CHAPTER FOUR
A GREEN BIODIVERSE CITY THAT IS RESILIENT TO CLIMATE CHANGE

INTRODUCTION

This chapter seeks to ensure that new development is adapted to climate change and does not impede Oxford's future resilience to climate change threats. The first part of the chapter sets out policies for protecting and enhancing a network of green and blue spaces across our city for the multitude of benefits they provide. The second part provides for biodiversity, protected species and habitats. The third part includes policies addressing flood risk and managing drainage, as well as mitigating various risks from the changing climate through climate-resilient design, such as that of overheating.

GREEN AND BLUE INFRASTRUCTURE NETWORK

A key feature that contributes to the special character of Oxford is its close relationship with the natural environment that encircles and permeates the city. These include: green spaces (from parks to flood plains and sites of nature conservation), some 248,000 trees and blue infrastructure (the rivers Thames and Cherwell, the Oxford Canal and smaller waterways between them). Collectively these green and blue features are referred to as the green infrastructure network. This green infrastructure network performs a vital role in supporting the health and wellbeing of our residents and the wider environment. They are particularly important for the ‘multi-functional’ role many of them provide (Table 4.1).

Environmental
• Supports and provides biodiversity (which underpins healthy and resilient ecosystems) and species movement/dispersal including through providing habitat, wildlife corridors and stepping-stones. • Provides climate change mitigation and adaption e.g., through providing flood and soil erosion protection, carbon sequestration and storage, and urban cooling. • Improves air and water quality (pollution absorption and removal). • Enables food production and supports pollination. • Supports and creates attractive and sustainable places and landscapes i.e., quality placemaking.
Social/health and wellbeing
• Provides opportunities for outdoor recreation, exercise, play and access to nature. • Provides attractive and safe spaces for people to enjoy and improve social contacts – a key component of 'liveable' towns and cities where people want to live. • Supports the development of skills and capabilities. • Improves air and water quality, provides urban cooling and shade, reduces noise pollution. • Provides green active travel routes.
Economic
• Provides attractive places to live and work, attracting inward investment and tourism. • Increased land and property values. • Supports sustainable homes and communities e.g., through providing local food and building materials, encouraging low carbon lifestyles e.g., through well connected and attractive walking and cycling routes. • Provides health and wellbeing benefits that result in avoided healthcare costs. • Provides local food, energy, and timber production. • Climate change mitigation and adaption.

Table 4.1: The various benefits that green infrastructure can provide to an area

PROTECTION OF THE GREEN INFRASTRUCTURE NETWORK

Policy context

- Oxford's constrained nature means there are competing pressures for land which can put open spaces and other green features under threat. Oxford currently has not got a surplus of sports pitches or allotments. Losses of green space can fragment the network and harm the wider functioning it provides, for example to climate change mitigation, biodiversity, and wellbeing. For all these reasons, no green space identified as part of the Green Infrastructure Network is considered surplus, and their loss without reprovision is not permitted.
- Whilst some of the benefits or functions spaces in the network provide can, if needed, be replaced and/or reprovided to other areas, some are intrinsic to the location and are important to retain in situ, such as providing flood storage; supporting rare habitat and species; or retaining important heritage and history.
- The connections between the features in the network is also of great importance, acting as movement corridors for both people and nature. Blue infrastructure like the rivers and their embankments being particularly valuable in this role.
- Many private spaces also play an important role in the GI network e.g. sports pitches, private gardens and non-domestic spaces. These can provide valuable opportunities for recreation, private amenity and socialising, host a range of green and blue features, as well as making an important contribution to the fabric of the urban realm.
- The network is also enhanced by a number of individual features that support the GI network and provide localised benefits to amenity and biodiversity, such as trees and

hedgerows, ponds, smaller streams, green roofs and walls, wild patches of vegetation, private gardens and other spaces.

- Of particular value are ancient woodland, ancient/veteran trees and important hedgerows (as defined by the Hedgerow Regulations 1997), which are assigned a high level of protection through national policy. A small proportion of trees benefit from Tree Preservation Orders (TPOs), or protection through conservation areas, but this is not the only determiner of quality/importance and others may be of a similar or higher quality with varied contributions to the area (e.g. supporting amenity, biodiversity, or as setting of heritage assets).

Policy implementation

- The following hierarchy of green spaces is used in the policy:
    - Core spaces – designated at highest level in hierarchy due to their fundamental role in supporting the city-wide network for reasons such as providing wildlife habitat and corridor functions, flood storage, intensity of use and strength of heritage or other local value. These benefits are typically intrinsic to their location, which means they are not easily reprovided elsewhere without compromising their character and/or function.
    - Supporting spaces – designated for their important role in enhancing the network and its overall function. Their loss will be resisted; however, there is more opportunity for reprovision. It is unlikely that any of these spaces could be found to be surplus, although it is accepted that there could be changes over time.
    - All other green spaces **–** these spaces also support the overall network, and often help to enhance the more urban areas of the city by breaking up the built environment with pockets of natural amenity, but are typically smaller and more fragmented, playing a reduced multi-functional role as a result.
- It should be noted that some types of spaces benefit from additional protections such as the designations for ecological sites (**Policy G6**) and Registered Parks and Gardens (**Policy HD3**). Applications proposed within Green Belt would be determined in accordance with national policy.
- Reprovision of green infrastructure that is harmed or lost to development is an important element of the policy, and the City Council will seek for this to be to the same standard or higher, ideally onsite. This reprovision can be delivered quantitatively (like-for-like replacement) or qualitatively (enhancements that improve the functionality and quality of other areas - demonstrated via the Urban Greening Factor or similar methodology, see **Policy G3**). Any features delivered as part of reprovision or as mitigation for losses should also be designed in accordance with the principles set out in **Policy G2.**
- There may also be additional considerations that would apply to applications that affect certain types of spaces in the supporting GI network, including how these might need to be 'reprovided'. These relate to the particular primary function a space is providing and will be of relevance when determining whether a site is 'surplus to requirements', but also in identifying the qualities and sensitivities essential to the function that would need to be addressed.
- Any strategy for a site where trees are present should consider their value in regard to the wide variety of benefits they can bring, making use of best practice criteria such as the BS.5837:2012 standards or future equivalent. Where losses are proposed, these will

need to be justified, including demonstrating that options for retention have been explored, before resorting to mitigation.

POLICY G1: PROTECTION OF GREEN INFRASTRUCTURE

Green Infrastructure (GI) Network

The City Council will seek to protect the GI network for the many and varied benefits it offers. The GI network is made up of a number of green spaces. The hierarchy of GI spaces and the policy approach for each level of the hierarchy is as follows:

G1A: Core spaces

Planning permission will not be granted for development that would result in loss of, or harm to, the protected spaces identified as part of the Core GI Network. *These spaces are designated G1A on the policies map*.

G1B: Supporting spaces

Planning permission will only be granted for proposals which affect spaces identified a part of the Supporting GI Network where any harm/loss is mitigated by ensuring sufficient reprovision, ideally onsite, and to the same standard or higher. *These spaces are designated G1B on the policies map.*

G1C: All other green spaces

Planning permission will only be granted for proposals which affect all other green spaces where any impacts are mitigated by ensuring sufficient reprovision, ideally onsite, and to the same standard or higher, or if it can be demonstrated in the application that current provision is surplus to requirements.

Additional details to be submitted with proposals affecting G1B Supporting spaces

Proposals impacting the following types of open space will need to be accompanied by additional evidence that demonstrates consideration of the following:

a) Outdoor sports including pitches:
   i. the types of sports that the space provides for currently, whether this can be accommodated elsewhere without creating deficits in provision against demand, or whether alternative sports might better suit the local community, and
   ii. with reference, where relevant, to the City Council's latest Playing Pitch Strategy, as well as engagement with Sports England and the City Council's Active Communities team.

b) Parks, accessible greenspace and amenity greenspaces:
   i. the role of the space in supporting people to socialize, take part in informal recreation (particularly where facilities like children/youth play and outdoor gym equipment are present), or as an escape from the urban environment, and
   ii. with reference, where relevant, to an up-to-date green infrastructure/open space study, with particular attention to local need arising from existing deficits of these types of spaces or deprivation in the area.

Residential Garden Land

Planning permission will be granted for new dwellings on residential garden land provided that:

c) the proposal responds to the character and appearance of the area, taking into account the views from streets, footpaths and the wider residential and public environment; and
d) the plot to be developed is of an appropriate size and shape to accommodate the proposal, taking into account the scale, layout and spacing of existing and

surrounding buildings, and the minimum requirements for living conditions set out in Policies HD11, HD12 and HD13; and

e) requirements are met for biodiversity as set out in Policy G4, greening factor as set out in Policy G3 as well as requirements for protection of existing green infrastructure features, as set out below.

Existing green infrastructure features

Planning permission will not be granted for development resulting in the loss or deterioration of ancient woodland or ancient or veteran trees and important hedgerows except in wholly exceptional circumstances or there is a suitable compensation strategy in place.

f) Planning permission will not be granted for development resulting in the loss or deterioration of other trees, unless it can be demonstrated that preservation of the trees is not feasible, by provision of evidence:
    i. Of testing of practical alternative site layouts that might preserve the tree(s) where possible; and
    ii. That loss or other impacts to any tree(s) on the site has been minimised where possible, and guided by BS.5837:2012 recommendations or its future equivalent;

g) where tree retention is not feasible, any loss of tree canopy cover should be compensated by the planting of new trees to provide additional tree cover (with consideration to the predicted future tree canopy on the site at 30 years following development) to achieve a minimum of no net-loss of tree canopy cover; and

h) where loss of trees cannot be compensated by tree planting, then alternative forms of green infrastructure should be incorporated that will mitigate the loss of trees, using the Urban Greening Factor (Policy G3) to demonstrate no reduction in GI score as a minimum.

Planning permission will not be granted for development that results in the loss of other green infrastructure features such as hedges or ponds where this would have a significant adverse impact upon public amenity or ecological interest. If it is demonstrated that their retention is not feasible, then their loss must be mitigated in accordance with other relevant policies, in particular Policy G3.

ENHANCEMENT AND PROVISION OF NEW GREEN AND BLUE FEATURES

Policy context

- Providing for high-quality green and blue infrastructure features on new development should be fundamental to the design process. New development can provide greening both through enhancing existing green/blue features on a site, as well as providing entirely new features and spaces and it is important to explore both avenues to maximise opportunities onsite. On more constrained sites with limited opportunities for extensive new greening it is important that green infrastructure is planned carefully to deliver maximum benefit.

- It is important that public open space is of an adequate size to be usable in a variety of ways, so it is maintainable and does not seem like left over space. Therefore, only larger sites are required to provide new public open space as part of the development.
- Developing sensitively in proximity to the blue corridors can improve our connections with these areas and promote enhanced benefits for wildlife. Inappropriate development can have negative impacts like polluting the water environment and destroying freshwater habitats, as well as exacerbating flood risk.

Policy implementation

- New and enhanced green infrastructure needs to be thought about as early as possible in the conceptual and design stages alongside other elements of the development. It is important that design choices are guided by an understanding of local context and opportunities on the site as well as in the surrounding area (see Box 4.1).
- The policy sets out requirements for incorporating ecological buffer zones along watercourses and seeks to facilitate opportunities to re-naturalise spaces near watercourses. This could mean thinking about ways to reinstate embankments by removing artificial materials and 'rewilding them' which can create new spaces for nature and for people as well as other benefits like helping to mitigate flood risk.
- Larger developments are expected to include a proportion of the site as public open space with a mix of uses tailored to the needs of occupants and the local area, for example, a nature area, seating, a playground and kick-about area, or areas left aside for community food growing.
- It is important that the ongoing maintenance and management of green features is considered when they are designed into a scheme, for example, appropriate watering and pruning regimes. Suitable arrangements will depend on the types of features proposed and the particular context of the application, and there may also be ways to encourage community stewardship as part of this.
- Whilst this policy sets out general requirements for new green infrastructure, applicants may have to consider other more site-specific requirements for greening that may be outlined in specific site allocations, as well as what is needed to meet the Urban Greening Factor targets (**Policy G3**).

Box 4.1: Using local context to help inform design of green infrastructure onsite.

Wider considerations informed by local context and the opportunities onsite and in the surrounding area should inform choices about new greening as part of a development. In practice these considerations could include:

Tailoring types of open space to meet identified needs or deficiencies – by providing space for food growing where residents might not have access to private gardens of allotments in the local area, or incorporating play features for younger people including children and teenagers to help enhance the number of facilities that can be reached in walking distance.

Strengthening linkages between areas to enhance network connectivity – by incorporating linear features like lines of trees/hedges, creating new pockets of green space that can form 'stepping stones' between larger spaces, or taking opportunities to open up and enhance access to rivers and streams including their banks. Improving linkages across the network can be particularly beneficial for supporting biodiversity helping species to move across the city (particularly where these improve connectivity between ecological sites), but also in supporting active and sustainable transport for people.

Buffering sites from potential sources of disturbance – where the site is in proximity to busy roads that could cause noise or air pollution issues, green infrastructure such as trees and wild meadows has been used as a buffering feature to improve amenity for residents and reduce their exposure to ill effects. Green features can also help buffer sensitive habitat such as ecological sites

or watercourses from disturbance that could be caused by the development itself.

Improving climate resilience and 'greening the grey' – taking opportunities on particularly urbanised sites, lacking green features and with an abundance of artificial surface cover to unseal surfaces and expose soils/natural vegetation where possible, as well as increasing canopy cover and incorporating features like green walls/roofs on buildings. These measures can help to slow and store surface water run off during heavy rainfall, as well as help cool urban realm and generally promote more climate resilient open spaces.

POLICY G2: ENHANCEMENT AND PROVISION OF NEW GREEN AND BLUE FEATURES

Planning permission will be granted for proposals that include a variety of green infrastructure features as a fundamental component in the design of new development. Where the site includes existing green and blue features, proposals should seek to enhance these, prioritising opportunities to improve linkages between features in order to strengthen connections with the wider green infrastructure network including beyond the boundaries of the site. Features should be highlighted clearly within the Design and Access Statement where required and/or on landscape/elevation plans, which should also include details of how the following requirements have been met where relevant.

In demonstrating that green infrastructure considerations have played a fundamental part of the design process, the selection of green and blue features, or enhancement of any existing features, should be tailored to the specific context of the site and surrounding area. The proposal should set out clearly how these features have been designed to secure multi-functional benefits which contribute to the following, where relevant:

a) Public access;
b) Health and wellbeing, including facilitating recreation and play for people of all age groups and abilities, particularly children and teenagers;
c) Making space for nature and enhancing biodiversity;
d) Where there is an opportunity to strengthen links between green spaces, particularly ecological sites, creating linkages with surrounding green infrastructure (e.g. by including lines of trees/hedges to support linkages);
e) Addressing climate change (including carbon sequestration; reducing flood risk; providing sustainable drainage; reducing overheating and promoting urban cooling);
f) Enhancing appearance and character/sense of place;
g) Conserving and, where possible, enhancing the historic environment;
h) Connectivity of walking and cycling routes, including potentially new public rights of way;
i) Opportunities for edible planting or community food growing;
j) Providing natural buffer features to mitigate impacts of air pollution or noise.

Opportunities to enhance blue corridors

For proposals on sites incorporating or located adjacent to watercourses, opportunities should be sought through careful design and landscaping to re-naturalise the water courses where possible, including restoration of the bankside and instream habitats. An ecological buffer zone of at least 10 metres with should be retained, or if it is not already in place it should be reinstated where possible.

New public open space

In situations where the proposal relates to replacement provision that is mitigating losses elsewhere, this will need to be demonstrated to be equally or more accessible for people of all ages and abilities by walking, cycling and public transport to local users of the existing site where relevant.

For residential sites of 1.5 hectares and above, new public open space should be provided that is equivalent to 10% of the overall site area. For mixed-use sites, the area of residential use should be used for that calculation.

Where new open space is provided, the type of provision should be tailored to address existing needs or deficiencies in access locally. For example, by providing space for food growing where residents might not have access to allotments in the local area or incorporating play features for younger people.

Maintenance/management arrangements
Appropriate maintenance/management plans should be organised as part of the design/construction process. Applicants will be required to replace any failed features for the first five years post-completion, unless agreed otherwise with the City Council, and this will be secured through planning condition. Where appropriate, applicants will be expected to enter into a legal agreement to ensure that any new public space is properly maintained, by means of a financial contribution to the City Council.

PROVISION OF NEW GREEN AND BLUE FEATURES – URBAN GREENING FACTOR

Policy context

- Overuse of artificial, impermeable surfacing materials like concrete, artificial lawns and tarmac can have a range of negative impacts for the environment and the people that go on to use these spaces. It seals away soils, leaves limited space for wildlife, increases surface run off (which can lead to flooding and pollution of watercourses), and exacerbates the ill effects of hot weather.
- Incorporating natural, green surface cover and other features on sites can secure multiple benefits for the development and the wider area (see Table 4.1), as well as helping to tackle many of the issues outlined above. It's therefore important that every new development in the city seeks to make use of natural surface cover wherever possible.
- The Urban Greening Factor (UGF) assessment helps quantify and deliver onsite greening as part of new development through use of weighted scores for different types of surface cover alongside set targets, with a particular focus on the naturalness of surface cover.

Policy implementation

- The policy sets out the minimum conditions for urban greening that major development will need to meet. This may involve raising the standard of green surface cover to meet the minimum targets set out, or ensuring no net loss in score (where the site is above the

target already). Proposals for development on wholly greenfield sites are subject to higher requirements reflecting their greener starting point.

- Where no net loss in baseline score is technically infeasible for wholly greenfield sites, applicants will need to justify this, such as through evidencing testing of different site layouts and will be expected to show how they have sought to minimise any reduction in baseline score. The highest quality features onsite should be retained in line with the requirements of **Policy G1.**
- The assessment process requires applicants to assess and quantify green infrastructure on their site prior to developing the area to establish a baseline for the site. This process is then repeated to assess the green infrastructure coverage which is proposed in the design of the new development to be provided post-development.
- Applicants have flexibility in how they meet the minimum conditions in the policy and these could be achieved through a mix of retaining or enhancing existing features, as well as providing new features.
- The UGF assigns weighted scores to different types of surface cover based upon the variety of environmental benefits that they offer (Figure 4.1). Higher quality types of provision benefit from a higher score. This means that understanding where these higher quality features are on the site and seeking to retain these, or providing more of them, will make achieving the minimum conditions easier.
- There is a shared objective with **Policy G4** on biodiversity net gain; however, the UGF assesses green surface cover more broadly and sets targets in order to secure a wider variety of benefits. Onsite habitat creation supporting BNG delivery will help to meet the UGF greening standards, and certain types of greening to meet the UGF requirements may also be able to support BNG requirements.
- The full UGF scoring matrix is set out in Appendix XX. Additional guidance on utilising the UGF is set out in the Technical Advice Note for Green Infrastructure and Biodiversity which should be referred to where appropriate.

POLICY G3: PROVISION OF NEW GREEN AND BLUE FEATURES – URBAN GREENING FACTOR

An appropriate proportion of natural green surface cover – which may be comprised of both existing and newly installed features – will need to be demonstrated on certain proposals (as set out below) and evidenced via submission of a completed Urban Greening Factor (UGF) assessment.

Applicants are expected to assess and submit the baseline score for the site pre-development, prior to any site clearance, as well as the proposal as-built/post-development. The as-built/post-development score required for development proposals will need to meet the following policy criteria:

Major development: proposals should demonstrate that there would be no reduction in baseline score and achieve a minimum score of:

- 0.3 for residential or predominantly residential schemes
- 0.2 for predominantly non-residential schemes

Major development on wholly greenfield sites: proposals should demonstrate that there would be no reduction in baseline score, unless this can be demonstrated to be technically infeasible, and achieve a minimum score of:

- 0.4 for residential or predominantly residential schemes
- 0.3 for predominantly non-residential schemes

All other forms of development (such as minor development) are encouraged to demonstrate how they have undertaken greening of their site through use of the UGF assessment, though this is not mandatory.

Along with the submitted UGF assessment, all greening features proposed for the development and used in the calculation of the UGF score should be clearly demonstrated on associated landscaping/elevation plans in the application.

The adopted calculation formulae and the factors for various surface cover types are outlined in Appendix XX.

BIODIVERSITY AND THE ECOLOGICAL NETWORK

Oxford benefits from a concentration of rare and valuable habitats that are important refuges for a variety of flora and fauna, such as lowland hay meadows, calcareous grassland, alkaline spring fen (among other types of wetland) as well as pockets of woodland. Their ongoing protection is particularly important because many species and habitats across the country continue to experience significant losses due to a range of pressures including from changing land use, pollution and climate change. The city is also home to a variety of wildlife, including various protected species like hedgehogs, water voles, slow worms and swifts. The policies in this section have a more specific focus on supporting biodiversity whilst mitigating our impacts on existing species and habitats.

DELIVERING MANDATORY NET GAINS IN BIODIVERSITY

Policy context

- Under the Environment Act 2021, all new planning applications must deliver Biodiversity Net Gain (BNG) of 10% through strategic habitat retention, creation and enhancement as calculated using the DEFRA Statutory Biodiversity Metric. There are a few exemptions to this requirement, including householder applications and the de minimis rule.
- Where proposals have demonstrated that the full 10% BNG cannot be delivered onsite, the Statutory Biodiversity Metric allows for the remaining BNG requirements to be delivered offsite, or as a last resort, by purchasing statutory biodiversity credits. Where offsite solutions are pursued, and the further away these are delivered, the local benefits for nature recovery and people's experience of nature are generally reduced.
- The Oxfordshire Local Nature Recovery Strategy (LNRS) identifies strategic opportunities for nature recovery across the county, including areas that, with specific habitat delivery and enhancement, are expected to deliver the greatest benefits for biodiversity.

Policy implementation

- The 10% BNG target should be considered as the minimum, but the policy strongly encourages applicants to explore options for delivery of net gain that exceeds this wherever possible.
- The policy sets out that in the first instance biodiversity net gain should be delivered onsite. Where that is not feasible, it is important that offsite delivery is as close to the impacted site as possible and the policy sets out a hierarchy to guide offsite delivery.
- Where the LNRS identifies opportunities for specific habitat interventions on a development site, aligning habitat delivery and management with these will make it easier for proposals to meet, and even exceed, the required BNG target. This is due to the boost in biodiversity value applied within the Statutory Biodiversity Metric calculations for proposed habitat delivery which matches the LNRS. In practice, this means:
    - Locating habitat delivery (creation and enhancement) within the areas identified by the LNRS Map; and
    - Proposing habitat interventions which align with the LNRS specifications.
- There are strict requirements in the Statutory Biodiversity Gain guidance and metric governing the ways that losses of habitat can be mitigated which need to be considered. For example, requirements that habitats of certain distinctiveness or condition cannot be replaced with those of lower distinctiveness or condition.

POLICY G4: DELIVERING MANDATORY NET GAINS IN BIODIVERSITY

Planning permission will only be granted for development where it delivers a minimum of 10% biodiversity net gain, as measured by the latest version of the Statutory Biodiversity Metric, unless exempted by national legislation or guidance. This must be achieved in all modules of the Biodiversity Metric relevant to that development (e.g. habitat, hedgerow, and river units). Delivery that exceeds 10% net gain is strongly encouraged wherever possible.

A completed Statutory Biodiversity Metric spreadsheet must be submitted in support of planning applications. All metrics must be completed in line with the requirements set out in the relevant Statutory User Guide, Technical Supplement, Legislation, and best practice principles.

Applications are expected to prioritise the delivery of net gain onsite.

Where this is not feasible, delivery of off-site biodiversity enhancements will be expected to demonstrate accordance with the following hierarchy of preference:

1. Land that is adjacent to the development site;
2. Land in Oxford identified for its ecological potential within the Local Nature Recovery Strategy;
3. Elsewhere within the Oxford boundary;
4. Elsewhere within the Local Nature Recovery Strategy areas in wider Oxfordshire.

Where offsite measures are proposed, these should focus on delivering high-quality priority habitats. Any offsetting proposed in alternative locations will be considered on a case-by-case basis.

Where it is robustly justified that the above cannot be achieved, purchase of biodiversity units

from habitat banks elsewhere or statutory credits may be accepted as a last resort.

Opportunities to deliver measures which align with those identified in the LNRS as part of any net gain provision should be prioritised, particularly where a proposal is located in an area identified in the LNRS, unless site constraints would make this unfeasible.

All onsite and offsite measures must be delivered through a biodiversity management and monitoring plan which must cover a period of at least 30 years in line with the national legislation requirements.

DELIVERING ONSITE ECOLOGICAL ENHANCEMENTS

Policy context

- The Biodiversity Net Gain requirements of the Environment Act focus specifically on habitat delivery, which is one important way of supporting biodiversity, but it does not address all the needs of the various species local to the city. It is equally important that we design measures into new development that go beyond pure habitat delivery in order to support flora and fauna through a range of other design measures.
- New development can also incorporate features which support different species in the city, such as by providing resources like food and shelter within the urban environment. Indeed, some species like swifts and bats rely on the urban environment as part of their lifecycle.
- Incorporating these ecological enhancements will be particularly important on sites where the development is exempt from mandatory biodiversity net gain, or where meeting biodiversity net gain requirements are not feasible onsite and these need to be provided offsite, to ensure that spaces are still created for nature on sites across the city.

Policy implementation

- The policy requires a certain number of ecological enhancements which scale up with the size of application. The enhancements which can be chosen from have been identified because they would be particularly well-suited to the local context of the city and the types of species prevalent in the area.
- The number of enhancements should be selected from each of three ‘pots’, as set out in Figure 4.2.

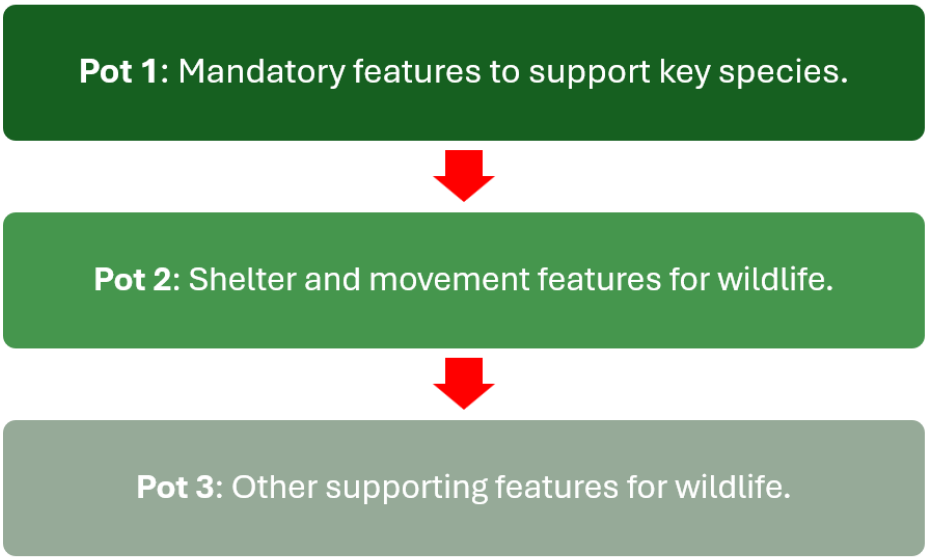

Figure 4.2: The three pots of ecological enhancements that should be selected from.

- The list of enhancements that can be selected from is set out in Appendix XX, any subsequent versions will be published within the Green Infrastructure and Biodiversity Technical Advice Note.

POLICY G5: DELIVERING ONSITE ECOLOGICAL ENHANCEMENTS

Development proposals should seek to incorporate ecological enhancements into landscaping or building facades/roof spaces which are tailored to the priority habitats and protected species present within the site and surrounding area. Opportunities to create, expand, enhance or link ecological networks are particularly encouraged.

All new development must deliver a minimum number of ecological enhancements selected from the City Council's Ecological Points List to achieve the required point total. The number of points required is as follows:

- **Householder application** – all mandatory features from pot 1 (where applicable)
- **Minor development application** – all mandatory features from pot 1 (where applicable); PLUS 1 feature from pot 2; PLUS 1 feature from pot 3
- **Major development application** – all mandatory features from pot 1 (where applicable); PLUS 2 features from pot 2; PLUS 2 features from pot 3.

Seeking advice from a suitably qualified ecologist on the ecological enhancements selected is encouraged. The chosen measure(s) will need to be clearly highlighted on landscape and elevation plans and/or within the design and access statement.

In addition, all new tree and soft landscaping must incorporate an element of native planting, and where non-native planting is proposed this should comprise species beneficial to UK pollinators and/or chosen to be well-adapted to future changes in climate. Proposals incorporating invasive plant species will be refused.

All maintenance and management requirements of the proposed enhancements must be specified within planning applications and secured via planning conditions.

PROTECTING OXFORD'S BIODIVERSITY INCLUDING THE ECOLOGICAL NETWORK

Policy context

- Oxford has a range of habitats and ecological sites, many benefit from levels of designation including:
    - International designations – the Oxford Meadows Special Area of Conservation (SAC), part of which is within Oxford's boundary and that contains certain habitats and species recognised for their importance across Europe,
    - National designations – these include the 12 Sites of Special Scientific Interest (SSSIs), eight of which were notified for their nature conservation interest and the others primarily for geological interest.
    - Local designations – including Local Wildlife Sites (LWS); Local Nature Reserves (LNR) and Oxford City Wildlife Sites (OCWS) which have been designated for their county or city-wide importance.
- Outside of the designated sites there are also many areas that support habitats and species of principal importance (this is a wider selection of priority habitats and species listed under S41 of the Natural Environmental and Rural Communities Act, 2006, some of which are protected under other legislation and some not).
- A number of sites in the city are particularly reliant upon specific hydrological conditions, which means that they are potentially vulnerable to changes in hydrology that could arise from development. For example:
    - Oxford Meadows SAC is potentially sensitive to changes in recharge, flows and quality of groundwater stemming from development on the North Oxford gravel terrace.
    - New Marston Meadows, Iffley Meadows, and Lye Valley SSSIs are sensitive to changes in flows and quantities and quality of surface and/or groundwater within their catchment areas.
- A Habitat Regulations Assessment (HRA) has been produced to support the Local Plan 2045. This assesses the level of development proposed through the plan both 'alone' and 'in-combination' with other relevant plans and projects against the relevant conservation objectives for the Oxford Meadows SAC. The HRA includes a Stage 1 Screening, and a Stage 2 Appropriate Assessment which proposes mitigation measures to ensure there are no likely significant effects, either alone or in-combination, on the integrity of Oxford Meadows SAC.

Policy implementation

- It is vital that existing biodiversity and features of ecological interest which could be impacted by a development are well understood and that impacts are avoided and/or mitigated. This includes features being directly impacted on a site as well as those which could be adversely affected by adjacent development. Where there is a reasonable likelihood of harm or loss to protected species or natural/semi-natural habitats, targeted ecological surveys must be undertaken prior to the determination of any planning application. The extent and scale of survey effort must be informed by the context of the site and appropriate ecological expertise.
- The mitigation hierarchy needs to be followed. This requires applicants to seek to avoid any potential impacts in the first instance through careful design/ construction choice before tailoring the proposal to mitigate impacts. Only once the first two steps in the hierarchy have been exhausted should compensation measures be considered.
- This policy supplements the protections assigned to the designated ecological sites through their 'core' designation under **Policy G1** by setting out additional considerations tailored to the particular ecological importance for which they have been designated. These considerations will often apply to a wider area, taking into account impacts from development such as pollution or changes to the environment which could ultimately bring about adverse effects to the designated sites themselves. Applicants are strongly encouraged to work with ecology experts to determine relevant considerations.
- New development immediately adjacent to Oxford's SSSIs, will be expected to incorporate appropriate buffers that protect these sensitive areas during the construction and operational phases and ultimately deliver additional supporting habitat. The design of these buffers will need to be guided by the ecological context of the sites.
- The policy outlines particular considerations around impacts on surface and/or groundwater in relation to Oxford Meadows SAC, the Lye Valley and New Marston Meadows SSSI's. Proposals may need to consider impacts on water quality, as well as disruptions to the flows and quantities of water to these sites. The City Council has published additional guidance in relation to the Lye Valley that applicants should refer to where applicable.
- More advice is set out in the Green Infrastructure and Biodiversity Technical Advice Note, whilst Oxfordshire County Council has also provided biodiversity guidance to assist applicants.

POLICY G6: PROTECTING OXFORD'S BIODIVERSITY INCLUDING THE ECOLOGICAL NETWORK

Development proposals should seek to conserve and enhance biodiversity including safeguarding the key sites of Oxford's ecological network.

Proposals with a reasonable likelihood of adversely impacting natural and/or semi-natural habitats, or protected species, on or immediately adjacent to the site, will only be permitted where they have been informed by targeted ecological surveys, completed prior to determination of the planning application, unless explicitly agreed with the City Council; and

Internationally and nationally designated sites and irreplaceable habitats
When determining planning applications potentially causing significant harm to biodiversity, then the approach set out in Paragraphs 193-195 of the NPPF (or the equivalent in any update) will be applied.

To ensure no likely significant effects on the Oxford Meadows SAC, proposals identified in an

area identified as having potential hydrological connectivity with the Oxford Meadows SAC that:

a) May negatively affect groundwater recharge and/or water quality must demonstrate that likely significant effects have been avoided, or mitigated where relevant through use of appropriate measures including incorporation of SuDS.
b) May negatively affect groundwater flow (subterranean development) must include a hydrogeological investigation, which must demonstrate that likely significant effects have been avoided, or mitigated where relevant.

Within the ground and/or surface water catchment areas for the Lye Valley, Iffley Meadows and New Marston Meadows SSSI's, development which could have negative hydrological impacts in relation to surface and/or groundwater will need to demonstrate that these have been avoided, or mitigated where relevant, through use of appropriate measures such as infiltration methods (where geological conditions allow) and careful design of below ground works.

Development proposed on land immediately adjacent to any SSSI must be designed with a buffer to that site that both helps to prevent adverse effects during the construction and operational phases of the development and delivers habitat supporting the interest features of that site.

Locally designated sites

Development that would have an adverse effect on a Local Nature Reserve (LNR), Local Wildlife Site (LWS) or Oxford City Wildlife Site (OCWS) will only be permitted where:

a) There is an exceptional need for the new development that outweighs any adverse effect from loss of habitat or harm to any feature of interest for which the site was selected, and this need cannot be met by development on an alternative site with less biodiversity interest; and
b) Satisfactory mitigation and compensation onsite or sufficiently local to preserve the feature of interest can be delivered and has been agreed with the City Council.

The same level of protection will be afforded to proposed LWS and proposed OCWS as to designated ones (prior to the conclusion of the selection process).

Where proposals result in habitat loss within a LNR or LWS, they must retain and enhance the interest features for which the site was selected.

Other features of interest

Development should seek to retain and enhance habitats and species of principal importance for biodiversity wherever possible.

Determining adverse effects

In determining the potential for adverse effects on ecology from a development, including where this relates to designated sites, applicants will need to demonstrate that they have considered information from various sources where relevant, including the site context and surrounding area; expert ecological advice, applicable City Council Technical Advice Notes, as well as a review of relevant existing information where available, such as Natural England's Impact Risk Zones (IRZs). A range of potential impacts will need to be considered and will depend on the context of the application and proximity to any protected site(s), particularly, but not limited to:

- Loss of protected land;

- Recreational impacts;
- Impacts on air quality;
- Impacts on water quality;
- Impacts from artificial lighting;
- Changes to the hydrological regime (particularly surface and/or groundwater).

CLIMATE RESILIENT DESIGN

Oxford is already at risk from climate change and this will increase in future. In particular:

- A significant amount of the city lies within areas of higher flood risk from various sources. Climate change is likely to bring wetter winters, and more intense rainfall events that could exacerbate flood risk from various sources like rivers, surface water and the sewers with impacts for people's health as well as economic costs through damage to properties and businesses.
- People and the wider environment are also at risk from overheating and heat stress, particularly for those living in poorer quality accommodation or located in areas that are heavily urbanised due to artificial surface cover locking in heat and exacerbating the urban heat island effect. Climate change is expected to bring about hotter, drier summers and more heat wave events which will increase these risks but also have impacts for the water resources we rely on and that support many habitats and species.
- The risks from climate change are not equal for everyone. The impacts are often exacerbated for those communities who are more economically deprived, or vulnerable due to other characteristics such as age, living with health issues or living in poorer quality accommodation.

The way we design and construct the built environment has a key role to play in reducing the risks of climate change for people and the environment, enabling us to better withstand the impacts when hazards arise and to recover more quickly. Many resilience building measures, also referred to as climate change adaptations, have additional benefits for health and wellbeing and should be considered simply as good design.

FLOOD RISK AND FLOOD RISK ASSESSMENTS (FRAS)

Policy context

- National policy on planning for and mitigating flood risk is already very strong, but there is a need to consider this in the local context of Oxford. Much of the new development comes forward on previously developed land and a significant amount of the city lies within areas of higher flood risk according to EA mapping (updated March 2025) and the City Council's latest Strategic Flood Risk Assessment (November 2025). In this context a bespoke approach to Flood Zone 3b is included in the policy, whilst ensuring that the flood risk vulnerability classification will not be increased on any site.
- The sequential approach means development should first be on areas of lowest flood risk from all sources and only located in areas of higher risk if it can be shown, through the sequential test, that sites are not available in areas of lower flood risk. In those circumstances, the exceptions test applies, proposals must be able to demonstrate that wider sustainability benefits to the community that outweigh the flood risk would result, and they should be safe for its lifetime, without increasing flood risk elsewhere (and reducing it where possible).
- Where development is in an area of flood risk it is important it is safe. To help achieve this, finished floor level should be above the 'design floor level' which is the maximum estimated water level during a flood event, including with a climate change allowance.
- Work to deliver the Oxford Flood Alleviation Scheme, led by the Environment Agency, is likely to commence within the plan period. This will reduce flood risk from the River Thames to existing businesses, residential properties, major roads and the railway in the Botley Road and Abingdon Road areas, however, it will not remove risk entirely.
- Open watercourses provide a multitude of benefits and culverting them would reduce their biodiversity value as well as lead to a loss of natural flood management features.

Policy implementation

- A first step in a methodical approach to addressing flood risk is to assess the potential for flood hazards from all relevant sources , as well as any impacts the development could have on flood risk offsite.
- The second step is to design development in a way which seeks to avoid highest risks, e.g. locating the most vulnerable uses in areas of lowest risk.
- Thirdly, once avoidance has been fully explored, mitigation measures will be required, these could include:
    - flood resistance measures (dry-proofing) e.g. barriers or raised floor levels to keep water out at times of flood;
    - flood resilience measures (wet-proofing) - using materials that can quickly dry out, helping buildings to be habitable again quickly;
    - Sustainable Drainage Systems (SuDS) to reduce surface water run off by slowing and storing water (see **Policy G8**); and
    - flood compensation measures e.g. creating new flood storage to mitigate any loss of storage through development.
- Finally, there is likely to be an element of residual risk e.g. flood defences can fail or be overrun by exceptional flood events. Managing this remaining risk could involve providing the emergency services with appropriate access/egress routes during flooding as set out in the Environment Agency's best practice guidance (https://www.gov.uk/guidance/flood-risk-assessment-standing-advice), providing occupants access to early warning systems and safe evacuation plans.
- Extensions are a common form of development, and whilst these may have limited flood risk implications in isolation, their frequency of occurrence does have potential for cumulative impacts resulting in increased flood risk as flood storage areas are lost to development. However, it is acknowledged that the limited scope of some extensions

can make achieving the full requirements challenging – thus the policy sets out a pragmatic approach to the requirements supporting such applications.

POLICY G7: FLOOD RISK AND FLOOD RISK ASSESSMENTS (FRAS)

Planning permission will only be granted where proposals have considered the potential for flooding from all sources including the impacts of climate change for the expected lifetime of the development, as well as the potential for them increasing flood risk elsewhere, the safety of users of the development, and where they have appropriately addressed any flood risks identified.

Planning applications for development (including minor householder extensions and changes of use to houses in multiple occupation (HMO)) must be accompanied by a Site-Specific Flood Risk Assessment (FRA) when proposed in the following locations:

- within Flood Zones 2 or 3,
- within Flood Zone 1 with a site area of 1 hectare or more,
- within 'Flood Zones plus Climate Change',
- within Flood Zone 1 and the most recent flood map for planning shows it is at risk of flooding from surface water
- within Flood Zone 1 where the LPA's strategic flood risk assessment (SFRA) shows it will be at increased risk of flooding during its lifetime
- on sites that increases the vulnerability classification and may be subject to sources of flooding other than rivers or sea

The FRA must be undertaken in accordance with up-to-date flood data, national and local guidance on flooding and must assess and mitigate flooding from all sources including the impacts of climate change now and in the future.

Planning permission will only be granted in areas of higher flood risk (depending on the vulnerability of the development and as set out in the NPPF) where a sequential approach has been taken to locating the development and where the Sequential Test and the Exception Test (where necessary according to national policy and supporting guidance) have been passed, and the FRA demonstrates that for the lifetime of the development and including the impacts of climate change:

a) the proposed development will not increase flood risk offsite; and
b) future occupants will be safe during times of flood; and
c) safe access and egress in the event of a flood can be provided; and
d) details of the necessary mitigation measures to be implemented have been provided; and
e) the proposed development will not impact on delivery of future flood relief measures, and where possible will reduce flood risk.

For minor extensions (including householder development) proposed within Flood Zone 2 and 3a, or at risk from other sources of flooding, it is acknowledged it may be challenging to meet all the requirements above. Proposals will be expected to minimise risk to occupants and the surrounding area by following the below hierarchy of principles in order of preference, demonstrating robust justification where the top levels in the hierarchy cannot be met:

c) Full requirements of an FRA (as above)
d) Finished floor levels above design flood level with compensation

e) Finished floor levels above design flood level
f) Finished floor levels at existing level, with water exclusion up to at least 300mm above the design flood level
g) Finished floor levels at existing level with a water resilient strategy up to at least 300mm above the design flood level (unless the development cannot be made safe).

Planning permission will not be granted for development in Flood zone 3b (including minor household development) except where it is for water-compatible uses or essential infrastructure; or where it is on previously developed land and includes a high standard of mitigation designed to demonstrably decrease flood risk on and off-site compared with the current situation. All the following criteria must also be met:

h) it will not lead to a net increase in the built footprint of the existing building within Flood Zone 3b and where possible will lead to a decrease; and
i) it will utilise a sequential approach to move development to lower risk areas within the site; and
j) it will not lead to a reduction in flood storage (using flood compensation measures) and where possible will increase flood storage; and
k) it will not lead to an increased risk of flooding elsewhere; and
l) it will not put the development or any future occupants at risk, including in relation to ensuring safe access/egress to an area wholly outside the flood event; and
m) it will not result in an increase in flood risk vulnerability classification or an increase in the number of dwellings.

Proposals for basement accommodation within flood zone 2 or 3 will not be permitted due to the unacceptable additional risks associated with this type of accommodation. Where proposals for construction of new basements are at risk of other sources of flooding (i.e. groundwater, surface water, or sewer flooding), it must be demonstrated that flood risk can be managed safely.

For any proposal including subterranean (such as basements or piling), it must be demonstrated through a hydrogeological assessment that the development will not cause adverse effects on groundwater (i.e. by not blocking groundwater flow).

Applications that propose culverting of open watercourses will not be permitted. De-culverting of existing culverts is encouraged wherever possible.

SUSTAINABLE DRAINAGE SYSTEMS (SUDS)

Policy context

- Sustainable Drainage Systems (SuDS) use techniques and features which are designed to manage the flow of rainwater in a way that mimics the natural landscape. They are increasingly important in the context of climate change, building the resilience of our urban areas to flooding during times of intense and heavy rainfall events.
- SuDs can also provide a multitude of additional benefits, including providing open space for recreation, habitats to support wildlife and adaptation to other climate hazards such as overheating.

Policy implementation

- SuDS need to be considered as early as possible in the conceptual and design stages and may include water conservation (e.g. rainwater collection and storage) as well as surface water drainage (e.g. soakaways, porous surfaces, swales, streams and balancing ponds).
- SuDS should be designed in a way that incorporates reuse, infiltration, retention or conveyance methods which utilise natural, green and blue infrastructure including soft landscaping, green roofs and ponds.
- Unnatural, artificial components such as piped systems or underground attenuation tanks will rarely be considered an acceptable approach.
- The context of the site and any previous site uses should inform choice of SuDS, for example infiltration will be discouraged where there is site contamination.
- In order to ensure that the drainage scheme functions effectively as designed in perpetuity, a SuDS maintenance plan will be required to be submitted alongside any planning application including SuDS. This should demonstrate how the SuDS will be managed and remain effective for the lifetime of the development.

POLICY G8: SUSTAINABLE DRAINAGE SYSTEMS (SUDS)

All development proposals will be required where feasible to manage surface water through Sustainable Drainage Systems (SuDS). Details of the SuDS must be submitted as part of a drainage strategy or FRA where required as part of a planning application submission, and must be submitted prior to determination unless agreed otherwise by the LPA.

SuDS should be designed in a way that incorporates reuse, infiltration, retention or conveyance methods which utilise natural, green and blue infrastructure rather than unnatural, artificial components. Below ground features such as pipe systems or underground attenuation tanks will not be permitted, unless exceptional site conditions justify an alternative approach which has been agreed with the City Council. Multi-functionality of SuDS should be maximised in their design, such as where they are incorporated into public open space.

Where a site has potential for contamination, SuDS that rely on infiltration will be discouraged and other suitable methods should be adopted to protect the water environment unless it can be demonstrated that there will be no pathway of contamination. Infiltration SuDS measures would not be encouraged in areas that have shallow groundwater as these measures would not be suitable.

Surface water runoff should be managed to greenfield run-off rates as close to its source as possible, in line with the following drainage hierarchy:

a) store rainwater for later use; then:
b) discharge into the ground (infiltration); then:
c) discharge to a surface water body; then:
d) discharge to a surface water sewer, highway drain or other drainage system; and finally:
e) discharge to a combined sewer (only in exceptional circumstances).

For minor developments, SuDS should be designed in accordance with the City Council's latest SuDS design standards, or any equivalent replacement document. For major developments, SuDS should be designed in accordance with the national standards for sustainable drainage systems (or any national or county-level standards that supersede them). Details of the SuDS must be submitted as part of a drainage strategy or FRA where required as part of a planning application submission, and must be submitted prior to

determination unless agreed otherwise by the LPA.

A SuDS maintenance plan should be submitted alongside any planning application for minor or major development, demonstrating how SuDS will be managed and remain effective for the lifetime of the development. The plan must clearly explain what maintenance measures will take place, maintenance responsibilities for all relevant parties, how frequently they will occur and for how long and will be secured by condition.

RESILIENT DESIGN AND CONSTRUCTION

Policy context

- New development must be designed for the expected future climate as well as today's. Planning for the future climate will help avoid 'maladaptation', whereby inefficient design results in inappropriate development for future climate and the increased risks for occupants.
- Resilience measures can be designed into a development from the start—helping to reduce the impacts of hazards like heat waves and flooding when they occur, but also supporting swifter recovery afterwards. They can be varied, involving simple design solutions like raising plug sockets so that they are less likely to get inundated during a flood, or incorporating overhangs on windows to reduce solar gain during the height of summer whilst allowing light in fully during winter.
- Green infrastructure can help slow down and store surface water during heavy rainfall, reducing risks of surface water flooding. Vegetation can also have a cooling effect by introducing shade to buildings and people and reducing solar gain, as well as through processes like evapotranspiration.
- The requirements in this policy can also support applicants in ensuring that their development aligns with some of the separate requirements of Building Regulations. For example, Part O, which addresses overheating, requires more stringent consideration of factors that influence a building's thermal performance such as the design/ layout of windows. Considering these issues at the design stage and as part of the planning process can help reduce the potential for conflicts with the standards required by Building Control.

Policy implementation

- The design and access statement should clearly set out how the requirements within the policy's checklist have been addressed (or identify where these are not relevant). Where a design and access statement is not required, the proposal should clearly set out in one place how the requirements have been met in another part of the application (e.g. in the planning statement).
- Applicants are encouraged to incorporate design measures that have multi-functional benefits and can refer to the same design features where they meet the requirements of multiple parts of the checklist.

- In providing evidence of compliance with this policy, reference can be made to supporting documentation for other policies where relevant (e.g. FRAs for Policy G7, urban greening factor for Policy G3), rather than duplicating it. However, the proposal will need to explicitly identify how a proposed measure put forward in response to the checklist adapts or builds resilience to the existing and future climate change risks.

POLICY G9: RESILIENT DESIGN AND CONSTRUCTION

Planning permission will be granted where proposals have been designed with regard to most up-to-date climate change projections, suitably addressing the key risks from changing climate on occupants; the development; and any supporting infrastructure for its lifetime.

All proposals, excluding householder applications, unless this is required as part of other policies in the Local Plan, will be expected to demonstrate (which could be as part of the Design and Access Statement) that the following resilience requirements are incorporated into the design:

a) Relevant future climate scenarios have informed approaches to mitigating the risk of overheating, flooding (from all relevant sources), and storm extremes for the lifetime of the proposed development.
b) A cooling strategy to address risks of overheating This should consider both internal and external environments, with temperature management and shading of outdoor spaces, and which and promotes passive cooling and energy efficient measures of buildings in the first instance (in line with requirements of Policy R1).
c) Measures to manage water run-off and, where the site is at risk of flooding now or in future, measures to reduce flood risk, such as flood resistance measures (e.g. dry-proofing to keep water out) and resilience measures (e.g. wet-proofing to allow continued function during, or quick recovery after flooding).
d) Measures to ensure water is used prudently and that water is conserved, including that dwellings meet the water consumption limits (in line with requirements of Policy R5).
e) Supporting infrastructure which is designed to function in extreme weather conditions.

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