Small things making a big difference

Alongside the provision of specially made covers for pews, monuments and memorials, St Dunstan's a '*brilliant*' Bats in Churches cleaning workshop was hosted at St Dunstan's. With attendees joining from other local churches, volunteers were given the confidence and materials to efficiently clean their places of worship.

One of the biggest issues for St Dunstan's had been the large amount of droppings adhering to 'out of reach' walls below the bat roosts. To solve the problem, BiC gave the Church a long-handled, extendable broom. This enabled the effective cleaning of previously inaccessible areas. '*Church is looking much better'* as a result.

The Bats in Churches project helped give St Dunstan's a new perspective and interest in their bats. Through the project, they've gained confidence and now know what to do if issues arise. Direct contact with the local bat group means they know where to go for help when a grounded bat makes a surprise appearance right before a wedding!

“We’ve been really pleased to be part of it… it’s been a great encouragement to all of us.”

The local bat group ran a bat walk and talk for cub scouts in April 2022 and the BiC team ran a workshop with the local primary school in September 2023.

Case Study G10 - St Peter and St Paul, Watlington, Norfolk

The Church

Watlington church was built largely in the 13th and 14th century. Inside is an early 16th century font carved with saints and apostles. The bench ends are mostly original and carved with animals and representations of the seven deadly sins. Some restorations and new carvings are present, including one of an extinct marine reptile, the ichthyosaur.

The church has close links to the village and hosts a flower festival and annual celebration of creation, Care for Our Earth, every October.

The Bats

The church is home to colonies of Common Pipistrelle and Natterer's bats. Generally, they cause little damage to the church and work mainly involves cleaning and sweeping up of droppings. Bat activity is mainly contained in particular areas, and cleaners are able to focus efforts there. The local community showed great interest, with organised bat walks and events supported by the Bats in Churches project, being well attended.

Managing Visitor Perceptions

On the whole, the bat situation was manageable. It could be a challenge at certain times of the year, but with the church's rural setting, bats were considered part of life and an important part of the history and heritage of the church. For some, it was very special to have bats flying around during evening services.

The church was keen to encourage visitors to view the church and churchyard as a valuable habitat for wildlife. This involved making people aware of the rich and diverse wildlife of the local area and the church's role in providing sanctuary to a variety of species, including bats.

While regular bat events were effective at informing the local community, it was often visitors from outside the area, particularly those from urban areas, that complained about the bats.

To help raise wider awareness of the church's wildlife objectives, information boards were proposed. These permanent features were positioned at strategic points

throughout the church and churchyard. It was hoped the boards would be an opportunity to educate and develop a better understanding of church wildlife among all visitors, and help to reach those beyond the already well-informed local community.