1.4 ADDRESSING THE NATURE CRISIS

1.4.1 BIODIVERSITY

Consider biodiversity from the outset, using survey information to inform the scope, design, and layout of the development.

Retain, protect, and enhance features of high biodiversity value including protected and priority species and the habitats which support them.

Maintain the integrity of and connectivity between designated sites of European, national, or local importance.

Enhance biodiversity through restoring degraded habitats, creating new habitats, and incorporating measures to increase biodiversity, including populations of priority species.

City Plan 2030 Policies

Env 21 - Protection of Biodiversity

Env 37 - Designing in Positive Effects for Biodiversity

NPF4 Policies

Policy 3 - Biodiversity

Policy 4 - Natural Places

Information required with planning applications:

- A proportionate *ecological survey report* carried out according to best practice
- Site plans showing ecological features including species, habitats and invasive species
- Where required, a Species Protection Plan detailing appropriate mitigation measures
- Biodiversity Enhancement Plan showing site layout with proposed planting and/or species enhancement measures

Edinburgh's Biodiversity

Edinburgh contains a diverse range of ecological assets which contribute to its character and provide essential ecosystem services for it's residents. These include:

- International, national, and locally designated sites
- European and nationally protected species (such as Bats, Otter, Great Crested Newt and Badger)
- Priority species and habitats identified in the *Edinburgh Biodiversity Action Plan*
- Information on designated sites is available on the *Council's website*. Species records for Edinburgh are held by *The Wildlife Information Centre*.

Strengthening the Edinburgh Nature Network *- To strengthen the Edinburgh Nature Network, this meadow next to a former bonded warehouse overlooking Leith Links was planted with an urban pollinator seed mix. © Alexandra Hadley*

Ecological Surveys

Proposals likely to affect a designated site, protected/ priority species or habitat must undertake an appropriate ecological survey. It is important to seek professional ecological advice at an early stage to understand how to avoid ecological impacts wherever possible and incorporate biodiversity into the development design. Ecological consultants can be found via the *CIEEM Member's Directory*

Surveys should follow a two-stage process.

1. A *Preliminary Ecological Appraisal* (PEA) will assess habitats on site and their potential to support protected and priority species.

2. Detailed species survey (e.g. *Bat Survey*) or an *Ecological Impact Assessment (EcIA)* will assess the impact on species and habitats, identify potential mitigation and provide recommendations for ecologically relevant enhancements.

Surveys and assessments must identify habitat features to be retained, enhanced or created to inform development proposals, particularly site layouts, at an early stage.

Timing of Ecological Surveys

In most cases, species survey work must be completed prior to the determination of the planning application. Ecological surveys, particularly protected species, and some mitigation measures often need to be carried out at certain times of year. Early consideration of timing is important to prevent application delays.

Mitigation Hierarchy

The mitigation hierarchy requires development to first avoid and minimise any negative impacts. Impacts that cannot be avoided should be rehabilitated or restored. Finally, any remaining adverse impacts should be offset. The mitigation hierarchy must be followed, with all negative effects mitigated prior to identifying enhancements. Where required, measures such as a protected species licence or a *Species Protection Plan* will be secured by condition.

European Designated Sites

Where a development may have a likely significant effect on a European designated site (e.g. Special Protection Area), the Council as competent authority must complete a Habitats Regulations Appraisal. It is the applicant's responsibility to submit sufficient information to allow the Council to undertake Appropriate Assessment, which may include additional survey information. Further information is available on the *NatureScot website*.

Providing homes for nature *- bat boxes can replace lost roosts or create new roosting opportunities*

Positive Effects for Biodiversity

All developments should provide opportunities to enhance existing biodiversity, strengthen connectivity with the habitat network and/or create new habitats. Biodiversity enhancements must be informed by an up-to-date ecological survey and demonstrate how enhancements have been identified in addition to any required mitigation or compensation measures.

Enhancement measures should be proportionate to the scale of development and sensitivity of the site. Development proposals should clearly set out the type and scale of enhancements they will deliver in a Biodiversity Enhancement Plan, taking account of the site location and characteristics and prioritising those locally important species and habitats identified in the *Edinburgh Biodiversity Action Plan*.

Consideration should also be given to the functional connectivity of measures within the development site and existing habitat beyond the site boundary, connecting with and expanding the *Edinburgh Nature Network*.

The structured approach set out in the *Developing with Nature* guidance is a useful reference when identifying measures to incorporate in proposals:

Planting for nature *- incorporating different habitats into the landscape strategy such as longer grass and meadow planting*

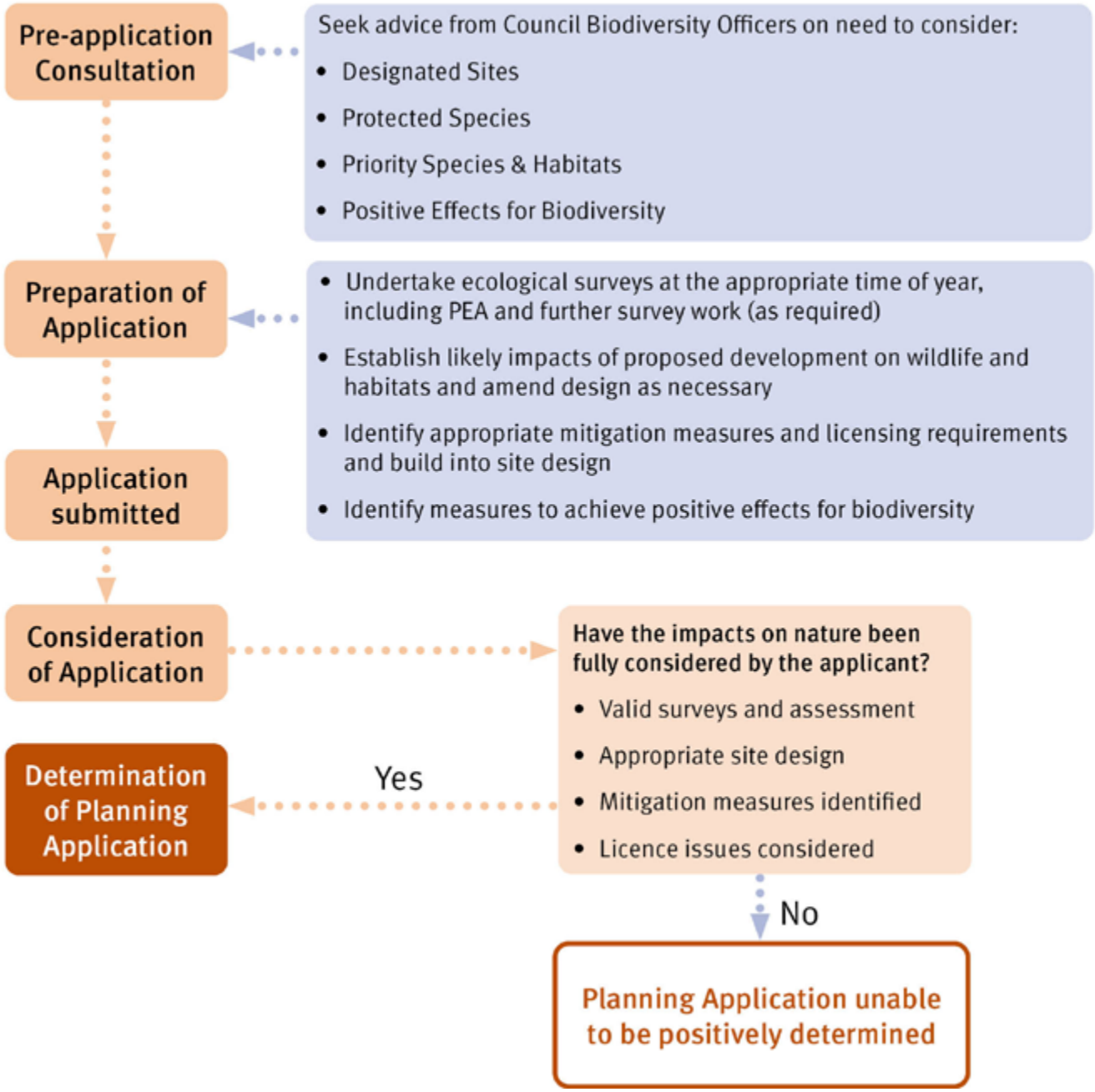
- Ensuring a nature rich approach
- Provide synergies and connectivity for nature to strengthen nature networks
- Integrate nature to deliver multiple benefits
- Prioritise on-site enhancements
- Ensure long term enhancement is secured

Larger developments are encouraged to use an existing metric to demonstrate biodiversity gains. See Technical Guidance for further information.

Ongoing and future management and monitoring are essential to ensure long term benefits for biodiversity. You may be asked to prepare a *habitat management plan* to demonstrate this, which sets out detailed habitat management for each habitat type and provides information on who will manage and monitor the work.

Wherever possible, biodiversity enhancement should be delivered on site. Where off-site enhancements are proposed, these must be agreed with the Council pre-determination.

The planning process and ecological considerations



Technical Guidance

Documents

Species Protection Plan – helps to ensure that works related to a proposal take into account any protected species on site

Habitats Regulations Appraisal - Under the *Habitats Regulations*, all competent authorities must consider whether any plan or project could affect a European site before it can be authorised or carried out. This includes considering whether it will have a 'likely significant effect' on a *European site*, and if so, they must carry out an 'appropriate assessment'. This process is known as Habitats Regulations Appraisal (HRA)

Assessment Methods

The Council will assess enhancement requirements according to the type of development:

Householder Development:

Small-scale householder applicants are encouraged, where appropriate, to contribute to the enhancement of biodiversity. Please refer to the *Edinburgh Householder Design Guidance.*

Local Development:

The level of information required to inform the biodiversity enhancement plan will vary according to the size and scale of the development.

All developments are required to refer to NatureScot's Developing with Nature Guidance, giving due regard to the Edinburgh Biodiversity Action Plan and Nature Network. There is no requirement to use a biodiversity metric, though it may be useful for larger developments to clearly demonstrate how a proposal will deliver enhancement.

The information supporting a planning application must provide evidence that the development incorporates appropriate measures to conserve, restore and enhance biodiversity to meet the requirements of NPF4 Policy 3. A statement should be provided setting out:

- How the mitigation hierarchy has been followed
- Details of the existing habitats and species present on site, and what measure(s) will be included to deliver positive effects for biodiversity
- Site plans that clearly show existing and retained biodiversity features, and the location and nature of all proposed biodiversity enhancements
- A brief description of future management and monitoring for biodiversity enhancements

Major/EIA Development:

National or major development proposals should demonstrate how they will conserve, restore and enhance biodiversity utilising an existing tool or metric, to clearly demonstrate biodiversity gain in accordance with Scottish Government *Biodiversity Planning Guidance*. Examples of appropriate tools include:

- *DEFRA Biodiversity Metric*
- *Urban Greening Factor*
- *Malmo Green Points*
- *Building with Nature Standards Framework*

Developments are required to demonstrate a significant gain for biodiversity. The preferred tool should be agreed at the pre-application stage with the Council. Developments should aim to deliver at least a 10% biodiversity gain where possible.

Major developments must be supported by an Ecological Impact Assessment and take account of the mitigation and enhancement measures recommended therein. Planning applications should include the following information:

- Ecological Impact Assessment, which should meet the following criteria:

1. the proposal is based on an understanding of the existing characteristics of the site and its local, regional and national ecological context prior to development, including the presence of any irreplaceable habitats;
2. wherever feasible, nature-based solutions have been integrated and made best use of;
3. an assessment of potential negative effects which should be fully mitigated in line with the mitigation hierarchy prior to identifying enhancements;
4. significant biodiversity enhancements are provided, in addition to any proposed mitigation. This should include nature networks, linking to and strengthening habitat connectivity within and beyond the development, secured within a reasonable timescale and with reasonable certainty. Management arrangements for their long term retention and monitoring should be included, wherever appropriate; and
5. local community benefits of the biodiversity and/or nature networks have been considered
6. Biodiversity metric details, including any habitat condition assessments in full. This may be included within the EcIA or as a separate document.
7. Site plans that clearly show existing and retained biodiversity features, the location of mitigation measures, and the location and nature of all proposed biodiversity enhancements.
8. Habitat Management Plan which specifies the enhancement, compensation/restoration management prescriptions and monitoring strategies

Multi-phased developments must calculate biodiversity enhancements for the whole site and demonstrate that adequate biodiversity enhancements can be delivered, with information on how it will be implemented as part of the larger development.

Holly Blue Butterfly *- the population is expanding in Scotland. Appropriate planting can support this species. © C. Cumming*

Sparrowhawk *– a priority species for Edinburgh as identified in the Edinburgh Biodiversity Action Plan. © Jim Johnston*

Badger *– a protected species requiring consideration in the development management process*

1.4.2 TREES & WOODLAND

Make sure layout, design and construction prioritise retention, protection, and expansion of existing tree and/or woodland cover.

Where trees exist on or near the site, use a tree survey to inform layout and design.

Make sure development achieves the appropriate target for tree canopy cover at that location.

Maximise opportunities to plant new trees in streets and open spaces.

Put in place satisfactory proposals for tree protection, planting and ongoing maintenance, including establishment maintenance for new trees.

City Plan 2030 Policies

Env 3 -	Development Design
Env 6 -	Green Blue Infrastructure
Env 20 -	Protection of Trees and Woodlands
Env 27 -	Public Realm, New Planting and Landscape Design

NPF4 Policies

Policy 6 - Forestry, woodland and trees

Trees and woodlands contribute to people's well-being as well as the character and appeal of the city and its surrounding countryside. Edinburgh's ancient woodland and veteran trees are an irreplaceable ecological resource and often have cultural or historic significance.

The city's trees also play a crucial role in responding to the climate and nature emergencies by:

- Slowing and absorbing rainwater to reduce surface water run-off;
- Locking up carbon from the atmosphere as they grow;
- Hosting a diverse range of plants, fungi and wildlife species;
- Providing pathways for nature species to connect both now and in response to future climate change.
- Providing shade in hot weather that limits the urban heat island effect.

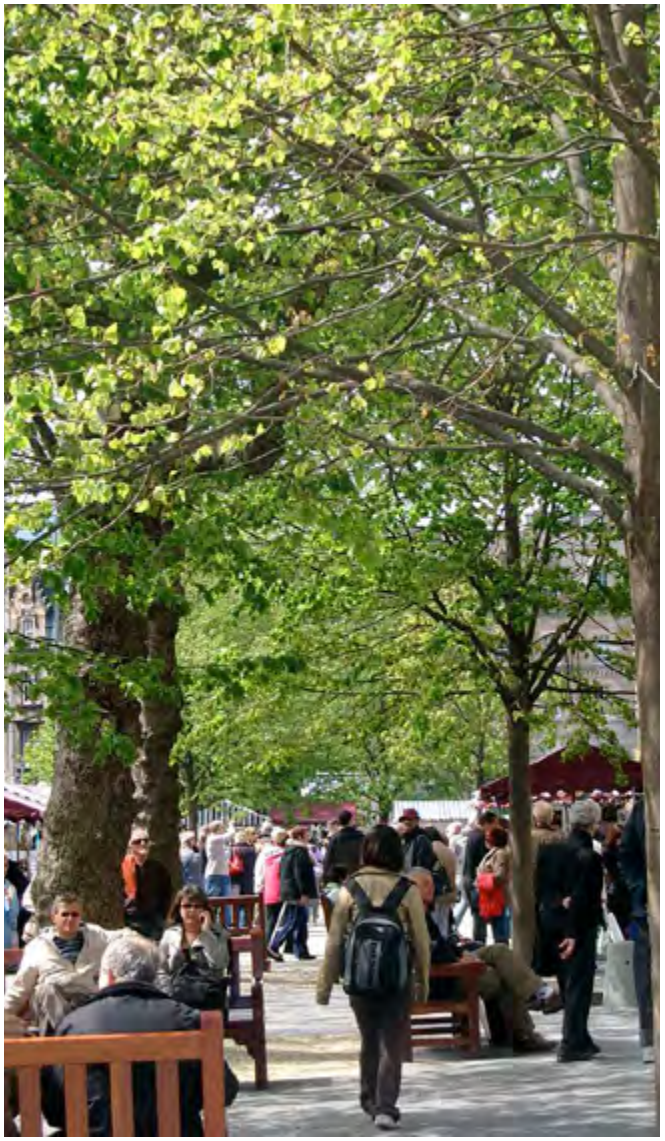
Edinburgh's ambition is to increase woodland cover in line with the Council's current *Forestry and Woodland Strategy* and *Edinburgh One Million Tree City* initiative. To help fulfil its climate emergency targets the city is committed to planting 250,000 new trees by 2030.

It is equally important to value existing trees as a ready-made setting for new homes and neighbourhood facilities. It can take several decades for new planting to provide equivalent benefits and reverse any loss of tree cover.

Retention, protection and enhancement of tree and woodland cover

Start with a tree survey to evaluate the existing tree and woodland on and adjacent to a proposal site.

Trees and woodland subject to a Tree Preservation Order or within a Conservation Area are subject to *statutory protection*. However, trees not subject to designation should still be retained and protected during development.



Street trees: Grassmarket - *A mix of mature and recently planted trees enhance the character and appeal of Edinburgh's Grassmarket, complementing the traditional hard landscape and providing welcome shade for sitting out in hot weather.*

The tree survey should consider the collective value of trees, not only their individual qualities. Tree groups comprising individual trees of lower quality often have high amenity, landscape or habitat value.

Jointly consider the tree survey and layout proposals against habitat and protected species surveys, in particular the presence of bat roosts.

The default position is that trees should be retained. To do so:

- The site layout should avoid adverse impacts on existing woodland, hedgerows, and individual trees unless these are proven to be unsuitable for retention.
- New buildings, streets, drainage infrastructure and utilities should be set-back from existing tree canopies and their root protection areas.
- Existing trees and woodland within areas of publicly accessible open space (or large communal grounds) should be retained, expanding planting where possible.

Where, as a last resort, removal of existing trees or woodland is justifiable compensatory planting, of appropriate species and numbers, will be expected.

Expanding Tree Canopy Cover

To achieve climate adaptation, biodiversity and placemaking benefits, development should maximise the opportunity to plant new trees and woodland.

All development with new public and semi-private external space will be assessed in terms of the quality and extent of tree planting proposed.

Planting proposals will vary depending on the size and location of the site, but tree planting should be used to structure the layout and enhance the community and environmental value of streets and open spaces.

Tree canopy refers to the area of ground covered by a tree when viewed from above, including foliage, branches, and stem.

Factsheet W7 - Tree Canopy explains how canopy cover should be calculated and presented by applicants as part of landscape proposals.

Trees lining the local path network - *At Hopetoun Village, trees are an integral part of design and layout.*

The tree canopy coverage across Edinburgh *- Mature trees within Blackford and The Grange achieve between 20-30% canopy cover and demonstrate the important contribution tree cover can make to the city's townscape in this view from Blackford Hill.*

Tree Canopy Cover Targets

The Council is targeting 20% tree canopy cover for all residential proposals (excluding householders) and residential or commercial led mixed-use development. This will be judged on a site-by-site basis, and will reflect the individual scale, context and opportunities of the site. The target should be established prior to submission through pre application advice.

A higher canopy cover of 30% could be targeted where development is located on a large site incorporating large open space in a strategic location for the city's green-blue network.

Where development is within a dense, urban environment with a tight urban grain, a lower canopy cover of 10% will likely be acceptable.

The initial set of targets will be monitored to evaluate benefits achieved in terms of securing an enhanced urban tree canopy and adjusted as required.

Target: 20% Tree Cover

Most medium to high density sites should target 20% canopy cover, including larger sites with a mix of flats, colonies, and townhouses.

The targets should be met within street design, civic spaces, and parking areas, not solely within public open space and private communal greenspace. Layout should prioritize connectivity of new stands of trees, street trees and woodland.

Smaller ornamental tree planting within private front gardens will not normally be counted towards achieving the target.

Example area: Quartermile

A slightly lower canopy cover will be permitted in situations where it can be demonstrated that this leads to a higher overall quality of green space.

STRATEGIC SITES

DENSE URBAN SITES

30% Tree Cover

Larger sites located within or adjacent to Edinburgh's Strategic Green Blue Network, or its planned extension should target 30% tree canopy cover.

This should also include major new development areas subject to comprehensive masterplans or place briefs and incorporating large new green spaces. This could apply to both new high density flatted development, proposals with a higher proportion of houses and colonies or sites where lower densities are appropriate to context.

The target should be delivered as part of the strategic approach to landscape across the development. This includes the design of the street network and larger open spaces that form the wider landscape framework, alongside retained and enhanced landscape features.

Example area: Blackford

10% Tree Cover

In some sites, a 20% tree cover will not be possible. This could include smaller sites in existing high-density areas, with a fine urban grain of flatted development. Or it may be due to circumstances such as: the setting of historic assets, archaeology, wayleaves and easements, airport safeguarding, the need for other priority habitat types, open ground for recreation and sunlight, or to maintain views and public safety.

These sites should aim to achieve as high a tree canopy cover as possible, and this should be no lower than 10% canopy cover. The reasons for not achieving a higher tree canopy targets must be clearly outlined. There must be clear consideration of how best to create high quality green space on the site. A lower canopy cover be accepted and may be compensated for by other green-blue infrastructure to manage surface water e.g. rain gardens and green roofs.

Example area: Kings Stable Rd

The targets should be achieved by retaining existing tree cover combined with the future canopy spread of new tree and woodland planting.

Applicants should follow the method recommended in *Factsheet W7 - Tree Canopy* to calculate the existing and proposed site canopy cover and present their findings.

For applications for Planning Permission in Principle, capacity to achieve the relevant target may require to be shown through an illustrative masterplan.

Detailed calculations will be expected for all applications for full planning permission or approval of matters specified in conditions.

Planting Considerations

During layout design, sufficient space should be allocated above and below ground for specimen trees, street trees and woodland to grow to maturity.

Select species to reflect the intended location, ultimate height and spread and relationship to buildings, roads, and wider landscape design.

Include a mix of small, medium, and large stature, long-lived tree species to create townscapes of the future, host more flora and fauna and lock up carbon.

A diverse mix of native and non-native trees will provide the greatest resilience to plant pathogens and climate change, as well as visual and environmental benefits.

On larger sites, no more than 10% of proposed trees should be the same species, no more than 20% should be the same genus, and no more than 30% should be the same family.

Except for historic designed landscapes, avoid single species avenues. Instead use a mix of two or three tree species with similar form and habit.

Tree planting in open ground is preferable to tree pits as it provides better conditions for growth including space, soil water availability, nutrients, biota, and gas exchange.

The planting of street trees and trees in hard surfaces requires careful site planning and detailed design.

Proximity to underground utilities, street lighting, road signs, CCTV and parking need require careful consideration and design.

For brownfield sites, the feasibility of proposed tree planting locations may need to be demonstrated by ground radar survey or trial pits to expand on utilities searches and avoid subsurface constraints.

Use structural soils or underground cellular systems in hard surfaces to provide adequate underground rooting area and a load-bearing paved surface.

Safeguarding trees during construction

Protective barriers must be erected before work starts on site and remain until all construction activity is complete. Conditions and Tree Preservation Orders will be used to safeguard trees.

British Standard (BS) 5837 provides guidance on planning and implementing development work on a site with trees.

Trees with local heritage value *- the Corstorphine sycamore is a cultivar that originated in Corstorphine.*

Management and Aftercare

The ongoing management of existing trees and woodland and effective aftercare of new planting must be set out in a maintenance plan.

In specific cases, an arboricultural clerk of works may be required by condition to oversee construction activities.

New trees should receive 50 litres of water a week in spring and summer for the first three years after planting.

Consideration may be given to the use of Planning Conditions to secure the longevity of trees.

Any trees proposed for adoption by the Council will require a period of five years' establishment maintenance prior to handover.

Detailed requirements for tree planting plans, planting stock and ongoing maintenance are set out under Public Realm and Landscape Design.

Trees providing communal benefit *- Trees within communal gardens lining the footway at Meggetland*

Technical Guidance

Summary of Process

1. Carry out tree survey to BS 5837
2. Prepare a Tree Constraints Plan showing the areas affected by existing trees
3. Use the Tree Constraints Plan to design site layout including new tree planting
4. Prepare a Tree Protection Plan
5. Submit with planning application – obtain planning permission with tree protection and planting conditions
6. Install tree protection measures before any work starts and maintain until all work is completed.

Trees and Woodland:

Appoint an Arboricultural Consultant registered with the *Arboricultural Association* or the *Institute of Chartered Foresters* to provide tree survey and management advice.

Tree survey

A tree survey to the standard of BS 5837 is required for of all trees with a stem diameter of 75mm or more at 1.5m above ground level or within 12m of the site boundary. Categorise trees by their quality and suitability for retention.

Prepare a Tree Constraints Plan (TCP) showing the below and above ground issues that need to be considered during the design process.

Identify the Root Protection Area (RPA) for each tree or woodland group. The ground within the RPA must remain undisturbed around each tree to prevent damage to their roots.

Map the current and future canopy height and spread of each tree. Consider the long-term impact of the trees on streets, buildings, and open spaces, including:

- Daylight and sunlight
- Privacy and views
- Effects of leaf litter
- Visibility at junctions
- Proximity to public transport, including double-decker buses and tram overhead lines.

Design and layout

The design proposal should be compatible with the mature size and shape of the tree without causing a future nuisance.

Opportunities for future planting should be identified and plotted on the TCP to protect these areas from soil compaction. Space needed for construction activity must also be considered.

Where conflicts arise in proximity to existing trees, further detailed and intrusive investigation may be required through an Arboricultural Impact Assessment (AIA). As a result, the site layout or working methods may need to be reconsidered.

Applications for full planning permission

For the finalised layout, a Tree Protection Plan should be prepared showing trees for retention and removal, and the precise location of protective barriers and ground protection to form the Construction Exclusion Zone (CEZ). Specify tree protection fencing on the drawings to at least the standard shown in Figure 2 of BS 5837. An Arboricultural Method Statement (AMS) may also be needed for specific works.

When submitted with a planning application, the tree survey report should overlay the proposed development footprint with existing tree constraints. Pre-development surveys alone are insufficient.

Protected Species

It is the developer's responsibility to determine the presence of bats (a European protected species), tree roosts and the effect of proposals on habitat and navigation features. *See "1.4.1 Biodiversity" on page 30*.

Further Reading

- *ESDG Factsheet F5 Street Trees*
- *ESRG W1 SuDS Trees in hard Landscapes*
- *ESRG Factsheet W7 Tree Canopy*
- *BS 5837 Trees in relation to design, demolition and construction.*
- *BS 3998 Tree work – Recommendations.*
- *BS 8545 Trees: from nursery to independence in the landscape – Recommendations.*

1.4.3 GREEN ROOFS

Design all flat roofs to be green or blue roofs, unless contextual analysis deems this unsuitable.

Make sure green and blue roofs are designed to attenuate surface water run-off and deliver positive effects for biodiversity.

Where possible, integrate green roof technology into the design of roof terraces.

Submit a green roof maintenance plan for any detailed proposal that includes a green roof.

City Plan 2030 policies

Env 8 –	**New Sustainable Buildings**
Env 6 -	**Green Blue infrastructure**
Env 37 -	**Designing-in positive effects for Biodiversity**

NPF4 Policies

Policy 20 – Blue and green infrastructure

A green roof is a flat or sloping roof that consists of two distinct layers:

- A natural layer that consists of vegetation and soil;
- A waterproof, engineered layer that ensures the natural layer performs as it should and avoids negative impact on the integrity of the building fabric.

The term "brown roof" refers to where the natural layer is not planted and instead allowed to self-seed naturally from seeds that are windblown and dispersed by birds.

A blue roof has an additional layer of temporary storage for storm water. Blue roofs are most effective as part of a wider SuDS scheme.

Green roofs supplementing blue-green infrastructure *- This building has been designed with a sedum green roof which provides ecological benefits to the adjacent Water of Leith*

Green, blue and brown roofs can deliver a range of practical benefits for people and nature, while assisting with adaptation to climate change. They contribute to sustainable rainwater management by absorbing, reducing and slowly releasing rainwater at the point where it falls. By adding thermal mass to the roof structure, they can limit the potential for a building to overheat during hot weather. They can also benefit residential amenity and biodiversity, enhance air quality, and reduce sound transmission.

Green, blue and brown roofs are sometimes referred to as a "living roofs". *ESRMG Factsheet W6 - Living Roofs* provides further information on design and maintenance, including case studies, and their role in responding to the climate emergency.

Green walls can also be used in certain circumstances and provide many of the benefits of green roofs. It is important to note that green walls require careful irrigation and maintenance.

Identifying appropriate locations for green and blue roofs

The Council expects all flat roofs to be designed as green or blue roofs except where it is demonstrated they are not suited to a specific location.

Locations that may not suit the introduction of a green or blue roof include:

- Sites where the roof finish could detract from:
  - the city's distinctive skyline of pitched roofs and spires
  - an important aerial view (such as the New Town Conservation Area, the World Heritage Sites)
  - the architectural integrity of a listed building
- Parts of the city that have an existing, visually cohesive roofscape;
- Sites within historic areas that are distinctive and sensitive to change.

In assessing the visual impact of green or blue roofs in these locations, both distant and street level views should be considered along with building height and landform.

Flat roofs, green roofs and blue roofs should be avoided within the immediate vicinity of the airport due to their potential to attract hazard bird species, such as gulls, that risk collision with aircraft. These roofs will be supported only where an appropriate bird management plan has been secured and can be delivered. Within 13km of the airport, applicants must demonstrate that flat, green or blue roofs are appropriately designed and will be maintained to reduce risk of bird strike to aircraft for the lifetime of the building. All construction within 5km of the airport requires an agreed risk management plan for the construction phase.

Types of green roof

A green roof is usually categorised according to how it is managed:

- An extensively managed roof has a shallow soil profile growing drought-tolerant, self-seeding vegetation (such as sedum and wild flowers);
- An intensively managed roof has a deep soil profile supporting shrubs, trees and grass.

Multi-functional green roofs

Green roofs should not be regarded as an alternative to open space provision on the ground except where they are designed to deliver multiple benefits. This requires careful detailing, design and maintenance. Examples include roof terraces that incorporate low maintenance ground cover, small shrubs and grasses with amenity value, providing opportunities for people to exercise, relax, grow plants and experience nature.

Green roofs can also provide a suitable location for micro-renewable energy installations, such as photovoltaic panels, providing they are appropriately detailed and installed to avoid damage to the roof layers.

Maintenance of green roofs

Maintenance requirements, including establishment irrigation and safe access arrangements must be a key consideration from the outset of the design process. Requirements vary according to the type, planting and design of the roof. An extensive roof with planting designed to be low maintenance may only require quarterly or twice-yearly visits. An intensive roof designed as a garden or amenity space may require monthly or weekly checks.

Key maintenance activities involve:

- Keeping all drainage points, outlets and gutters clear of debris or vegetation;
- Clearing debris and vegetation from fire-breaks;
- Removing undesirable or invasive plants.

Green roofs must be designed and maintained to resist external spread of fire. Measures include designing in firebreaks and limiting the organic content of the growing medium.

Information to accompany a planning application

All detailed applications for buildings with new or retro-fitted green roofs should be accompanied by:

- A green roof maintenance plan (forming part of the landscape management plan) that spans the lifetime of the building and describes maintenance regimes, responsibilities and funding mechanisms;
- Details of proposed roof planting, including plans and sections that describe height implications.
- Realistic photomontages that reflect the season of planting along with information on seasonal changes.

Where planning permission has been granted and design is subsequently altered to omit a green roof, this is likely to be considered to be a material change to the development.

Green roofs and views - *The green roof on the OMNI Centre, Leith Street creates a pleasant rooftop environment while also enhancing the view from Calton Hill.*

Green Wall, Waverley Station *- Green walls provide many of the benefits of green roofs. This green wall at Waverley Station softens and enhances the rail environment.*

1.4.4 LANDSCAPE DESIGN AND PUBLIC REALM

Design and detail all external space to respond well to the character of the surrounding context.

Create a robust landscape structure, integrating built form, landform, trees, blue green infrastructure, and hard surfaces.

Design a high quality and connected public realm as a stage for city life and an appropriate setting for buildings.

Minimise disturbance and damage to soils.

Specify attractive and biodiverse planting that is suited to the site's growing conditions and the city's changing climate.

Submit fully specified landscape designs and long-term landscape and habitat management plans with every detailed application.

City Plan 2030 Policies

Env 25 – Layout Design

Env 27 - Public Realm, New Planting and Landscape Design

NPF4 Policies

Policy 14 - Design, quality, and place

Policy 20 -Blue and green infrastructure

Providing a high quality external environment: Scottish Parliament *- The landscape design creates an inspiring space that responds to the context © Getty Images*

To enable Edinburgh to be a sustainable and liveable city, development must create high quality landscapes and public realm that connect people, place, and nature.

Landscape design

Landscape design must cater for the needs of all proposed use(s) and user groups, drawing upon the positive characteristics of the surrounding area, including designated sites.

For major development that will be delivered in phases or by multiple parties, landscape masterplans must co-ordinate the layout and intended quality of all external spaces.

The layout and species mix, form, scale, colour, and texture of planting should be used to enhance the setting of buildings and neighbourhoods. Where space is limited, climbing plants, green or blue roofs, or green walls may be acceptable.

Woodland should be delivered at the earliest stage of development, to give more time for it to establish and benefit people, place, and wildlife.

Use planting, furniture, retained features, public art or displays to provide interpretation of local history and present-day cultural life.

Landscape proposals, including trees and woodland, open terrain and water features should avoid creating *potential wildlife hazards* within 13km of Edinburgh Airport.

Pre-planning dialogue with Aerodrome Safeguarding and a bird strike risk management plan may be needed.

Layout principles

Layouts should be multi-layered, offering year-round interest for people and a range of habitats linked to the wider nature network, including:

- Larger stature trees or blocks of woodland should be used to structure the site and define open spaces, streets, and multi-user paths *see "1.4.2 Trees & Woodland" on page 34*.
- Shrubs, hedges and herbaceous plants should be used to define spaces, provide shelter, privacy, and amenity, as well as cover and food for nature.
- New hedges should generally be mixed native species for their biodiversity value, shaped to an urban or rural form as required.
- Open grass for recreation should include bulbs and native wildflowers for seasonal interest and habitat value.
- Incorporate space for informal play that is suitable for all age groups, with accessible paths, inclusive seating and plant beds.
- Consider use of flowering or fruiting trees or orchards to add seasonal interest through blossom, apples, or conkers.

Planting

To ensure new planting will thrive and provide initial visual impact:

- Minimum standards for new planting will apply (refer to Technical Guidance).
- The specified planting should be suited to the site's soils, micro-climate and resilient to the effects of climate change, including hotter, drier summers and warmer, wetter winters.
- Avoid plants that could be toxic or allergenic in settings such as housing, schools and nurseries.

To strengthen biodiversity and to prevent the escape of cultivated plants into the wild, use only native species in rural settings or adjacent to natural features, watercourses or protected sites.

Multi-layered planting, Holyrood - *The landscape of this student housing development includes a varied assortment of planting*

Soils

Early consideration of existing soil and habitat resources can minimise the disturbance and damage to soils from development, reduce waste and limit the need to import new material for site restoration. Consideration should be given to soil functions, water permeability and soil biodiversity.

Proposals must demonstrate that soil health will be protected through correct handling and storage that complies with the British Standard for topsoil and subsoil. Wherever possible, undisturbed ground should be safeguarded for planting.

More *detailed site-specific information* will be required where peatland or carbon-rich soils may be impacted by development, including appropriate surveys and assessment that inform design and layout to ensure compliance with the mitigation hierarchy. Where impacts cannot be avoided, a method statement for soil, Construction Environmental Management Plan (CEMP) or Habitat Management Plan (HMP) may be required to protect soil from compaction and erosion.

Effective maintenance and management

Good management and maintenance are essential for landscapes and their biodiversity to thrive and evolve in the long-term.

Proposals must be adequately resourced to achieve their potential and future maintenance costs should be considered as part of the design process.

A Landscape and Habitat Management Plan (LHMP) is required to explain how a development will manage the landscape and ecology of a site, clarifying:

- funding arrangements and parties responsible, in writing accompanied by an annotated plan showing e.g. areas to be privately maintained, land to be adopted by the Council subject to a relevant commuted sum, and those areas adopted and maintained by Scottish Water or other third parties.

- the intended maintenance objectives and operations, scheduling their frequency and where these apply on an annotated plan.

Developments including substantial new or enhanced green blue infrastructure or proposals subject to EIA mitigation will require a post-implementation monitoring report.

Alongside reducing carbon in construction and re-use of site won materials, design and layout should minimise emissions and resource use in maintenance e.g. avoiding, wherever possible, mowing with machinery.

Unlike established plants which have developed root systems, new trees and other plants require watering in dry spring and summer weather. For example:

- Newly planted trees require watering for three years, ideally using harvested rainwater with watering pipes or bags.
- Mulches should be applied to planting to suppress weeds and prevent soils drying out.

References

CAP 772: Wildlife Hazard Management at Aerodromes | Civil Aviation Authority (caa.co.uk)

HTA Guide to Potentially Harmful Plants, 3rd Edition (2022)

BS 3882:2015 Specification for topsoil

BS 8601:2013 Specification for subsoil

Providing high density homes with quality green space - *At this relatively high density development at Canonmills Gardens, residential amenity is supported through a mix private gardens, balconies and communal open space.*

Technical Guidance

Proposals should be prepared by a landscape architect. Refer to the *Landscape Institute Member Directory.*

Applications for Planning Permission in Principle (PPP)

These applications may require a landscape strategy, to show how the amount of development proposed can achieve an acceptable fit with the site and context. Details should include:

- The proposed functional use and treatment of external spaces, key changes in level/slope gradient.
- Set-back distances to retained built and natural features, including trees and woodland.
- The location of existing and proposed services and preliminary drainage proposals.
- Cross-sections of typical streets, open spaces, and blue green infrastructure in relation to buildings.

Detailed applications

To achieve a high standard of landscape design, detailed applications for planning permission should include fully specified landscape proposals.

Submission of landscape proposals as a condition of planning permission will only be acceptable, by negotiation, where there is sound justification to do so.

In addition to the considerations for PPP, detailed landscape proposals should include the following information:

- Site-wide topographic information (including existing and proposed plans and sections showing site levels and contours).
- Full botanical name of all plant stock.
- Minimum size of plant stock at planting as per the National Plant Specification or BS 3936-1 Nursery stock – Specification for trees and shrubs.
- Expected height and spread of trees and estimated contribution to tree canopy cover targets.
- Planting density, total numbers, and planting locations.
- Grass and wild flora seed mixes and specification.
- The layout, proposed finishes and levels information must be co-ordinated with the Tree Protection Plan showing trees to be retained.
- Tree pit details, including soil volume calculations, specified growing medium and ameliorants, drainage, means of support, protection, and accessories.
- Details of all functioning landscape elements of Sustainable Drainage.
- Details of proposed hard landscape materials, including paving and laying pattern, site furniture and boundary treatments *refer to "1.4.5 Hard Landscape" on page 46*.

All information should be set out and referenced on scaled drawings submitted for approval.

As a minimum, submitted drawings should include a landscape general arrangement, soft works plan, and hard landscape plan.

Clearly annotate plans and include all relevant specifications in the drawing notes and not within separate documents.

Landscape and Habitat Management Plans

The LHMP should show the maintenance operations, timings or frequency for each landscape and habitat component, including:

- Grass, turf and meadow cutting regimes, including removal of arisings.
- Height and form of shrub and hedge pruning.
- Maintenance of herbaceous plants and bulbs.
- Inspection of trees for wind-rock, re-firming of root zone, adjusting tree ties, stake replacement.
- Replacement of plant failures (dead, diseased, dying, damaged or missing).
- Watering volume, frequency, methods, contingency for drought/hosepipe bans.
- Subsequent removal of tree guards and means of support.
- Management of retained trees and woodland.
- Maintenance and top up of mulch and loose surfaces such as gravel.
- Maintenance, cleansing and refurbishment of hard landscaping, including surfacing around trees in paving.
- Control of undesirable weeds
- Litter and graffiti removal and cleansing.
- Maintenance of boundary walls, fencing or site furniture.

Standards for Planting

The following minimum standards will apply:

Planting type	Size at planting	Density/spacing	Other requirements
Woodland	60-80 cm height	1m spacing	Include 30% feathered trees of min height 180 cm where immediate visual effect required. Min 300mm depth of topsoil. Biodegradable tree guards, matting or protective fencing required to reduce plant failure due to exposure or browsing animals.
Trees in green spaces and planted areas	Extra heavy standard, 14-16 cm girth minimum. The Council may require larger dependent on location.		2m clear stem or multi-stem. Provide a dimensioned tree pit/trench detail with topsoil, soil ameliorant specification, details of drainage, staking and accessories, including watering pipes and bags.
Trees in paved spaces and public realm	Semi mature, 30-35 cm girth.		2m clear stem, underground guyed , or 2.5m clear stem adjacent to cycle routes. Provide a dimensioned tree pit/ trench detail to demonstrate adequate soil volume and load bearing support for surrounding paving. Include topsoil, soil ameliorant specification, drainage, watering pipes and bags.
Fruit trees	Light standard, 6-8cm girth.		Root stock, spacing and means of support to correspond with intended form and shape.
Hedges	60-80 cm height. Larger stock may be required dependent on location.	250mm spacing in two offset rows 300mm apart.	Protected by post and wire fencing or similar. Min 400mm depth topsoil.
Shrubs/fruit bushes	Dependent on species	500-600 mm apart	Min 3L pot grown unless bare root/root balled. Min 300 mm depth site topsoil. Planted in groups of 3-5 of same species.
Herbaceous perennials/ ground cover	Dependent on species.	300 - 450mm apart	Planted in groups of at least 7 of same species.
Amenity Grassland	Specify turf or seed mix g/m2		Min 200 mm site topsoil spread over graded and free draining subsoil. Stone picked.
Meadow Grassland	Specify meadow seed mix g/ m2 by type, including dry/wet meadow, pictorial, woodland, and percentage of each species. Additional plug plants to be specified by species and nr/m2		Use of graded site subsoil free from compaction. Ensure removal of arisings to maintain nutrient status of soil.
Bulbs	Specify by species, grade nr/m2 and diameter.		
Green roofs/walls	Specify whether intensive or extensive green roof and type of green wall.		Ensure sufficient structural capacity and depth of growing medium exists. Where proprietary matting systems are specified, set out species mix and details of any plug planting.

1.4.5 HARD LANDSCAPE

Keep the number of materials and colours in the hard landscape to a minimum and avoid street clutter.

Detail the hard landscape to ensure it is accessible and provides good visual appearance that lasts over time.

Ensure street furniture reflects the needs of the development and future users.

Retain and re-use historic materials.

Make use of stone walls and railings to form high quality boundaries.

City Plan 2030 Policies

Env 27 - Public Realm, New Planting and Landscape Design

NPF4 Policies

Policy 14 - Design, quality, and place

Providing high quality hard landscape: St James Quarter *- This new public space off James Craig Walk connects the St James Quarter entrance to the east end of Princes Street. It features sandstone paving, granite seating terraces, and street trees.*

Hard landscape responding to heritage: St Andrew Square *- Elliptical path in St Andrew Square, edged by seating walls, low level lighting and small paving stones to echo historic horonised paving.*

Edinburgh's public realm – the space between its buildings – contributes to the Outstanding Universal Value of the World Heritage Site, the character of the city's Conservation Areas and the setting of key buildings and monuments.

The city's hard landscape typically comprises simple, uncluttered space, using a limited and consistent palette of materials. Historic features include flagstones, stone setts, kerbs and drainage channels, and footways pitched with stone - known as 'horonized' paving.

New paved space can form a welcoming entrance and setting for buildings or community gathering and social spaces. Paved space can also be used to define the city's canal side and waterfront edges.

Hard landscape

Hard landscape should be sited and designed to complement city centre and town centre public realm frameworks where these exist. Major development may require its own public realm strategy to set out a cohesive network of high-quality streets and spaces.

Layouts should reflect the city's historic fabric and urban grain. It is appropriate to use changes in material to define spaces of differing functions, between public and private areas and level changes.

The extent and type of paving and planting should be balanced within a layout. This is important to reduce the amount of sealed surfaces and manage rainwater

Expressing the layers of history: King's Stables Road *- Rear courtyard in the Old Town, paved with Caithness slate to a design inspired by its history as a medieval tilting (jousting) yard, as well as its industrial past and use as stables.*

sustainably and to reduce heat stress resulting from hot paving in summer.

Topographical surveys must be extended beyond the site to ensure proposed levels tie in with adjacent surfaces.

Paving materials

The character of the city's stone buildings should be reflected in the tone of new paving in public spaces and streets, for example:

- New Town - sandstone flagstones
- Old Town - Caithness slate

In other Conservation Areas, use of natural stone or pre-cast concrete slabs will be considered case-by-case. Elsewhere, asphalt footways should be used. Beyond the public road, however, it is acceptable for other materials and styles to form part of a public realm design.

Existing stone setts and kerbs should be retained and re-used on site, for heritage value and to reduce embodied carbon.

Detailed design is of particular importance, ensuring the size of paving unit and laying pattern is appropriate.

Granite may be used for durability and visual contrast for areas of vehicular over-run, for kerbs, steps and tactile paving.

Creating Space for People: Bristo Square *- Durable hard landscaping and seating provides an important space for social and recreational activity*

Permeable paving selected for surface water management should have a high-quality finish that lasts over time.

Recessed covers for inspection chambers should be used and co-ordinated with paving layouts to reduce their visual impact.

Street Furniture

Minimising street clutter and defining furniture zones enables ease of walking, wheeling, cleansing and maintenance.

Walls, railings, seating, visitor cycle stands, bins, sign and signal poles should be carefully integrated with the design.

Seating should be included to provide rest points, social spaces or at attractive viewpoints.

Vehicular access controls and hostile vehicle mitigation must be considered at the start of the design process to reduce the need for bollards and retrofitting of barriers.

Boundary treatments

Edinburgh's tradition of stone boundary walls, railings on low stone walls or coping, and hedges should be reinforced.

In most situations, hedges should be mixed native species planting for biodiversity value.

Tall, rendered boundary walls should be used sparingly and detailed carefully to shed water.

Timber fences should not be used to front streets or publicly accessible routes unless bespoke and attractively detailed.

Low walls and raised beds can define space, make planting accessible and offer perch seating but must provide suitable long-term growing conditions.