Item: 12

Development and Infrastructure Committee: 5 September 2023.

Development Management Guidance – Considering and Including Biodiversity in Development.

Report by Corporate Director for Neighbourhood Services and Infrastructure.

1. Purpose of Report

To consider adoption of Development Management Guidance (DMG) – Considering and Including Biodiversity in Development.

2. Recommendations

The Committee is invited to note:

2.1.

That Development Management Guidance provides advice on technical issues and the interpretation of given policies where a need arises, thus ensuring a consistency of approach in the determination of planning applications.

2.2.

That National Planning Framework 4 has introduced a new policy requirement to contribute to the enhancement of biodiversity.

2.3.

That Development Management Guidance has been prepared to provide additional clarification when assessing planning applications and how the applicant has considered and included biodiversity within the development proposal.

It is recommended:

2.4.

That the Development Management Guidance – Considering and Including Biodiversity in Development, attached as Appendix 1 to this report, be approved.

3. Background

3.1.

DMG is produced to provide advice on the interpretation of policies matters. It is the intention of DMG to ensure consistency of approach and to highlight the original intention / sprit of a policy where there is ambiguity. As such DMG is a material consideration in the determination of planning applications. Whilst DMG is not subject to public consultation, it is approved by Council prior to publication.

3.2.

In February 2023, the Scottish Government published National Planning Framework 4 (NPF4) with national planning policies. Policy 4 – Biodiversity intention is to protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks.

3.3.

In March 2023, NatureScot published national guidance, Developing with Nature that provides national guidance on Policies 3 and 4 of NFP4. It was considered that local guidance was required that was more relevant to Orkney and the development types commonly applied for locally.

3.4.

The drafting of this DMG has been completed with assistance from Development Management. The Environmental Planner has worked with and assisted local planning agents on this new provision and held a series of workshops with local agents when drafting this DMG.

4. DMG – Considering and Including Biodiversity in Development

4.1.

The DMG, attached as Appendix 1 to this report, provides local guidance on how to consider and include biodiversity in developments, with local examples and measures suitable for Orkney in terms of weather conditions and the existing biodiversity in Orkney. The DMG provides a Biodiversity Form to be used with relevant development that will assist planning agents and applicants by providing the information needed by Development Management to assess this matter through the planning application process.

4.2.

The DMG provides links to information sources that will be usual in this matter.

5. Equalities Impact

An Equality Impact Assessment (EqIA) has been undertaken for the Orkney Local Development Plan 2017 and NPF4 and therefore a standalone EqIA for this DMG is not required.

6. Island Communities Impact

As the policy being developed in terms of this report has been assessed as being unlikely to have an effect on an island community which is significantly different from its effect on other communities (including other islands communities) in Orkney, a full Island Communities Impact Assessment has not been undertaken.

7. Environmental Implications

A Strategic Environmental Assessment (SEA) has been undertaken in respect of the OLDP2017 and NPF4. It is not considered that SEA is required for this DMG as it meets the requirements for exemption under Schedule 2 of the Environmental Assessment (Scotland) Act 2005.

8. Links to Council Plan

The proposal in this report support and contribute to improved outcomes for communities as outlined in the Council Plan strategic priority of Strengthening our communities in establishing the highest standards of public support and protection.

9. Links to Local Outcomes Improvement Plan

This Development Management Guidance support and contributes to the improved outcomes from communities as outlined in the Local Outcomes Improvement Plan prioritiy of Sustainable Development.

10. Financial Implications

All resources associated with the preparation of this DMG have been met through staff time and is contained within existing Planning Service revenue budgets.

11. Legal Aspects

Whilst DMG is not subject to public consultation, it is approved by the Council prior to publication. As such DMG is a material consideration in the determination of plannings which is considered to be the standing advice of the Planning Authority.

12. Contact Officers

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13. Appendix

Appendix 1: DMG – Considering and Including Biodiversity in Development.

Development Management Guidance: Considering and Including Biodiversity in Development

August 2023

Photographs © Nina Caudrey unless otherwise credited. Above: biodiversity measure example of a boundary wall incorporating flowering plants to benefit biodiversity.

Section 1: Introduction

National Planning Framework 4 (NPF4) was published in February 2023 and there is now a new policy requirement to include and positively consider biodiversity with the majority of planning applications. In March 2023, NatureScot published Developing with Nature that provides guidance to this national policy for local scale development.

To assist at an Orkney level and to consider the local biodiversity as well as climate and weather conditions, this Development Management Guidance (DMG) has been drafted. It includes a biodiversity form to be completed with all relevant planning applications and examples to assist planning agents and applicants dealing with local scale development.

NPF4 can be found at https://www.gov.scot/publications/national-planning-framework-4/

Developing with Nature can be found at https://www.nature.scot/doc/developing-nature-guidance

Policy 3 of NPF4 requires all planning applications, other than those for individual householder development such as extensions, to submit information about how the biodiversity interest of the proposed development site will be conserved, restored and enhanced.

Development Management will advise on the planning applications that will not require biodiversity information with a proposed development. It is unlikely to be required if the proposed development does not involve a change in floor area, does not change the way an existing building and any associated outside space is utilised, and does not change the number of people who use an existing building, and does not involve groundworks.

Scottish Government is due to publish guidance for national and major scale development, including those requiring an Environmental Impact Assessment.

Section 2: How to consider biodiversity and development

For applications that require biodiversity information, using the biodiversity form will help you demonstrate how the biodiversity interest of the proposed development site will be conserved, restored and enhanced. The form is found in **Section 8: Blank biodiversity form for planning applications**, with an example of the typical level of information expected provided in **Section 4: Worked example of biodiversity form for a fictitious site**. Once filled out, the form should be submitted with your planning application. Information about a range of biodiversity measures you could consider is found in **Section 5: Biodiversity measures suitable for Orkney**.

Photo 1: example biodiversity measure that incorporates spring flowering plants to benefit early flying pollinators and enhance visual amenity

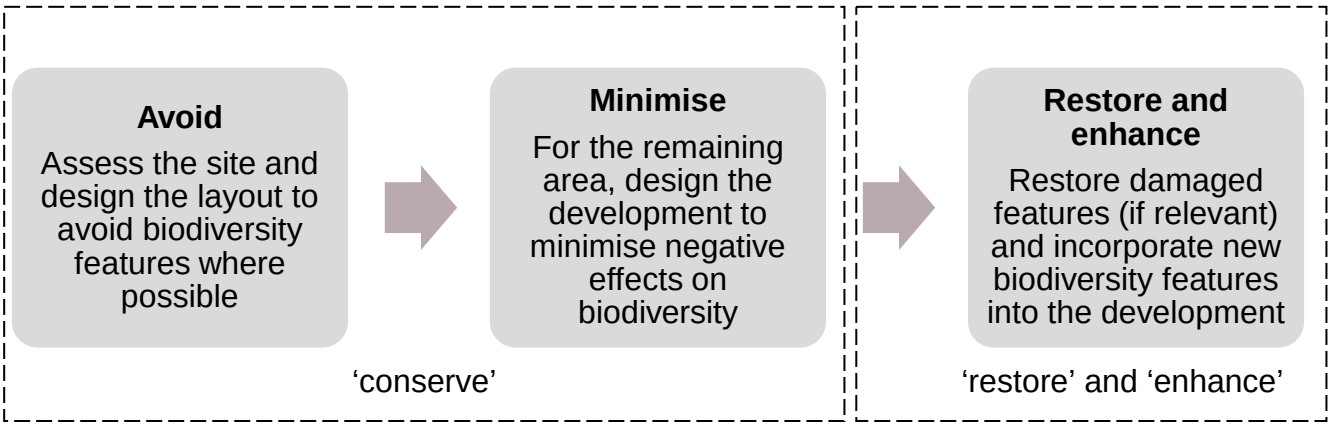
The earlier you consider the requirements of the biodiversity form, the easier it should be to incorporate biodiversity into the design and layout of the proposed development. The information gathered should be used to inform the siting, layout and design of the proposed development from the outset, to minimise adverse effects on biodiversity and identify where opportunities for conserving, restoring and enhancing can be most easily incorporated. Whereas leaving it to the last minute is likely to make it challenging to identify and incorporate biodiversity, simple and cost-effective opportunities are likely to be missed and more expensive/time consuming options may be necessary to meet the policy requirements. This means that biodiversity information will be required at the permission in principle stage as well as at full planning application stage.

If you are proposing a phased development or one that will cover a large area, such as multi-unit housing development, you may find it helpful to break the proposed development site into sections corresponding to the phasing/site layout and complete a form for each section. If the proposed development is large, complex or requires Environmental Impact Assessment, you might also choose to have an environmental consultant do this work.

It is expected that biodiversity measures will be delivered on-site, within the red line boundary. However, there may be rare occasions when this is not possible. In such situations, the policy requirements still apply but off-site biodiversity delivery will be required. As off-site delivery raises land ownership and delivery mechanism issues, it is better to seek to deliver biodiversity measures on-site in the first instance.

There is no one size fits all approach – generic measures should not be added to proposed developments as a tick box exercise to meet policy requirements. The existing biodiversity within and surrounding the proposed development site, as well as the location, exposure, scale, type and nature of the proposed development itself will need to be taken into account when considering what measures might be appropriate for each development.

When considering a new site, the mitigation hierarchy should be applied. The layout of the site should be designed by first avoiding and minimising effects on existing biodiversity features, before features are added to enhance biodiversity:



The scale, type and number of measures that are appropriate for each site will vary depending on the level of effects caused by the proposed development, as well as the size and opportunities that the proposed development site offers. The number and type of measures selected should not be limited in number or chosen by size. Several different smaller measures that complement each other might be better for biodiversity (and people) than one or two large scale measures.

Photo 2: biodiversity measure example of a small courtyard with some flagstones lifted to allow planting for biodiversity and improve visual amenity

Opportunities to connect with existing habitat next to or close to the proposed development site should be taken where practical. For example, building a drystone boundary wall that connects to existing drystone wall field boundaries, providing a window box or container garden as a stepping stone between other vegetated areas, etc.

It is highly likely that biodiversity measures will provide other benefits such as shelter for outside spaces, sustainable drainage, visual enhancement and screening. **Section 7:**

Biodiversity measures and development functionality quick reference table provides a useful quick reference guide on how functional elements of development can benefit both people and nature.

When incorporating new plants, a range of plants that flower, fruit and/or provide shelter at different times of the year should in selected to sustain wildlife year-round. The use of native species is preferred as a starting point. However non-native species that are quicker to establish, are known to be able to cope with Orkney conditions and that provide biodiversity benefits might be suitable. Care must be taken that invasive non-native species are not included. Within the Developing with Nature guidance | NatureScot guidance there is a list of invasive non-native plant species that should be referred to when considering and including biodiversity.

Section 3: Completing the biodiversity form

Before starting it is important to understand the context of your development and relevant planning policies:

- undertake a site visit and draw a rough map, identifying where existing biodiversity features are, such as walls, trees and shrubs, wetter/drier areas, ditches and water courses, different types of vegetation (e.g. heather, grass, flowering plants, etc), invasive species;
- read **Section 5: Biodiversity measures suitable for Orkney** and consider if there are any measures to conserve, restore or enhance biodiversity that might work on your site;

Photo 3: biodiversity measure example of a functional boundary wall retained to contribute to conserving the biodiversity growing on and sheltering within it, with an added planted border protected by a low wall for maintenance and visual amenity

- check if there are any areas identified or protected for their biodiversity importance within or in close proximity to the proposed development site that might either be affected by the proposed development, could help indicate what habitats and species are likely to be in the vicinity, or could offer an opportunity to enhance connectivity;

– use the information gathered to inform the siting, layout and design of your development so that it retains and/or restores existing biodiversity features where practical and incorporates measures to enhance biodiversity;

– use the information gathered to complete the form found in **Section 8: Blank biodiversity form for planning applications**. **Section 4: Worked example of biodiversity form for a fictitious site** demonstrates the typical level of information likely to be required.

Links to documents and sources of information referred to below are provided in the table overleaf:

Relevant information	**Source**
Planning policy	
National Planning Framework 4, policy 3.c on biodiversity	https://www.gov.scot/publications/national-planning-framework-4/
Orkney Islands Council Local Development Plan 2017, policy 9.C	https://www.orkney.gov.uk/Service-Directory/O/Orkney-Local-Development-Plan.htm via "related downloads"
Areas important for biodiversity	
Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs), Ramsar sites and Local Nature Reserves (LNRs)	https://sitelink.nature.scot/map Zoom in to show Orkney, then click on the "+" to the right of "Layers" and select the types of protected areas listed. Zoom to the location of the proposed development. Click on any protected areas that appear within the site or nearby - a small box should appear, click on "site details". A new page should open that provides information about the protected area. (Note that some protected areas have more than one designation – indicated for example by a "1 of 2" in the small box.)
Local Nature Conservation Sites (LNCS)	https://oic.maps.arcgis.com/apps/MapJournal/index.html?appid=273d8d6359ae451cbe16f3a867297276 Scroll through the pages to view the map of LNCS in Orkney. Zoom in to the location of the proposed development. Use the number shown on the relevant green area to find the site in the list on the left hand side of the

	page. Click on the relevant site in the list. A new page should open with the site statement, providing information about the LNCS.
RSPB and SWT reserves	https://www.rspb.org.uk/orkney and https://scottishwildlifetrust.org.uk/things-to-do/visit-our-reserves-and-visitor-centres/

Section 4: Worked example of biodiversity form for a fictitious site

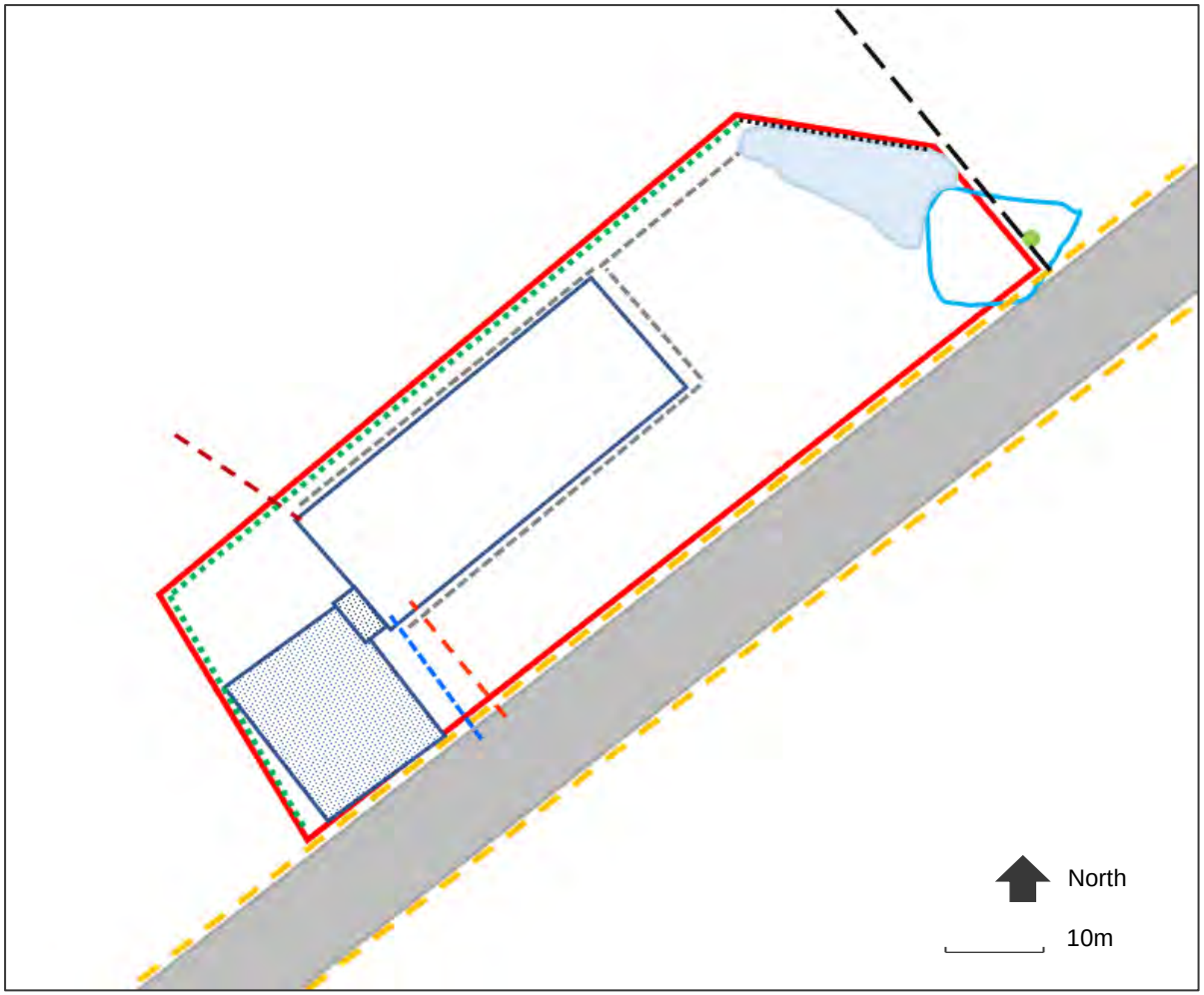
The following example is provided to show the typical level of information required to demonstrate how biodiversity has been taken into account during the siting, design and layout of the proposed development and how biodiversity measures have been incorporated. More information may be required for sensitive, large or complex sites.

ORKNEY ISLANDS COUNCIL **BIODIVERSITY FORM FOR PLANNING APPLICATIONS** **TO BE COMPLETED AND SUBMITTED WITH PLANNING APPLICATIONS**	
Planning reference or address of development:	Example for new house somewhere in Orkney
Date of form completion:	12 April 2023
Person/company completing form:	A N Other
Baseline - what's there	
– Please provide photographs to give an overview of the habitats and features present on site, and, referring to the photographs, describe below the dominant habitat type and most recent land use. If the land use has recently changed please also describe the previous known land use. List any species of note using the site. (Example level of information: grass, grazed field, brown hare and curlew; coastal heath, rough grazing for sheep, Arctic skua; heather moorland, unmanaged, short eared owl; livestock fodder crops, agricultural field, geese; unmanaged meadow, previously livestock grazing field until farm changed hands last year, unknown; urban brownfield site previously with flats on it (demolished 5 years ago) within existing settlement, none as it's a concrete slab; etc). – Please provide a site layout plan that shows the location of existing broad habitat types and biodiversity features such as wetter/drier areas, ditches, watercourses, trees and shrubs, stone walls, ditches, invasive plant species, etc, both within and adjoining the proposed development site. The biodiversity features should be marked on a site layout plan that shows all elements of the proposed development, including infrastructure such as roads, paths, services, drainage, electricity lines, etc. (This is to enable assessment of how the existing biodiversity features might be affected by the construction and use of the proposed development. It can also be helpful to include photographs of the biodiversity features and their context within the site.)	
Grass, grazed livestock field.	

Curlew, oystercatcher, lapwing, starling, skylark, wren, house sparrow, blackbird, goldfinch, hen harrier, various seagulls, migratory thrush and wading bird species forage in the fields and along the field boundaries.

Brown hare and rabbit are also present.

[*Note: the below are illustrative photos as this worked example is a fictitious site so providing actual photographs is not possible. For a real life application, more photographs would be required, e.g. taken from each corner looking over the site and showing the features identified on the site layout plan*.]



Existing:

- Site boundary
- Wetter area
- Tarred private road
- Willow tree
- Stock fencing
- Dry stone wall

(All other areas grazing grass)

Proposed:

- House
- Parking and path
- Drainage (to SUDS)
- Rainwater bog garden
- Electricity supply
- Mains water connection
- Foul water connection
- Low drystone walling
- Tea leaved willow hedging with stock fencing on field side

Minimising effects on existing biodiversity (conserving and restoring)

- Referring to the plan provided above, please describe below how you have minimised adverse effects on existing biodiversity through siting, design and layout that retains existing habitats and features of biodiversity value, and where this has not been possible, please explain why.
- Where relevant, please also describe how degraded existing biodiversity features are going to restored. (Restoration will not be applicable to all sites.)

Built development and services have been located away from the wetter area so that it remains undisturbed. The existing willow tree and drystone walling at the eastern boundary are unaffected.

Restoration is not applicable to the existing biodiversity features on this site.

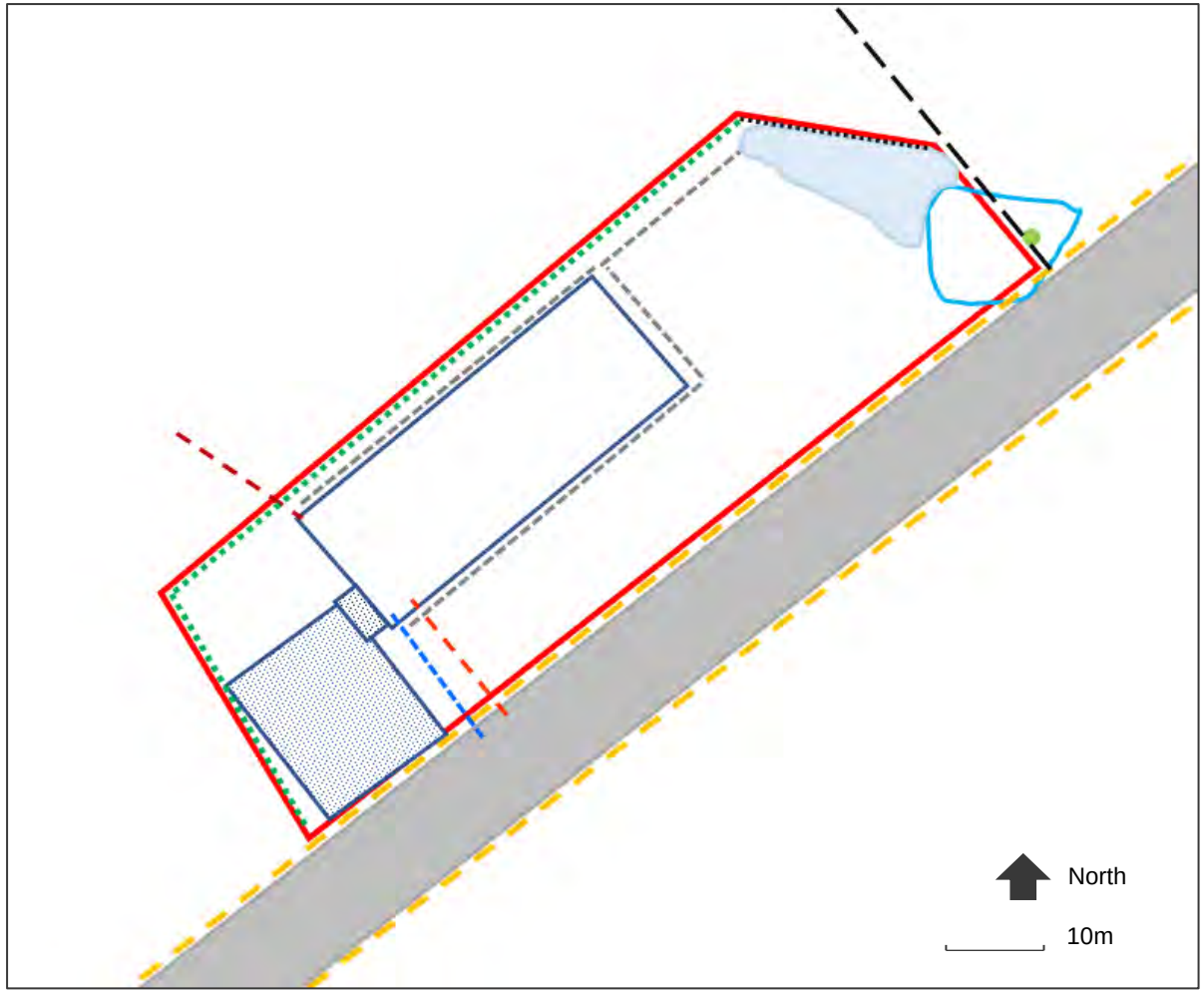
Enhancement of biodiversity

- Please list below what enhancement measures have you intend to include and explain what they are seeking to achieve. Please include common and latin names of plant species and where the plants or seeds will be sourced from. (This is to check that species appropriate to the site and Orkney conditions are used.)
- Please provide a site layout plan that shows the location of enhancement measures. The enhancement measures should be marked on a site layout plan that shows all elements of the proposed development, including infrastructure such as roads, paths, services, drainage, electricity lines, etc. (This it to enable assessment of how the construction and use of the proposed development might interact with the proposed enhancement measures.)

Rainwater bog garden - planted with native (yellow flag iris *Iris pseudacorus*, marsh marigold *Caltha palustris*, bog cotton *Eriophorum angustifolium*, water forget me knot *Myosotis scorpioides*) and domestic/garden wetland plant species (to be decided), to increase the variety of plants (particularly flowering plants for insects) and so provide habitat for wildlife. Also located in proximity to the existing wet area but without causing disturbance to it, to provide connectivity for wildlife.

Low drystone walling – to provide shelter for the rainwater bog garden plants, and also a place for wildlife to hide and hunt within. Also connects with the existing high drystone walling, providing a route for wildlife using that to access the rainwater bog garden area.

Tea leaved willow (*Salix phylicifolia*) hedging – mainly planted to provide shelter and privacy for users of the house, but will also benefit insects and other wildlife by creating food and shelter.



Existing:

- Site boundary
- Wetter area
- Tarred private road
- Willow tree
- Stock fencing
- Dry stone wall

(All other areas grazing grass.)

Proposed:

- House
- Parking and path
- Drainage (to SUDS)
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Monitoring and maintenance of biodiversity retained and enhanced

– Please describe below how will the retained and enhanced biodiversity features and measures be monitored and maintained in the longer term to ensure they continue to benefit biodiversity, and who will be responsible for monitoring and maintenance. (Where detailed information on monitoring and maintenance will be provided in a landscaping or other site management plan to be submitted with the planning application, please provide the document title, author and date, and summarise the information below.)

No formal monitoring and maintenance is proposed as the development is for a single dwelling house. It is however expected that the rainwater bog garden will be part of a building warrant submission and will be marked on title deeds. It will be in the owner/occupiers' interests to make sure the bog garden continues to function and deal with rainwater for as long as the house is in use. As part of the intention of the willow hedging is to provide shelter and privacy, it is expected that the hedging will be monitored and maintained by the owner/occupiers of the house to ensure that it continues to perform that function over time.

Advice

– If you have sought or received advice about what is present on or makes use of the proposed development site and / or how to safeguard, restore and enhance biodiversity, please list below who has given you advice. (For example, an ecological consultant, others with relevant local knowledge, etc.)

– Where advice has been received, please summarise it below and provide a copy if advice was given in writing.

The farmer who owns the land was asked about what species use the site and surrounding area. They have farmed the land for over 20 years and live nearby, so have a good knowledge of the site and its surroundings. Their knowledge indicated that while a range of birds forage in the fields, the site has low biodiversity value, being mainly improved grassland, so any new habitat or features would be of benefit by increasing the variety of habitat and features available to wildlife.

The OIC Environmental Planner was telephoned and suggested incorporating drystone walling and hedge planting along the boundaries where possible.

– Please describe how have you incorporated any advice you received into the proposed development, and if not, please explain why not.

Consideration was given to extending the drystone walling around more of the boundary, however this is not cost effective – the incorporation of willow planting as an

alternative also introduces greater biodiversity gain through provision of a different habitat and food source.

Consideration was also given to extending the hedging all the way around the boundary, however this was discounted as it would create shading on the garden space.

Section 5: Biodiversity measures suitable for Orkney

Orkney experiences powerful wind and rain conditions, with salt spray burning vegetation. Plants (and people) need to be suited to the maritime climate. The list below contains ideas for biodiversity measures that are likely to cope with Orkney conditions and that have low maintenance requirements. This should increase the effectiveness of the measures over the longer term for nature, while also making the measures more likely to be adopted and retained by future residents/users of the development. The list should not be seen as exhaustive – other measures that respond to the proposed development, its location, scale and exposure are welcome.

Some biodiversity measures commonly used in mainland Scotland are unlikely to be effective in Orkney due to the climatic conditions and other reasons. Information about such measures is provided in **Section 6: Biodiversity measures of limited effectiveness in Orkney**.

Please note that ideas for marine biodiversity measures will be covered in separate guidance associated with the Regional Marine Plan. In the meantime, applicants with proposals affecting the marine environment should contact Marine Scotland https://marine.gov.scot/content/contact-marine-scotland and/or NatureScot https://www.nature.scot/professional-advice/land-and-sea-management/managing-coasts-and-seas/marine-enhancement.

Measure	Benefits to nature	Benefits to people	More information
Remove existing non-native invasive species (a restoration measure) Complete removal of the below and above ground parts of non-native invasive species (such as salmonberry, pampas grass and Japanese knotweed - see Annex III) in compliance with relevant legal requirements on their disposal.	Allows native plants to re-establish, increasing diversity that supports a wider range of wildlife. Removes the seed source of the non-native plant, preventing the spread of the non-native plant either by wind dispersal of the seeds or by birds or animals eating and spreading the seeds.	Reduces problems for residents caused by invasive species that might otherwise take over garden or amenity ground. In the case of giant hogweed sap causes skin blistering and ongoing sun sensitivity. Japanese knotweed is pervasive and must be carefully removed along with contaminated soil, as fragments of roots can regrow and pierce materials such as tarmac, causing	https://www.nature.scot/professional-advice/protected-areas-and-species/protected-species/invasive-non-native-species/invasive-non-native-plants https://www.orkneycommunities.co.uk/woodland/index.asp?pageid=595122 https://s3-eu-west-1.amazonaws.com/s3.spanglefish.com/s/34161/documents/leaflets/salmonberry.pdf https://www.rhs.org.uk/prevention-

		insurance and/or future sale issues.	protection/invasive-non-native-plants
Biodiversity lawns Instead of a monoculture of grass, include low growing native flowering plants appropriate to Orkney conditions (such as cowslip) in the grass mix that can be used as a traditional lawn/amenity ground and withstand mowing on a higher cut. Spring bulbs can also be incorporated.	Provides food and shelter for a range of insects, which in turn feed other insects, birds and animals.	Creates a visually interesting place to live. Is still suitable for recreational use by people. Where it is undesirable to have complete lawns as biodiversity lawns, smaller biodiverse patches, borders or corners could be created instead.	https://www.nhm.ac.uk/discover/how-to-grow-a-better-lawn-for-wildlife.html https://www.rspb.org.uk/birds-and-wildlife/advice/gardening-for-wildlife/lawns-for-wildlife/
Window box or container gardens (likely to only be appropriate for development with very limited outside space) A few large plant pots, containers or troughs filled with flowering plants.	Pocket meadows provide food and shelter for insects. They can act as a stepping stone, helping to sustain insects travelling between larger areas of habitat.	Creates a visually more interesting place for people, improving visual amenity.	https://www.nhm.ac.uk/discover/biodiversity/act/choose-a-mission/wildflower-pots-for-pollinators
Downpipe rainwater container gardens Container(s) connected to the downpipe and used to grow plants. The water flows through the container(s) and out into the usual rainwater drainage system. Suitable for buildings with limited space around them.	Introduces plants and habitat that provide food and shelter for insects. Can provide a stepping stone habitat between larger areas	Creates an interesting feature. By varying the level of the soil and water within the container, downpipe rainwater gardens can be used to grow herbs and vegetables.	https://www.wwt.org.uk/discover-wetlands/gardening-for-wetlands/how-to-build-a-mini-drainpipe-wetland/ https://www.10kraingardens.scot/build-your-own/

Rainwater gardens Structures that collect rainwater run off, either sunk into the ground similar to a pond or a wetland, or built above ground structures. Planted with a range of wetland and/or aquatic plants.	Makes use of rainwater/run off that would otherwise be piped underground, creating different habitat that benefits a variety of wildlife.	Creates an interesting landscape feature. Provides flood water storage that can help manage flooding.	https://www.susdrain.org/case-studies/pdfs/moulsecoombprimary_suds_lightcasestudy_221012.pdf https://www.wwt.org.uk/discover-wetlands/gardening-for-wetlands/how-to-make-a-rain-garden/ https://www.rhs.org.uk/garden-features/rain-gardens
Wildlife permeable boundaries (likely to need to be implemented in combination with other measures to achieve biodiversity benefits) Include small gaps along the bottom of fencing and walls to allow wildlife such as hedgehogs to pass through to/from surrounding areas.	By allowing wildlife to pass through boundaries, the loss of foraging habitat for wildlife is minimised. Permeable boundaries allow wildlife to seek shelter and to escape from predators more easily. It also reduces the risk of wildlife becoming trapped and dying in enclosed spaces they cannot exit.	Privacy and amenity for residents retained while allowing them to connect with nature when wildlife visits their space.	https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/
Drystone walls and features (can be a measure to conserve biodiversity by retaining existing walls; restore biodiversity through repairing and reinstating damaged walls; or enhance biodiversity by creating a new wall) Use traditional drystone walls made	The gaps and spaces in traditional drystone walls provide places for insects, birds and other wildlife to live, nest and shelter. Lower plants such as lichens and mosses colonise the outer surfaces of the stone. Dry stone walls that join with existing walls increase available habitat and	Provide shelter and are an attractive feature. Make the development feel/appear established more quickly by relating the new development to historic landscape features. When robustly built, stone walls have a long life and should not crack or discolour unlike blockwork or rendered modern	https://farmwildlife.info/how-to-do-it-5/field-boundaries/dry-stone-walls/

of local stone to create full or partial boundaries, or to create smaller walls or features (such as a low wall between front gardens, to define zones in garden or amenity ground, to contain raised flower/shrub beds, create a wrap-around shelter for a seating area, etc).	connectivity between different areas.	walls that require regular repointing and/or repainting over time.	
Scrub, hedging, trees and woodland Where the location is not too exposed, incorporate trees and shrubs into garden and amenity ground and use to define boundaries instead of or supplementary to fencing. Native species are preferred, although non-native flowering scrub, shrubs and tree species can be used where these will establish more quickly, are known to survive Orkney conditions and are not on the invasive plants list.	Provides shelter, safety and a place to live for a range of insects, birds and animals. Can provide connections with the surrounding area by providing a safe corridor to move through.	Creates a visually interesting place to live. Can provide shelter, break up expanses of otherwise uninteresting ground, and help define boundaries. Over time, hedges can disguise fencing initially used to define boundaries and help create a greater feeling of privacy and security.	https://www.rspb.org.uk/birds-and-wildlife/advice/gardening-for-wildlife/plants-for-wildlife/shrubs-for-gardens/ https://www.orkneycommunities.co.uk/woodland/index.asp?pageid=595118 (Although written for those wishing to create a woodland, the Orkney woodland design guide contains information about a range of tree and shrub species known to survive Orkney conditions. The design guide can be found via https://s3-eu-west-1.amazonaws.com/s3.spanglefish.com/s/34161/documents/leaflets/2023-owp-woodland-guide-updated.pdf.)
Flowering plants Incorporate flowering plants and shrubs into garden	Provides food and shelter for a range of insects, which in turn feed other	Creates a visually interesting place to live. Can provide shelter, break up expanses of	https://www.nhm.ac.uk/discover/biodiversity/act/choose-a-

and amenity ground. Native species are preferred, although non-native flowering plants can be used where these will establish more quickly, are known to survive Orkney conditions and are not on the invasive plants list.	insects, birds and animals.	otherwise uninteresting ground, and help define different zones within a development.	mission/wildflower-pots-for-pollinators https://www.nhm.ac.uk/discover/how-to-grow-a-better-lawn-for-wildlife.html https://www.rspb.org.uk/birds-and-wildlife/advice/gardening-for-wildlife/plants-for-wildlife/shrubs-for-gardens/
Varying ground levels (likely to need to be implemented in combination with other measures to achieve biodiversity benefits) Incorporate different ground levels, such as slopes, mounds and depressions.	Different ground levels will create drier and wetter ground conditions that suit a wider variety of plants and insects.	Creates a more interesting place for people. Can help amenity ground feel larger that it is, by creating a landscape that reveals itself as it is moved through (Arcadia Park in Kirkwall is an example of this, where a relatively small space feels much larger due to the use of landscaping.) Undulating ground offers opportunities for active play for children. Can be used in combination with other measures to tackle issues such as flooding (Papdale park in Kirkwall is an example of this.)	Arcadia park https://www.sustrans.org.uk/our-blog/news/2023/january/community-designed-park-opens-on-orkney Papdale park https://storymaps.arcgis.com/stories/61340259069843d7b0f55b7fa6c1f8ba
Areas left to grow (unsuitable for domestic gardens as residents are likely to mow such areas, so the biodiversity benefits would be lost)	Allows existing plant life to develop and grow to full height, benefiting insects and other wildlife by providing different conditions, food and shelter. Where the wild area is sufficiently large or	Creates a visually more interesting place to live that changes through the seasons as different bulbs and flowers appear. Reduces maintenance frequency. Is still suitable for	https://www.nature.scot/wilding-our-parks-case-studies https://www.nhm.ac.uk/discover/how-to-grow-a-better-lawn-for-wildlife.html https://www.rspb.org.uk/birds-and-

Instead of amenity ground being a monoculture of closely mown grass, leave corners, edges or larger areas to nature, with no or minimal seasonal mowing. Where possible, retain the original vegetation in these areas. If this is not possible or the ground is improved grassland, include bulbs and native wildflowers appropriate to Orkney conditions into the new ground cover to increase plant variety. Mow paths through larger areas to allow people to move through. Leave long vegetation pockets that are cut once a year in late autumn.	distant from human activity (particularly off-lead dog walking), it can also provide opportunities for ground nesting birds.	recreational use by people. Where it is undesirable to have the entire amenity ground as biodiverse, smaller patches or corners could be created.	wildlife/advice/gardening-for-wildlife/lawns-for-wildlife/ https://www.nesbiodiversity.org.uk/news/amenity-grassland-and-road-verges-doing-more-with-less/
Living roofs Roofs that are vegetated instead of using traditional roof tiles or slates.	For development with a sloping roof, provides a greater area of habitat than is lost under the footprint of the building. Provides food and shelter for insects and birds.	Can reduce the visual appearance of buildings in the landscape. Can help keep buildings cool in summer and warm in winter. Can be used on any size of building, from bus shelters up.	http://www.sgif.org.uk/index.php/green-infrastructure/green-roofs
Plant pocket walls Incorporate gaps or air bricks that can be stuffed with small amounts of soil and planted with drought tolerant plants that require little soil.	Increases the variety of plants, providing different food and shelter to insects.	Makes a more attractive feature of the wall. Softens a hard landscape feature.	https://www.rhs.org.uk/plants/types/alpines/dry-stone-walls

Solitary bee hotels (likely to need to be implemented in combination with other measures to achieve biodiversity benefits) Home made or commercially bought solitary bee hotels - which are different to bug hotels - can be attached to buildings, fences or incorporated into walls.	Provide shelter, a place to rear young and over winter. Other insects will also use solitary bee hotels. Birds may visit the bee hotel to eat insects on the surface.	Unobtrusive bee hotels are unlikely to be noticed by most people, however they can spark in interest and allow people to connect with nature when they see insects using the bee hotel.	https://www.rspb.org.uk/get-involved/activities/nature-on-your-doorstep/garden-activities/build-a-bee-hotel/ https://schoolgardening.rhs.org.uk/resources/project/make-a-bug-hotel
Ephemeral ponds and wader scrapes Best suited to larger site that include fields and larger areas of amenity ground, ephemeral ponds and wader scrapes are shallow depressions that remain damp for much of the year and collect water during periods of wetter weather.	Create conditions suitable for a range of insects that wading (and other) birds like to feed on.	Creates variety in the landscape. Allows people to connect with nature by seeing wildlife. Can help with surface water management, reducing the effects of flooding.	https://www.rspb.org.uk/globalassets/downloads/documents/farming-advice/scrapecreationforwildlife_tcm9-255102.pdf https://farmwildlife.info/how-to-do-it-5/wet-features/temporary-ponds-and-scrapes/
Wildlife friendly kerbs (likely to need to be implemented in combination with other measures to achieve biodiversity benefits) Kerb stones moulded with a recess that are fitted next to drain covers/grates.	Reduces small mammal and amphibian mortality by allowing them to follow the kerb around the edge of the drain cover/gulley grate, instead of being forced over the drain cover where they are at risk of falling in.	Unlikely to be noticed by people, however wildlife kerbs should lower the number of blockages by reducing the number of corpses in drains, helping better manage run off and flood water.	https://www.conservationjobs.co.uk/articles/wildlife-kerbs/

Wastewater treatment reed beds Where ground conditions allow, use reed beds or other planted soakaway systems to provide secondary treatment to wastewater from private treatment plants.	Introduces a different habitat type that will provide food and shelter for a variety of wildlife. Uses natural processes to improve the quality of the water discharged.	Makes use of a resource that would otherwise be sent underground to soak away.	https://www.wwt.org.uk/news-and-stories/blog/slimbridge-wetland-system-is-treat-for-water-and-wildlife https://www.gov.scot/publications/building-standards-2017-domestic/3-environment/39-private-wastewater-treatment-systems--infiltration-systems/
Planted SUDS ponds SUDS ponds planted with a range of native wetland species around the edges.	Contributes to the variety of habitats that will appeal to a wider range of insects and other wildlife.	Makes an interesting feature that allows people to connect with nature. Softens an otherwise obvious hard manmade structure.	https://www.rspb.org.uk/globalassets/downloads/documents/positions/planning/sustainable-drainage-systems.pdf https://www.susdrain.org/delivering-suds/using-suds/suds-performance-and-monitoring/biodiversity-benefits https://www.susdrain.org/case-studies/pdfs/004_3105_20_bertha_park_perth_2020_awards.pdf
Swales (likely to need to be implemented in combination with other measures to achieve biodiversity benefits) Unlike traditional straight edged and steep sided ditches or underground pipes, swales are vegetated above ground depressions	Creates drier and wetter ground conditions that suit a wider variety of plants and insects.	Creates an interesting landscape feature. Helps naturally manage flood water by collecting and directing it, as well as allowing water to soak into the ground along the swale, reducing the volume of flood water. Can be connected to larger flood attenuation areas. Being above	https://www.rspb.org.uk/get-involved/activities/nature-on-your-doorstep/garden-activities/dig-a-damp-ditch-for-diversity/ https://www.susdrain.org/delivering-suds/using-suds/suds-components/swales-

that collect and channel rainwater, that allow water to soak into the ground.		ground, swales are easier to maintain and less prone to blockages. Does not require regular intrusive maintenance by excavation that harms biodiversity (unlike traditional ditches).	and-conveyance-channels/swales.html
Ponds and bog gardens Usually dug into the ground, areas that collect rainwater either from the sky or through connection to downpipes. May hold water or be designed to allow slow drainage, creating wet habitat. Planted with wet tolerant native species. Can be any size, from sink sized upwards.	Increases the diversity of habitats available to wildlife. Ponds can also provide places for wildlife to drink and bathe.	Creates an interesting feature that helps people connect with nature. Can help with flood water storage.	https://www.nature.scot/wilding-our-parks-case-studies https://www.rhs.org.uk/ponds/wildlife-ponds https://www.rhs.org.uk/garden-design/bog-gardens https://www.rspb.org.uk/get-involved/activities/nature-on-your-doorstep/garden-activities/create-a-mini-pond/ https://www.rspb.org.uk/birds-and-wildlife/advice/gardening-for-wildlife/water-for-wildlife/making-a-pond/
Orkney vole corridors 3 metre strips running alongside ditches and boundaries, fenced off from livestock/that undergo no mowing or cutting, to allow vegetation to grow to full height.	When connected to areas where Orkney voles are known to be present, increases habitat available for voles and allows population expansion. Supports other wildlife by providing food and shelter.	Vegetation slows the flow of water in ditches, helping with flood management.	https://www.webarchive.org.uk/wayback/archive/20221013133137/https://www.nature.scot/doc/naturescot-archive-report-029-orkney-vole-habitat-guidance http://www.fernvalleywildlifecentre.co.uk/conservation.html

Reprofiling watercourses (including ditches) Artificially straightened water courses are reprofiled to follow a meandering form and regraded to remove manmade sides and obstructions and create stepped sides and margins. Margins are planted with native species.	Creates new habitat, providing a place for wildlife to live, feed and shelter. Can connect with other habitat features, providing a wildlife corridor.	Creates a more attractive feature that connects people with nature. Helps with flood water management by slowing down the flow of water and increasing the volume of water that can be accommodated. Can more easily be adapted over time to changes in rainfall.	https://www.greenspacescotland.org.uk/news/naturalising-the-lade-to-whitfield-pond-lennoxtown https://www.nature.scot/wilding-our-parks-case-studies
Peatland restoration (can be a measure to conserve and restore biodiversity) Interventions to restore peatland hydrology and habitats.	Improves ground conditions so that the peatland recovers and can support a wider range of plants and wildlife.	Can contribute to natural flood management, reducing effects of flooding on people and infrastructure. Reduces carbon emissions from degrading peatland that otherwise would contribute to climate change. Reduces erosion of exposed peat that adversely affects water quality.	https://www.nature.scot/climate-change/nature-based-solutions/peatland-action-project

Photo 4: biodiversity measure example of a drystone wall feature providing a place for nature as well as shelter around a picnic area for people

Section 6: Biodiversity measures of limited effectiveness in Orkney

The table below provides information about biodiversity enhancement measures that are likely to have limited effectiveness in Orkney, with suggested alternatives from the list provided in **Section 5: Biodiversity measures suitable for Orkney**.

Measures with limited effectiveness in Orkney		**Alternative measure(s)**
Bird boxes	Bird boxes can be problematic in the Orkney climate. They are most likely to be effective in more sheltered urban areas with established garden shrubs and trees. Bird boxes need to be firmly fixed at an appropriate height to reduce the risk of predation, and in an orientation that will not be blown off in the Orkney winds, allow rain to enter or overheat in the sun. They also need to be of the right size and shape for the bird species found at the location and have sufficient suitable habitat in the surrounding area to provide food and shelter for the adult and young birds. As well as needing to be positioned in the right place for birds, bird boxes need to be located so that the cheeping of young birds does not disturb human residents. Most bird boxes also require to be cleaned out each year before the breeding season, which new residents may not be willing to do, limiting the effectiveness of bird boxes.	All of the below measures benefit birds by providing food and/or shelter, with some of the measures also providing potential for nesting (e.g. scrub, hedging, trees and woodland, drystone walls and features): – flowering plants – biodiversity lawns – areas left to grow – scrub, hedging, trees and woodland – living rooves – plant pocket walls – drystone walls and features – wastewater treatment reed beds – swales – rainwater gardens – ponds and bog gardens
Bat boxes	Bat boxes are unlikely to be effective in most locations in Orkney, mainly because there are very few locations where bats are present. This is due to limited suitable foraging habitat for bats and the climatic conditions reducing the	Where the below features can connect with existing known bat foraging habitat, they can provide additional foraging habitat for bats: – flowering plants – biodiversity lawns

	number of days with suitable flying conditions. In locations where bats are known to be present bat boxes may be appropriate enhancement. They should be of the right size and shape for the bat species found at the location and have sufficient suitable habitat in the surrounding area to provide food. The box(es) need to be firmly fixed at an appropriate height to reduce the risk of predation, and in an orientation that the box will not be blown off in the Orkney winds, allow rain to enter or overheat in the sun.	– areas left to grow – scrub, hedging, trees and woodland – swales – rainwater gardens – ponds and bog gardens – Orkney vole corridors – reprofiling watercourses (including ditches) – peatland restoration
Bug hotels, log, leaf and stone piles	Bug hotels, log, leaf and stone piles can provide a place for insects to live. Small piles looked after by residents can be beneficial to biodiversity. However the Orkney wind and rain can damage them and/or create unsuitable conditions for insects. Larger piles/bug hotels may also harbour or be perceived to harbour pests such as rats. The piles/bug hotels are therefore most likely to be effective on a small scale that reduces the risk of pests and where they will be looked after long term by the resident of the proposed development.	The main alternative for bug hotels are Solitary bee hotels. The other measures listed below also benefit insects: – flowering plants – varying ground levels – container gardens – biodiversity lawns – areas left to grow – scrub, hedging, trees and woodland – living rooves – plant pocket walls – drystone walls and features – ephemeral ponds and wader scrapes – wastewater treatment reed beds – planted SUDS ponds – swales – rainwater gardens

		– ponds and bog gardens – downpipe rainwater container gardens – Orkney vole corridors – reprofiling watercourses (including ditches) – peatland restoration
Drain escapes	Drain escapes are miniature ladders placed in road drains that amphibians and small mammals can use to climb out of road drains when they have fallen through the cover. However the ladders can interfere with gulley cleaning, getting damaged or displaced, which can also happen when drains are overwhelmed during heavy rainfall and flood events.	The main alternative for drain escapes are wildlife kerbs. Installing wildlife kerbs that reduce the risk of amphibians and small mammals falling into the road drain are an alternative that should not interfere with gulley cleaning or require ongoing maintenance/replacement.

Section 7: Biodiversity measures and development functionality quick reference table

Most of the biodiversity measures can contribute to the functionality of proposed developments, for example by providing shelter, while also benefiting wildlife and people. A summary of the potential functions for each measure is given in the table below.

	Function(s) of measure			Main function	✓	Added benefit	✓
Biodiversity measure	**Lawns / amenity areas**	**Water management**	**Landscaping**	**Defines boundaries**		**Helps wildlife move about**	
Biodiversity lawns	✓	✓	✓			✓	
Container gardens	✓					✓	
Areas left to grow	✓	✓	✓	✓		✓	
Flowering plants	✓		✓			✓	
Ponds and bog gardens		✓	✓	✓		✓	
Rainwater gardens		✓	✓	✓		✓	
Downpipe rainwater container gardens		✓				✓	
Wastewater treatment reed beds		✓				✓	
Swales		✓	✓	✓		✓	
Reprofiling watercourses (including ditches)		✓	✓	✓		✓	
Planted SUDS ponds		✓	✓	✓		✓	

Biodiversity measure / function:	Lawns / amenity areas	Water management	Landscaping	Defines boundaries	Helps wildlife move about
Ephemeral ponds and wader scrapes		✓	✓		✓
Peatland restoration		✓	✓		✓
Varying ground levels	✓	✓	✓	✓	✓
Scrub, hedging, trees and woodland		✓	✓	✓	✓
Wildlife permeable boundaries		✓	✓	✓	✓
Drystone walls and features	✓	✓	✓	✓	✓
Scrub, hedging, trees and woodland	✓	✓	✓	✓	✓
Plant pocket walls			✓	✓	✓
Remove non-native species	✓		✓		✓
Solitary bee hotels					✓
Wildlife friendly kerbs		✓			✓
Living roofs		✓	✓		✓
Orkney vole corridors		✓	✓	✓	✓

Section 8: Blank biodiversity form for planning applications

A Word version of this form that enables users to type directly into the form is available on request.

ORKNEY ISLANDS COUNCIL **BIODIVERSITY FORM FOR PLANNING APPLICATIONS** **TO BE COMPLETED AND SUBMITTED WITH PLANNING APPLICATIONS**	
Planning reference or address of development:	
Date of form completion:	
Person/company completing form:	
Baseline - what's there	
– Please provide photographs to give an overview of the habitats and features present on site, and, referring to the photographs, describe below the dominant habitat type and most recent land use. If the land use has recently changed please also describe the previous known land use. List any species of note using the site. (Example level of information: grass, grazed field, brown hare and curlew; coastal heath, rough grazing for sheep, Arctic skua; heather moorland, unmanaged, short eared owl; livestock fodder crops, agricultural field, geese; unmanaged meadow, previously livestock grazing field until farm changed hands last year, unknown; urban brownfield site previously with flats on it (demolished 5 years ago) within existing settlement, none as it's a concrete slab; etc). – Please provide a site layout plan that shows the location of existing broad habitat types and biodiversity features such as wetter/drier areas, ditches, watercourses, trees and shrubs, stone walls, ditches, invasive plant species, etc, both within and adjoining the proposed development site. The biodiversity features should be marked on a site layout plan that shows all elements of the proposed development, including infrastructure such as roads, paths, services, drainage, electricity lines, etc. (This is to enable assessment of how the existing biodiversity features might be affected by the construction and use of the proposed development. It can also be helpful to include photographs of the biodiversity features and their context within the site.)	

Minimising effects on existing biodiversity (including restoration)

- Referring to the plan provided above, please describe below how you have minimised adverse effects on existing biodiversity through siting, design and layout that retains existing habitats and features of biodiversity value, and where this has not been possible, please explain why.
- Where relevant, please also describe how degraded existing biodiversity features are going to restored. (Restoration will not be applicable to all sites.)

Enhancement of biodiversity

- Please list below what enhancement measures have you intend to include and explain what they are seeking to achieve. Please include common and latin names of plant species and where the plants or seeds will be sourced from. (This is to check that species appropriate to the site and Orkney conditions are used.)
- Please provide a site layout plan that shows the location of enhancement measures. The enhancement measures should be marked on a site layout plan that shows all elements of the proposed development, including infrastructure such as roads, paths, services, drainage, electricity lines, etc. (This it to enable assessment of how the construction and use of the proposed development might interact with the proposed enhancement measures.)

Monitoring and maintenance of biodiversity retained and enhanced

- Please describe below how will the retained and enhanced biodiversity features and measures be monitored and maintained in the longer term to ensure they continue to benefit biodiversity, and who will be responsible for monitoring and maintenance. (Where detailed information on monitoring and maintenance will be provided in a landscaping or other site management plan to be submitted with the planning application, please provide the document title, author and date, and summarise the information below.)

Advice
– If you have sought or received advice about what is present on or makes use of the proposed development site and / or how to safeguard, restore and enhance biodiversity, please list below who has given you advice. (For example, an ecological consultant, others with relevant local knowledge, etc.) – Where advice has been received, please summarise it below and provide a copy if advice was given in writing.
– Please describe how have you incorporated any advice you received into the proposed development, and if not, please explain why not.