



MILL MEADOWS

CASE STUDY



MILL MEADOWS IN SUMMARY



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In 2020 one of the UK's rarer bat species, the Lesser Horseshoe bat, was confirmed to be breeding in the purpose built bat house – a real boost for the England and Wales population. It is hoped that now the female bats have found the site they will use this house as a nursery for many years to come.”

Samantha Walters

Technical Director, Ecology at ARCADIS Consulting

212

NEW HOMES



5 YEAR

BAT POPULATION
MONITORING



BROWNFIELD

LOCATION
TRANSFORMED



SLOW WORM

POPULATION
SAFELY RELOCATED



BAT HOUSE

PURPOSE BUILT
BAT HOUSE
ON SITE



BATS BREEDING

FOR FIRST TIME
AT THIS LOCATION





FACT FILE

Redundant former paper mill being **transformed to provide much needed housing**

Close to the **River Severn Channel and M4 Severn Crossing**

26 acre development site within 100 acres of land, which includes pasture land, a protected woodland and Scheduled Ancient Monument (Sudbrook Camp)

Mill Meadows will provide **212 new homes plus a network of public open space, landscaping and biodiversity enhancement**

Breeding population of the rare and endangered **Lesser Horseshoe bat** established in new bat house – providing a real boost for the population

Population of slow worms successfully relocated off-site, including to newly created refuges and hibernaculas in the retained woodland area

Development Cycle

Redundant mill buildings = Roosting Lesser Horseshoe Bats

New development plans = Specially designed conservation measures

Purpose built bat house = Endangered species now breeding here for the first time!



A CONSERVATION SUCCESS STORY

Redrow's Mill Meadows development, on the site of a former paper mill in Sudbrook, South Wales, has successfully led to a breeding population of one of the UK's rarest species of bat, the Lesser Horseshoe bat, being established where previously they only roosted.

The development is on course to provide 212 much needed new homes by 2022, over a four-year development programme. However, preparation work on site began back in October 2013 when, before any demolition could start, a purpose built bat house was installed to provide a roosting place for the bats who had made the redundant mill buildings their home.

Among the bat species that had roosted in the old mill were the Common Pipistrelle, Long-Eared bats and Lesser Horseshoe bat; the latter, unlike other species of bat don't use boxes.

The Lesser Horseshoe bat grows to between 3.5cm and 4.5cm, and weighs just 5-9g. These tiny mammals used to be cave dwellers and now tend to roost in old buildings and barns. They are a protected species in the UK, breeding throughout the summer in mixed sex colonies and hibernating over winter.

Nicola Johansen, group sustainability manager at Redrow, said: **"This rare and endangered bat is only found in Wales and parts of South-West England following severe population declines. It is fantastic news that we now have a new breeding population at Sudbrook. They had never bred at the mill previously but this year our ecologists have discovered pregnant females and pups."**

"A single pup is born to a female in the nursery and is looked after by other females when their mother goes out to feed. Even the adults are tiny – the size of a plum – and one of the smallest British mammals. This is a real success story for our work protecting them and for the potential recovery of the species."

This achievement provides evidence that a considered approach to conservation alongside new development can actually have a positive impact on native wildlife.

Samantha Walters, technical director – ecology, at Arcadis Consulting, said: **"In 2014 a house was built at Mill Meadows with the sole purpose of providing a home for roosting bats. Since 2016, this house has been visited on an annual basis by bat licensed ecologists from Arcadis. Up until 2020 the house was used by small numbers of bats in winter and summer."**

"In 2020 one of the UK's rarer bat species, the Lesser Horseshoe bat, was confirmed to be breeding in the purpose built bat house. This is of one of our endangered bat species and a real boost for the England and Wales population. It is hoped that now the female bats have found the site they will use this house as a nursery for many years to come. This house was built as mitigation for the new development and shows that well-designed bat houses put in the correct location can be of real benefit to wildlife."



BACKGROUND

A 100 acre site, close to the River Severn Channel, just north of the M4 Severn Bridge, was acquired by Redrow's sister company Harrow Estates in spring 2011 from DS Smith Plc.

The total area included land occupied by the redundant Sudbrook Mill alongside grazing fields for cattle, wetland areas, a former plantation woodland and the Scheduled Ancient Monument of Sudbrook Camp.

Following promotion through the local plan process, around 26 acres of brownfield land was allocated for residential development. This presented an opportunity to transform a former industrial site in a village location, close to the town of Caldicot, into much needed new homes.

Redevelopment proposals were prepared following engagement with the local community, while the areas around the allocated housing site, including the woodland and Scheduled Ancient Monument, would be protected.

With Redrow confirmed as the developer, a full planning application was submitted by Harrow Estates in October 2015.



CREATING A PLACE FOR NATURE AND PEOPLE

While industry had once boomed at the location, nature had once again staked its claim on the site following the mill's closure. However, some potentially dangerous materials remained.

Mark Nicholls, technical director at Harrow Estates, explains: **"While the site was brownfield, it had been derelict for a lengthy period and this had resulted in nature reclaiming the site.**

"The main building, while badly affected with deteriorating asbestos, had become a roost for bats, which was a concern given the potential impact to human health. The lower area of the site had become overgrown and was retaining water, resulting in an ephemeral pond; the periphery of which had become a habitat for slow worms.

"We worked closely with Monmouthshire's planning authority and Natural Resources Wales to formulate a plan for mitigation at the site and a great deal of work was undertaken by our consultants Hyder (now Arcadis).

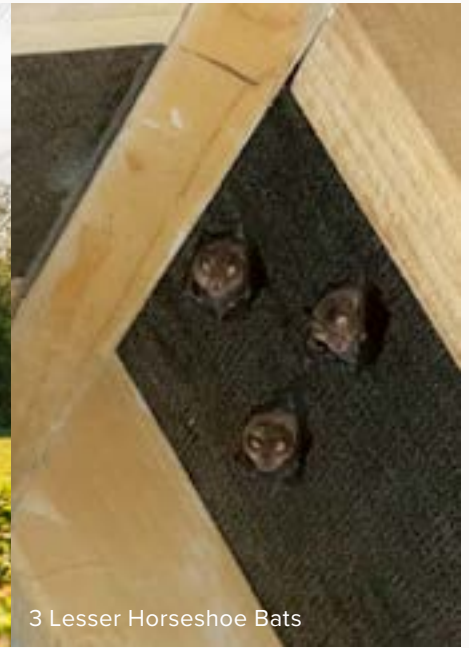
"It was decided that a bat house would be built in advance of demolition to provide sufficient mitigation for the loss of the roosting sites within the building."

Taking six months to construct, and carefully designed and located to encourage access and use, the bat house includes grillages in the walls and access tiles in the roof as well as raised ridge tiles. Larch lap cladding features on the exterior to provide crevices for bats. The interior contains a cool room and tower and a hibernation room as well as access internally to the cavity of the building.



In addition to the new bat house, a relocation plan was also required for the population of slow worms.

Mark adds: **"There was a great deal of mitigation for slow worms, which needed to be successfully captured and relocated outside of the working site. This included the building of refuges and hibernaculas in the retained woodland area."**



3 Lesser Horseshoe Bats

Once the wildlife had been cared for, the full planning application for 212 two, three and four bedroom homes was approved in June 2016. This included 20 affordable homes (10%), access improvements and a network of public open spaces alongside the biodiversity enhancements. Following this, in July 2017, the site was formally acquired by Redrow South Wales.

Due for completion in 2022, the building of the new homes is now well underway. Featuring designs from Redrow's traditional 'Arts and Crafts' inspired Heritage Collection, Mill Meadows is a desirable place for people to call home.

And thanks to the careful remediation of the site and the creation of the new habitats, it is now a safe haven where nature and people can live side by side.

Reuben Cooke, technical manager at Redrow (South Wales), said: **"Our Mill Meadows development is fast becoming a thriving community and a fantastic place for residents to live. With superb views across the Severn estuary, it's being built with a strong landscape framework around green corridors and high quality landscaped areas, with opportunities for play and conservation. In addition, we are creating links to the existing communities and focal points around the development with new footpaths and cycle routes.**

"Alongside the new homes, we're creating a large area of public open space on the south west portion of the site, which will contain a footpath link from the development to the Wales Coastal Path so residents can enjoy the scenic surroundings of the Severnside area and beyond.

"It's very satisfying to see the bat population go from strength to strength at Mill Meadows and 2020 has been a particularly noteworthy year with the discovery of breeding Lesser Horseshoe females in the new bat house. This will help boost the population of this protected species and we hope the bat house will provide a nursery for many years to come.

"Our customers value the conservation of nature at the development. They are keen to see local wildlife being protected and the natural elements of the location only serve to enhance the environment for residents."

Read more here about how Redrow is playing its part to protect habitats, including its partnership-led strategy with The Wildlife Trusts to enhance nature on its developments.

