

PROVIDING HOMES FOR BATS AT PENYGARN HEIGHTS PONTYPOL, WALES BARRATT HOMES SOUTH WALES

BIG Biodiversity Challenge Award Category: Innovation Award

Project overview

Barratt Homes has successfully provided a new home for Lesser horseshoe bats at its development, Penygarn Heights, in Pontypool. Their derelict roost was destined for demolition. The new house's design and associated undercroft was based on best practice and many years of data collection on their use of the site and roost.

What were the biodiversity conditions on site, prior to the enhancement?

A derelict Chapel remained after the demolition of an old school in mitigation/compensation under the previous EPS licence. Data showed that lesser horseshoes, common pipistrelle and brown long-eared used the Chapel as a minor roost between 2007-2010. Data then showed that use by lesser horseshoes expanded and a moderate-sized maternity roost developed and use of the undercroft became more prevalent. The Chapel's demolition, although unlikely to significantly impact local populations of brown long-eared or common pipistrelle, could have significantly impacted lesser horseshoes. To mitigate and protect local bats Barratt designed a house for their exclusive use based on best practice and years of data collection.

What were the reasons behind this project ?

This project is a result of Barratt Homes discharging planning conditions and mitigating the loss of minor bat roosting sites found in the Chapel, specifically mitigating the loss of the lesser horseshoe roost.



The derelict Chapel, provided by Tom Probert



Site layout with the new bat house & undercroft identified

What were the reasons behind this project ? Continued

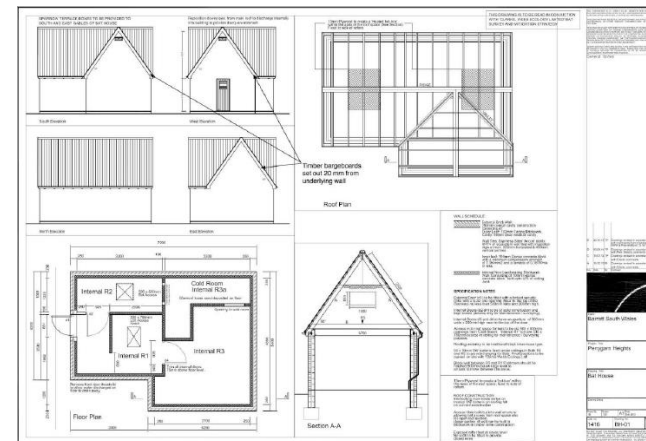
As a company we are also committed to integrating biodiversity conservation into our development designs wherever possible, and the bat house is one example of how we have achieved this. Barratt Homes maximised the opportunity of having c. 9 years of monitoring and survey data on which to base the design of the bat house and associated built and green infrastructure, to ensure a successful outcome.

What were the biodiversity measures taken?

The new bat house has been designed based on recommendations in the Lesser Horseshoe Bat Conservation Handbook and the knowledge gathered over c.9 years of surveys of how they used the Chapel, undercroft and the site as a whole. The house is located adjacent to the woodland edge, north of the Chapel providing new summer/satellite roosting opportunities (replacing the existing Chapel roof space) with opportunities for a small maternity roost. The undercroft has been retained and improved to provide day/night roost and light-sampling/socialising opportunities for lesser horseshoe bats, which is how they had used it. This is connected to the bat house by a native hedgerow so bats emerging from the bat house can easily and directly access the undercroft (as they did when emerging from the Chapel).

Specific details include:

- An L shaped footprint of c. 35m² and internal volume of c. 130m³
- cavity walls constructed from a double skin of brick;
- pitched roof fitted with clay tiles on bituminous felt underlay.
- ceiling across half of the building with a roof space above. The remainder of the building is open to the roof;
- doorway fitted with a locked security grille with an opening at the top facing onto the adjacent woodland



Bat house designs, provided by Clark Webb Ecology



New bat house, taken by Clark Webb Ecology

Specific details include: Continued

- above. The remainder of the building is open to the roof;
- doorway fitted with a locked security grille with an opening at the top facing onto the adjacent woodland
- 'cold room' in the northeast corner of the building,
- 'hot box' within the roof space accessible to flying bats
- screening along 3 sides by new native hedgerow;
- painted black entrance hall to minimise light reflection including features for bats to hang from
- damp floor
- timber bargeboards fitted on each of the gable ends for bats to crawl up and roost behind

Once development is completed landscaped areas, including the bat house, will be passed to Torfaen County Borough Council for adoption including financial support from Barratt Homes for future management and maintenance.

Further information

Bat surveys in the Chapel started in 2007 when the site was still occupied by the old school building. The roof space did not appear to be used in 2007 and use only commenced once flying access points were subsequently installed. By 2013 the number of bats observed and relatively small number of droppings present was consistent with use as a satellite roost. By 2015-2016 numbers of adult bats present within the roost in the mid-summer months had increased to over 40, with pups identified on at least one occasion indicating use as a maternity roost. While bats could use the roof space at other times of the year, use was mainly confined to the extended summer months. Long brown-eared and pipistrelles were also identified in these surveys but to a much lesser extent.



Restored and retained undercroft with hedge planting on top and new bat house at the rear, taken by Clark Webb Ecology

Further information continued

The loss of the Chapel to lesser horseshoes, without appropriate mitigation, was considered a significant impact on the local population. Therefore, mitigation was agreed in the form of a bat house and demolition of the Chapel not consented until there was evidence of bats using the bat house. Construction of the bat house was completed in 2016. In 2016 monitoring revealed the presence of bats through surveys and roost monitoring with a maximum of 7 individuals using the house overnight. In 2017 this number had risen to over 40 individuals again and the latest survey in 2018 found more than 59 individual lesser horseshoes using the new bat house with some venturing to the undercroft.

The amount of careful consideration that has gone into the development of the house, based on best practice and years of knowledge has provided a successful mitigation.

Project Team

- Torfaen CBC / Barratt Homes South Wales
- Rob Hammond (Hammonds Yates Consultants) were initial designers of the bat house with guidance from Pete Web & Tom Probert, on size & design

What was the motivation for carrying out the enhancement?

The motivation came from mitigating the potentially significant impact of demolishing a derelict building on lesser horseshoes and the loss of their roost. However, Barratt Homes took the opportunity to build on c.9 years of monitoring and bat surveys that had taken place to design a bat house that would ensure the successful mitigation of this loss. This is in line with Barratt Developments PLC policy to comply with relevant ecology legislation and best practice to protect and enhance the environment we operate in and our commitment to integrate biodiversity conservation into our development designs wherever possible.



New bat house from woodland edge with housing development behind and right, taken by Clark Webb Ecology