



HEATHLANDS

CASE STUDY



HEATHLANDS IN SUMMARY



“

From a regulator’s point of view, the scheme is a good example of how housebuilders can **respond to the challenges of the Habitats Directive and produce a commercially-viable attractive development** whilst delivering evidence based enhancement of biodiversity.”

Matt Ellis
Natural Resources Wales

313

NEW HOMES



FULL-TIME

WARDEN EMPLOYED
FOR NATURE
RESERVE PLUS LONG
TERM MANAGEMENT
SURVEILLANCE



OVER 35,000

NEWTs, TOADS
AND FROGS
SAFELY RELOCATED



45

NEW PONDS CREATED



21-YEAR

HABITAT
MANAGEMENT PLAN



5.3ha

OF NEW NATURE RESERVE HABITATS



FACT FILE

313 new homes delivered in an area with significant housing need

Derelict and unsafe claypit area reclaimed for **beneficial uses** (site had previously operated as a brickworks until clay quarrying ceased in 2000)

Located within a **Special Area of Conservation (SAC)** and a Site of Special Scientific Interest (SSSI)

Unsafe, 1ha steep-sided lagoon filled

Circa **£2m invested** in earthworks, new pond creation, landscaping and amphibian translocation

2,349 great crested newts temporarily moved and protected at the outset, along with 32,404 other newts, 529 toads and 40 frogs, before being relocated to new ponds

Newt numbers tripled between 2017 and 2018 in the new ponds

9.6ha of residential development

3.8 ha of public green space, including a children's play area and more informal play space

5.3ha of **new nature reserve habitats**

Multi award-winning:

- Landscape Institute's 2017 Award for Science Management and Stewardship
- Highly Commended at IEMA's 2019 Sustainability Awards for Biodiversity and Environmental Net Gain
- Commended at CIEEM's 2019 Awards for Best Practice – Large-scale Mitigation

Nature reserve managed by Wild Ground, a registered charity which runs and manages 15 nature reserves across North East Wales

Full-time warden funded by Redrow's upfront investment and annual payments by Redrow residents

Site lies adjacent to the **Buckley Tramway Scheduled Ancient Monument**, dating back to the opening of the brickworks in the late 1700s

Footpath links to the existing Buckley Heritage Trail, a circular walk providing insight into the brick-making industry that flourished here during the industrial revolution.

Long term surveillance to evidence net biodiversity outcome

Surveillance data contributes to 3 sets of monitoring – the site itself, the designated Area of Special Conservation and country (Wales) spatial scales

The Surveillance data is uploaded into the online **Wales GCN Monitoring scheme**.



OVERVIEW



Nicola Johansen, Redrow's group sustainability manager: "Take a walk through Redrow's Heathlands development in Buckley, North Wales today and you could be forgiven for thinking that it's always been this way. The 313 home development completed by 2018 is nestled within the beautiful surroundings of a nature reserve and natural open spaces complete with 45 wildlife ponds.

"But amazingly, much of this landscape is newly-created as part of our new housing development which is on the site of an old derelict clay-pit and brickworks. If you took a walk here before the new development you would have seen an abandoned, unsafe industrial site which contained a huge steep-sided deep lagoon and surrounding 'moonscape'.

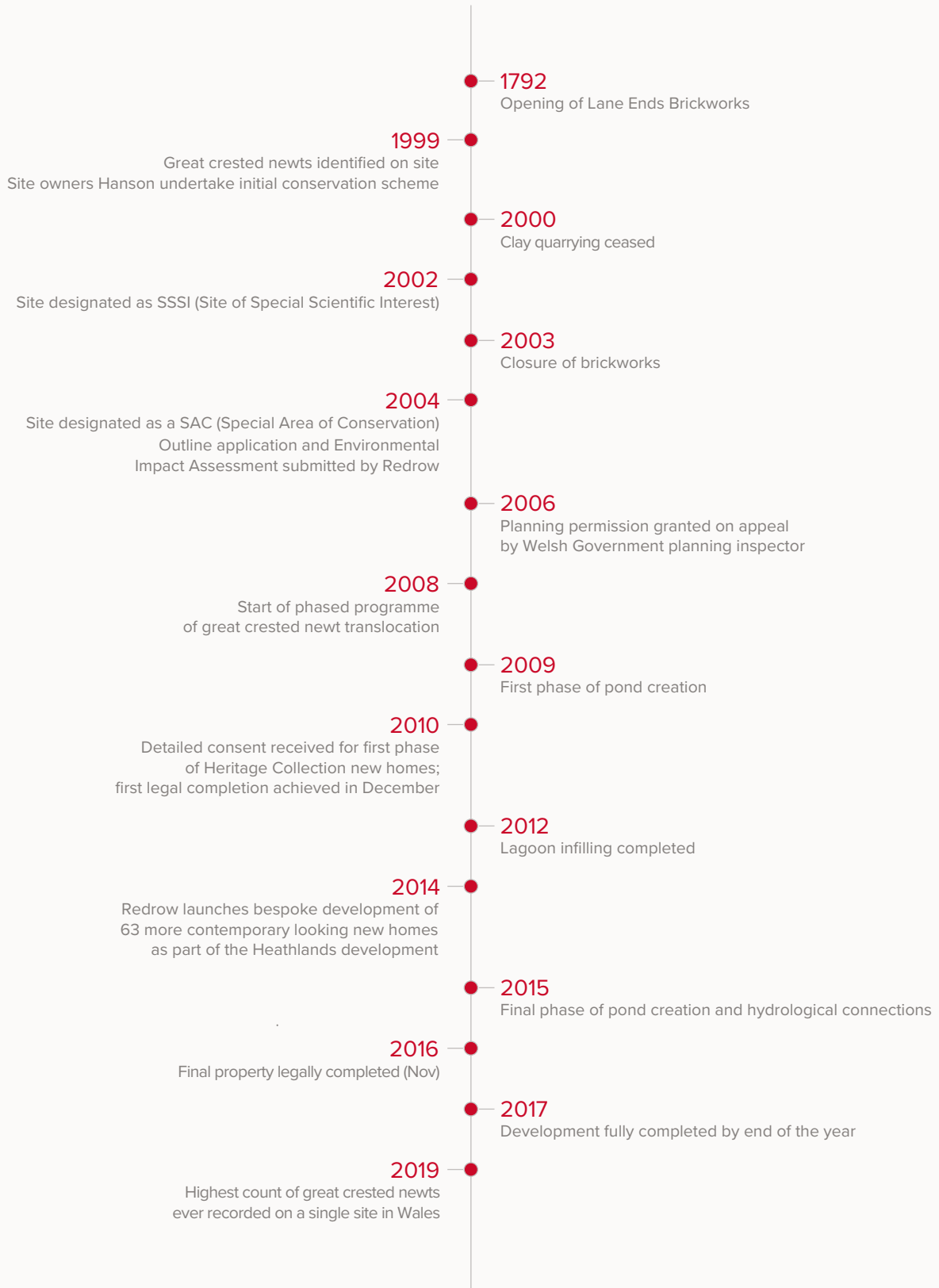
"The design of the new development sought to provide much needed local housing, remediate the derelict site, deliver measurable ecological benefits, and create natural spaces for the whole community to enjoy. The resulting new community showcases how new housing developments can be achieved at the same time as improving the environment and providing gains for wildlife."

Prior to development, protected species great crested newts were using the deep lagoon and these had to be temporarily moved and protected while the works took place. The ambitious scheme then filled-in the lagoon, re-vegetated the 'moonscape' surrounds and converted the site into a multi-pond nature reserve and public open space for the community to enjoy.

One of the key features of the project was to ensure the long-term legacy of the site for wildlife, so extensive management and monitoring arrangements were introduced. Monitoring of the great crested newt population has revealed that although the population was in decline before the development, newt numbers in the newly created ponds tripled between 2017 and 2018, helping reverse their decline in this area, and increased again in 2019.

But this beautiful new nature reserve doesn't just provide a home for newts – countless other species of wildlife have also moved in – and it also offers a focal space for the residents and local community to enjoy. The development also funded a warden employed by local wildlife charity Wild Ground, and a new warden's base – 'the Bug Shack' – complete with its green roof. Here, a series of education and volunteering events are held to help local schools and the community find out more about and help to look after this special place.

TIMELINE





RE-INVENTING THE LANDSCAPE

The environmental and ecology consultants for this project were TEP (The Environment Partnership).

TEP designed and implemented a detailed restoration scheme to enable the infilling of the unsafe lagoon, the re-vegetation of the 'moonscape' landscape and conversion to a multi-pond nature reserve.

They provided all the essential ecological surveys, landscape masterplan and Environmental Impact Assessment, liaised with the local authority and other relevant bodies, including Natural Resources Wales, provided the landscape design for the nature reserve and public open space, produced the 21-year habitat management plan and managed the migration of great crested newts and other amphibians.

The scheme was highly collaborative and TEP worked alongside various organisations, including engineering and hydrology consultants WYG, who were responsible for earthworks and SUDS design, and Natural Resources Wales, who were a proactive regulator in respect of Habitats Regulations and the great crested newts.

The project is an exemplar of sustainability; turning a derelict and unsafe liability into an asset of ecological value. The water cycle is complete within the site through a combination of rainwater harvesting, feeding interlinked ponds connected to a central soakaway. Ponds are organised in separate clusters which cascade water towards a large retention pond at the lowest point. This ensures that each cascade is hydrologically separate to ensure that any pollution incidents can be isolated and treated without affecting the whole system. Earthworks involved no removal or import of bulk fill.

All of this work was financed by the creation of 300-plus new family homes by Redrow, but also required a degree of commitment and long-term vision from the developer that is not always evident in housebuilders. To help inform implementation, geotechnical compliance audit was carried out by Reynolds International Limited and Ecological Compliance Audit by AEDC



Francis Hesketh, director at TEP: “Heathlands saw Redrow rise to many challenges. Ground conditions and hydrology meant creating a complete sustainable drainage system that worked with the new housing and the lie of the land. The scale of remediation, coupled with the extensive works to translocate protected species and protect the Special Area of Conservation, gave rise to complex programming challenges.

“I’m sure there were times when other clients might have walked away; but credit to Redrow and their strong in-house technical team for delivering a great environment for housing and nature.

“On this scheme, Natural Resources Wales acted as a strong but constructive regulator, and there was a local community wildlife campaigner. It is to Redrow’s credit that they engaged pro-actively with both regulator and community champion, resulting in good quality outcomes.

“Last, but not least, the scheme has long-term financial sustainability arising from a combination of endowment and service charges which pay for site management and wardening.”

Supporting TEP’s winning entry for the 2017 Landscape Institute Awards, Matt Ellis, senior species advisor for Natural Resources Wales said: “**The EC Habitats Directive sets a challenging test for developers, and Redrow’s scheme was comprehensively designed, with several failsafe measures to ensure no adverse effect on the integrity or functionality of the Buckley and Deeside Newt SAC.**

“Initially NRW was nervous about the technical challenges of remediating the claypit at Lane End within the legislative and policy constraints applicable to the site. We therefore worked collaboratively with Redrow and their consultants TEP and WYG to design a phased habitat creation scheme with rigorous scientific monitoring to inform and evidence compliant habitat restoration and re-establishment.

“Redrow embraced the challenge, and the outcomes of the overall project can now be robustly demonstrated by the significantly rising great crested newt population.

“From a regulator’s point of view, the scheme is a good example of how housebuilders can respond to the challenges of the Habitats Directive and produce a commercially-viable attractive development whilst delivering evidenced based enhancement of biodiversity.”



Paul Furnborough

LONG-TERM HABITAT MANAGEMENT

Redrow's upfront investment, combined with annual Heathlands residents' payments, funds a full-time warden, has provided a new, green-roofed base for North East Wales wildlife charity Wild Ground and pays for the ongoing management of the new nature reserve habitats and the adjacent Knowle Hill site in perpetuity.

Wild Ground implements the long-term habitat management plan that was a condition of the Natural Resources Wales great crested newt licence. Wild Ground's role includes both management activities and ecological monitoring, with ongoing wildlife surveys continuing to build the evidence base for the success of this scheme and providing a valuable resource for similar projects.

Their role is to inform and educate local residents of the value of the nature reserve and heritage trail and address any anti-social behaviour (of which there has been very little). They also work with the local community and the Welsh Government's historic environments organisation CADW to identify and map heritage assets in the adjacent Knowle Hill Nature Reserve, typically including relics of Victorian era clay quarrying and brick-making that have now become overgrown with scrub.

The on-site warden also organises education and volunteering events with local schools and the community.

Paul Furnborough, Reserves Development Manager for Wild Ground, said: **"It's a privilege to work on such a flagship site for great crested newts, with recent counts of well over 1,000* individuals making it one of the best sites for them in Wales. Given its urban setting, both adjacent to the new estate and the wider population centre at Buckley, the reserve provides us with a fantastic resource to showcase**

local nature, to share wildlife encounters with the community and to engage and enthuse the next generation of conservationists."

Material components of the scheme include long-term surveillance. Amphibian surveillance data is collected on an annual basis and uploaded into the online Wales GCN Monitoring scheme. This database, managed by Cofnod and funded by Welsh Government, now includes over 30,000 records from over 130 sites. This database can be used, following completion of development, to evidence successful long-term conservation action.

***How to count newts!**

Counting newts is a tricky business. There is a difference between total population counts and one-off surveys. Here's how it works:

- **A total of 2,349 great crested newts were trapped and translocated from the site at the start of the project** – this number represents an absolute number of newts (the total population), as trapping continues until there is a run of no new captures.
- **By contrast, more recent surveys show the numbers of newts counted on night-time torching surveys** – and these figures are inevitably less than the total population because not all newts present will be observed.
- **So in 2017 the count (not population) went from 342 to 1,030, and in 2019 the count increased again to 1,300.** The newt count is rising post-development, and includes evidence of successful on-site breeding.



SUMMARY

Redrow's Heathlands development has delivered long-lasting effects and benefits in many areas.

- Heathlands delivered **313 new homes, including 15% affordable properties**, while creating visually attractive public open space and a nature reserve.
- It demonstrates Redrow's credentials in **delivering regeneration and establishing biodiverse habitats** alongside development.
- The project illustrates the **benefits of ecologists and engineers working together** to manage large-scale reclamation and creating a sustainable ecosystem, water cycle and site funding.
- The project shows that the **Habitats Regulations can be a positive driver for change**. The greater crested newt population in the SAC/SSSI/LNR has increased. Other species have colonised.
- An unsafe eyesore has been **brought into beneficial use** and the scheme integrated with neighbouring landscape, including the adjoining Knowle Hill Nature Reserve, and the Buckley Heritage Trail.
- The project created **new housing, public spaces and construction stage jobs**.
- There is **increased interaction** between local residents and their surrounding environment.
- The project evidences **long-term sustainable surveillance** action.
- Formal handover of the site by Redrow to nature conservation charity Wild Ground will **preserve and enhance the site** in perpetuity, supported by homeowners' annual payments.

