

Broads Local Plan
Adopting the Biodiversity Enhancements and Waterside Bungalows Guides
Report by Planning Policy Officer

Summary:	Information guides have been produced to help applicants meet any requirement placed upon them to enhance wildlife as part of their development proposals as well as provide guidance and advice to those intending to alter waterside bungalows. These have been the subject of public consultation
Recommendation:	To note the responses and amendments and to recommend to the Broads Authority that they adopt the guides.

1 Introduction

- 1.1 Biodiversity enhancements are often required as part of planning proposals. The purpose of this guide is to help applicants design and deliver enhancements as part of their scheme to help wildlife.
- 1.2 Waterside bungalows are an important feature and asset to the Broads Authority Executive Area and communities. It is recognised that they may need changes over time. This document provides guidance on making these changes to the bungalows.

2 About the Guides and Work Completed to Date

- 2.1 The Biodiversity Enhancements guide seeks to provide information, images and further links on different types of wildlife enhancements that could be provided as part of schemes. The enhancements range from bird and bat boxes, to log piles and ponds. It is envisaged that applicants will be directed to the guide to help implement enhancements to meet their planning conditions.
- 2.2 The Waterside Bungalows guide describes the history of the bungalows as well as discusses their importance. In part two, it discusses changes that are often proposed for waterside bungalows ranging from new windows and extension to total replacements.
- 2.3 Both guides were subject to public consultation between 8 July 2016 and 4pm on Friday 26 August 2016. The comments received and the proposed response from the Authority are included at Appendix A.
- 2.4 The final guides, highlighting changes that have come about as a result of the consultation, are included at Appendix B. Please note that following adoption

by Full Authority, the guide will be edited and formatted to make a final electronic version for the website.

4 Recommendation

- 4.1 It is recommended that the responses and amendments to the guides are noted and the revised guides as shown at Appendix B are adopted by the Broads Authority.

5 Financial Implications

- 5.1 It is intended that the guides will be hosted on the Broads Authority website and produced in paper format only on request.

6 Conclusion

- 6.1 The guides address enhancements for wildlife as well as guidance on changes to waterside bungalows.
- 6.2 To give the guide more weight in the planning system, the guides have been consulted on and it is proposed that they are adopted by Full Authority.
- 6.3 Having up to date guides like this (and the already adopted Riverbank Stabilisation and Mooring Guides) will provide developers and landowners with useful guidance on what is deemed useful and acceptable in the Broads.

Background papers: None

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Date of report: 27 September 2016

Appendices: APPENDIX A – Comments received through the consultation

APPENDIX B – Biodiversity Enhancement Guide and Waterside Chalets

APPENDIX A Comments received as part of the consultation on the Guides. Sorted in alphabetical order of respondent.

Organisation	Section Heading	Representation	BA Officer Summary of Representation	BA comment	Which Guide
Anglian Water		On this occasion, we have no comments to make.	No comment.	Noted.	Biodiversity Enhancements Guide
Environment Agency		<p>Developments which contribute to and enhance their environments can be shown to add value to projects. A longer quotation from paragraph 109 of the National Planning Policy Framework may give developers a wider understanding of the benefits of addressing biodiversity.</p> <p>Incorporating green and/or brown roofs and walls can be effective means of providing habitat in circumstances where this may otherwise be problematic. They can provide valuable habitats, increase the energy efficiency of buildings and the attenuation of rain water. Research from the journal 'Environmental Science and Technology' claims that green walls deliver cleaner air at street level where most people are exposed to the highest pollution. They can also add to an attractive street scene if designed well.</p> <p>Developers should use a sustainable drainage approach to surface water management (SUDS). SUDS are an approach to managing surface water run-off which seeks to mimic natural drainage systems and retain water on or near the site.</p> <p>SUDS can include grassed swales, ponds and wetlands promoting groundwater recharge, improving water quality and amenity, provide local habitat opportunities and provide linkages and connectivity between habitat sites.</p> <p>Our Fisheries, Biodiversity and Geomorphology (FGB) team can provide guidance on the stocking of ponds and fisheries and on preventing the spread of invasive aquatic species. In some circumstances our consent is required.</p> <p>For developments adjacent to rivers the Anglian river basin district management plan requires the restoration and enhancement of water bodies to prevent deterioration and promote recovery of water bodies. Depending on the development and its impact we may require watercourse to be restored and enhanced to a more natural state. Measures can include bankside tree planting to provide shade and installing woody debris and berms in the water course. Applicants should consider the provision of "buffer zones" between the water course and the development. Our FBG team can advise on these measures.</p>	<p>1: longer quotation from paragraph 109 of the National Planning Policy Framework may give developers a wider understanding of the benefits of addressing biodiversity.</p> <p>2: Incorporating green and/or brown roofs and walls can be effective means of providing habitat in circumstances where this may otherwise be problematic.</p> <p>3: Developers should use a sustainable drainage approach to surface water management (SUDS).</p> <p>4: Our Fisheries, Biodiversity and Geomorphology (FGB) team can provide guidance on the stocking of ponds and fisheries and on preventing the spread of invasive aquatic species. In some circumstances our consent is required.</p> <p>5: For developments adjacent to rivers the Anglian river basin district management plan requires the restoration and enhancement of water bodies to prevent deterioration and promote recovery of water bodies..</p>	<p>1: Not needed as the quote already in the document gets the message across adequately.</p> <p>2: Agree to some extent but consider it more relevant to city locations where there is limited green space. Officers at the Broads are aware of these roofs and walls and can advise accordingly.</p> <p>3: Noted. There are many guides already in relation to SuDS. SuDS tend to be a response to flood risk but the aim of this guide is for those applications which are required to specifically have a biodiversity enhancement.</p> <p>4: Noted. No change to guide however.</p> <p>5: Noted. However, the aim of this guide is for those applications which are required to specifically have a biodiversity enhancement. No change to guide.</p>	Biodiversity Enhancements Guide
Environment Agency		<p>We understand that the focus of the document is heritage and conservation. As such most of the matters within our remit can be addressed through the development management process. The following 3 observations are offered:Foul water disposal: For chalets not connected to the foul sewer and where improvements or replacement is proposed applicants should seek to make a connection. Normally we would require a connection if a sewer is available within 30m of the site boundary. Where it is not reasonable to connect to the public foul sewer we will grant an environmental permit, as long as the proposed discharge is otherwise environmentally acceptable. The applicant should consider disposal in this order of preference: sewer connection, package sewage treatment plant (which can be offered to the Sewerage Undertaker for adoption), septic tank and if none of these are feasible a cesspoolFlood risk: We also encourage early engagement with ourselves where flood risk is an issue; initial advice is free and detailed advice is on a cost recovery basis. Where replacements are being considered and part of the site may be outside of the flood zones then applicants should take a sequential approach when determining the new location.Flood Defence Consents now fall under the new Environmental Permitting (England and Wales) Regulations 2010 system (EPR). Applicants may need an environmental permit for flood risk activities if they want to do work in, under, over or within 16m of a main river and of any flood defence structure or culvert within 8m of the river.</p>	Provides information relating to flood defence consent, foul water and flood risk.	Comments noted but these relate to site specifics proposals and issues. Foul water disposal, flood risk - not remit of guide and will be addressed through the Local plan. No change.	Waterside Chalets Guide
Great Yarmouth Borough Council		Thank you for consulting Great Yarmouth Borough Council on these two documents. The Borough Council has no comments to make on them.	No comment.	Noted.	General comment on the guides
Health and Safety Executive		While there is often overlap between environmental and health and safety issues, HSE's primary responsibility is for hazards caused by people in their work and so in this case we have no direct comment to make concerning the biodiversity enhancements guide. However, the environmental improvements should not include measures which would conflict with the requirements of the	No comment.	Noted.	Biodiversity Enhancements Guide

Organisation	Section Heading	Representation	BA Officer Summary of Representation	BA comment	Which Guide
		Health and Safety at Work etc. Act 1974 and its relevant statutory provisions.			
Health and Safety Executive		<p>HSE is a statutory consultee on relevant developments within the consultation distance of a hazardous installation or a major accident hazard pipeline. Planning Authorities should use the new HSE's Planning Advice Web App to consult HSE on such applications and produce a letter confirming HSE's advice. This service replaces PADHI+ HSE's on-line software decision support tool.</p> <p>Some chalet developments would be considered as residential in respect of this consultation process; others would be considered as temporary or holiday accommodation. In either case, we would need to be consulted if the development was in the consultation distance of a major hazard site or major hazard pipeline.</p>	We would need to be consulted if the development was in the consultation distance of a major hazard site or major hazard pipeline.	Noted although no change to guide.	Waterside Chalets Guide
King Line Cottages	Hedgerows	Hedges in a village community are not as important as a non-village location where hedges are more natural and should be encouraged. Fencing should be allowed up to 2 metres in height for privacy but should be consistent with other fencing the locality.	Hedges in a village community are not as important as a non-village location where hedges are more natural and should be encouraged. Fencing should be allowed up to 2 metres in height for privacy but should be consistent with other fencing the locality.	Comment noted. This is more detailed than the guide is intended for. Proposals will need to respond to the characteristics of the site. No change.	Biodiversity Enhancements Guide
King Line Cottages	Bird Boxes	I agree with the comments, but have noted at my new boathouse in Horning, where we have only quay headed to the ground on one side, but have left a gap of 1 metre to the water side (instead of quay heading), we have gained a large colony of swifts that are nesting under a walkway above the water. They use this open-sided section, thus allowing us to keep the boathouse doors shut and a flow of water that stops the boathouse silting up. We have had two fledglings from four nests this year, the latest on 20th July 2016. The use of hardy plank or similar product, as recommended for bird boxes is excellent.	General support.	Support noted.	Biodiversity Enhancements Guide
King Line Cottages	Part 1: On the waterfront	All waterside new building should be consistent with others in the locality, not like in Horning where a modern, out of place building next door to the Horning Yacht Club is completely out of character. This building has had scaffolding round it all summer for painting/maintenance. No buildings of brick construction should be allowed, unless it is an annex to an existing brick built building.	All waterside new building should be consistent with others in the locality. No buildings of brick construction should be allowed, unless it is an annex to an existing brick built building.	Comment noted. The guide gives general principles, but the actual detail will be down to the planning application and the characteristics of the site. The Authority considers design to be a very important aspect. No change to the guide.	Waterside Chalets Guide
King Line Cottages	Part 2: Repair, alteration or replacement	<p>By my experience of making repairs to an old building, it is by far better to demolish the building, as expensive unknown repairs are very frequent. I have learnt this to my cost. Advantages in re-building are: The building should be built on piles driven into the chalk layer, not the hard sandstone layer that sometimes can be found 3 metres above the chalk in the Horning location. These should finish a metre above the high water mark and land around the property raised to help minimise the flood risk, if allowed. All flooring can then be on a concrete suspended floor (this stops vermin and floor rotting), main construction in tantalised timber, all doors and windows should be of uPVC or the new wood manufactured uPVC type finish, these stand up to building 'movement' better than timber and stands up to the environment better. It also matches 95% of the windows seen on riverside buildings at the present time. All doors should be to the accessible criteria for wheelchairs.</p> <p>Cladding to replacement and new buildings: Modern materials that can be obtained are far better than wood, as you state in the Bird Boxes [section] of the biodiversity guide (boxes made from woodcrete a mixture of cement and wood are best - they can last over 20 years, wood lasts about four years) and woodcrete requires little or no maintenance and therefore eliminates the need for toxic painting.</p> <p>Cladding of buildings: Timber cladding is going out of favour, although of a traditional method, it is virtually impossible to obtain well-seasoned cladding that will last in good condition. It requires wood treatment every 3 years (which can entail scaffolding for health and safety in painting). This wood treatment kills insects and spiders that do not return for a year (spiders live off the mosquitoes which pester us). From experience, the cladding shrinks 10% over the years, dries out, causing expensive replacements to keep up a good appearance. The use of woodcrete planking, that is difficult to distinguish the difference between it and wood, as recommended in the biodiversity guidance, does not require any treatment, fades to a natural look, and will last years longer and give insects a more stable environment. It also does not shrink or warp and stands up</p>	Detailed comments relating to cladding, demolition, replacement and plastics.	<p>The Authority has policies in place to determine replacement buildings. Construction and design are site specific issues. It is important to understand that the historic environment is a finite resource so demolishing may not always be appropriate. No change to the guide.</p> <p>Woodcrete - the two guides are separate. We have policies about design... do not aim to be prescriptive.</p> <p>Use of plastic - have policies on design.</p> <p>Case by case basis</p>	Waterside Chalets Guide

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		<p>to the damp atmosphere near water. It also has an A2 fire rating making it safer for the environment and other buildings close by. When seen from over 2 metres away it is difficult to distinguish from real wood. The use of colour coated aluminium, for doors and windows, is very expensive, uses vast amount of electricity to produce. UPVC is a better alternative.</p> <p>The use of plastics: We have to use plastic gutters and soffits as no other material can be found to replace them. The use of the flat weather boarding can be a big problem near waterside since asbestos boarding was outlawed. The weather boarding in the damp atmosphere, although painted, will delaminate and look very unkempt (as can be seen from the river in many places at the moment). When this happens, flat plastic sheeting works well and keeps up appearances. White plastic plank type boarding looks bad after a few years. White Hardy planking or similar, which is made from woodcrete, is far better. Plastic hand rails from square gutter down, pipe filled with wood are ideal as they are easy to clean and in time do not have splinters.</p> <p>I have commented on this document as King Line Cottages have had experience of waterside wooden construction buildings since 1971 replacing buildings with new in 1987, 1988, 1994 and 2010. I have also noted that the use of wooden door frames and doors produced at this time grow substantially in winter and cannot be closed. Then in summer they shrink and doors will not latch to as they should. UPVC door frames stand up to the seasons better. The use of both should be allowed.</p>			
Natural England		Natural England welcomes the production of these guides which will help developers and owners make good informed choices, respectively, regarding biodiversity and the protection of the special landscape features of the Broads.	Support for guides.	Support noted.	General comment on the guides
Norfolk Constabulary		This office has no specific comment regarding the comment of this guide.	No comment.	Noted.	Biodiversity Enhancements Guide
Norfolk Constabulary		<p>Expertise in crime prevention processes, products and criminal methodology helps the police fight crime; protect properties, businesses and visitors from unnecessary loss. We recommend the Waterside Chalet guide recognises the security principles of deterring, delaying, denying and detecting criminal activity. Designing in good security processes and protection with owners, developers and builders at all stages of development or restoration is essential to combat criminality and its consequences. Please consider the following comments in parallel to proactive policing and activity/initiatives across Norfolk where Waterside Chalets are located:- The adoption of Crime Prevention Through Environmental Design (CPTED) principles in building design and development would help protect the cultural heritage of the Waterside Chalet buildings.- Screened boundary treatments should be considered proportionate to existing criminal statistics and not be measured against a dominant aesthetic. Overgrown frontages and gardens whilst visually pleasing can also provide hiding places for criminality to occur. Visually open gardens helps deter criminal activity and can identify suspicious activity early. This is encouraged.- Waterside Chalets feature nonstandard construction with inherent security features much less robust than contemporary brick build dwellings. The effective attack resistance of the building(s) may be limited where traditional features and materials are not enhanced or up graded, putting the properties at increased risk from intrusion. Traditional wooden features are attractive but contemporary materials can aesthetically compete and provide increased protective strength to the property.- New, bespoke or replacement doors and windows should reflect traditional designs and materials but crucially should include attack resistant features (Secured by Design, Homes 2016), particularly where a greater threat of criminal attack occurs at the rear.- Isolated boat moorings and ancillary buildings attract criminal attention both waterside and roadways and they will use the same highways and byways to commit crime and escape detection. Suitable security lighting provides safety for occupiers and visitors, reduces the fear of crime (Secured by Design, Homes 2016) and is a significant deterrent for the criminal, who seeks to avoid being seen.- Of utmost importance is the ongoing vigilance of owners and users of these chalets to the possibility of crime. By providing and maintaining effective natural surveillance together with the speedy reporting of emergency, urgent or suspicious activity, the owners and users of the Waterside Chalets will continue to enjoy and protect these wonderful places. By promoting the spirit of CPTED principles and practices</p>	Security is an important consideration and should be addressed in the guides.	Agree. Will add this text: 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	Waterside Chalets Guide

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		within the Waterside Chalet Guide, it will be a significant step towards future proofing our Waterside Chalet heritage, a delightful feature of the Broads National Park.			
Norfolk County Council		Thank you for consulting Norfolk County Council on the above Biodiversity Enhancements Guide and Waterside Chalet Guide. At this stage it is not considered that the Biodiversity Enhancements Guide and Waterside Chalet Guide. raises any strategic issues with Norfolk County Council. Obviously you would consult the County Council when you review your Local Plan. I assume, under your statutory duty to co-operate (Localism Act 2011), that if you feel there are any strategic issues arising or likely to arise that you would seek further discussion with Norfolk County Council	No comment.	Noted.	General comment on the guides
River Thurne Tenants Association and Thurne Bungalows Management Company		<ul style="list-style-type: none"> • Object to term ‘chalet’. Would prefer bungalow, holiday homes or properties. • Guide covers too much • What properties does it address? The large homes at Wroxham set well back from the water? • Make the document more specific about what writing about • Sort into areas? • Query where document says ‘were set as far back as possible’. • Some areas of bungalows are unique such as those in the Potter Heigham Bridge area. Could have their own document. • Emphasise in document the range of styles • Make more obvious what refer to – maybe using a map • Thereius a grey area between maintenance and planning permission • Add page numbers • More detail on raising height – case by case basis • Most significant part of property in aesthetics terms is floor level. Need to raise the land as well otherwise look silly. • Part of charm is the variation in the bungalows • Plot does not sink but river level increases • Wartime retreats – not all were refugees. Some people chose to live there as felt safer. Also servicemen were billeted there. Some refugees. • Is detailed history needed? • If add history be careful as danger in using what is accepted as history. • Potter Heigham design not just due to being windswept – economic as well as cheap to construct. • Rather see tick or cross and diagrams • There are no photos of bungalows from the Potter Heigham Bridge area • Tone – care as comes across as ‘good old days’ and might give wrong impression. • Balance between history and advice • Historical accuracy an important consideration • Potter Heigham area bungalows – info regarding foundations and rafts • Encourage innovative solutions 	Numerous details comments.	Chalet will be replaced by bungalow. Early on, it will be clarified what this guide refers to: For the purposes of this guide, the term Bungalow relates to small/low light-weight buildings which are generally at the water's edge. Clear in document that there are different types and areas and characters. Replace current wording with: Chalets were sometimes set back from the water’s edge on their plot allowing natural vegetation to develop at the waterside. New title – Wartime use of the Bungalows. 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. History is needed. References included. History text taken from a Thesis which earned a distinction. Simpler and smaller chalets which were cheap to construct were built in settlements such as Potter Heigham, within higher densities and smaller plots. Keen to avoid tick and cross as design is not a tick box exercise and reflects the site specifics. Gudie refers to contemporary solutions.	Waterside Chalets Guide
Sanford, Mr D W	General Comment	1 I am not sure that the overall balance of the document is in proportion. This document devotes 50% of its text to explaining the history of the waterside properties 2 I think a working definition of “waterside” needs to be made either in words or perhaps more clearly in a simple map. 3 The term “chalet” (a hut or cabin on the Swiss mountains, where cattle are lodged in the summer, and where cheese is made; hence, the small wooden house or cottage of the Swiss peasant; gen. a house or villa built in the style of a Swiss cottage) has a history (from the Thurne bungalows owners’ point of view) as being pejorative. Chalets they most certainly are not. I have taken the liberty of changing the word ‘chalet’ for the more generalised term, ‘property’ throughout this	1: Queries why so much history. 2: What does water side mean? 3: Disagrees with 'chalet'. 4: Ensure photos do not have plastic. 5: Document is muddled 6: Should say no more bungalows at Thurne.	1: The history sets scene and shows how important they are and not everyone has the knowledge. 2: We do nto intend for this to cover houses set far back with large garderns such as at Wroxham. 3: Wil; change from chalet to bungalow. For the purposes of this guide, the term Bungalow relates to small/low light-	Waterside Chalets Guide

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		document.4 Given the anti-plastic message contained in the document, the BA will need to be 100% sure that none of the photographs selected for publication show upvc fenestration or doors. It wouldn't surprise me to learn that the front cover photograph illustrates my point where, I believe, both windows and doors are upvc.5. My overall impression of the document is that it reads muddled in concept and execution. Is this a history of a disparate man-made landscape, a description of a globally unique vernacular, a set of planning guidelines descriptive or prescriptive? It cannot be all things to all men. If the BA wishes to write a history then it should publish the already authored dissertation. If it wishes to publish planning guidelines, perhaps it should do so in a separate, two sided leaflet with illustrations and bullet pointed wish lists.6. Given that this is a document produced by the BA's planning department, I would have expected a note to the effect that no new waterside development is permitted on the Thurne.		weight buildings which are generally at the water's edge.4: Photos have been checked and the Authority believes there are no upvc windows or doors.5. The document has two parts. It is a summary of the history based on the dissertation as well as giving advice on the kind of things looked into when considering applications. 6. There is a policy in the Local Plan relating to the Upper Thurne area.	
Sanford, Mr D W	Part 1: Changing perceptions	I am not at all sure that such a simple sentence adequately or accurately describes what actually happened. Similarly the issue of Lease B property proposed clearance in 1999 ought to be addressed if the 1982 controversy is to be included. It was actually the River Thurne Tenants Association (established in 1948) that, not unsurprisingly perhaps, took exception to any clearance of the riverside properties both in the 1980s and again in the late 1990's.	More detail regarding the threat of removing the bungalows needed.	This is a summary of the situation. It is not intended to go into detail. No change.	Waterside Chalets Guide
Sanford, Mr D W	Part 1: Entrepreneurs	And so they may have been but where is the actual documentary evidence that any of the waterside properties were erected by boat-building tradesmen? Apart from anything else, in planning terms, who cares who built them? Does it matter?	Where is the actual documentary evidence that any of the waterside properties were erected by boat-building tradesmen?	Agree. Sentence removed.	Waterside Chalets Guide
Sanford, Mr D W	Part 1: Wartime refugees	They were only "permanent" if the "refugees" did not return to their Great Yarmouth permanent residences. "There is also evidence of a property in Wroxham, Closeburn, being used as a Red Cross unit for recuperating soldiers." Interesting perhaps, but its relevance in the context and purpose of this document? All of the riverside properties at Potter, bar two, are restricted by lease covenant to non-permanent residences, holiday use only. These covenants have been in existence for more than sixty years.	They were only "permanent" if the "refugees" did not return to their Great Yarmouth permanent residences.	Text relating to refugees changed. New title – Wartime use of the Bungalows. 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. Disagree. This is an interesting story that gives an idea of how the chalets have been used in different ways. No change.	Waterside Chalets Guide
Sanford, Mr D W	Part 1: Controversial assets	Unless the BA has documentary evidence in support of the italicised statement above [entire 'Controversial assets' section quoted], I see absolutely no reason for including it in this document.	Queries justification for text.	Evidenced in dissertation: The locals were not comfortable with seeing the chalets 'spring up among the alder carrs and meadows' (Malster 1933.109) , and observing natural banks being developed, and often saw the chalets as vulgar and over the top (Watts 2003). Dutt, for example, described Wroxham as being spoilt by 'the erection of unsightly modern houses for the accommodation of visitors' (Dutt 1903 in Williamson 1997.159).	Waterside Chalets Guide
Sanford, Mr D W	Part 1: Location,	'However it doesn't explain the property development in the open landscape around Potter Heigham and Martham, which was and remains a working landscape.' What, exactly, is a working	Queries some text and wording.	Agree and removed.	Waterside Chalets Guide

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	location, location	landscape? 'Agriculture predominates and the banks are clear of trees'. They may be now, but in the early part of last century almost every plot had a large tree yet there was an abundance of property development.			
Sanford, Mr D W	Part 1: Natural habitat	None of this paragraph relates to development at Potter. Properties here were built on the artificial flood bank (the rhond or rand) of the River Thurne.	None of this paragraph relates to development at Potter.	Noted. 'in some instances' will be added to the start of this section. The next section relates more to the Potter bungalows.	Waterside Chalets Guide
Sanford, Mr D W	Part 1: On the waterfront	<p>I would like to see explained the reason for the Thurne properties being located so close to the river's edge. The fact is that all of these surviving properties are built on the artificially created flood banks of the Thurne. By definition each is a rand property (b. Eng. regional (chiefly E. Anglian). Usu. in form rond. A marshy, reed-covered strip of land lying between the natural river bank and an artificial embankment; (also) land of this nature. 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.</p> <p>'Typical forms included regular, well-proportioned features. The roof was usually the dominant surface with generously overhanging low eaves and overhanging gables.' I can find no photographic evidence that such properties ever existed and certainly were never 'typical' Some of the early waterside boathouses may have had dominant roofs with generously overhanging eaves and gables, but this was due to their dependence on locally and cheaply available reed for thatching which required a steep angle and overhanging eaves to fulfil its purpose.</p> <p>'The early properties were generally built at ground level and were single storey.' Aren't all buildings built at 'ground level'.</p> <p>'As issues with flooding became apparent the properties were raised on piles to avoid seasonal flooding. 'There surely here ought to be a reason given for the increased risk of flooding of properties on the functioning flood plain. River levels at Potter Heigham have risen by almost a foot in the last twenty years.</p> <p>'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 offriver, within the plot of each property. This offered more protection to boats, with less potential for obstruction to navigation.' Not at Potter it wasn't. Few of the plots leased for decades had (have) an associated boat dock. Historically, many of the leased plots had neither boat dock of bungalow on them. Rather a boat was permanently moored in the river at each plot and this served as holiday, short stay accommodation.</p>	Many queries about current text.	<p>New section to replace current.</p> <p>The age and design of the chalets varies across the Broad with the more elaborate qualities of the chalets upstream at Wroxham and the smaller and simpler looking chalets downstream at Potter Heigham. Chalets 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 Broad included regular, well-proportioned features. The roof was usually the dominant feature with generously overhanging low eaves and overhanging gables. The early chalets 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 chalets were raised on piles to avoid seasonal flooding.</p>	Waterside Chalets Guide
Sanford, Mr D W	Part 1: A sense of proportion	I doubt that builders of the Potter properties thought, we're a bit exposed to the elements out here, we'd better build a simple form. Surely the reason for the simple form is both economic and geographic. Transporting building materials to a riverbank location without road access is what determines what you build and to what scale. 'A greater variety of design and styles can be seen at Potter Heigham and the properties in this area are more individual; one is even constructed from the top of a helter-skelter from the Britannia Pier at Great Yarmouth.' No it isn't. Omit the words "the top of" to improve the accuracy of the text. In fact all but the very top of the original helter skelter are on the riverbank plot. The helter-skelter property is locally listed - with upvc windows all round.	Many queries with text.	Changes made to address concern regarding elements.'the top of' has been removed.	Waterside Chalets Guide
Sanford, Mr D W	Part 1: Simple and fun	<p>'The properties often had a sense of fun, reflecting holiday use, and sympathy for the landscape and their location close to the waterside.' Where is the evidence for this value judgement? A building built with a sense of 'fun' seldom reflects either landscape or location or is this a matter of inadequate punctuation? The helter skelter is an example of just such a fun piece of waterside architecture. Fun it may be. Vernacular it isn't.</p> <p>'All of the properties were lightweight in construction and timber predominated as a building material for many elements. Some were constructed on piles driven into the ground to form a foundation.' Not one of the riverside properties at Potter was ever constructed on timber piles driven into the ground. Timber piles did not appear on the Thurne until the modular cedar bungalows of the late 1960s and were the authority's idea of more suitable foundations. Timber</p>	Many queries with text.	<p>The Authority considers that fun is an acceptable way to describe these bungalows.</p> <p>As Malster outlines 'some of these buildings were based on piles that were driven down through the peat to a firm foundation' and others were constructed on either timber or concrete rafts (1993.108) (Figure 7). E.g. Whiteslea Lodge.</p>	Waterside Chalets Guide

Organisation	Section Heading	Representation	BA Officer Summary of Representation	BA comment	Which Guide
		<p>piles were not used because locals knew that wood rotted – not if kept permanently wet or permanently dry, but where it alternated wet to dry on a daily cycle. By the 1990s, bungalows built on timber piles were showing signs of being seriously compromised. Most of such properties at Martham, Potter Heigham, Ludham, Repps with Bastwick and Womack have received structural modification to overcome the ignorance of people who ought to have known better in the 60s and 70s.</p> <p>The vast majority of waterside properties at Potter had foundations that consisted of nothing more than a dozen or so poured concrete pads little more than a couple of feet square and four bricks.</p> <p>'Others were constructed on timber rafts.' I'm not altogether sure what constitutes a 'timber raft' but I cannot think of one constructed on one. Where is the evidence for such a statement?</p> <p>'On most early examples the roofs were thatched in local reed.' 'most' – really? The evidence at Potter is where?</p> <p>'...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.' And the evidence for such a statement is where? At Potter, many of the early boundary treatments were, indeed, rustic, but this very much reflected Edwardian tastes where at home the waterside property's owners would have had rose trellising constructed from tree branches. As well as being a la mode, such fencing was cheap and locally available.</p>		<p>Will add concrete pads and concrete rafts to text.</p> <p>The roofs were, in most cases, thatched and others had metal sheet roofs such as corrugated iron (Malster 1993 and Williamson 1997) and felt roofs were also seen (Broads Authority 1989).</p>	
Sanford, Mr D W	Part 1: Local sources	But whose buildings were never designed to take account of the fact that they would ever be placed on blancmange and have to travel by water to arrive at their eventual location. As for being 'lightweight', please take it from me, as someone who has lifted in excess of thirty of the waterside properties at Potter, the Boulton & Paul bungalows are, by far, the heaviest.	Refers to weight of some bungalows and the ground conditions they were places on.	Noted.	Waterside Chalets Guide
Sanford, Mr D W	Part 1: Limited services	There are no wells on the Potter riverbanks. Rainwater was gathered, then pumped up to storage tanks in the loft from where it was piped to the kitchen. In the case of all bungalows except one, permanent residence on the banks of the Thurne has been specifically prohibited by lease burden for at least a documented half a century and probably a lot more.	Extra information provided.	Will add in about the rainwater harvesting.	Waterside Chalets Guide
Sanford, Mr D W	Part 2: Then and now	Should not 'total replacement' and 'work to a property' not be more carefully differentiated? To me the paragraph above reads that the BA would prefer total replacement to reflect the materials and detailing of the property the new build replaces. I am confident the BA planners do not intend such. On the other hand I can see that the BA would wish to preserve the integrity of both materials and detailing for repair work to existing buildings.	Should not 'total replacement' and 'work to a property' not be more carefully differentiated?	Do not fully understand the point being made. The text in this section seeks retention. There are also other policies on the issue of replacement dwellings. No change to be made.	Waterside Chalets Guide
Sanford, Mr D W	Part 2: Repair, alteration or replacement	'Costs of these various materials are not dissimilar.' But the on-going maintenance costs are. Again the non-differentiation of materials for cladding from fenestration is confusing. 'Colour coated aluminium' wall cladding? We seemed to have jumped from description to prescription in style. Do we have the hand of a second author here whose motivation and objectives are different?	Confusion between windows, doors and cladding.	'for windows and doors' will be added after 'to that of timber'.	Waterside Chalets Guide
Sanford, Mr D W	General comment	<p>I have thought a lot about the anti-upvc stance seemingly being adopted by the BA planning department. I did a little research too. Of 220 riverside properties, more than three quarters have upvc windows and/or doors. Some of these date back twenty or more years.</p> <p>My suggestion would be for the BA to take a much more practical and pragmatic approach to upvc as construction material by pointing people in the direction of the better end of the upvc window market. If it's the aesthetics that matter rather than the construction material itself, there are companies, including some local ones, who make windows that are all but indistinguishable from timber originals. It is interesting that people seldom pick up on guttering and its importance in architectural detailing. All of the riverside buildings gutters are upbv. In many cases the upvc guttering perfectly mimics the original ogee cast iron guttering which it replaces.</p>	Queries the anti-upvc stance seemingly being adopted by the BA planning department	Noted. Basis for further future discussion. But this guide reflects the current situation. Case by case basis.	Waterside Chalets Guide
South Norfolk Council		Recommend a mix of at least seven species in new hedgerows. The rationale being that if the hedgerow gets to be at least 30 years old, then the fact that it has at least seven woody species will mean that it is more likely to be classified as 'important' (and therefore protectable) under the	Recommend a mix of at least seven species in new hedgerows. Add the Latin plant names (possibly in an	Agree regarding 7 species. Agree re latin names.	Biodiversity Enhancements Guide

Organisation	Section Heading	Representation	BA Officer Summary of Representation	BA comment	Which Guide
		Hedgerows Regulations. It might be worth adding the Latin plant names (possibly in an appendix), as often there are several common names for the same plant, for example it would be hard to know whether the cited 'wild rose' is the native Rosa canina (dog rose) or native Rosa arvensis (field rose).	appendix).		

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

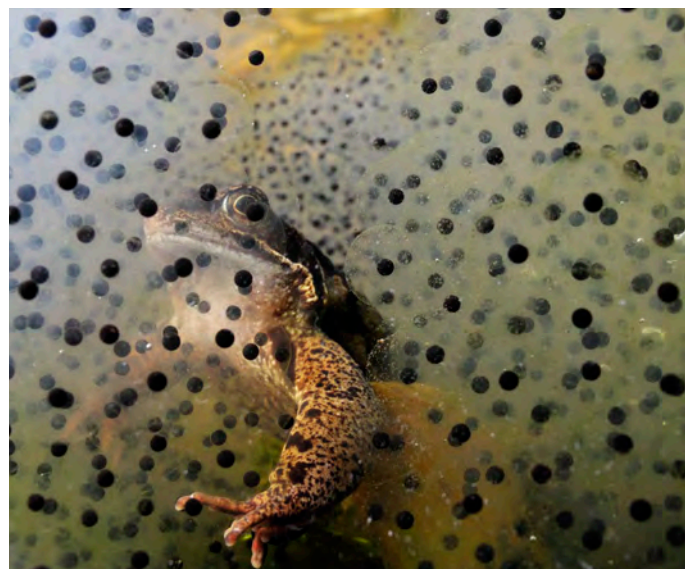
www.sarahraven.com/flowers/seeds/wild_flowers

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/

www.rspb.org.uk/makeahomeforwildlife/advice/gardening/pondsforwildlife/making.aspx

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 spinosa*), 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

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

www.rspb.org.uk/makeahomeforwildlife/advice/helpingbirds/nestboxes/smallbirds/making.aspx

www.birdventures.co.uk

www.hawkandowl.org/sculthorpe/nest-boxes-for-sale

www.rspb.org.uk/makeahomeforwildlife/advice/helpingbirds/nestboxes/owlskestrels

www.nhbs.com/browse/subject/426/bird-boxes

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

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

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



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

www.rspb.org.uk/makeahomeforwildlife/advice/gardening/deadwood.aspx

www.rspb.org.uk/makeahomeforwildlife/advice/gardening/insects/building_homes.aspx

www.nhbs.com/browse/subject/436/insect-boxes

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



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 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

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