

# Broads Authority biodiversity enhancements planning guidance



## Habitat for homes

Habitat loss through human activity is the biggest threat to species survival on the planet.

The Broads National Park is extremely rich in wildlife, with over 11,000 species recorded, including the swallowtail butterfly and Norfolk hawker dragonfly, very rarely found outside the Broads fen habitats. But in Britain as a whole over 60 per cent of our species are in decline.

One of the statutory purposes of the Broads Authority is to conserve and enhance the natural beauty, wildlife and cultural heritage of the Broads. So we have a duty to ensure that impacts on biodiversity from new developments (of any size) are minimised, and that wildlife is protected and habitats are enhanced through the planning process.

For these reasons, as part of your planning application, you may be asked to show how you will enhance biodiversity.

## National policy

The National Planning Policy Framework says:

109. 'The planning system should contribute to and enhance the natural and local environment by:

- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including

by establishing coherent ecological networks that are more resilient to current and future pressures'

## But what can you actually do – or avoid doing?

Many rare species are found on conservation sites in the Broads, but gardens, churchyards, parks, school grounds and other open areas form an important network of different habitats, providing feeding and breeding sites, and green corridors for wildlife to move between areas. So everyone living in villages and towns within and adjacent to the Broads, and also people visiting the Broads, can play an important part in helping to conserve this internationally important wetland for future generations – of people and wildlife too.

## Advice for different habitats

### Meadows

Meadows are big business. The economic value of pollinating insects to farmers and other growers is £510 million – that's the same amount annually as visitors bring to the Broads. And the value of pollinators to our well-being from visiting wild places cannot be underestimated.

- Meadows are also bee heaven. Wild flowers provide an essential supply of nectar for hundreds of insects including bees, butterflies and hoverflies.
- Creating your own mini wildflower meadow will not only look attractive, but will provide a nectar highway for pollinating insects to move between





habitats. Choose an area in full sun, preferably with low fertility and few weeds.

- Use a British wild flower seed mix appropriate for your soil type. Add yellow rattle (*Rhinanthus minor*) to your seed mix as it will help wild flowers to establish as it reduces the strength of grasses which can outcompete wild flowers.
- Make sure the area is free of coarse-leaved grasses, thistles and docks before you sow.
- Rotavate, rake to ensure fairly fine soil and water if necessary.
- Sow seed from August to October at the density recommended by the supplier.
- Cut the new growth, keeping it short until the end of March to prevent the stronger grasses from outcompeting the wild flowers.
- In the first summer you should have yellow rattle, a few daisies and clover. In the second, thanks to your hard work, you should have a beautiful wild flower meadow full of different flowers to admire.
- Cut the meadow again in August (or use a strimmer). Leave the hay where it falls for a week, turning it as it dries to help the wild flower seeds drop back down into the soil. After a week, rake the hay away so as not to increase fertility and use it for compost.
- If you're impatient for results, use plug plants. Plant five plugs per square metre in the spring or autumn. Plug plants will flower in the first spring or summer after planting. But be aware that rabbits are very partial to plug plants.

[www.wildseed.co.uk](http://www.wildseed.co.uk)

[www.sarahraven.com/flowers/seeds/wild\\_flowers](http://www.sarahraven.com/flowers/seeds/wild_flowers)

[www.plantwild.co.uk/meadows/how-to-create-a-wild-flower-meadow](http://www.plantwild.co.uk/meadows/how-to-create-a-wild-flower-meadow)

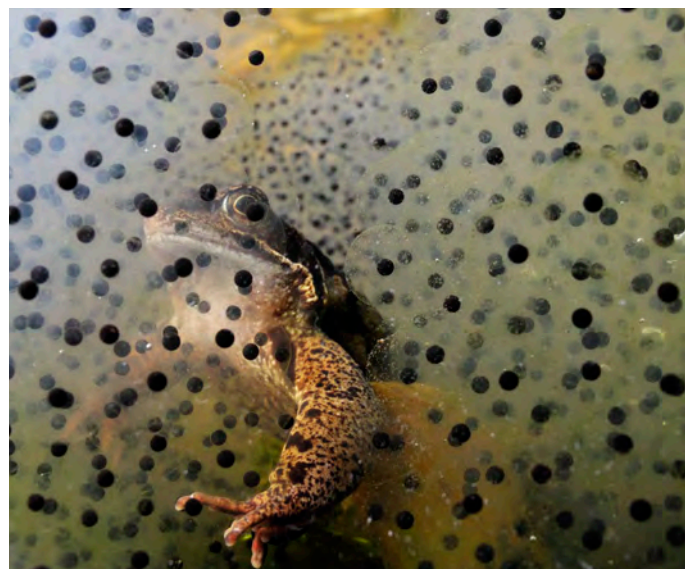
## Ponds

**One third of ponds are thought to have disappeared from the British countryside in the last 50 years.**

- Wildlife is wild about ponds – creating a pond is one of the best ways to help wildlife, including a whole range of insects. All ponds will help, but one that is at least two metres square will provide the essential breeding habitat for most amphibians including frogs, toads and newts.
- The other main points to consider are depth, shape, location and plant species. A pond with gently sloping shelved sides and a deeper central area (at least 60cm), with floating and taller native plants, is the most beneficial.
- Autumn is the best time for pond cleaning as fewest species will be affected. Avoid removing silt from the bottom as this will contain eggs and larvae of pond insects. Remove excess leaves which could lead to nutrient enrichment and subsequent algae blooms in the spring. Trim plants if necessary. Leave trimmings and leaves at the side of the pond for a couple of days to allow insects to return to the pond.
- Winter freezing of ponds can create dangerous conditions for animals as ice can cause a build-up of toxic gases released by the continued decomposing of plants and animals. To help alleviate

this, remove snow from the ice to allow plants to continue producing oxygen. You can create a hole in the ice by leaving a pan of hot water on the surface. Never smash the ice as this can harm wildlife and puncture a pond liner. Never use salt, antifreeze or other chemicals.

- Algae can be a blooming nuisance! Algal blooms are caused by excess nutrients in the water and soil. Algae can quickly reproduce causing cloudy conditions. Duckweed and blanket weed are indicators of excess nutrients. Remove duckweed by carefully running a net across the surface to scoop it up. To remove blanket weed twist a cane amongst it to pull it out. Leave weed next to the water's edge for a couple of days to allow any animals caught up in it to return to the pond. You can also reduce algal blooms by adding larger plants as they use up nutrients during their growth. Or add a bundle of netted barley straw which releases algae-fighting chemicals as it decomposes.



### Native plants for ponds

Deeper water (submerged and oxygenating plants): common water crowfoot, curled pondweed, water starwort, water violet.

Floating-leaved plants: broad-leaved pondweed, yellow water lily, frogbit.

Marginal plants: amphibious bistort, brooklime, creeping Jenny, lesser pond sedge, lesser spearwort, marsh marigold, water forget-me-not, water plantain, yellow flag iris.

### Invasive non-native plants to avoid

Floating pennywort, parrot's feather, New Zealand pygmy weed, water fern, Nuttall's, Canadian pondweed, water primrose.

[www.froglife.org/info-advice/creating-or-improving-ponds/](http://www.froglife.org/info-advice/creating-or-improving-ponds/)

[www.rspb.org.uk/makeahomeforwildlife/advice/gardening/pondsforwildlife/making.aspx](http://www.rspb.org.uk/makeahomeforwildlife/advice/gardening/pondsforwildlife/making.aspx)

[www.nonnativespecies.org/home/index.cfm](http://www.nonnativespecies.org/home/index.cfm)

### Hedgerows

One hundred and thirty Biodiversity Action Plan priority species for conservation are associated with hedgerows.

- Native hedgerows support a high proportion of woodland birds, mammals and butterflies, providing an abundance of food, shelter and nesting sites, as well as an important green corridor for wildlife. A hedgerow with a thick base is best for wildlife. The ditches and banks

associated with hedgerows provide important habitat for frogs, toads, newts and reptiles.

- Hedgerows also provide living fences, rather than wooden fences which can be expensive and require maintenance. Planting evergreen species such as ivy will ensure the hedgerow provides privacy and is beneficial for wildlife throughout the year.
- Hedgerows should ideally be planted between autumn and spring, in prepared ground, free from weeds. Water well and add a thick mulch to prevent competition from weeds. Gaps can be filled in later.
- Planting a hedgerow with at least **seven** native species will help to ensure a wildlife rich habitat. Many hedgerow shrubs and trees flower at different times, ensuring a nectar supply for insects, as well as fruits and berries for birds over the autumn and winter months. And maybe some for human consumption too!
- Trim at the end of the winter after the supply of berries and nuts has gone, and to avoid the bird nesting season. Ideally hedgerows should be cut every other year to encourage fruits and berries. Avoid disturbing the base of the hedgerow which may be home to hibernating hedgehogs and amphibians.
- Feed the plants annually and top up the mulch for the first three years.
- New developments should aim to





incorporate and enhance existing hedgerows. Generally the older the hedgerow, the more species rich it will be and therefore better for wildlife. You can improve old hedgerows by filling in any gaps with a different woody species to increase their diversity. Ensure that existing plants do not shade out new plants, and for the first three years protect new plants from grazing by rabbits and deer.

### Native hedgerow species

**Pollen rich shrubs:** blackthorn (*Prunus spinose*), hawthorn (*Crataegus monogyna*), willow (*Salix caprea*), wild privet (*Ligustrum vulgare*), field maple (*Acer campestre*), crab apple (*Malus sylvestris*), common buckthorn (*Rhamnus cathartica*), holly (*Ilex aquifolium*)

**Trees:** oak (*Quercus robur*), ash (*Fraxinus excelsior*), hazel (*Corylus avellana*), wild cherry (*Prunus avium*)

**Climbers:** wild rose (*Rosa canina*), traveller's joy (*Clematis vitalba*), honeysuckle (*Lonicera periclymenum*)

[www.ptes.org/wp-content/uploads/2014/06/Hedgerow-guide-web-version.pdf](http://www.ptes.org/wp-content/uploads/2014/06/Hedgerow-guide-web-version.pdf)

[www.suffolkwildlifetrust.org/Hedgerow-planting](http://www.suffolkwildlifetrust.org/Hedgerow-planting)

## Advice for different species

### Birds

Norfolk holds 40% of the national barn owl population.

- Over the years many traditional nesting and roosting sites for birds (and bats as well) have been lost. It is extremely important that new building developments incorporate permanent homes for wildlife, such as swift nesting chambers and bat lofts. These can be simple and cost effective to provide.

### Boxes

- Birds need boxes for breeding and roosting.
- Boxes made from woodcrete (a mixture of cement and wood) are best – they

can last over 20 years (wood lasts about four years) and require little maintenance apart from cleaning out.

- Consider location, height and orientation. Place them in trees where possible. Small boxes suitable for blue tits and great tits can also be attached to the outside of a building. Most boxes should face between north and north-east. Fix them three metres from the ground to avoid disturbance and predators. You can also have a metal plate round the entrance hole to deter woodpeckers and squirrels. If you are putting up more than one box they should not be sited too close together, as this may cause aggressive behaviour between neighbours.
- Most birds need a clear flightpath to the entrance hole – trim any overhanging vegetation.
- Robins and wrens prefer an open-fronted box, sited two to three metres high on a tree trunk or wall, hidden behind overhanging vegetation such as ivy.
- Many owls rely on boxes (larger size) due to the loss of mature trees and old buildings.
- Site boxes for barn owls close to open areas of rough grassland required for hunting.
- Site boxes for tawny owls in woodland.
- Site boxes for little owls in open farmland areas with hedgerows, scattered trees and orchards.

### Nest sites and artificial nests

- Swifts, swallows and house martins are summer visitors to the Broads.
- Swallows and house martins need mud to construct their nests which can be in short supply, particularly during a dry spring. Providing a muddy area close to the nest site will encourage swallows and swifts to nest.
- Barns, stables, and boat houses can provide suitable nest sites for swallows. Swallow nests should be placed inside the building under the eaves with open access during the spring and summer months. Multiple nests should not be installed at less than one metre intervals, to avoid disputes between neighbours.
- Swift and house martin nests can be installed under the external eaves of most buildings. Swifts and house martins live in colonies, so provide boxes and nests to accommodate multiple pairs.

[www.swift-conservation.org](http://www.swift-conservation.org)

[www.rspb.org.uk/makeahomeforwildlife/advice/helpingbirds/nestboxes/smallbirds/making.aspx](http://www.rspb.org.uk/makeahomeforwildlife/advice/helpingbirds/nestboxes/smallbirds/making.aspx)

[www.birdventures.co.uk](http://www.birdventures.co.uk)

[www.hawkandowl.org/sculthorpe/nest-boxes-for-sale](http://www.hawkandowl.org/sculthorpe/nest-boxes-for-sale)

[www.rspb.org.uk/makeahomeforwildlife/advice/helpingbirds/nestboxes/owlskestrels](http://www.rspb.org.uk/makeahomeforwildlife/advice/helpingbirds/nestboxes/owlskestrels)

[www.nhbs.com/browse/subject/426/bird-boxes](http://www.nhbs.com/browse/subject/426/bird-boxes)

[www.rspb.org.uk/discoverandenjoynature/discoverandlearn/birdguide/name/s/swallow/encouraging.aspx](http://www.rspb.org.uk/discoverandenjoynature/discoverandlearn/birdguide/name/s/swallow/encouraging.aspx)

[www.cornwall.gov.uk/media/3626630/Accommodating-swallows-swifts-and-house-martins.pdf](http://www.cornwall.gov.uk/media/3626630/Accommodating-swallows-swifts-and-house-martins.pdf)

## Bats

**Pipistrelle bats, the most common British species can eat over 3,000 midges in one night!**

- All British bats (18 species) are protected under British and European law. Breeding female bats only produce one offspring a year so it is essential to protect their habitat to maintain populations. Buildings and trees provide roosting and breeding sites.
- Don't put bats under the spotlight! Artificial light has a detrimental effect on wildlife, changing normal behaviour patterns which can affect the ability to survive. Avoid illuminating trees and hedgerows used by many species, including bats. Artificial lighting can cause bats to delay their emergence from roosts to hunt and feed, missing the peak in insect prey abundance, and resulting in a possible reduction in body mass. Artificial light should never shine on a known bat roost in a building or a bat box. Consider sensitive lighting early on as part of your development design. Use low level LED lights where possible. Minimise the spread of light, ensuring

only task areas are lit. Use lanterns or light hoods to shield or direct light where it is required. Use reactor lights or limit the time that lights are on to provide dark periods – and save energy and money too.

[www.bats.org.uk/pages/bats\\_and\\_lighting.html](http://www.bats.org.uk/pages/bats_and_lighting.html)

[www.rhs.org.uk/advice/profile?pid=513](http://www.rhs.org.uk/advice/profile?pid=513)

## Boxes

- As for birds, boxes made from woodcrete are best.
- Place on trees at least five metres high, in groups of three facing south-east to south-west to provide the range of roosting temperatures that bats require.
- If boxes are to be positioned on buildings choose locations next to hedges or trees. Bats use them to forage for insects and to commute between favoured roosting sites.

[www.nhbs.com/browse/subject/421/bat-boxes](http://www.nhbs.com/browse/subject/421/bat-boxes)





## Insects, amphibians, reptiles and fungi

The average garden may hold over 2000 species of insect!

- Over 60 per cent of insect species are in decline, so wild flower habitats and nesting sites are becoming ever more important.
- Invertebrates are attracted to artificial light at night and it is estimated that as many as a third of these will die as a result.
- Insect boxes provide homes for hibernation for adults or larvae. You can buy boxes or they are easy to make from recycled materials.
- Small boxes suitable for solitary bees and wasps are best placed in a sunny spot close to flowering plants.
- To provide homes for a wide range of species, build your own 'bug hotel' by stacking old pallets and filling them with a range of recycled materials such as bamboo canes, logs and dried leaves to provide cracks and crevices. Build hotels in semi-shade close to hedges or ponds so passing animals can find them easily.
- Retain natural plant and habitat features where possible. Dead or hollow stems such as elder or buddleia provide overwintering sites for adult insects or larvae. Dry, sunny banks or warm patches of bare earth are favoured by solitary bees and wasps for burrowing.

- Log piles simulate fallen trees in the wild, creating valuable habitat for insects, amphibians, reptiles and many fungi. Roughly stack native wood including beech, oak, ash and elm in a shady spot so it remains cool and damp. Log piles situated close to ponds or under hedgerows will attract hibernating frogs and toads so it is important that they remain undisturbed. By adding a pile of leaf litter you may also attract hibernating hedgehogs and ladybirds. Add new logs over the years as the old ones decay.

[www.wildlifetrusts.org/how-you-can-help/wildlife-gardening](http://www.wildlifetrusts.org/how-you-can-help/wildlife-gardening)

[www.rspb.org.uk/makeahomeforwildlife/advice/gardening/deadwood.aspx](http://www.rspb.org.uk/makeahomeforwildlife/advice/gardening/deadwood.aspx)

[www.rspb.org.uk/makeahomeforwildlife/advice/gardening/insects/building\\_homes.aspx](http://www.rspb.org.uk/makeahomeforwildlife/advice/gardening/insects/building_homes.aspx)

[www.nhbs.com/browse/subject/436/insect-boxes](http://www.nhbs.com/browse/subject/436/insect-boxes)

[www.buglife.org.uk/bugs-and-habitats/discover-bugs#](http://www.buglife.org.uk/bugs-and-habitats/discover-bugs#)

### Contact us:

For more information and advice please contact the Broads Authority on 01603 610734 or visit our website [www.broads-authority.gov.uk/contact-us](http://www.broads-authority.gov.uk/contact-us)





This guide outlines the history of waterside bungalows and the contribution they make within the Broads, discusses their similarities and differences, and suggests ways to maintain and alter existing bungalows and insert new bungalows successfully within their particular historic and landscape setting. **For the purposes of this guide, the term Bungalow relates to small/low light-weight buildings which are generally at the water's edge.**

## Part 1: Changing perceptions

Waterside bungalows undoubtedly make an impact on the character of the riverbank. Historically there was concern that in some locations this was starting to become negative. For example back in 1982 the Broads Authority was keen to remove some of the bungalows on the River Thurne at Potter Heigham and Martham. Residents disagreed and the bungalows remained. Over time the contribution that the bungalows make to the character of the area began to be more widely appreciated. When in 2015 the Authority, in consultation with local residents, wished to add waterside bungalows to its Local List, 58 waterside bungalows, including a number on the River Thurne, were given the status and protection of local heritage assets.

### Early tourists

Waterside bungalows are part of the unique Broads landscape. Most of the

bungalows we see today stem from holidaymaking in the Broads from the 1880s to the 1960s. They are a distinct group of buildings which significantly contribute to our understanding of the history of the Broads. In the late 1800s, if you had some disposable income, what better way to dispose of it than on a waterside bungalow in the Broads? Waterside bungalows were initially built for this expanding holiday market consisting mainly of affluent city dwellers who sought refuge within the wild and undeveloped Broads in the late 19th and early 20th century. The growth of tourism in the Broads was closely linked to the establishment of railway stations within the Victorian period and some of the most popular areas for waterside bungalows were around villages with links to major towns and cities, and those which offered existing recreational facilities.

### Entrepreneurs

Opportunity existed and an influential group of Broads entrepreneurs, boat builders and hirers, started providing tourist facilities that offered alternatives to boating. People such as John Loynes of Wroxham and Herbert Woods of Potter Heigham had captured early tourists with their boat offer and unsurprisingly other tourist facilities, including bungalows, were erected in areas in close proximity to the popular boat hirers. ~~The boat builders' trades and skills (such as carpentry) were easily transferable to the erection of the predominately timber bungalows.~~





## Wartime refugees Wartime use of Bungalows

The two world wars brought new uses for the bungalows. Refugees from some of the larger towns in the area, such as Great Yarmouth, used the bungalows as permanent residences when their main homes were under greater threat from bombing. There is also evidence of a bungalow in Wroxham, Closeburn, being used as a Red Cross unit for recuperating soldiers. Within this period the bungalows also started to be used more generally as permanent residences, resulting in the mix of use we see today, as both holiday and permanent accommodation. **The two world wars brought new uses for the bungalows. On occasion people from some of the larger towns in the area, such as Great Yarmouth, used the bungalows as permanent residences when their main homes were under greater threat from bombing. There is also evidence of a bungalow in Wroxham, Closeburn,**

**being used as a Red Cross unit for recuperating soldiers. Within this period the bungalows in some areas also started to be used more generally as permanent residences, resulting in the mix of use we see today, as both holiday and permanent accommodation.**

## Controversial assets

As with many forms of development, the bungalows were not without controversy. The bungalows were some of the original second homes – built not for local people, but for visitors. Many local people of the time were not comfortable with seeing the bungalows being developed and what was then considered the local distinctiveness of the area being eroded. Wider social issues such as divisions between the early tourists and the less affluent local people may have exacerbated this divide in opinion.

## Location, location, location

The bungalows are unevenly distributed

throughout the Broads, with high densities in some villages such as Wroxham, Hoveton, Horning, Potter Heigham and Brundall. They are also predominantly a feature of the northern broads. Several factors contributed to this, such as the location of early railway stations and main boatyards, and the distance to larger centres of population. Another important factor was one of aesthetics. It was the undulating and wooded landscape in the upper reaches of the Broads that was particularly attractive to tourists of the time. This is certainly the case with the late 1800s and early 1900s bungalow development around Wroxham, Hoveton, Horning and Hickling. However it doesn't explain the bungalow development in the open landscape around Potter Heigham and Martham, which was and remains a working landscape. Agriculture predominates and the banks are clear of trees, yet there was an abundance of bungalow development.

## Natural habitat

In some instances bungalows situated in a more natural habitat of reeds and trees were surrounded by vegetation which allowed even quite large buildings to fit less conspicuously into the Broads landscape. Individual or small groups of trees could be seen on the plots and planting was typically natural, avoiding regular spacing and formal borders. The dominant surface on river frontage was grass. Bungalows were sometimes set as far back as possible from the waterfront, allowing natural vegetation to develop at

~~the waterside.~~ Bungalows were sometimes set back from the water's edge on their plot allowing natural vegetation to develop at the waterside. This natural vegetation and untrimmed edges supported the growth of wild flowers and contributed to a natural appearance which also had benefits for wildlife. Our Planning for Biodiversity guide (available on our website) suggests ways in which new developments can encourage wildlife.

## On the waterfront

~~Bungalows siting right on the waterfront, such as those on the River Thurne, were traditionally simple in shape, of square or oblong plan, parallel or at right angles to the river, with an adjoining boat dyke and sometimes boathouse. Typical forms included regular, well-proportioned features. The roof was usually the dominant surface with generously overhanging low eaves and overhanging gables. The early bungalows were generally built at ground level and were single storey.~~ The age and design of the bungalows varies across the Broad with the more elaborate qualities of the bungalows upstream at Wroxham and the smaller and simpler looking bungalows downstream at Potter Heigham. Bungalows siting right on the waterfront, such as those on the River Thurne, were traditionally simple in shape; the size and shape of these properties was determined by the size and shape of the rand (that piece of land between river and soke dyke). Typical characteristics of bungalows across the Broads included regular, well-proportioned features. The

roof was usually the dominant feature with generously overhanging low eaves and overhanging gables. The early bungalows were generally were single storey and not raised off the land. As issues with flooding became apparent (for example River levels at Potter Heigham have risen) the bungalows were raised on piles to avoid seasonal flooding. As issues with flooding became apparent the bungalows were raised on piles to avoid seasonal flooding. On the River Bure boathouses were often integral to the design, sometimes with the boathouse below and the living accommodation above. Treatment at the waterside varied but often the banks were retained by timber quay heading or natural banks in the calmer reaches of the system. Traditionally mooring was provided off-river, within the plot of each bungalow. This offered more protection to boats, with less potential for obstruction to navigation. Historically, many of the leased plots at Thurne had neither boat dock or bungalow on them. Our Mooring Design Guide (available on our website) will be helpful for new developments and modifications.



## A sense of proportion

The scale and density of the bungalows varied significantly across the Broads, as did their design – they possess certain characteristics across different areas. The bungalows at Wroxham, Hoveton and to a certain extent Horning that were constructed with a thatched roof and false timber framing had a ‘romantic’ character typical of the wider Arts and Crafts Movement. Larger, more elaborate examples were built at Wroxham, within lower densities, set in larger wooded plots, therefore exhibiting a more exclusive feel. Simpler and smaller bungalows were built in settlements such as Potter Heigham, within higher densities and smaller plots. The lower reaches of Potter Heigham and the rest of the Thurne were more exposed to the elements and as a result the bungalows were a lot simpler in form. Simpler and smaller bungalows which were cheap to construct were built in settlements such as Potter Heigham, within higher densities and smaller plots. However they were often still beautifully designed, with hints of Arts and Crafts and Art Nouveau detailing. A greater variety of design and styles can be seen at Potter Heigham and the bungalows in this area are more individual; one is even constructed from the top of a helter-skelter from the Britannia Pier at Great Yarmouth. Horning, a settlement in the middle reaches, displayed characteristics of both styles of development.

## Simple and fun

The bungalows often had a sense of fun,



reflecting holiday use, and sympathy for the landscape and their location close to the waterside. All of the bungalows were lightweight in construction and timber predominated as a building material for many elements. Some were constructed on piles driven into the ground **or concrete pads** to form a foundation. Others were constructed on timber rafts **or concrete rafts e.g. Whiteslea lodge**. Walls were often constructed with a timber frame and were clad with timber, painted white or stained dark. Planed tongue-and-groove boards were used, or rougher timber featheredge or waney-edged boarding. On most early examples the roofs were thatched in local reed, but others had metal sheet roofs such as corrugated iron and later felt roofs were also used. Boundary fences were designed to blend with their surroundings and have a minimal impact. Traditional fencing materials included cleft chestnut fencing and hurdles made from close woven osiers, hazel wattle or reeds.

## Local sources

Local manufacturers developed their own vernacular style of simple, lightweight timber buildings, suited both to the uncertain subsoils of the wetlands and the need to transport materials, in the majority of cases, by water rather than road. Local builders included Donald Curson of Wroxham, the Farman Brothers of Salhouse, Albert Oetzmann of Horning and Thomas Wright of Potter Heigham. One of the largest manufacturers of prefabricated timber and iron buildings at the end of

the 19th century was Boulton & Paul of Norwich, whose extensive catalogues in the 1890s ranged from glazed porches and watchmen's huts to large houses and pavilions. Boulton & Paul bungalows of the period can still be seen in the Broads.

## Limited services

The bungalows had very limited services. They were often lit by paraffin lamps, had meagre heating arrangements and no sewerage, with sewage emptying into the rivers and broads, until legislation changed and it was no longer permitted. For water, deep wells were often constructed or drinking water was provided by nearby stores **or captured rainwater**. The bungalows had little or no insulation but as they were constructed predominantly for use in the warmer summer months such luxury was not often considered necessary. Most of the bungalows were only ever meant for summer residents. Their lightweight and cheap construction was not suited to 'permanent' buildings. Although over the years many adaptations have been made and some are now used as permanent residences.

## Part 2: Looking after our assets

### Then and now

Many original waterside bungalows remain in the Broads and form a significant part of the overall character of the area. They are enjoyed by owners and holidaymakers alike. Given their significant contribution to the Broads we believe it is important to help protect the best examples of these



bungalows and ensure important features are not lost.

We have now included some of the bungalows on the Broads Local List. Buildings on the List do not necessarily meet the strict criteria for National Listing but make a significant contribution to the historic environment of the Broads. The List is a means of acknowledging and celebrating the best examples of local historic assets in the Broads. You can find more information on our website.

[www.broads-authority.gov.uk/planning/Other-planning-issues/protected-buildings/broads-local-list-of-heritage-assets](http://www.broads-authority.gov.uk/planning/Other-planning-issues/protected-buildings/broads-local-list-of-heritage-assets)

Bungalows vary in condition and are particularly vulnerable to change. Regular and careful maintenance of the bungalows will help to retain many special details and minimise the need for repair or replacement. However, given the wet environment and their

construction, bungalows can deteriorate if not maintained. Elements of the building then need to be replaced which can result in erosion of original details and loss of character. In addition, the requirements of modern living and the desire to extend can lead to pressure for development and further erosion of character. Total replacement of a bungalow can potentially result in a bungalow of non-traditional construction, particularly in terms of detailing and materials. When considering work to a bungalow an assessment of the character of the existing building should be undertaken.

## Repair, alteration or replacement

If the bungalow or features of it make a positive contribution to the character of the Broads, give consideration to the most appropriate form of alteration or repair in order to best preserve this character, including detailing and materials. For example:

- Is it possible to retain or re-use key features?
- Is it possible to extend rather than replace the bungalow?
- Is it possible to re-introduce more traditional features or materials to enhance the bungalow?
- If replacement of the bungalow is the only option, how can the replacement enhance the area?

One factor which can alter the character of the bungalows is the replacement of timber windows and doors using uPVC or other non-traditional materials. Similarly, replacing wall boarding with non-traditional cladding such as uPVC boarding can have an impact on the character of the bungalow. There are many advertised benefits of PVC materials but the use of timber, both for joinery and boarding, is traditional in the Broads. The advertised benefits of plastics often apply to timber, but timber gives a traditional appearance not possible with many alternatives. Also, sustainably sourced timber is far more environmentally friendly than the alternatives, particularly oil derived plastics, in terms of both its manufacture and use. Colour coated aluminium is an alternative to timber and plastic and can give a slim profile similar **for windows and doors** to that of timber. Costs of these various materials are not dissimilar.

## Extensions to existing bungalows

Extensions are a common form of alteration to bungalows. In principle, extensions are generally acceptable where they would not result in the overdevelopment of the building or the site, or would not impact unacceptably on the host building.

Extensions should generally be smaller than the existing bungalow and be sited to the side or rear of the existing building. The riverside elevation of a bungalow is often identified as the principal (front) elevation and while extensions to this elevation can be appropriate, they will require particular care in terms of character, scale and relationship to the original bungalow.

Generally extensions will be smaller scale and similar in design to the original building although sometimes it may be appropriate to introduce a more contemporary solution, providing a contrast to the original design. Contemporary solutions work best when they share common features with the original bungalow.

Setting any extension back from an existing wall or down from the existing roof planes can help the original bungalow to remain dominant which is often desirable.

## Replacement bungalows

The waterside is a harsh environment and sometimes existing bungalows may require replacement. In designing



a building to replace a bungalow it is especially important to recognise the cultural heritage value of the area and the contribution it makes to the wider Broads landscape. It is important to consider how the new building could add to that value. The quality of architectural design of the building including form, shape, mass, scale, size and materials will determine the contribution the building can make to the character of the area. As with extensions, contemporary design can make a contribution in its own right as can more traditional detailing and materials.

A simple form which is then enhanced through the choice of materials, colour and the detailed treatment of features such as windows, doors and balustrades is usually the most appropriate solution. Quite individual designs can still contribute to an overall harmony on the riverside, taking account of the appearance and character of the natural landscape and the other buildings in the area.

## Ancillary buildings

Due to the use and nature of the riverside plots ancillary buildings are often required for storage. These buildings should be smaller and less prominent than the main bungalow. As with extensions, some reference to the main bungalow in terms of shape and materials can help the ancillary buildings to contribute to the character of the riverside.

## Security

Waterside bungalows can be quite isolated. The adoption of Crime Prevention Through Environmental Design (CPTED) principles in building design and development could help protect the cultural heritage of the Waterside Bungalows.

<http://designforsecurity.org/about/crime-prevention-through-environmental-design>

## Planning advice

Waterside development, including new and replacement works, usually requires planning permission. The Broads Authority is the local planning authority for the Broads. Policies relating to design, landscape and the historic environment can be found on our website.

Buildings by the waterside are often at risk from flooding. Extensions or replacement buildings may require higher floors to protect against flooding. This can have an impact on the height and external appearance of extensions or replacement buildings. Seek early advice from the Broads Authority and the Environment Agency. The Authority's Development and Flood Risk Supplementary Planning Document is available on our website.

The Broads Authority offers a free pre-application advice service so that you can find out whether the works you propose require any form of consent and if so, whether a request for planning permission is likely to be successful. Staff can discuss alterations to bungalows and can offer specialised design and historic design

advice.

[www.broads-authority.gov.uk/planning/Planning-permission/getting-advice-before-you-apply](http://www.broads-authority.gov.uk/planning/Planning-permission/getting-advice-before-you-apply)

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## Contact us:

For more information and advice please contact the Broads Authority on 01603 610734 or visit our website [www.broads-authority.gov.uk/contact-us](http://www.broads-authority.gov.uk/contact-us)