

2025

Derelict Houses, Andy Brennan Park,  
Navan, Co. Meath – Derogation  
Licence Application Letter



Dr Tina Aughney  
Bat Eco Services

**Bat Eco Services, Ulex House, Drumheel, Lisduff, Virginia, Co. Cavan. A82 XW62.**

**Licensed Bat Specialist:** Dr Tina Aughney ([tina@batecoservices.com](mailto:tina@batecoservices.com), 086 4049468)

NPWS licence C17/2023 (Licence to handle bats, expires 23<sup>rd</sup> January 2026);

NPWS licence 27/2023 (Licence to photograph/film bats, expires 31<sup>st</sup> December 2024);

NPWS licence DER/BAT 2022-36 (Survey licence, expires 24<sup>th</sup> March 2025).

**Statement of Authority:** Dr Aughney has worked as a Bat Specialist since 2000 and has undertaken extensive survey work for all Irish bat species including large scale development projects, road schemes, residential developments, wind farm developments and smaller projects in relation to building renovation or habitat enhancement. She was a monitoring co-ordinator and trainer for Bat Conservation Ireland for 20 years. She is a co-author of the 2014 publication *Irish Bats in the 21<sup>st</sup> Century*. This book received the 2015 CIEEM award for Information Sharing. Dr Aughney is a contributing author for the Atlas of Mammals in Ireland 2010-2015.

All analysis and reporting is completed by Dr Tina Aughney. Data collected and surveying is completed with the assistance of a trained field assistant.

Mr. Shaun Boyle (Field Assistant) NPWS licence DER/BAT 2022-37 (Survey licence, expires 24<sup>th</sup> March 2025).

**Client:** Meath Co. Co.

**Project Name & Location:** Derelict Houses, Andy Brennan Park, Navan, Co. Meath

**Report Revision History**

Date of Issue	Draft Number	Issued To (process of issuing)
20 <sup>th</sup> January 2025	Letter	Prepared for NPWS Derogation Licence

**Purpose**

This document has been prepared as a Letter for NPWS. Only the most up to-date report should be consulted. All previous drafts/reports are deemed redundant in relation to the named site.

Bat Eco Service accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

**Carbon Footprint Policy**

It is the policy of Bat Eco Services to provide documentation digitally in order to reduce carbon footprint. Printing of reports etc. is avoided, where possible.

**Bat Record Submission Policy**

It is the policy of Bat Eco Services to submit all bat records to Bat Conservation Ireland database one year post-surveying. This is to ensure that a high level bat database is available for future desktop reviews. This action will be automatically undertaken unless otherwise requested, where there is genuine justification.

**Citation: Bat Eco Services (2025) Derelict Houses, Andy Brennan Park, Navan, Co. Meath - Derogation Licence Application Letter. Unpublished letter prepared for NPWS.**

20<sup>th</sup> January 2025

***RE: Application for a Derogation Licence to demolish derelict houses adjacent to Andy Brennan Park, Navan, Co. Meath.***

To whom it may concern:

On behalf of the client Meath Co. Co., Bat Eco Services is applying for a derogation licence to demolish four derelict buildings that were recorded as a soprano pipistrelle satellite roost.

These derelict buildings were on a derelict site notice for a number of years and due to extensive anti-social behaviour, continued deterioration of the buildings and collapse of the roofs, Meath County Council CPO the site on health and safety grounds. Meath County Council have provided a ES Re-inspection report on this which is included as part of the supporting document for this application.

The roof structure of the derelict houses has fallen in at one section and this is the exit point for the colony. Due to the poor condition of the structure, it was not possible to enter the internal space to undertake an inspection of the exact roost location. Dusk and Dawn surveys were completed as part of a larger project. A separate report (Bat Eco Services, 2022) is included in the email with this letter and this report provides all of the survey results from 2022 on the larger project which includes Spicer's Bakery, Ramparts Car Park and Andy Brennan Park and that report provides the details of the bat usage of a larger area around the proposed demolition works. Meath Co. Co. has a proposal for a large public space development for this general area. The demolition of the four buildings are part of the proposed development to facilitate a new entrance to Andy Brennan Park. But these derelict houses are also in very poor condition which are a Health & Safety risk and this is the priority task for Meath Co. Co.

**Citation: Bat Eco Services (2022) Bat Assessment: Spicer's Bakery, Rampart's Car Park & Andy Brennan Park Project, Navan, Co. Meath. Unpublished report prepared for Meath Co. Co.**

In 2024, bat mitigation measures in relation to providing alternative bat roosts were undertaken and the results of this is provided in the report listed below. This provided evidence that the bat boxes are providing alternative roosts for Leisler's bats and soprano pipistrelles, particularly the latter and the numbers of bats recorded are similar to the number of individuals recorded in the satellite roost. Therefore, it is considered that alternative bat roosts are sufficiently providing alternative roosting for the local soprano pipistrelle bat colony.

**Citation: Bat Eco Services (2024) Alternative Bat Roosts – Mitigation Measures: Spicer's Bakery, Rampart's Car Park & Andy Brennan Park Project, Navan, Co. Meath. Unpublished report prepared for Meath Co. Co.**

If you require any further information, please do not hesitate to contact me.

Yours sincerely,  
Dr Tina Aughney

## 1. Proposed Works

Meath Co. Co. are proposing to demolish the four derelict houses adjacent to Andy Brennan Park (Athlumney Road, Navan, Co. Meath). These buildings are in poor condition (Plate 1) and are a Health & Safety hazard along a principal road through the busy town of Navan.

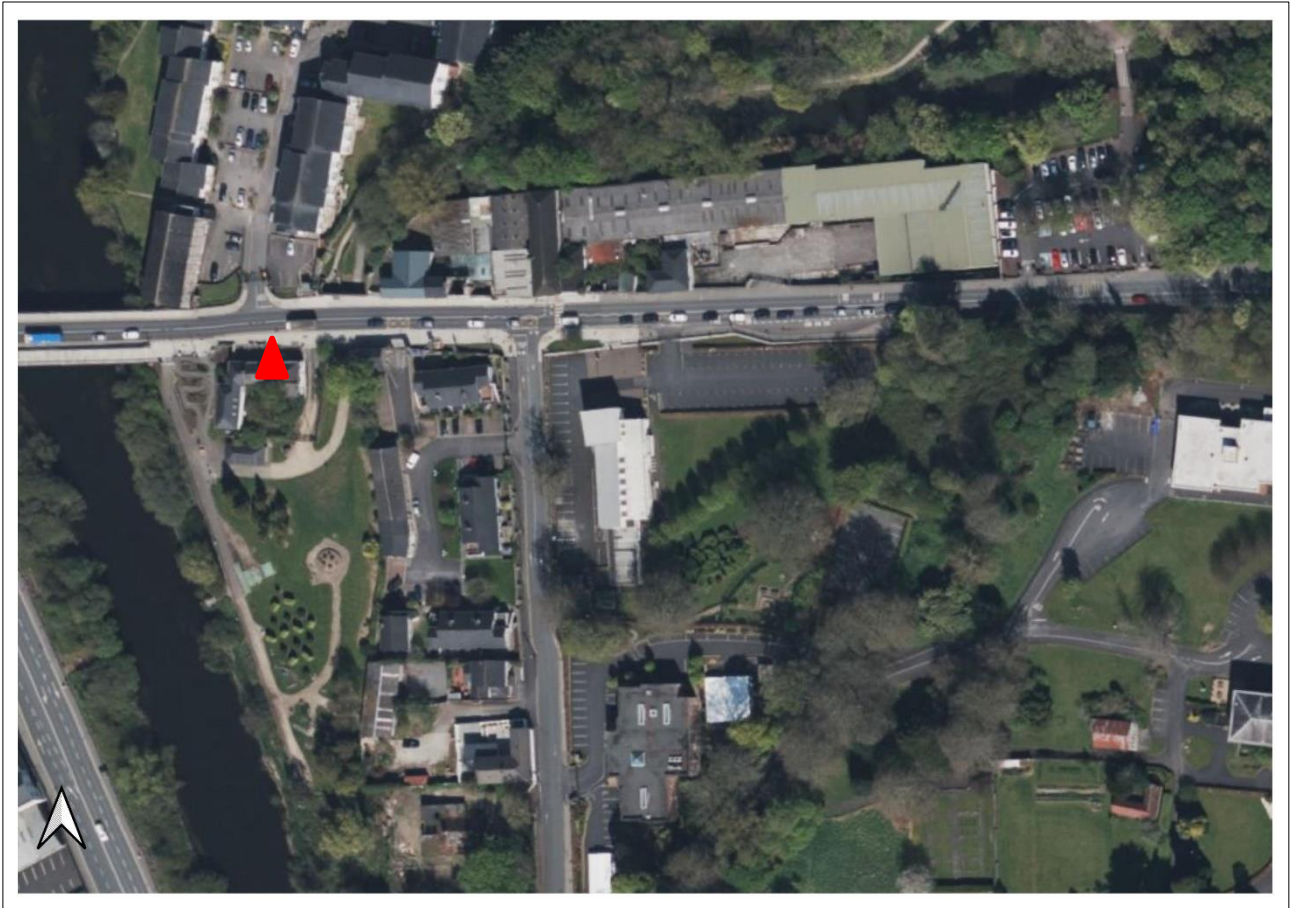


Figure 1: Location of derelict houses (Red Triangle) adjacent to Andy Brennan Park, Navan, Co. Meath.

Meath Co. Co. are proposing to undertake the following works in relation to Andy Brennan Park (Taken from Bat Eco Services, 2022):

1. Demolition of the derelict terraced dwellings fronting the Athlumney Rd.
2. New stepped plaza at entrance of Andy Brennan Park.
3. A redesign of the Andy Brennan Park primarily for the purposes of an Active Recreational Play Area.





Plate 1: External view of houses located adjacent to Andy Brennan Park, Navan, Co. Meath (in 2022).

### 1.1 2022 Survey Results

In 2022 Bat Eco Services undertook a bat survey of Spicer's Bakery, Ramparts Car Park and Andy Brennan Park. Surveys were completed on the 16<sup>th</sup> and 17<sup>th</sup> August 2022 (Survey team: 3 surveyors – dusk and dawn surveys). During the dawn survey on the 17<sup>th</sup> August 2022, it was noted that soprano pipistrelles were continuously recorded foraging within the tree canopy of the trees located to the rear of the bakery and between the Boyne Canal and the River Boyne. Soprano pipistrelles were recorded commuting along the canal towards Andy Brennan Park (3 individuals), likely returning to roost recorded in the terrace houses. During the dusk survey on the 17<sup>th</sup> August 2022, a Soprano pipistrelle roost was confirmed to be located in the roof space of the derelict houses to the front of Andy Brennan Park. soprano pipistrelles roost of (>20 individuals) emerging for the middle section of the terrace houses along the boundary of the Andy Brennan Park. The bats emerged from the collapsed section of the roof and therefore the bats a likely to roosting in the attic spaces of the houses. Individuals from this roost commuted to The Ramparts by travelling along the existing path under and over the road bridge towards the River Boyne. This commuting route was also confirmed by a 2<sup>nd</sup> surveyor during this dusk survey.

The number of bats counted are indicative of a satellite roost, especially as the survey was undertaken in August when young bats are volant (Please note: the only way to confirm roost type is to catch individuals and determine the sexual status of the individuals. Due to the height of the exit point and health & safety condition of the buildings, this was not possible to undertake for this site). This species of bat tend to roosts in large number (i.e. >100 individuals, with roost of up to 1,000 recorded in exceptional cases (Bat Conservation Ireland database)) and therefore a roost of approximately 20 individuals is unlikely to be a maternity roosts. Please consult the main bat survey report (Bat Eco Services, 2022) for more detailed information.

As a result of these survey results, the alternative bat roost locations (i.e. bat boxes) were chosen to provide roosting in suitable foraging and commuting habitat. Bat box inspections has shown that the bat boxes are providing alternative roosting for the local soprano pipistrelle bat colony. Please consult the bat survey report (Bat Eco Services, 2024) for more detailed information.

## **1.2 Proposed Demolition Procedure**

Demolition works cannot be undertaken during the months of May to August.

The demolition plan will include the following in order to ensure that no bats are harmed in the process:

An on-site meeting with demolition contractions will be undertaken to determine the exact plan of works. The following will be the minimum steps to be undertaken:

- A daytime inspection of the buildings will be undertaken prior to demolition works.
- A dusk and/or dawn bat survey will be undertaken prior to demolition works.
- Demolition works will be supervised by a bat specialist.
  - o Day 1 procedure will be undertaken following daytime inspection and dusk/dawn surveys. Demolition procedure will involve the removal of fascia and soffit by hand. The removal of lead flashing and inspection by the bat specialist. This will be followed by the removal of the ridge tiles and slates (where Health & Safety permits), by hand, with continuous checking for potential roosting bats. Any bats encountered will be carefully removed to safety by the on-site bat specialist and placed in the bat boxes already erected within the park. Once the roof is removed, any other crevices or potential roosting sites will be checked by the bat specialist using a high powered torch and endoscope. If works require further days, dusk/dawn and internal checks of buildings will be undertaken to ensure that the structure is bat free during works.
- The above procedure will continue to be followed until all of the buildings are deemed bat free.

## 2. Derogation Licence Application

A derogation licence is required to be in place prior to proposed removal of the derelict buildings. Once this is in place, Bat Eco Services will liaise with the contractor to plan supervision of the works.

### Derogation Licence

A NPWS Derogation Licence is required for proposed works as the removal of the derelict buildings will result in the loss of a Soprano pipistrelle satellite roosts. However these works will be undertaken outside the main bat activity season, it is deemed that minimum disturbance will occur.

The following two questions are taken from the derogation licence application in order to provide information requested to allow NPWS to undertake an assessment of the licence application.

#### 10. Please tick which reason below explains How this Application Qualifies under Regulation 54(2)(A-E) of the European Communities (Birds and Natural Habitats) Regulations:

<b>a.</b>	In the interests of protecting wild flora and fauna and conserving natural habitats	<input type="checkbox"/>
<b>b.</b>	To prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property	<input type="checkbox"/>
<b>c.</b>	In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.  EXPLANATION The proposed works are being undertaken due to the Health & Safety condition of the buildings and their location along the Athlumney Road, Navan, Co. Meath. It is also proposed to develop a new entrance to the Andy Brennan Park in the footprint of the four derelict buildings.  An Derogation Licence is being sought as a the demolition of the building will results in the loss of a Soprano pipistrelle satellite roost.	<input checked="" type="checkbox"/>
<b>d.</b>	For the purpose of research and education, of re-populating and re-introducing these species and for the breeding operations necessary for these purposes, including artificial propagation of plants	<input type="checkbox"/>
<b>e.</b>	To allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species to the extent specified therein, which are referred to in the First Schedule	<input type="checkbox"/>

The following table requires detailed information, which this bat survey report provides. Some of this information is presented as part of the table below while other sections within the report (as directed) are required to be consulted.

#### 11. Report Checklist: Please append a detailed report to support this application and ensure that it contains the following information:

<b>11.1</b>	Explanation as to why the derogation licence sought is the only available option for works and no suitable alternative exists as per Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations.	<input checked="" type="checkbox"/>
	Explanation:	<input type="checkbox"/>

	<p>The proposed works are being undertaken due to the Health &amp; Safety condition of the buildings and their location along the Athlumney Road, Navan, Co. Meath and adjacent to Andy Brennan Park.</p> <p>A Derogation Licence is being sought as a the demolition of the building will result in the loss of a Soprano pipistrelle satellite roost.</p> <p>The proposed works will be undertaken in a manner to minimise disturbance to local soprano pipistrelle colony. Successful alternative bat roosting has been provided adjacent to the derelict buildings in an area where the colony is known to commute and forage (i.e. The Ramparts, River Boyne and Boyne Canal – please see Bat Eco Services, 2022 for more details).</p> <p>The proposed works will reduce a Health &amp; Safety hazard in the town of Navan.</p> <p><b>Alternative Solutions Considered:</b></p> <p><b>a) Alternatives – leave buildings in-situ</b></p> <p>If the buildings remain in-situ, their continued deterioration will increase as a health and safety hazard particularly for pedestrians, users of Andy Brennan park and road users of the Athlumney Road.</p> <p>In addition, it is proposed to construct a new entrance to Andy Brennan Park and the demolishment of the buildings will facilitate this. This will prevent the construction of this proposed entrance which is considered to improve access and use of the park.</p> <p><b>.Alternatives – new roosting location</b></p> <p>A bat box scheme was erected and this is successfully providing alternative roosts for a similar number of soprano pipistrelles recorded roosting in the derelict buildings proposed to be demolished.</p> <p>Please see report for more information on bat box scheme:</p> <p>Citation: Bat Eco Services (2024) Alternative Bat Roosts – Mitigation Measures: Spicer’s Bakery, Rampart’s Car Park &amp; Andy Brennan Park Project, Navan, Co. Meath. Unpublished report prepared for Meath Co. Co.</p>	
<p><b>11.2</b></p>	<p>Evidence that actions permitted by a derogation licence will not be detrimental to the maintenance of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range as is required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations.</p>	<p>☒</p>
	<p>The proposed works will be undertaken outside the maternity season. Therefore it is considered that there will be minimum disturbance of the soprano pipistrelle bat colony.</p> <p><b>a) Soprano pipistrelle <i>Pipistrellus pygmaeus</i></b></p> <p>Soprano pipistrelle is an Annex IV bat species under the EU Habitats Directive. The status of this bat species is listed as Least Concern. The national soprano pipistrelle population is considered to be increasing (Aughney <i>et al.</i>, 2022).</p> <p>The modelled Core Area for soprano pipistrelle is a relatively large area that covers much of the island of Ireland (62,020km<sup>2</sup>). The Bat Conservation Ireland Irish Landscape Model indicated that the common pipistrelle selects areas with broadleaf woodland, riparian habitats and low density urbanization (Roche <i>et al.</i>, 2014).</p>	



	<p>Conservation Significance (Marnell <i>et al.</i> (2022) of the Building A day roosts is “Small numbers of common species. Not a maternity roost”. The Conservation Significance according to Marnell <i>et al.</i> (2022) results determine the bat mitigation measures required. In relation to the roosts recorded for soprano pipistrelles and Leisler’s bat, the mitigation requirement is “Flexibility over provision of bat boxes, access to new buildings etc. No conditions about timing or monitoring”.</p> <p>Therefore, it is considered that the loss of this roost will not impact on the favourable conservation status of the natural range of soprano pipistrelle and will not have a detrimental effect on the local bat population of either bat species. Indeed, the alternative bat roosting (i.e. bat box scheme) will ensure the long-term stability of the local bat populations.</p>	
11.3	<p>Details of any mitigation measures planned for the species affected by the derogation at the location, along with evidence that such mitigation has been successful elsewhere.</p>	☒
	<p>Bat mitigation measures relating to the demolition of the derelict houses are provided, in in Section 1.1. Bat Eco Services have undertaken numerous projects which involved demolition of known bat roosts. By undertaking such works outside the main bat activity season, the encountering of bats during supervision, is more often, nil bats. This reflects the fact that bats are very transient species and more often than not, will have a separate roost location outside the main bat activity season.</p> <p>Evidence of such is taken from a recent project that Bat Eco Services was involved in. This was the demolition of a known Common pipistrelle bat roost in a farmhouse under derogation licence. Works were undertaken in December 2024 and during supervision of the removal of the roof by hand, only a single bat was encountered, even though a small maternity roost was recorded roosting in the farmhouse during the summer months. This bat was successfully removed and placed in a bat tube of the bat house erected as part of the mitigation measures for the project (Derogation Licence DER BAT 2024-181).</p> <p>The bat mitigation measures follow Marnell <i>et al.</i> 2022 to ensure that conservation of the bats are of paramount importance. The roost status (Figure 1 below) determines the mitigation measures required. The Soprano pipistrelle is deemed a satellite roost for common bat species (i.e. Small numbers of common species. Not a maternity site) means that there is “Flexibility over provision of bat boxes, access to new buildings etc. No condition about timing or monitoring). However, Bat Eco Services has completed a comprehensive bat box scheme and undertook monitoring that provides evidence of successful alternative roosting for this species of bat.</p> <p>Bat Eco Services have completed a large number of successful bat box schemes across the country. But the uptake of the bat box scheme for this project within 4 months of erection is one of the best examples of success. Additional information on bat boxes as a suitable bat mitigation measures is presented below.</p>	
11.4	<p>As much information as possible to allow a decision to be made on this application.</p>	☒
	<p>The proposed works will ensure the conservation and protection of the bats during and post-construction.</p> <p>The bat mitigation measures follow Marnell <i>et al.</i> (2022) to ensure that conservation of the bats are of paramount importance. The design of the bat mitigation measures Marnell <i>et al.</i>, 2022 and Bat Eco Services have successfully erected many bat box schemes to-date.</p> <p>Additional information is provided in Section 2.1.</p>	



### 2.1.1 Bat Box Schemes

Bat Boxes are frequently used as part of bat mitigation to retain local bat populations within an area proposed to be development. The NPWS Bat Mitigation Guidelines (Marnell *et al.* 2022) considers that where roosts of low conservation significance (Figure 20, Marnell *et al.* (2022)) are to be lost due to a development, bat boxes may provide an appropriate form of mitigation and the effectiveness depends on the type of bat box provided, which should be appropriate to the bat species.

Species	Summer/ maternity	Summer/non breeding	Hibernation*	Notes
<i>Rhinolophus hipposideros</i>	N/A	N/A	N/A	Horseshoe bats cannot use bat boxes
<i>Myotis daubentonii</i>	H	H		
<i>Myotis mystacinus</i>	H	H		
<i>Myotis nattereri</i>	H	?		
<i>Pipistrellus nathusii</i>	H	H		
<i>Pipistrellus pipistrellus</i>	C	C/H	C	H are rarely used as maternity roosts.
<i>Pipistrellus pygmaeus</i>	C	C/H	C	
<i>Nyctalus leisleri</i>	H	H	H?	
<i>Plecotus auritus</i>	H	H		Maternity roosts

**Key**

\* Large well-insulated hibernation boxes may be more successful

N/A -not applicable; bat boxes should not be considered as replacement roosts

H - tree hollow-type box, providing a void in which bats can cluster

C - tree crevice-type box, with 25-35mm crevices

? - few data on which to base an assessment

**Figure 2:** Table 7 (p 58) Reproduced from Marnell *et al.* (2022).

#### 2.1.1.1 Effectiveness of Bat Boxes as a Mitigation Measure

Two publications that provide good scientific advice in relation to the effectiveness of bat boxes are presented below. McAney & Hanniffy (2015) reviewed the use of bat boxes in Ireland in relation to the bat usage of the following bat box schemes: 62 Schwegler boxes of three models erected in Portumna Forest Park (Bat box scheme consisted of 30x 1FF design, 30x 2FN design and 2x 1FW design); 50 2FN boxes erected in Coole-Garryland Nature Reserve and 50 2FN boxes erected in Knockma Nature Reserve of which 40 were later transferred to Glengarriff Nature Reserve County Cork. The bat box schemes were set up in March 1999 and data was collected up to 2015. Eight of the nine resident bat species were recorded roosting in bat boxes (lesser horseshoe bats cannot use bat boxes due to their need to fly, rather than crawl, into roosts). The main summary points are as follows:

- Leisler's, brown long-eared and *Pipistrellus* spp. were recorded in boxes at all three Galway woods, Daubenton's bat was only recorded in Garryland, Natterer's bat was only recorded in Glengarriff and whiskered/Brandt's was recorded just twice.
- There was a 31% chance of encountering a bat at Portumna Forest Park compared to 11.5% and 10% at Coole-Garryland Nature Reserve and Knockma Nature Reserve respectively.

- *Pipistrellus* spp. preferred 1FF boxes as this bat box design offer crevice-like roosting conditions. This species group also showed a seasonal preference with more bats present later in the season (visual observations confirmed the bats were using the boxes as mating roosts) and their numbers increased from the time that the bat box scheme was originally established.
- Brown long-eared bats preferred 2FN boxes that mimic holes in trees, the natural roosting sites for this species. This species also showed no seasonal pattern to their occurrence in the boxes. However one aspect of 2FN boxes that this report mentions is the high occupancy by birds which can be an issue in relation to nesting material reducing the availability of bat boxes for roosting bats.
- Leisler's bat showed no preference for box model but showed a seasonal preference with more bats present later in the season.
- Aspect was not a significant factor for occupancy but most boxes received dappled sunshine for part of the day.
- The other factor that proved significant was the length of time the boxes were in place, with occupancy rates increasing for all three species, although in the case of pipistrelles this increase appears to have stabilised. So, although the boxes were occupied very quickly, it took several years before they were regularly occupied and before clusters of bats were formed and breeding was confirmed.

Collins *et al.* (2020) investigated the implementation and effectiveness of bat roost mitigation, which included bat boxes, in building developments completed between 2006 and 2014 in England and Wales. The bat species studied were: common and soprano pipistrelle, brown long-eared bat and *Myotis* species, all of which are present in Ireland. A summary of the main points relating to bat boxes are as follows:

- Bat boxes were the most frequently deployed roosting provision (i.e. alternative roosts), being installed at 64% (n = 71) of sites surveyed as a compensation or enhancement measure.
- Box frequencies ranged from 1 to 41 at sites where they were installed, with an average of 6.6 boxes per site.
- Bats, or evidence of bats, were recorded in 20% of these bat boxes.
- Bat boxes mounted externally on buildings showed the highest occupation rate regardless of species while Common pipistrelle showed a preference for these over tree mounted boxes; the opposite was true for soprano pipistrelle.
- The four most popular bat box models used by consultants in the study were all Schwegler woodcrete bat boxes. Bat presence was highest in the 1FF bat box design (32%, n = 53) and lowest for birds (8%). The tree-mounted 2F and wall-integrated 1FR/2FR models both demonstrated similar bat presence rates of 23% (n = 43) and 25% (n = 32) respectively. The 2FN tree-mounted model showed the lowest presence rate for bats (11%, n = 19) and the highest for birds (58%). There were also 26 timber bat boxes, none of which were used by bats.

The author has also erected a number of bat box schemes and, where possible, has completed occasional monitoring visits. One such example is a bat box scheme erected in Kileshandra, Co. Cavan which consists of 8 Schwegler woodcrete bat boxes of various designs. The bat boxes were erected on mature trees located in a linear woodland adjacent to a river. This bat box scheme was erected in 2012 as part of mitigation for the demolition of a large derelict building where small satellite roosts were recorded for *Pipistrellus* spp. and Daubenton's bat. Two site visits have been completed since 2012 and during these visits the bat boxes were checked for evidence of bat usage. The first site visit was on 25/8/2015 and one bat box was occupied by a single Leisler's bat while the additional seven bat boxes had evidence of bat droppings (*Pipistrellus* spp. and *Myotis* spp.). During

the second site visit (27/7/2019) four bat boxes were occupied by bats (Soprano pipistrelle x1 individual (adult male), Leisler's bat x1 individual (adult male) and two bat boxes with x16 Daubenton's bats and x10 Daubenton's bats respectively). Biometrics was recorded for the 12 of the bats (which included 10 of the Daubenton's bats recorded in the bat box with 16 individuals) and five of these Daubenton's bats were lactating females with the remaining five Daubenton's bats recorded as juveniles, thereby indicating that this bat box was used as a maternity roost. The remaining four bat boxes all had droppings within for *Pipistrellus* spp and Leisler's bats. This bat box scheme, while just one example, demonstrates that when bat boxes are erected in an area with good bat habitat (bat survey documented a high level of bat activity for the named bat species), a high level of occupancy of bat boxes will occur. This bat box continues to be successful and monitoring of it in 2023 recorded three bat species and the exact numbers of individual bats for each bat species is present in the following table.

Table 1: Results of inspections of Kileshandra Bat Box Scheme, Co. Cavan (Source: Cavan bat Group) SP = soprano pipistrelle; Leis = leisler's bat, Daub = Daubenton's bat

Model	28/01/2023	18/02/2023	26/03/2022	30/04/2023	13/05/2023	23/09/2023
Schwegler Woodcrete 2F	1cm Pipistrellus droppings	Fresh Pip droppings	No bat evidence	9 Daubs	No bats, Daub droppings	no bats, 1cm of Daub droppings
Schwegler Woodcrete 2F	Old Leisler's bat droppings	Bird poo	No bat evidence	No bats	No bats, bird feathers	No bats, small amount of Leis bat droppings
Schwegler Woodcrete 2F	Unid droppings	Fresh Pip droppings & bird poo	No bat evidence & bird poo	Nest - cleaned out	Blue tit sitting on nest	No bats, no droppings
Schwegler Woodcrete 2F with timber panel	5cm Unid droppings	No bat evidence	No bat evidence	1 Leisler's bat	Leis x1 (male, 13.5g, 41.2mm R forearm, 41.6mm L forearm).	No bats, 1cm of Leis bat droppings
Schwegler Woodcrete 2F with timber panel	5 Soprano pipistrelles (semi-torpor), 2cm droppings	4 Soprano pipistrelles	12 Daub	2 Daubs , 4 escaped (biometrics)	x4 Daubs, droppings	13 Daubs
Schwegler Woodcrete 2F with timber panel	3cm Unid droppings	Daubenton's bat droppings	1 Leis, 4 SP, 5 Daub	6 Daubs	x7 Daubs (not processed), droppings	17 Daubs
Schwegler Woodcrete 2F	Bird's nest	Fresh Pip droppings	No bat evidence	11 Daubs	No bats, Daub droppings	Bird's nest (removed)
Schwegler Woodcrete 2F	3cm Unid droppings	Start of bird's nest	No bat evidence	Nest - occupied by Blue tit	Nest - occupied by Blue tit	No bats, 4cm of Daub droppings
Woodstone Chilton	2 pipistrellus droppings	No bat evidence	No bat evidence	No bats	No bats	No bats, no droppings
Woodstone Chilton	No evidence	No bat evidence	No bat evidence	No bats	No bats	No bats, no droppings
Woodstone Chilton	No evidence	No bat evidence	No bat evidence	No bats	No bats	1 SP
Woodstone Chilton	No bat evidence	No bat evidence	No bat evidence	No bats	No bats	No bats, no droppings
Woodstone Harlech		Erected on 18/2/2023	No bat evidence	No bats, x1 Pipistrelle bat dropping	No bats	3 SP
Woodstone Harlech		Erected on 18/2/2023	No bat evidence	1 Soprano pipistrelle	No bats	No bats, no droppings
Schwegler Woodcrete 2FN		Erected on 18/2/2023	No bat evidence	No bats	No bats, pip droppings	No bats, unid bat droppings
Schwegler Woodcrete 1FF		Erected on 18/2/2023	No bat evidence	1 Soprano pipistrelle	No bats	1 Leis



In relation to bat boxes, Marnell *et al.* (2022), a document that provides guidelines that are considered to be practical and effective based on past experience, recommends that the design life of potential bat boxes, including essential maintenance, should be about 10 years, as this would be comparable with the lifespan of the tree roosts that bat boxes are designed to mimic. The guidelines continues by stating that the “This lifespan can be achieved with good quality wooden boxes and exceeded by woodcrete bat boxes or other types of construction that ensure any softwoods are protected from the weather and attack by squirrels” (note – this includes woodstone bat boxes).

In relation to the number of bat boxes recommended to be erected, Lintott & Mathews (2018) found that the greater the number of bat boxes deployed, the greater the probability of at least one of the boxes becoming occupied and that the odds of bats occupying at least one box increased by approximately 7% with each additional bat box that was deployed.

Therefore woodcrete bat boxes are recommended as a bat mitigation measure and the author’s preference to use 1FF designs as this box is open at the bottom which reduces build-up of droppings (i.e. it is a self-cleaning bat box). Both McAney & Hannify (2015) and Collins *et al.* (2020) demonstrated that usage of this bat box design by bat species recorded in this survey report. In addition, the author has a preference for 2F and 2FN bat boxes as these two designs are also regularly used by common Irish bat species. Evidence of usage in relation to the larger summer bat boxes is being collated by Bat Eco Services as this box has been used in a number of new schemes to-date.

To increase occupancy of bat boxes by bats it is important to erect bat boxes 4m or higher (to ensure that bat boxes are out of reach from disturbance by humans and predation by other mammals) and that they should be located where bats have been documented foraging and commuting. The aspect of the bat box is not an influencing factor in relation to occupancy. These recommendations have all been implemented in the erection of the Ramparts Bat Box Scheme.

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