



Open Space Provision for New Developments

Supplementary Guidance

Contents

1 Introduction	3
2 Defining Open Space	3
3 Delivering Public Open Space	6
Minimum Quantity Benchmarks	6
Accessibility Benchmarks	8
On-site provision or off-site contribution	9
4 Design Standards	11
5 Developer Contributions & Maintenance	17
Mitigating the Impact of New Development	17
Accountability	17
Adoption and Maintenance of Open Space	17
Commuted Sums	18
6 Applying the Guidance	19
Studying the context	20
Determining the required provision	20
Pre-application discussions and engagement	20
Planning Application Stage	21
Appendix 1: Further Guidance on Landscaping	22
Appendix 2: Further Guidance on Sustainable Drainage	31

1. Introduction

Why do we need this guidance?

This supplementary guidance has been produced to accompany Policy 14: Open Space Retention and Provision within Local Development Plan 2. The Local Development Plan seeks to protect and enhance open space within Perth and Kinross which contributes to making it an attractive place to live, visit and do business.

This guidance should be referred to by anyone intending to submit a planning application. This guidance will provide:

- The standards for open space in new developments
- The types of open space which are required
- Whether the open space provision should be on-site or off-site
- The mechanisms for the maintenance of open space

This guidance will focus on seeking to ensure there is appropriate mitigation for the impact new development has on existing open spaces, and determine whether or not new public open space provision will be required to support the development. Furthermore, the document provides guidance on landscaping and the design of development. It encourages well-connected, high quality open spaces which are designed with long-term maintenance implications in mind.

2. Defining Open Space

Developments are expected to provide a variety of open spaces which contribute to the wider green infrastructure and benefit both people and wildlife.

Public Parks

These are multifunctional areas of open space designed for recreational uses. They form the focal point of communities and provide space for a wide range of leisure use and sporting activities in an attractive landscape setting. The Council have a hierarchy of public open space provision and Regional or Settlement level parks would only be required in significant new developments which create new large neighbourhoods or communities.

Hierarchy	Description	Examples
Regional (includes Premier Parks)	Large sites attracting visitors from beyond the settlement.	MacRosty Park Crieff, Kinnoull Hill & North Inch, Perth
Settlement	Large or high profile sites which are used by people across the whole settlement.	Braidhaugh Park Crieff, Victory Park, Meigle
Neighbourhood	Sites which are important to a larger distinct area of a settlement	Craigie Park, Perth & Green Park, Kinross

Amenity Open Space

These are typically grassed or planted areas which can be used for informal outdoor and social activities, and contact with nature. In some cases they also provide buffer between different land uses for environmental, visual or safety reasons.



Residential amenity space with SUDS basin provides opportunity for informal recreation



Service strips and avenue trees enhance the streetscape and divide the road from the pavement



Buffer planting between houses and a busy road reduces noise and visual impact

Amenity greenspaces need to be well designed to respond to the site context including topography, natural features and access, complimenting private garden grounds. They should be of a size and scale that is appropriate for the function and not an ongoing maintenance liability.

Amenity greenspaces should be designed with a public open space function in addition to being created for a landscape, visual amenity and biodiversity value. For instance a woodland strip primarily planted for screening purposes may form part of a larger public open space or double up as a green corridor incorporating a new path. In all cases, landscaped areas must be designed to be fit for purpose and easily accessible for maintenance in order to avoid creating long term nuisance for neighbours. Isolated areas with no public open space contribution are not encouraged and will not be adopted by the Council.

Equipped Areas for Play (EAP)

These areas are purpose built to provide a range of physical and sensory play opportunities for children and to provide important and attractive social spaces for families. The Council classifies play areas as:

Local (LEAP)	Designed to cater for 4-8 year olds in urban and rural settings
Neighbourhood (NEAP) & Rural (REAP)	Designed to cater for 4-8 and 8-14 year olds in separate spaces on the same site.
Premier (PEAP)	Located within major parks providing facilities for children in the local and neighbourhood catchment areas and beyond.

The Council's Play Area Standards provide further information on the minimum requirements for the different types of play areas. The catchment area of existing play areas and how this relates to the new development will define whether an off-site contribution or new play facility is required and what type it should be.

Sports Areas

This includes outdoor pitches and courts with associated facilities such as changing pavilions, parking, landscape framework and good path links. These are required on a larger catchment basis according to the need within the community and should be a shared facility with schools where appropriate. Contributions are required more frequently than new provision but where there is no provision (or limited poor quality provision) within the area, new on site provision may be required from major developments.

Green Corridors and Core Paths

Routes including along waterways, old railway lines and countryside tracks linking different areas within and between settlements. Many will be part of the designated core path network and used for walking, cycling or horse riding. These may be within green corridors and link public open spaces and other community facilities (e.g. Perth Lade Green Corridor). Surfacing signage, planting and other infrastructure requirements needs to be appropriate to the level of use and accessible for maintenance. New development should take account of existing provision and ensure integration, enhancement and links wherever possible.

Natural/Semi-Natural Open Space

Areas of undeveloped or previously developed land with residual natural habitats or which have been planted or colonised by vegetation and wildlife, including woodland and wetland areas. Existing open spaces should be protected and enhanced and physically connect with surrounding green corridors and other blue-green infrastructure. The creation of new natural / semi-natural open spaces may be required where the site presents a specific opportunity to do so (e.g. opportunity to expand woodland on site) or it is to compensate for a loss of existing habitats. They should be biodiverse and accessible through multifunctional path networks to facilitate active travel and informal outdoor activities. These areas will not be regularly maintained to a high amenity standard.

Other Functional Open Space

In some cases it may be required to provide other functional open spaces such as community growing areas (e.g. allotments, orchards) or skate parks. It is assumed that their provision is not supply driven but subject to demand. Consultation with communities and the Local Authority at the pre-application stage can help establish whether there is a need to provide these types of open spaces.

3. Delivering Public Open

The public open space requirements for different types of development vary depending on scale and location. When bringing forward a development proposal, applicants should consider the delivery of appropriate open space at the outset and include it as an integral component of the site layout and design process.

The requirement for open space in relation to new developments will be based on the scale of the development, the accessibility of the site in relation to existing open space and the quality and capacity of existing local open space.

The standard for public open space should be achieved in addition to providing sufficient private garden ground as outlined in the [Council's Placemaking Guide](#).

Minimum Quantity Benchmark

In Perth and Kinross, the minimum amount of public open space required from new residential developments is 80 sqm/ dwelling house or 3.5 ha /1000 people. This should be achieved across the whole masterplan area rather than individual phases. Landscape plans should show which areas are public open spaces as well as their size.

What counts towards the minimum requirement?	What does not count towards the minimum requirement?
Any open space with a clearly defined function which is accessible and can be used for outdoor recreation by members of the public. This also includes the following types of spaces: • High quality SUDS features which are integrated with the wider public open space provision • Larger areas of buffer / screen / street planting where these are integrated with paths and cycleways.	• isolated, grassed areas which have no clear public open space function • isolated SUDS features which are not integrated with the wider public open space provision • small areas of street planting • service strips - unless incorporated with public open spaces

Where there is adequate open space provision within the surrounding area, off-site contributions may be required instead of on site provision (see page 9).

The table below provides an overview of the type of on-site public open space that would be expected for developments of different sizes. Question marks indicate where the type of public open space may be required depending on the scale of development and the provision in the surrounding area.

This guidance does not include quantity standards for non-residential development (e.g. employment uses, community facilities). This will be decided on a case by case basis, depending on the location, the type of use location and the amount of demand it is expected to generate.

On-site provision and contribution to off-site provision in the vicinity of the development may be required. Development may be required to contribute to the green infrastructure of the area e.g. connecting green and blue corridors or contributing to paths networks.

	Public Park	Amenity Greenspace	Equipped Play Area	Sport Area	Green Corridors & Core Paths	Other Functional Open Space	Natural / Semi-Natural Open Space
	X	X	X	X	?	X	?
	X	?	?	X	✓	?	?
	?	✓	✓	?	✓	?	?

Indicative public open space requirements for residential development

Accessibility Benchmarks

The accessibility thresholds are put in place to ensure that everyone is within a reasonable walking distance to an area of open space. The thresholds are largely based on the [Fields in Trust Standards for Scotland](#):

- | |
|---|
| Everyone should be within 700m of a public park |
| Everyone should be within 400m of a LEAP playground |
| Everyone should be within 1000m of a NEAP playground |
| Everyone should be within 1200m of a playing field |
| Everyone should be within 500m of a path/green corridor |

In mapping this walking distance, the route must be achievable so that barriers such as rivers, railway lines, dual carriageways or impenetrable built development are taken into account. For calculations based on straight line/ buffer distance, thresholds should be reduced proportionately. It is suggested that 60% of the original threshold is used to estimate walking distance:

- 400m = 240m
- 500m = 300m
- 700m = 420m
- 1000m = 600m
- 1200m = 720m



--- Walkable distance to open space



--- Buffer distance to open space

On-site provision or off-site contribution

For residential developments, public open space provision is likely to be required and should be designed to be integral to the development.

Where it is not possible to provide the required public open space provision on site or the type of public open space required (e.g. football pitch) has a much wider catchment than the proposed development then the Council may seek to secure off-site provision or financial contribution towards upgrading or expanding existing facilities.

Where the various types public open space already exist in the surrounding area and where they are accessible for new residents, there may be no need for new public open spaces on site but a financial contribution to existing facilities may alternatively be required to go towards upgrading the quality of the facility's (e.g. play areas and playing fields) and /or improving access and connectivity (e.g. connecting to and enhancing existing Core Paths).

Where development is located in an area without existing public open spaces, (e.g. a small rural settlement) it will depend on the scale of the proposal whether the provision of new facilities is required. In the case of play areas, the indicative threshold that would trigger the development of a new play facility is reaching approximately 50 residential units within the settlement.

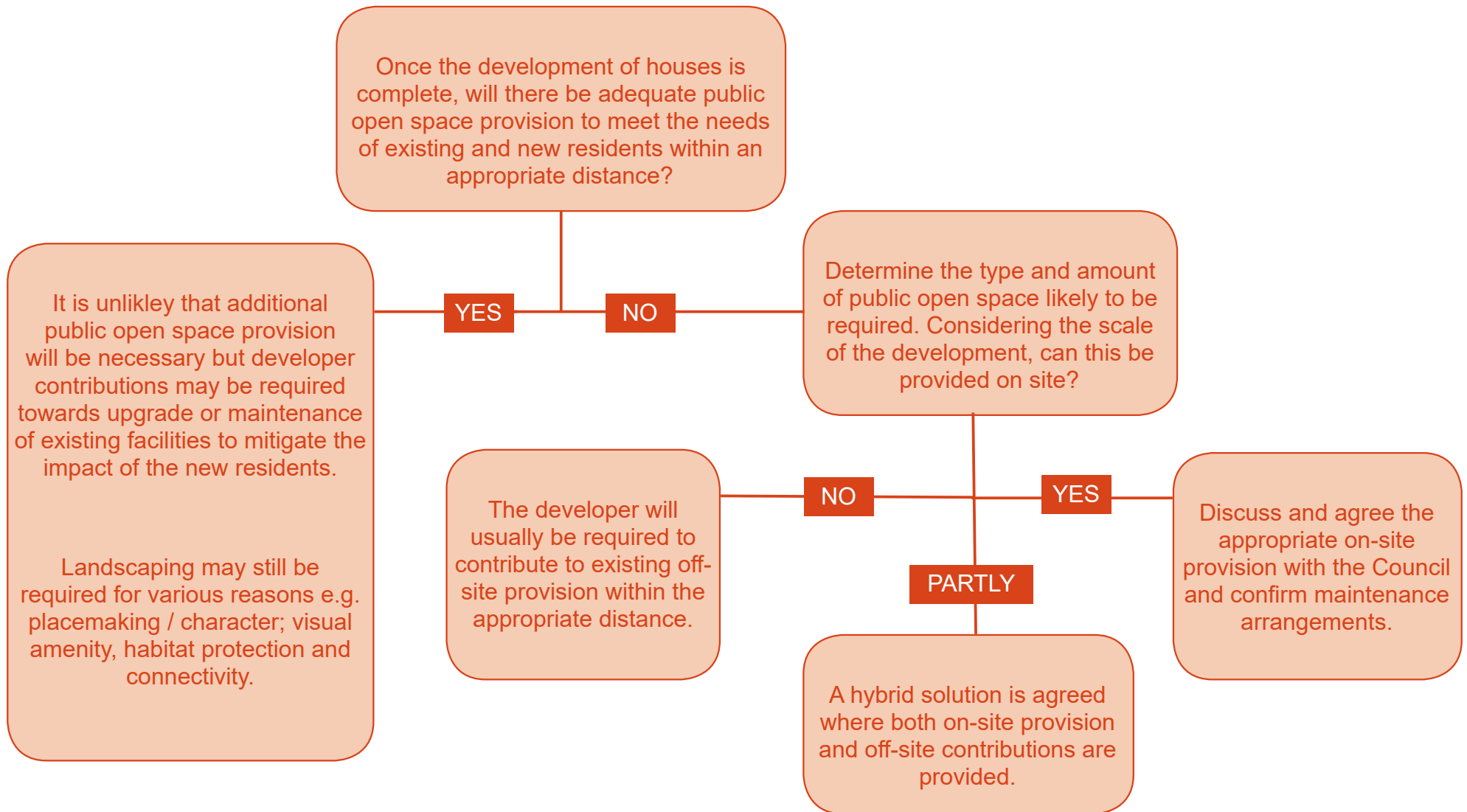
Where smaller developments require a NEAP/REAP which will largely serve the existing population, the Council may contribute to its delivery. In areas where several developments are being delivered at the same time, a new play facility may be delivered through shared off-site contributions and commuted sums between developers.

Even if no on-site public open space provision is required, some areas within the development may need to be landscaped in order to mitigate against flood risk, provide habitat connectivity or buffer between different uses.



Well-designed amenity greenspaces make developments more attractive and provide infrastructure for non-motorised users.

The diagram outlines the process of identifying the type of contribution that is likely to be required from new developments.

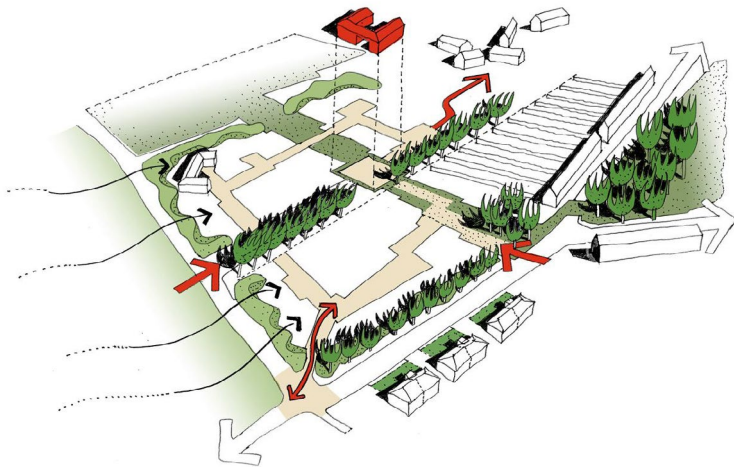


Guide to identifying Public Open Space requirements

4. Design Standards

Proposals must demonstrate through a design statement and/or masterplan that they respond to the following design principles:

- The green and blue infrastructure of the wider area has been identified at the outset and new open spaces are located strategically to form linkages with the existing open space network. Refer to the Council's [Green and Blue Infrastructure Supplementary Guidance](#) to identify opportunities to expand and improve the existing network.



Early stage concept sketch identifies potential green linkages and movement patterns (by Proctor and Matthews Architects)

- The proposed developments sits within the landscape context with due consideration for views from and over the site. Existing significant and/or sensitive features (e.g. mature trees, hedgerows, water features, paths) have been identified and incorporated into the design of development.

- Open spaces have a sense of identity and character which makes them unique to the community which they belong to. Public art, landscaping features and signage provide opportunity to achieve this.
- Public open spaces have clear functions within the design and an adequate size for the given purpose. Plans clearly highlight the intended purpose of all landscaped areas including street greening. Small, isolated parcels of undeveloped land will not be considered as public open space and will not be approved.
- Public open spaces are welcoming and highly accessible for all. They form a network which is easy to navigate and make cycling and walking an attractive transport option.



Open spaces are designed to create green links and are aligned with key pedestrian routes (by Barton Willmore & Urban Union)

- All open space is maintenance efficient with long term sustainable management and maintenance proposals in place. The choice of species takes into account future maintenance implications.
- The types of species reflect the function of the planting and location of the open space and respond sensitively to ground levels on site.
- The protection and enhancement of biodiversity have been considered. Opportunities have been identified within both public open spaces and private garden grounds to incorporate elements which facilitate habitat creation and biodiversity (e.g. wildlife trees and hedges, swift & bat boxes, dry stone walls, wildlife hedges). Native species should be used where appropriate as a first principle, and habitat connectivity should be sought within and beyond the site. Where biodiversity areas are designed to be low or no maintenance they must be clearly marked on the plans.
- Private garden grounds can be clearly distinguished from public open space and amenity street planting. Hedges and small grassed/planted areas adjacent to properties should be incorporated into garden grounds where possible and will not be adopted by the Council.

For further advice on landscaping specifications and sustainable drainage, see Appendix 1 & 2.

In line with Scottish Water guidelines and the Council's Flood Risk Supplementary Guidance, Sustainable Urban Drainage Systems (SuDS) should make a positive wider contribution to the quality of development. SuDS are a soft-engineering solution which aim to create multi-functional landscapes that deliver multiple benefits for water management, amenity and biodiversity. SuDS should be:

- considered from the outset, with enough land allocated for them within the site. Submissions should clearly reflect how the water & drainage strategy has influenced the design approach taken for the site.
- a network of detention features which connect to the wider green and blue infrastructure (rather than only a single feature). Consider different types of SUDS such as ponds, basins, green roofs, swales and rain gardens. These should ideally be naturally linked, providing connectivity for people and wildlife within and through the site.
- located at suitable topographic locations, integrated with other public open space types wherever possible and safely designed to co-exist with activity areas (e.g. playgrounds, sport pitches). SuDS that are isolated and/or provide little amenity value will not be considered part of the public open space contribution.
- accessible and biodiverse, with suitable planting around the edges to maximise their ecological value and also allow for an economical maintenance regime.

Integrated: SuDS, play spaces and amenity areas form one large multifunctional public open space which is central and accessible. Existing woodland and water feature is retained and forms part of the design. The proposal includes different types of SuDS features which are naturally linked together.



- Conveyance swale - very low water
- Permanent pond
- Permanent planted wetland
- Shallow accessible mostly dry 1/30 detention
- Shallow accessible mostly dry 1/200 detention

Fragmented: SuDS, play area and amenity spaces are disconnected and constrained to small, isolated areas. The lack of connectivity limits benefits for people and wildlife.



- Permanently dry play area
- Overflow
- Flow direction
- Woodland
- Paths

	Key Considerations	Positive Examples	Negative Examples
Public Parks	-Ensure positive relation between open space and surrounding uses - e.g. housing should be fronting onto a park with an appropriate and attractive frontage design -Provide a diversity of landscaping elements; including a good balance of amenity grass and species diverse grassland, native and ornamental species, trees, shrubs, hedgerows and water features -Incorporate elements which provide natural habitats, sheltered from activity areas -Use landscaping to highlight entrances	 Multifunctional open space for play and relaxation. The area is overlooked by houses and includes natural landscaping elements.	 Open space has amenity value however its functions are limited. Could benefit from paths, seats, additional features and landscaping.
Amenity Greenspaces	-Street planting which provides multiple benefits is encouraged (e.g. traffic calming, sustainable drainage) -Include a mix of species which are appropriate in size for their location and easy to maintain. Avoid planting certain tall growing species close to buildings -On amenity areas where regular maintenance is required, trees should be planted with shrub beds underneath in an appropriate distance from each other -Avoid narrow beds and sharp angles which are difficult to access (e.g. for mowing)	 Street planting serves as traffic calming and provides an attractive feature in the development. Shrub under-planting instead of grass reduces need for maintenance.	 Vegetation provides good screening however trees and shrubs have been planted too close to the pavement and to houses on the other side. They quickly overgrow and become a liability.

Play Areas	-The landscape design should create an interesting and stimulating environment for children by creating character and place through landform design, planting, textures and surfaces. -Prioritise child-friendly and sensory plant species in the vicinity e.g. willow stands for informal play -Provide facilities for families (e.g. seating and social areas) -Use fencing only if specifically necessary for the site (e.g. adjacent to busy roads) and where necessary consider whether required on all sides and create attractive or informal boundary where possible -Comply with the Council's Play Area Standards. Further guidance will be available on http://www.pkc.gov.uk/playareas.	 Play area situated central to the development and it is overlooked by houses. It is within a safe distance from the road and there is plenty of space for informal play. Natural materials enhance its appearance and stimulate play.	 Play equipment is well maintained but activity area is constrained by metal fence. If boundaries are necessary, landscaping and natural materials would be preferable. Additional elements which stimulate play and social interaction would benefit the play area.
Sport Areas	-Located on good, level free draining land -Ideally integrated into a public park and/ or design to be a greenspace not just a pitch -Should be accessible with both path and vehicular links -Consider the impact on residents and provide adequate separation between playing pitches and houses -Structure planting around the perimeter of the site should be designed to reduce wind, noise and light spill -Potential for wildflower corners and strips alongside edges	 Rugby pitch located within a park which is the focal point of the neighbourhood and is accessible by paths.	 Kickabout area located on a small amenity space. Instead of a fence, boundary planting could have made this space more attractive.

Green corridors & Core Paths

- Incorporate paths in landscaping
- Paths should facilitate both active travel and recreational uses and link to wider path network & community facilities (e.g. safe routes to school). They should ideally be located within green corridors, remote from roads
- Design landscaping to maintain good sightlines. Paths must be barrier free, have suitable width, surfacing and signage. They should comply with the [Council's Advice Notes on Public Access](#).
- Paths must keep to one side of water features/woodlands to provide refuge for wildlife on the other.



Attractive paths with houses on one side and vegetation set back from path edge on the other. Good sight lines are maintained and overlooking windows contribute to a sense of security.



Path lacks character and it is isolated from the rest of the development. High fences limit opportunities for natural surveillance.

Natural / Semi- Natural Open Spaces

- Natural appearance with a diverse range of habitats and shelter areas for wildlife
- Good mix of native species that fit in with existing habitats around the site
- Entrances and paths are easy to navigate and link with existing routes.
- There is appropriate signage throughout the site.
- Well developed ground layers and wide, species rich edge, where appropriate
- Appropriate facilities for visitors e.g. litter bins, seating



Public art can be used to mark key entrance points to woodlands and other natural open spaces. Also consider where litter bins and seating should be located.



Designing the basin as a natural wetland area with more robust structure planting would allow for a smoother transition between the development and the countryside.

5. Developer Contributions & Maintenance

Mitigating the Impact of New Development

Developments will be required to mitigate their impact on local open space and sports facilities through on-site or off-site provision or financial contributions.

Financial contributions may be paid up front, prior to release of planning consent. Delayed payment of contributions will normally be secured by means of a Section 75 Planning Obligation between the Council, developer, landowner and any other relevant person(s). Such Planning Obligations will need to be registered before planning permission can be issued.

Accountability

Contributions from individual sites will be accountable through separate accounts and a public record will be kept to identify how each contribution is spent. Contributions will be recorded by the applicant's name, the site address and the planning application reference number to ensure the individual sums can be accounted for.

Where a contribution has been made through a Section 75 Agreement, the appropriate person will be able to reclaim any money not spent for the agreed purpose after 15 years from the date of collection. Where contributions are returned, interest will be made payable at 0.25% below the Bank of Scotland base rate.

The [Council's Developer Contributions Supplementary Guidance](#) includes detailed advice on the Planning Obligations and the phasing of payments.

Adoption and Maintenance of Open Space

Maintenance of open space will be agreed prior to the commencement of work and will usually be set out in planning conditions. [The Council's Policy on Maintenance Options for Public Open Spaces in New Residential Developments](#) sets out two options for the maintenance of public open spaces:

1. The Council adopts all public open space in new developments. In this case the flat rate commuted sums will be paid by the developer with no charge to the residents. Where there is a planning requirement for exceptionally large public open space areas, such as a country park, the Council reserves the right to apply a site specific commuted sum calculation for these areas. Areas of amenity planting and small open spaces which do not benefit the public will not be adopted by the Council. These areas can be maintained through employing a private factor or them remaining the resident's responsibility.

2. The Council will adopt only Priority Public Open Space (PPOS) (equipped play areas, large parks¹, sports pitches and possibly green corridor path links which are of importance to the wider community) in all developments to ensure they are available to the public and that residents are not charged for these important public spaces. In all cases the Council must adopt above grounds SUDS (where Section 7 agreement applies) and they are being jointly maintained with Scottish Water (see below). For play areas, payment of the flat rate commuted sum will apply. For the other PPOS areas the flat rate commuted sum per dwelling will not apply. Instead, a site specific commuted sum will be calculated separately, based on current maintenance rates, and be paid by the developer. For all remaining POS and amenity areas the developer can apply a Development Management Scheme (DMS), subject to Council agreement, with home owners meeting maintenance costs of these areas. Land title for the POS areas must be transferred to the Owners' Association.

In both options, developers must transfer land title and pay the appropriate commuted sums prior to maintenance handover for all adopted public open space. Payment of a security deposit which is calculated as a percentage of the commuted sum is also required to ensure that all public open space meets Council standards prior to adoption. Although developers can opt for private arrangements for some areas, Council adoption of all public open space within a development is preferred as it is a simpler process. It also has the benefit that after adoption, developers and residents are relieved of all future maintenance responsibilities which will be attractive to all prospective house purchasers.

Areas of amenity planting and small open spaces which do not benefit the public will not be adopted by the Council. These areas can be maintained through employing a private factor or remain the residents' responsibility.

Where there are opportunities for community management such as allotments, amenity woodland or sports pavilions, this is encouraged and arrangements with the Council such as a Licence to Occupy can be applied.

A landscape management plan must be provided identifying the short, medium and long term management proposals for the site and the elements within it. A list of assets, quantities, life time costs, and routine maintenance operations must be provided and approved.

Regardless of the maintenance arrangements in place, public open spaces created by new developments should remain to be used as public open space in perpetuity.

Please refer to the [Council's Flood Risk Supplementary Guidance](#) for information on the vesting of SuDS features. Note that site specific commuted sums may apply.

Commuted Sums

To ensure clarity for developers, the Council's standard commuted sum for play areas and public open space are set out in the table below. Commuted sums have been calculated to be the equivalent to annual maintenance over a 20 year period. Where play areas are adopted, the commuted sum includes a contribution to the replacement cost within that 20 year period.

¹ Large parks will usually incorporate play and/or pitch facilities, further POS areas within the same development if over 1ha and suitable for informal play or ball 'kickabouts' will usually also be considered as large parks. Where play and pitch facilities are not required within a development the same criteria apply. In small settlements areas of public open space smaller than 1ha may be significant and the largest of these will be considered large parks.

Public Open Space Area	Commuted Sum Amount (2020/2021)
Public Open Space Adoption	£800 per dwelling *
Play Area adoption	£65,500 per LEAP £82,000 per NEAP/REAP
Additional facilities within major developments (e.g. changing pavilions, skate parks, allotments)	This will be calculated on a site by site basis

* in addition to separate commuted sums for play areas

All figures above are based on the current maintenance costs for 2020/21 however the commuted sums will be uplifted annually on 1 April in line with the retail price index (RPI). The appropriate commuted sums will be applied at the time of adoption. Where the Council adopts only priority public open spaces, the measurements and maintenance costs of adoptable areas will have to be calculated by the developer and provided for the Council to check and approve.

The calculation of commuted sums is set out in detail in the Council's Policy on Maintenance Options for Public Open Spaces in New Residential Developments.

It should be noted that the cost of maintaining structures within public open spaces is not included in the commuted sums detailed above. Developers must highlight where an area of open space includes structures and they may have to pay additional commuted sums on a case by case basis. A structure in this respect can be defined as either a bridge, culvert or retaining wall to be adopted by the Council. For information on design requirements please refer to the [Design Manual for Roads and Bridges](#).

6. Applying the Guidance

Establishing public open space requirements is a key step in the wider design process:

Study the site context to identify existing green and blue infrastructure and opportunities for new connections within and around the site. Check the [Green Infrastructure Supplementary Guidance](#) and the [Local Development Plan](#) for site specific requirements.



Use this guidance to identify the type of open space which is likely to be required and establish a conceptual layout.



During the pre-application consultation, discuss requirements and early design decisions with the relevant stakeholders.



Develop a design statement and landscape plan which is easy to read and shows the right level of detail.

Studying the context

The Council's [Placemaking Guide](#) provides detailed advice on collecting baseline information and preparing site appraisals. In addition, the following sources may be useful in identifying existing open spaces in the vicinity of the development:

- [Map of Council maintained open spaces](#)
- [Green Infrastructure Supplementary Guidance](#) web map
- [Ordinance Survey Open Greenspace dataset](#)
- Google maps (aerial & street view)
- Site visits

Determining the required provision

Min.Quantity Standards	Accessibility Standards	Design Standards
80m ² of open space per dwelling or 3.5ha per 1000 people	Everyone should be within 700m walking distance of a public park	New public open spaces should:
	Everyone should be within 1200m walking distance of a playing field	-form a network and link to existing green/blue spaces -sit within the landscape context - have a sense of identity and character
	Everyone should be within 400m walking distance of a LEAP playground and within 1000m of a NEAP playground	-have clear function(s) -be welcoming and accessible for all -be maintenance efficient -be biodiverse
	Everyone should be within 500m of a path	-be clearly distinguished from private gardens

The minimum public open space required will be calculated based on the number of dwellings and the likely number of future residents within a new development. The average household size across Perth and Kinross is 2.19 people / household (Census, 2011). The minimum requirement may be delivered on site or off-site and in certain scenarios financial contributions may be sought instead.

Pre-application discussions and engagement

While this guidance provides an indication of likely open space requirements, every scenario is unique. Developers are encouraged to initiate [pre-application discussion](#) with the Council in order to seek advice on the local context and agree on the open space contributions (fees apply).

In addition to contacting Local Authorities, advice could also be sought from other parties such as **sportscotland** when outdoor sport facilities may be required or could be affected by the development.

Early discussions with Scottish Water about the ambitions for SUDS such as potential conveyance swales, planting near SUDS or avoidance of warning signs and fencing can help enabling better placemaking.

Early community consultation helps assessing local demand for specific types of open spaces and allows residents to provide feedback on the initial design. Where sport provision/contributions are likely to be required, approaching local sport groups and Live Active Leisure's Sports Development Team can help inform the

developer and authority about demand for additional facilities or the possibility of upgrading existing ones. Clearly, the local aspirations have to be balanced with the demand arising from the new development where the future residents cannot be consulted in advance.



The need for demand driven facilities can be established through public consultation and discussions with relevant stakeholders.

Planning application stage

The Design Statement should reflect an understanding of existing green infrastructure and key landscape elements. It should highlight how new public open spaces enhance the existing green network.

Landscape Plans should include an appropriate level of detail, facilitating the assessment of proposals against Council standards. They should:

- Show the location, size and function of all public open spaces (with reference to the typologies outlined in this guidance).
- Illustrate connections to green infrastructure, off road paths, active travel and key destinations outwith the site boundary
- Show levels (gradients) and existing features.
- Provide cross sections of key public open spaces.
- Include specifications of any sport, play area and path (including the type of play equipment, surface materials).
- Where SuDS are integrated within the public space, plans should distinguish between permanent water/pond, planted wetland and various detention scenarios for the accessible green space, ideally showing water conveyance flow directions and exceedance flow path
- Include specifications for any structure on site (e.g. bridges, steps, landmark features).
- Provide full details of all planting (size, species, density, location) and differentiate existing and new vegetation.
- Mark public open spaces to be adopted by the Council.

Appendix 1: Further Guidance on Landscaping

The following section is aimed at informing landscape architects and designers about the Council's expectations with regards to the design of public open spaces and landscaped areas. The Appendix should be read in conjunction with the standards and design advice set out in the main body of the Supplementary Guidance.

1. Path standards

Function	Key standard
Pedestrian	width min 1.5m
Multi-use (cycle, pram, mobility scooter, pedestrian)	width min 2.5m; surfacing blacktop
Segregated cycle/pedestrian	width min 3m; white line divides users
Self-closing gate	Avoid kissing gates/stiles
Signage	Destination and distance should be clear; simple arrow waymarker can indicate continuous route.
Bridges	Steel beam and non –slip timber deck and timber balustrade; timber larch or other approved
Slopes ramped with handrail	Wooden steps should be avoided, material must be easy to maintain

2. Sports pitch standards in public parks

- Marked out pitches with goalposts to be grouped & highly accessible via paths, roads and public transport with parking provided.
- To be located on level free draining land with positive drainage required where indicated by ground tests.
- Any landscaping (e.g. trees) should be a minimum of 5m away from the edge of playing fields.
- To reduce noise and light disturbance, playing pitches should be adequately separated from residential areas. Landscaping along the boundaries should be robust, minimising light spill and noise impact. **sportscotland's** [planning guidance](#) provides further advice on the siting of synthetic sport pitches with regards to noise and floodlighting.
- Changing/community pavilion required for 2 or more pitches to be suitable for level of use (min 2 teams)
- Grass pitches should be constructed to meet the requirements of the [Quality Performance Standard](#)
- Detailed advice on the design of sport pitches is available at <https://sportscotland.org.uk/facilities/design-guidance/>

Function	Pitch size	Buffer zones (based on Fields in Trust standards)
MUGAs (multi-purpose game areas)	18 x 36 m	30m minimum separation between activity zone and boundary of dwellings
Football full sized	60 x 100 m	3 m safety margin all around
Football junior (7 aside)	60 x 40 m	3 m safety margin all around

3. General Planting Standards

- Create a multifunctional spaces with attractive landscaping elements and good path connections. Open spaces should include a diversity of planting and landscaping elements relative to their size. The landscape and planting design (and subsequent maintenance) should reflect the function and character of the location. Amenity grass, shrub beds and trees are appropriate in areas with high level of activity (e.g. a public park, town centre amenity space). Low maintenance solutions such as long grass, wildflowers, informal shrub planting and tree belt are appropriate in areas where activity is low and biodiversity value can be increased (e.g. at edges of open spaces, larger areas of open space with limited functions, traffic islands).
- The choice of new planting should consider the ultimate height and spread, form, habit and colour, density of foliage and maintenance implications of species.
- Consider seasonal interest and support biodiversity
- Use native species for structure planting (especially blossom and berry bearing trees)
- An appropriate distance should be left between trees and buildings both within gardens and on the street. Furthermore, sufficient space must be given between trees and residential boundaries, sports pitches, play areas and paths. This will avoid unnecessary maintenance and removals in the future.
- Shrub species selection should relate to the location and should not outgrow the space available leading to excessive and avoidable maintenance (e.g. shrubs should not grow across paths). Amenity grass areas are largely obstacle free, shaped and at a gradient suitable for machine cutting.
- On amenity grass areas where regular maintenance is required, trees should be planted with shrub beds underneath or in an appropriate distance from each other not to become mowing obstacles. This applies for instance to avenue trees or trees on the edge of parks / sport areas.
- All planting must be established and achieve full ground cover prior to adoption/handover (after minimum 1 year from planting).
- Sloping sites which require regular maintenance should be no more than 15 degrees for mowers with a 3m clearance around any obstacles.

The table below includes a list of species which may be considered for different areas of open space. This is not an exhaustive list and should be applied with regards to the specific site context and biodiversity needs. The table also highlights key considerations when preparing landscape plans and deciding on the type of species.

Planting type		Examples of suitable species	Consideration
Woodlands	Woodland mix 	sessile oak (<i>Quercus petraea</i>); pedunculate oak (<i>Quercus robur</i>); alder (<i>Alnus glutinosa</i>); silver birch (<i>Betula pendula</i>); wild cherry (<i>Prunus avium</i>); bird cherry (<i>Prunus padus</i>); rowan (<i>Sorbus aucuparia</i>); hazel (<i>Corylus avellana</i>); scots pine (<i>Pinus sylvestris</i>); holly (<i>Ilex aquifolium</i>); blackthorn (<i>Prunus spinosa</i>); hawthorn (<i>Crataegus monogyna</i>); crab apple (<i>Malus sylvestris</i>); goat willow (<i>Salix caprea</i>); grey willow (<i>Salix cinerea</i>); white willow (<i>Salix alba</i>); yew (<i>axus baccata</i>); honeysuckle (<i>Lonicera periclymenum</i>) Woodland Mix wildflowers including bugle (<i>Ajuga reptans</i>); enchanter's nightshade (<i>Circaea lutetiana</i>); foxglove (<i>Digitalis purpurea</i>); wild garlic (<i>Allium ursinum</i>); dogwood (<i>Cornus sanguinea</i>); box (<i>Buxus sempervirens</i>); elderberry (<i>Sambucus nigra</i>); traveller's joy (<i>Clematis vitalba</i>)	- Avoid using non-native species; there is a preference to Scottish native species for biodiversity value.
Standard trees	Street Planting Avenue trees, trees around parking spaces, traffic calming islands, civic spaces etc. The amount of space can vary enormously with the exact context.	Fastigate/ narrow species for confined spaces - fastigate scots pine (<i>Pinus sylvestris</i> 'Fastigiata') Height 8m Spread 3m - fastigate aspen (<i>Populus tremula</i> 'Erecta') Height 12m Spread 4m - fastigate aspen (<i>Populus tremula</i> 'Fastigiata') Height 10m Spread 4m - fastigate oak (<i>Quercus robur</i> 'Fastigiata') Height 15m Spread 6m - fastigate rowan (<i>Sorbus aucuparia</i> 'Fastigiata') Height 6m Spread 4m - hybrid whitebeam, service tree (<i>Sorbus thuringiaca</i> Fastigiata) Height 8m Spread 4m - fastigate field maple (<i>Acer campestre</i> 'Elsrijk' Fastigate) Height 10m Spread 4m - fastigate hornbeam (<i>Carpinus betulus</i> 'Frans Fontaine') Height 12m Spread 5m - fastigate purple beech (<i>Fagus sylvatica</i> Dawyck Purple) Height 12m Spread 6m - chonosuki crab (<i>Malus tschonoskii</i>) Height 8m Spread 6m	- To maximise biodiversity value, this should be predominantly native trees. - Ash and European Larch should not be included in landscaping proposals due to disease, until advised otherwise by the Scottish Forestry. - Consider what is the appropriate species for the location and consider the species choice at maturity, not just at the time of planting.

Standard trees	Street Planting (continued) - pright sargent`s cherry (<i>Prunus sargentii</i> `Rancho`) Height 6m Spread 4m</li> <li>- callery pear (<i>Pryus calleryana</i> `Chanticleer`) Height 12m Spread 4m</li> <li>- fastigate false acacia (<i>Robinia pseudoacacia</i> `Pyramidalis`) Height 12m Spread 5m - fastigate beech (<i>Fagus sylvatica</i> Dawyck) height 20m, spread 3m - upright flowering cherry (<i>Prunus hillieri</i>) height 10, spread 6m Broader species for where space allows. - silver birch (<i>Betula pendula</i>) Height 12m Spread 8m - double flowering gean (<i>Prunus avium</i> `Plena`) Height 12m Spread 8m - hawthorn (<i>Crataegus monogyna</i>) Height 12m Spread 6m - scots pine (<i>Pinus sylvestris</i>) Height 15m Spread 8m - bird cherry (<i>Prunus padus</i>) Height 12m Spread 8m - rowan (<i>Sorbus aucuparia</i>) Height 12m Spread 6m - field maple (<i>Acer campestre</i>) Height 12m Spread 8m - sweet gum (<i>Liquidambar styraciflua</i> `Worplesdon`) Height 12m Spread 8m - whitebeam (<i>Sorbus aria</i>) Height 12m Spread 8m - swedish whitebeam (<i>Sorbus intermedia</i>) Height 12m Spread 8m - caucasian lime (<i>Tilia euchlora</i>) Height 12m Spread 8m Larger street trees for wide verges - scots pine (<i>Pinus sylvestris</i>) Height 18m Spread 8m - silver maple (<i>Acer saccharinum</i>) height 20m, spread 8m - sessile oak (<i>Quercus petraea</i>) Height 18m Spread 10m - sweet chestnut (<i>Castanea sativa</i>) Height 18m Spread 10m - common beech (<i>Fagus sylvatica</i>) Height 18m Spread 10m - wych elm (<i>Ulmus glabra</i>) Height 15m Spread 10m - norway spruce (<i>Picea abies</i>) Height 18m Spread 10m - false acacia (<i>Robina pseudoaecia</i>) height 30m, spread 7m - norway maple (<i>Acer platanoides</i>) height 25m, spread 10m	- Leave plenty of space between trees and houses and avoid very large species. Consider species with seasonal interest and lighter canopies. - Avoid planting large species within 15m of garden boundaries, particularly to the south and west of dwellings. Avoid all tree planting within 1.5m of garden boundaries. -Where space allows (e.g. within parks, larger amenity spaces), plant trees at least 1.5m away from footpaths and pavements to prevent future maintenance issues - Where space does allow such as in a large open space take the opportunity to plant large growing species such as oak, scots pine and lime species - Consider planting low maintenance shrubs under tree instead of grass to limit the need for maintenance. - Avoid planting lime close to parking areas.
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Standard trees	Street Planting (continued)	- purple leaved beech (<i>Fagus sylvatica purpurea</i>) Height 18m Spread 10m - common walnut (<i>Juglans regia</i>) Height 18m Spread 10m - hungarian oak (<i>Quercus frainetto</i>) Height 15m Spread 10m - common lime (<i>Tilia Europaea</i>) Height 18m Spread 10m - caucasian lime (<i>Tilia euchlora</i>) Height 15m Spread 8m	
	Trees in private gardens Small growing and decorative with seasonal interest	- common hazel (<i>Corylus avellana</i>) Height 8m Spread 4m - hawthorn (<i>Crataegus monogyna</i>) Height 6m Spread 4m - 'Paul's scarlet' red flowering hawthorn (<i>Crataegus laevigata</i>) Height 6m Spread 4m - crab apple (<i>Malus sylvestris</i>) Height 6m Spread 4m - rowan (<i>Sorbus aucuparia</i>) Height 6m Spread 4m - rowan with yellow berries (<i>Sorbus 'Joseph Rock'</i>) Height 6m Spread 4m - field maple (<i>Acer campestre 'Elsrijk' Fastigiate</i>) Height 10m Spread 4m - paperbark maple (<i>Acer griseum</i>) Height 6m Spread 4m - june berry (<i>Amelanchier lamarkii</i>) Height 6m Spread 4m - pillar apple (<i>Malus tschonoskii</i>) Height 10m Spread 6m - tibetan cherry (<i>Prunus serrula</i>) - yoshino cherry (<i>Prunus × yedoensis</i>) Height 6m Spread 4m - callery pear (<i>Pyrus calleryana 'Chanticleer'</i>) Height 12m Spread 4m - vilmorin's rowan (<i>Sorbus vilmorinii</i>) Height 6m Spread 4m	
	Shelterbelts/ Screening/ Peripheral planting to screen noise and limit visual impact (e.g. by roads)	- aspen (<i>Populus tremula</i>) Height 15m Spread 10m - hawthorn (<i>Crataegus monogyna</i>) Height 6m Spread 8m - holly (<i>Ilex aquifolium</i>) Height 10m Spread 6m - hazel (<i>Corylus avellana</i>) Height 6m Spread 6m - rowan (<i>Sorbus aucuparia</i>) Height 6m Spread 4m - crab apple (<i>Malus sylvestris</i>) Height 6m Spread 4m - gean (<i>Prunus avium</i>) Height 12m Spread 8m - bird cherry (<i>Prunus padus</i>) Height 12m Spread 8m - blackthorn (<i>Prunus spinosa</i>) Height 6m Spread 4m - downy birch (<i>Betula pubescens</i>) Height 12m Spread 8m	- To maximise biodiversity value, this should be predominantly native trees.

Standard trees	Shelterbelts/ Screening/ Peripheral planting (continued)	- silver birch (<i>Betula pendula</i>) Height 12m Spread 8m - alder (<i>Alnus glutinosa</i>) Height 12m Spread 8m - goat willow (<i>Salix caprea</i>) Height 12m Spread 8m - eared willow (<i>Salix aurita</i>) Height 6m Spread 4m - scots pine (<i>Pinus sylvestris</i>) Height 18m Spread 8m - sessile oak (<i>Quercus petraea</i>) Height 18m Spread 8m - penduculate oak (<i>Quercus robur</i>) Height 18m Spread 8m - dog rose (<i>Rosa canina</i>) Height 4m Spread 4m - guelder rose (<i>Viburnum opulus</i>) Height 4m Spread 4m - wych elm (<i>Ulmus glabra</i>) Height 15m Spread 10m - dogwood (<i>Cornus sanguinea</i>) smaller species to create an understory - elderberry (<i>Sambucus nigra</i>) smaller species to create an understory - privet (<i>Ligustrum nivale</i>) smaller species to create an understory - balsam spire (<i>Populus TT32</i>) height 30m, spread 8m for rapid screening	
	Large Majestic Trees Only plant where there is room for the trees to grow, however where space does allow these species are a major asset	- scots pine (<i>Pinus sylvestris</i>) Height 18m Spread 8m - aspen (<i>Populus tremula</i>) Height 15m Spread 10m - douglas fir (<i>Pseudotsuga menziesii</i>) 18m Spread 10m - sessile oak (<i>Quercus petraea</i>) Height 18m Spread 8m - red oak (<i>Quercus rubra</i>) Height 15m Spread 10m - common lime (<i>Tilia Europaea</i>) Height 18m Spread 8m - caucasian lime (<i>Tilia euchlora</i>) Height 15m Spread 8m - wych elm (<i>Ulmus glabra</i>) Height 15m Spread 10m - sweet chestnut (<i>Castanea sativa</i>) Height 18m Spread 10m - common beech (<i>Fagus sylvatica</i>) Height 18m Spread 10m - purple leaved beech (<i>Fagus sylvatica purpurea</i>) Height 18m Spread 10m - common walnut (<i>Juglans regia</i>) Height 18m Spread 10m - pedunculate oak (<i>Quercus robur</i>) height 40m, spread 20m - norway maple (<i>Acer platanoides</i>) height 25m, spread 10m - large leaved lime (<i>Tilia platyphyllos</i>) height 15m, spread 8m	

Shrubs	Shrubs as street planting or green amenity spaces (e.g. as boundary treatment or under trees) and as part of private garden grounds	Species selection of shrubs should be on the basis of ‘right shrub, right place’ which should be on the basis of the following considerations: - it is suitable in size both width and height for its location - shrubs should not outgrow the size of the shrub bed especially adjacent to paths , gardens and roads - robustness and good growth for establishment - function e.g. screening - feeling of security e.g. sightlines along paths and potential feeling of over enclosure. - amenity and seasonal interest - biodiversity e.g. shelter for birds, pollen, berries - thorny and spiky species should be used carefully and avoided next to paths and in windy locations where likely to trap litter, or where access for maintenance required e.g. by fences - hardy perennials may also be useful in conjunction with shrub planting	-To maximise biodiversity value, this should be predominantly native shrubs. - Include pollinary friendly species wherever possible -Where space allows (e.g. within parks, larger amenity spaces), plant shrubs at least 1.5m away from footpaths and pavements to prevent future maintenance issues
Grass Areas	General amenity grass mixes	- Flowering Lawn mix including oxeye daisy (<i>Leucanthemum vulgare</i>); birds foot trefoil (<i>Lotus corniculatus</i>); yarrow (<i>Achillea millefolium</i>); lady’s bedstraw (<i>Galium verum</i>) - Bee, Bird & Butterfly Mix including cow parsley (<i>Anthriscus sylvestris</i>); viper’s bugloss (<i>Echium vulgare</i>); yarrow (<i>Achillea millefolium</i>) - Urban Pollinator mix including wild grasses and wildflowers such as oxeye daisy (<i>Leucanthemum vulgare</i>); hedge woundwort (<i>Stachys sylvatica</i>); sweet vernal grass (<i>Anthoxanthum odoratum</i>)	- To maximise biodiversity value, this should be predominantly native species.

Grass Areas	Wild grasses at the back of amenity greenspaces	sheep's fescue (<i>Festuca ovina</i>); wavy hair-grass (<i>Deschampsia flexuosa</i>); yorkshire fog (<i>Holcus lanatus</i>); timothy grass (<i>Phleum pratense</i>)	
	Meadow grassland	- Northern Hay meadow mix including pignut (<i>Conopodium majus</i>); self-heal (<i>Prunella vulgaris</i>); common sorrel (<i>Rumex acetosa</i>) - Highland Meadow mix including alpine lady's mantle (<i>Alchemilla alpina</i>); tormentil (<i>Potentilla erecta</i>); devil's bit scabious (<i>Succisa pratensis</i>); heather (Summer flowering varieties) - MG5 meadow mix including agrimony (<i>Agrimonia eupatoria</i>); meadow vetchling (<i>Lathyrus pratensis</i>); common knapweed (<i>Centaurea nigra</i>)	
	Biodiversity banks for steep banks	- Spring flowers/grassy bank: cowslip (<i>Primula veris</i>); primrose (<i>Primula vulgaris</i>); spring crocus (<i>Crocus vernus</i>); snowdrop (<i>Galanthus nivalis</i>); wild daffodil (<i>Narcissus pseudonarcissus</i>); bluebell (<i>Hyacinthoides non-scripta</i>); lady's- smock (<i>Cardamine pratensis</i>); wood forget-me-not (<i>Myosotis sylvatica</i>) - Summer flowers/grassy bank: harebell (<i>Campanula rotundifolia</i>); lungwort (<i>Pulmonaria officinalis</i>); red campion (<i>Silene dioica</i>); sweet violet (<i>Viola odorata</i>); common rock-rose (<i>Helianthemum nummularium</i>); common poppy (<i>Papaver rhoeas</i>); lavender (<i>Lavandula angustifolia</i>) - Urban banks: different heathers with lungwort (<i>Pulmonaria officinalis</i>); hebe (<i>Hebe spp</i>); ivy (<i>Hedera helix</i>) - On thin soil: Dry Meadow mix including kidney vetch (<i>Anthyllis vulneraria</i>); wild carrot (<i>Daucus carota</i>); common rock-rose (<i>Helianthemum nummularium</i>) - On damp ground: flag iris or yellow Iris (<i>Iris pseudacorus</i>); purple loosestrife (<i>Lythrum salicaria</i>); water mint (<i>Mentha aquatica</i>); meadowsweet (<i>Filipendula ulmaria</i>); ragged robin (<i>Lychnis flos-cuculi</i>); butterbur (<i>Petasites hybridus</i>); lesser celandine (<i>Ranunculus ficaria</i>) - Steep banks with thin soil: dry Meadow mix including kidney vetch (<i>Anthyllis vulneraria</i>); wild carrot (<i>Daucus carota</i>); common rock-rose (<i>Helianthemum nummularium</i>)	

	Biodiversity banks (continued)	- Herbs including chives, sweet cicely, angelica, borage, marjoram, rosemary, mint (all varieties), hyssop, fennel, thyme	
Hedges	Boundary hedges to mark the boundary of private garden grounds or open spaces	- wild privet (<i>Ligustrum vulgare</i>); common beech (<i>Fagus sylvatica</i>); holly (<i>Ilex aquifolium</i>); hazel (<i>Corylus avellana</i>); yew (<i>Taxus baccata</i>) - hornbeam (<i>Carpinus betulus</i>); honeysuckle (<i>Lonicera nitida</i>) create formal hedges in greenspaces or gardens. - Decorative hedges within gardens can include shrub roses, medium cotoneaster species	- To maximise biodiversity value, this should be predominantly native species. -Where space allows (e.g. within parks, larger amenity spaces), plant informal hedges at least 1.5m away from footpaths and pavements to prevent future maintenance issues
	Informal Hedges as part of screen planting by the roadside, in low maintenance areas	dog-rose (<i>Rosa canina</i>); elder (<i>Sambucus nigra</i>); dogwood (<i>Cornus sanguinea</i>); hazel (<i>Corylus avellana</i>); blackthorn (<i>Prunus spinosa</i>); hawthorn (<i>Crataegus monogyna</i>)	
	Hedge base	Hedgerow Mix including herb bennet (<i>Geum urbanum</i>); greater stitchwort (<i>Stellaria holostea</i>); lesser stitchwort (<i>Stellaria graminea</i>)	
	Wetland areas by the edge of SUDS features.	Wet meadow mix including meadowsweet (<i>Filipendula ulmaria</i>); water avens (<i>Geum rivale</i>); sneezewort (<i>Achillea ptarmica</i>) or any native marginal aquatic planting suited to the design, function and location.	
General Greenspace plantings	Climbers	box honeysuckle (<i>Lonicera nitida</i>); clematis montana (<i>Clematis montana</i>)	-Consider maintenance implications and what support is required and e.g. for fences -To maximise biodiversity value, this should be predominantly native planting.
	Ground cover	bilberry (<i>Vaccinium myrtillus</i>); juniper (<i>Juniperus communis</i>); lesser periwinkle (<i>Vinca minor</i>); ivy (<i>Hedera helix</i>) (avoid if trees nearby)	
	Green Roofs	-Green Roof mix including thrift (<i>Armeria maritima</i>); heath bedstraw (<i>Galium saxatile</i>); common toadflax (<i>Linaria vulgaris</i>); stonecrop (<i>Sedum spp</i>) -Herbs including chives, sweet cicely, angelica, borage, marjoram, rosemary, mint (all varieties), hyssop, fennel, thyme	
	Bulbs	autumn crocus (<i>Colchicum autumnale</i>); snowdrop (<i>Galanthus nivalis</i>); bluebell (<i>Hyacinthoides non-scripta</i>)	

Appendix 2: Further Guidance on Sustainable Drainage

The consultation on the draft Open Space Guidance highlighted the need to provide more in-depth advice on the design of Sustainable Drainage Systems and align priorities with stakeholders involved with the design and maintenance of SUDS. The following section responds to the issues highlighted on the stakeholder workshop in June 2019, and provides a technical checklist for developers and designers.

System hierarchy

Sustainable Urban Drainage Systems are designed to mimic the natural hydrological process. They collect and treat excess water and direct it towards wetlands, streams or aquifers. This process requires a network of SuDS features that are spread across the site.

Source control

Features such as swales, green roofs and rain gardens control water at source and prevent flooding elsewhere. They can be located in soft or hard surfaced areas, including verges by the side of the road to minimise land take.

Site control

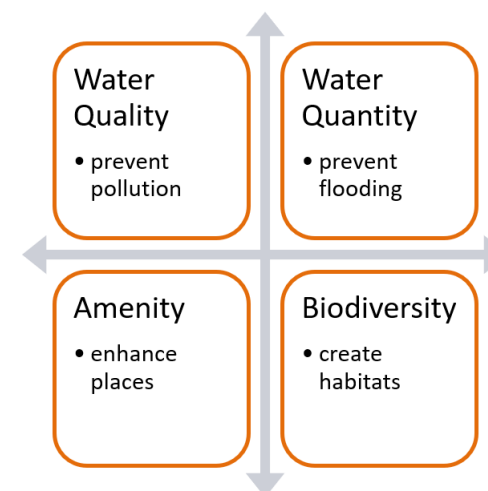
Ponds and basins provide the 'last line of defence', treating the remaining excess water on site. They should be well- integrated with the wider open space area and be functional as well as attractive to wildlife and people

Conveyance

Swales and channels can also act as conveyance, moving water between between different treatment stages.

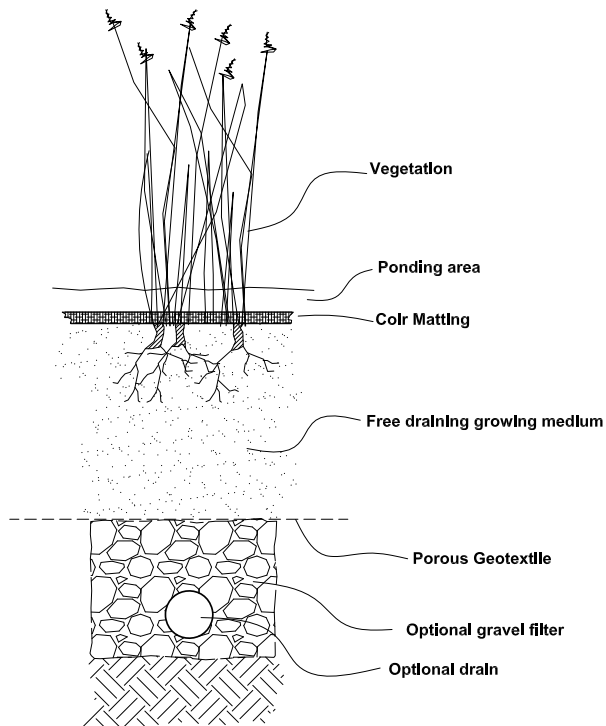
Benefits of providing a network rather than a single feature

- effective treatment of surface and rain water without the need for pipe network upgrades/installation
- reduced need for large features which require land take within the site
- provides attractive and well-connected places for people and wildlife
- raises the profile of developments and increases property values



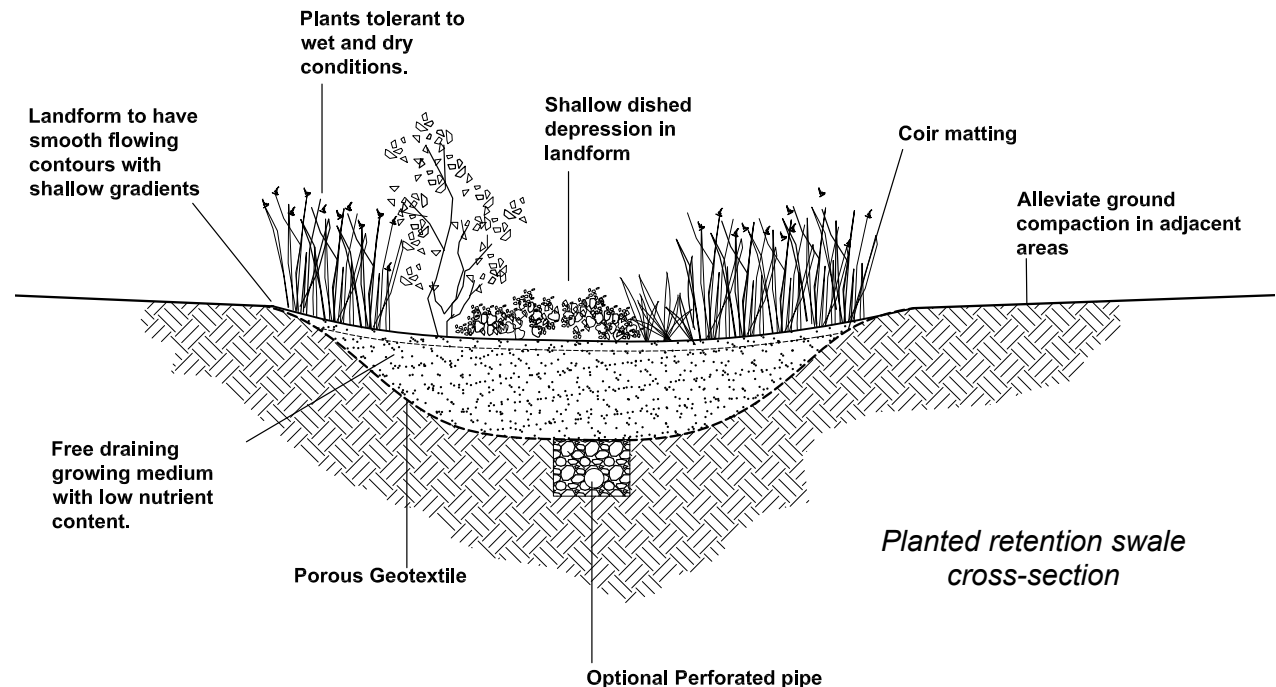
Bioretention features

Smaller SuDS features can be incorporated with open spaces as well as streets and can substitute traditional shrub beds and single function amenity planting. They typically consist of shallow depressions of different shapes and sizes that drain surface water runoff and encourage infiltrations into the ground. Bioretention features and rain gardens can be ideal solutions for compact, high density sites with limited space.



Typical bioretention cross-section

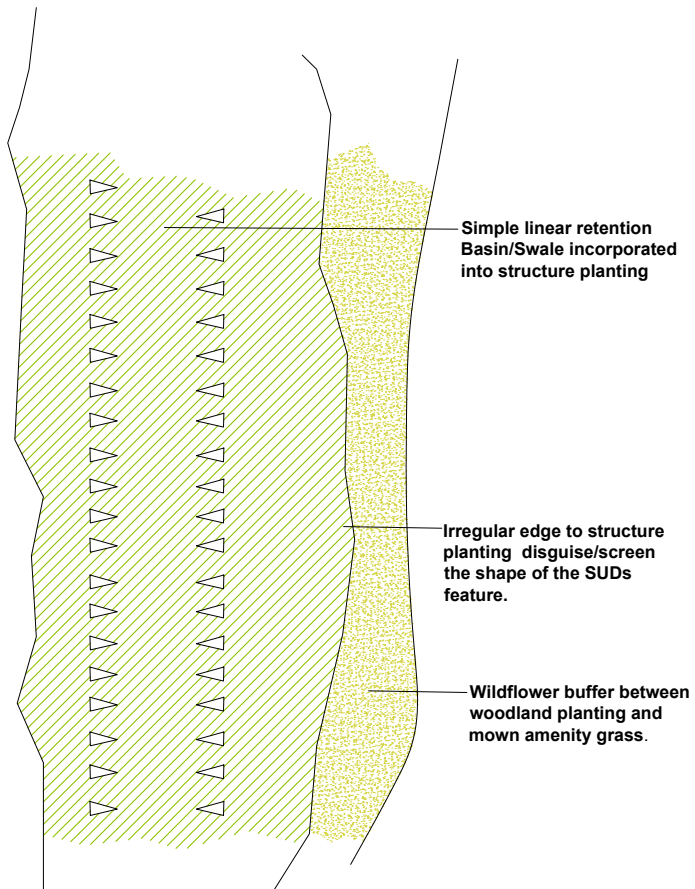
- Create smooth, flowing contours with shallow gradients that enable the water retention area to neatly tie into the adjacent landscape and aid maintenance
- Use coir matting to minimise weed growth, pegged to earthworks to prevent movement when the swale is flooded
- Chose plants tolerant to wet and dry conditions. Next to roads, salt tolerant planting should be considered to cope with salt run off/spray from winter roads maintenance. Nectar rich species should be included wherever possible to benefit wildlife.
- Use free draining growing medium with low nutrient content. This can be an 'engineered' sandy or gritty soil. Avoid peat, clay and silt based soils as they are not sufficiently porous and are high in nutrient content which will encourage unwanted weed growth
- A porous geotextile prevents soils from mixing and enables the easy replacement of the free draining soil layer when necessary.
- An optional perforated pipe connected to other SUDs and drainage infrastructure can be installed to prevent the bioretention / swale from becoming too full.



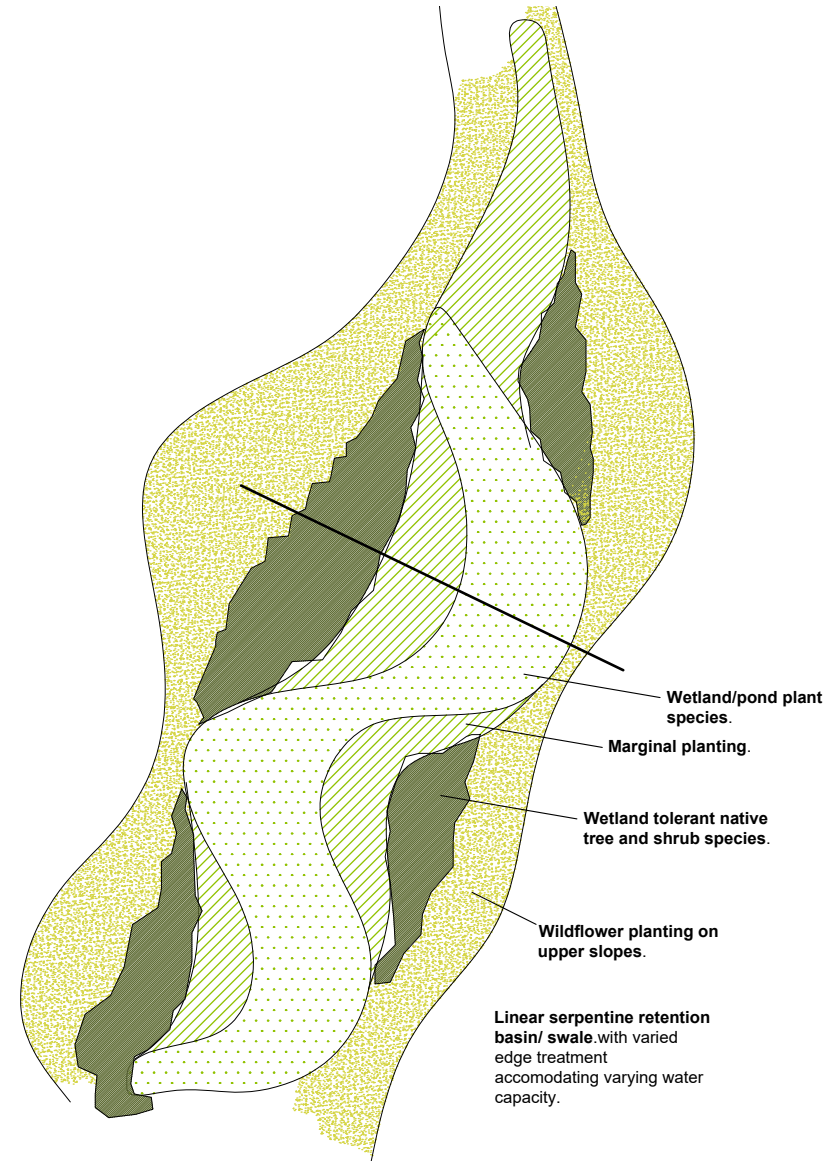
Planted retention swale cross-section

Linear Swales & Basins

Swales and basins can be various shapes and sizes and can be integrated with informal amenity areas. The drawings show linear and serpentine detention basins / swales which are ideal for narrow spaces such as linear open space corridors, road verges and structure planting on the edge of developments.



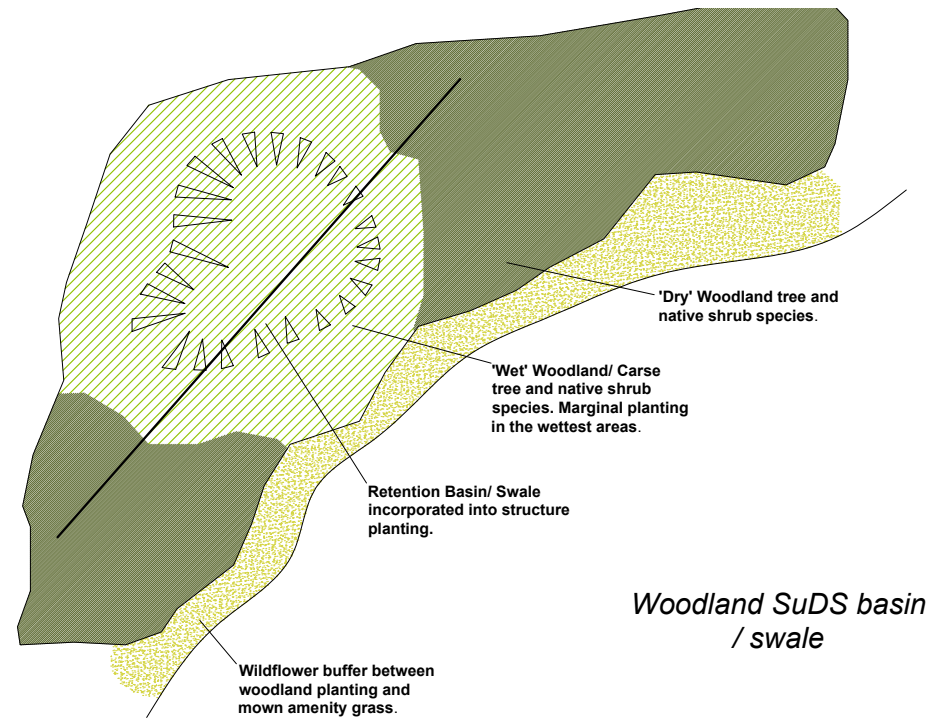
Simple, linear basin/swale



Serpentine basin/swale

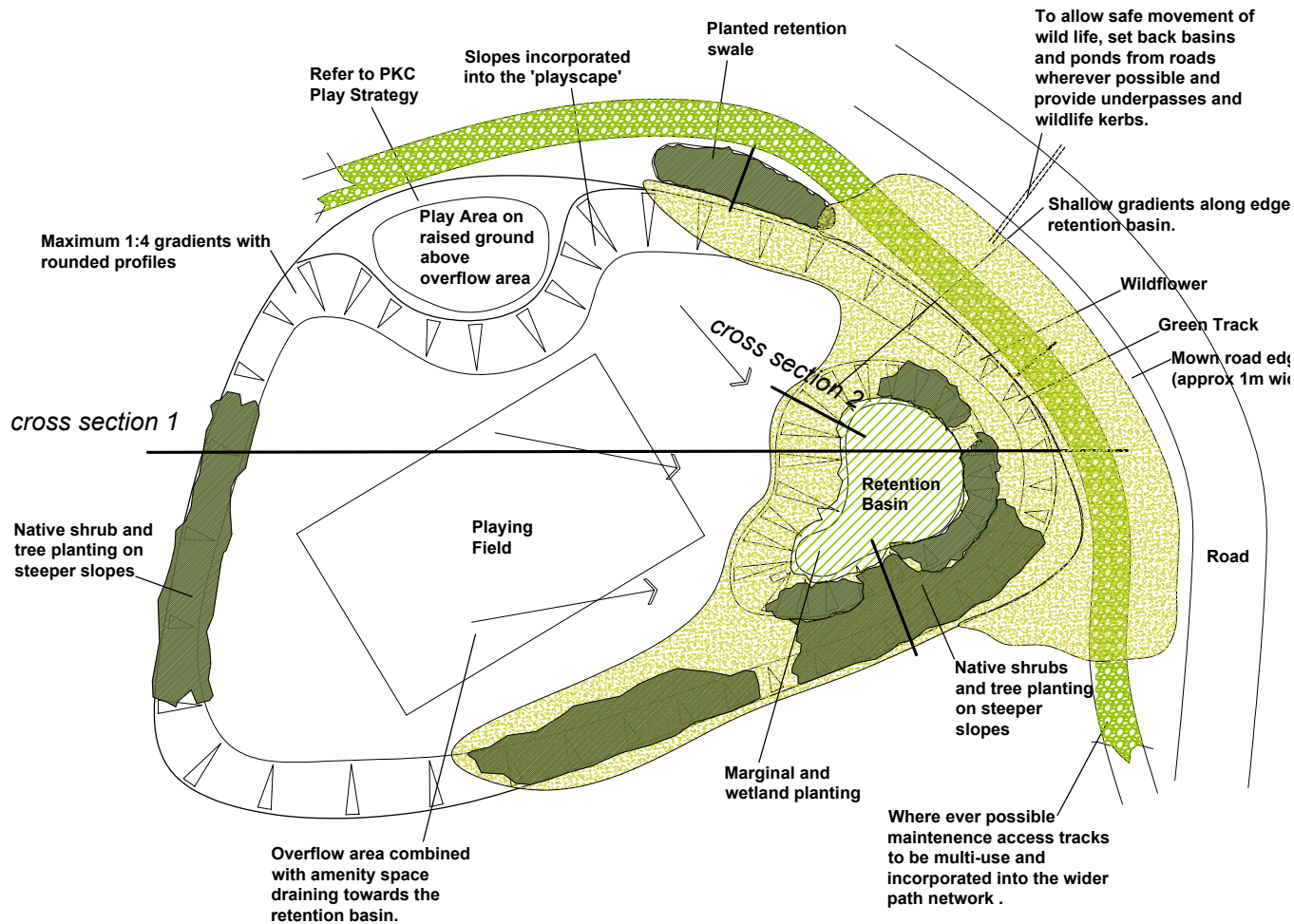
Woodland Swales/ Basins

Water retention areas can also be incorporated into landscape structure planting such as woodland habitats. The combination of 'wet' and 'dry' woodland increases biodiversity. Trees and under-storey species need to be tolerant of damp conditions (e.g. rushes, downy birch and willows).



Integrating Ponds & Basins with Recreational Areas

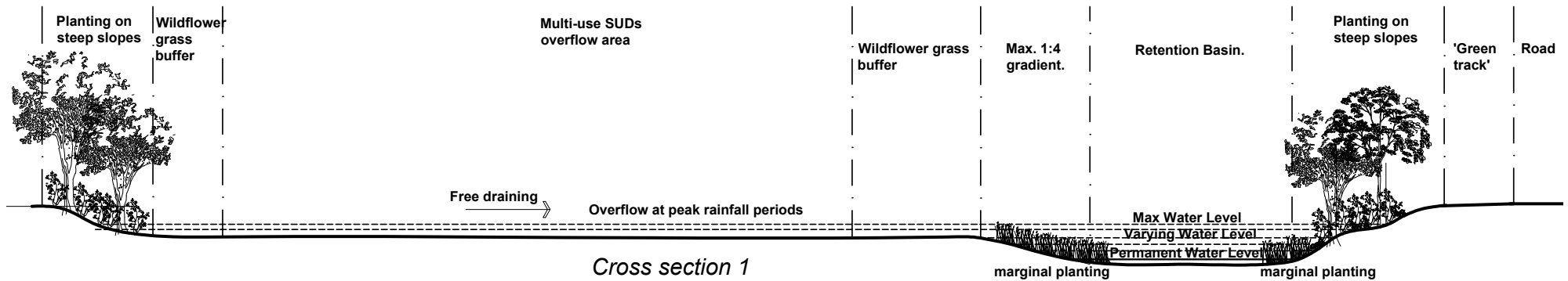
Ponds and basins should always form part of the wider green infrastructure of the site and deliver multiple benefits. The careful design of landscaped areas allows for accommodating excess water at times of high rainfall. When conditions are dry, overflow areas can be used for recreation. The incorporation of integrated SUDs systems throughout the development will help to reduce the size of the retention basin and overflow area and maximise the use of the available land.



Example public park / amenity space (see cross-sections on next page)

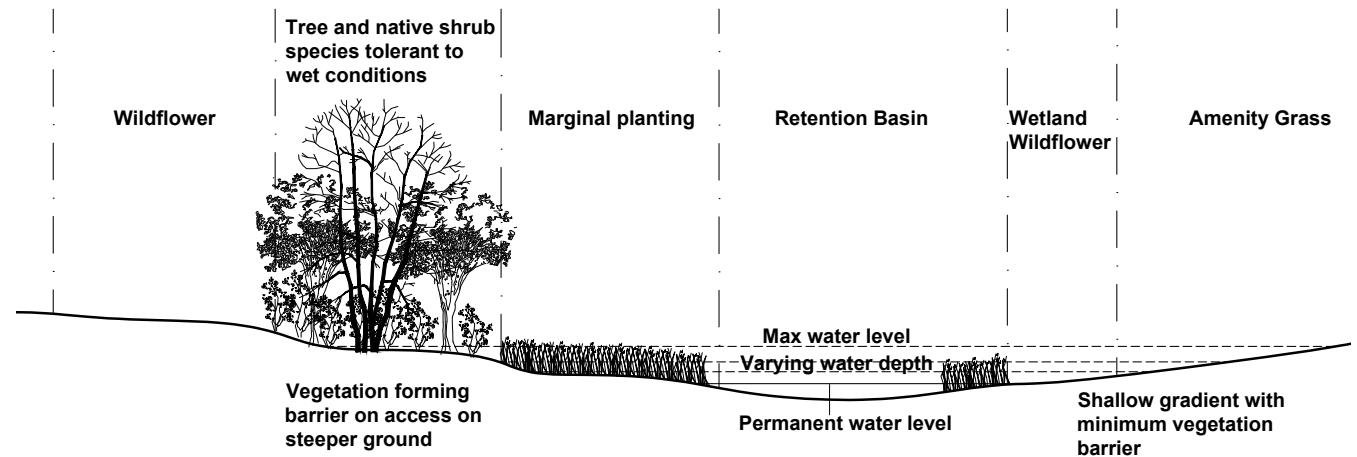
- For multi-use overflow area (e.g. playing field), the ground must have free draining soil to allow the area to be used and maintained when not storing excess water
- All cross-falls should lead towards the retention basin. Gradients must suit the amenity function of the overflow area
- Opportunity to increase habitat area with wildflower grass buffer between marginal planting and mown amenity grass
- Shallow gradients and rounded profile enable the banks to be maintained and enable easy access to/ from the basin. They help to merge the basin into the wider landscape and increased the scope for marginal planting
- Vegetation cover on steeper slopes to aid maintenance and create landscape structure
- To allow for the safe movement of wildlife, set back basins and ponds from roads wherever possible and provide underpasses and wildlife kerbs.

Cross-sections



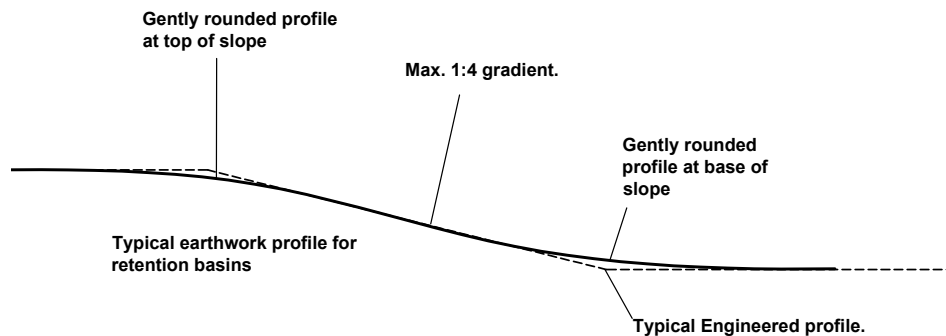
Well-illustrated cross sections help others understand how the proposed landscape will function. Drawings submitted as part of planning applications should differentiate:

- permanent water/pond and planted wetland areas
- various detention scenarios for the accessible green space,
- water conveyance flow directions and exceedance flow path



Slopes & Gradients

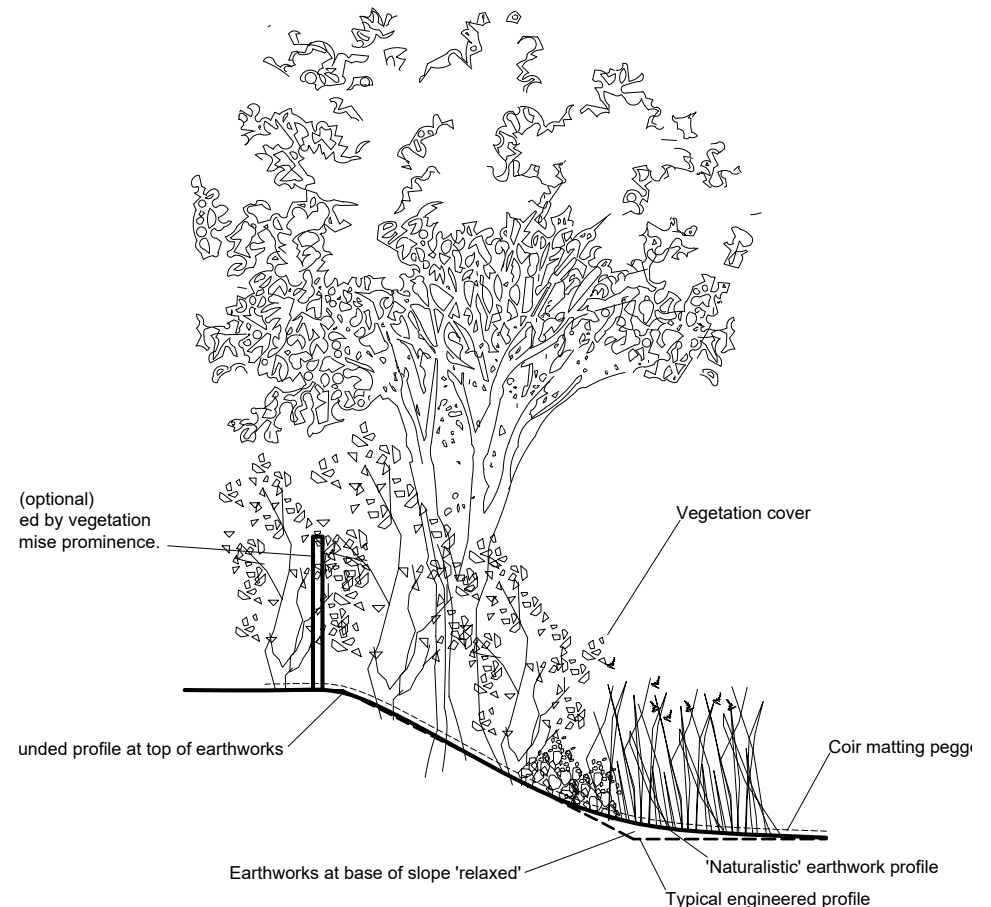
For most SuDS features, shallow gradients and multiple step edges are preferable as they can accommodate varying water levels, appear more natural and facilitate easy access for both wildlife and maintenance. The typical engineered profile should be avoided and slopes should be gently rounded. Where steeper gradients are unavoidable, they should be designed carefully, with appropriate vegetation cover and safety measures in place.



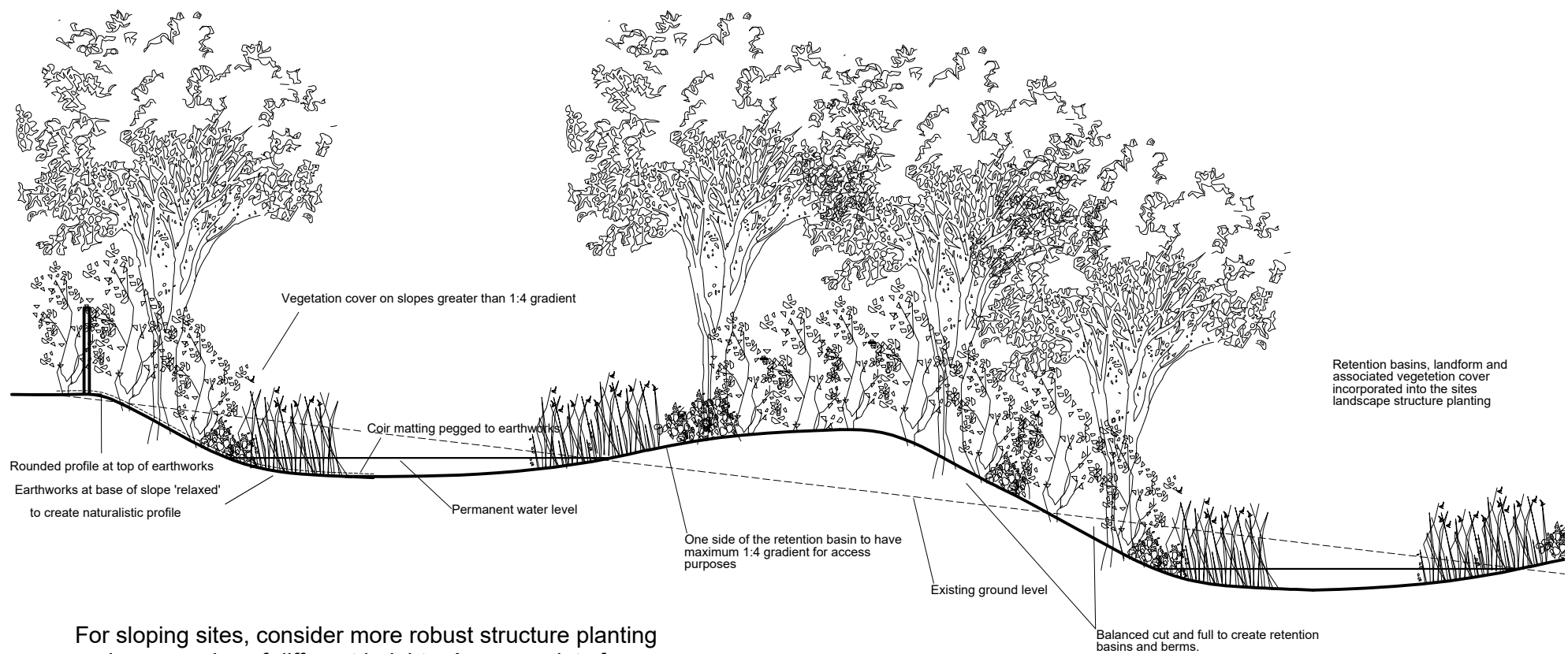
Ideal SuDS feature profile

Safety considerations

- Planting on the aquatic bench should effectively dissuade people from trying to get access to the open water and allow for clear visibility of the retention area
- Fencing, where absolutely necessary, should be low and unobtrusive and incorporated into planting
- Signage and interpretation should be unobvious and sympathetically designed rather than overly large.
- Proposals must comply with the [Council's Water Safety Policy](#) and [ROSPA guidelines](#)



Treatment for steeper gradients

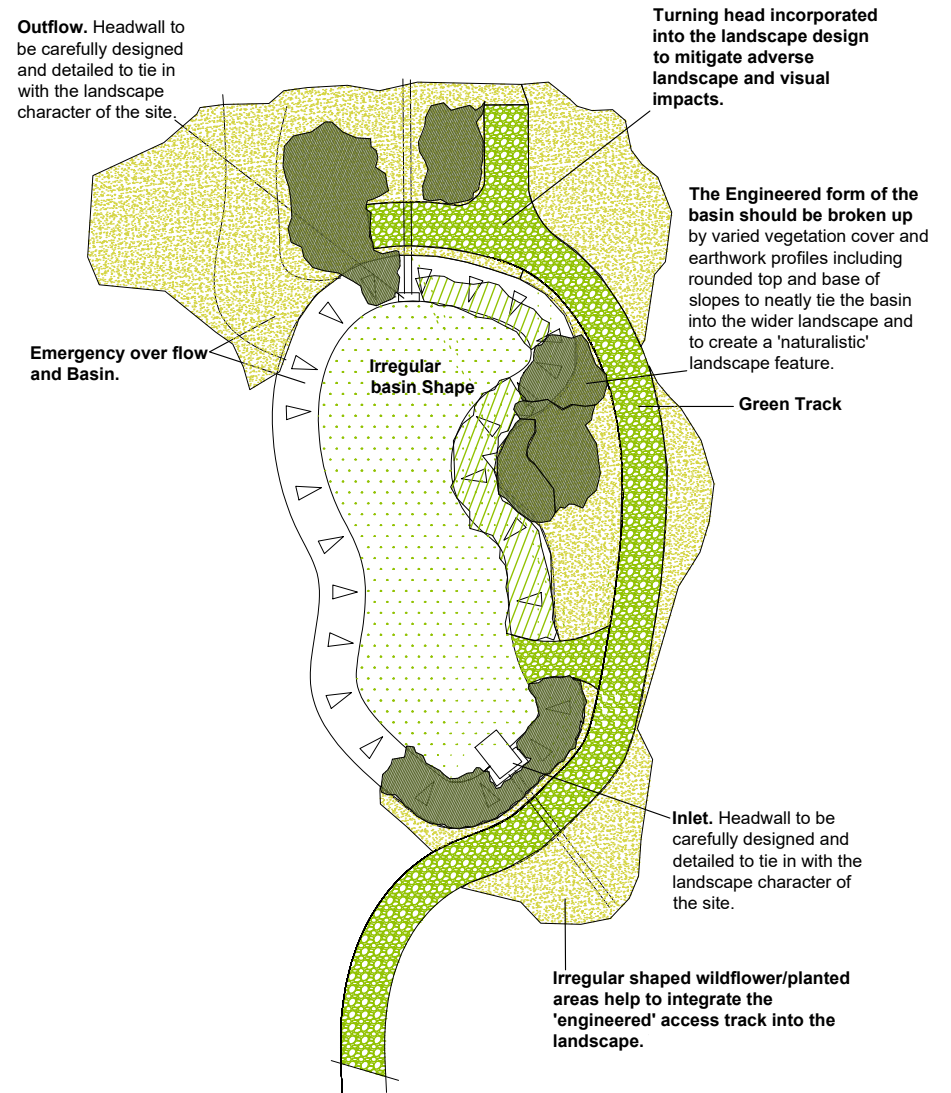


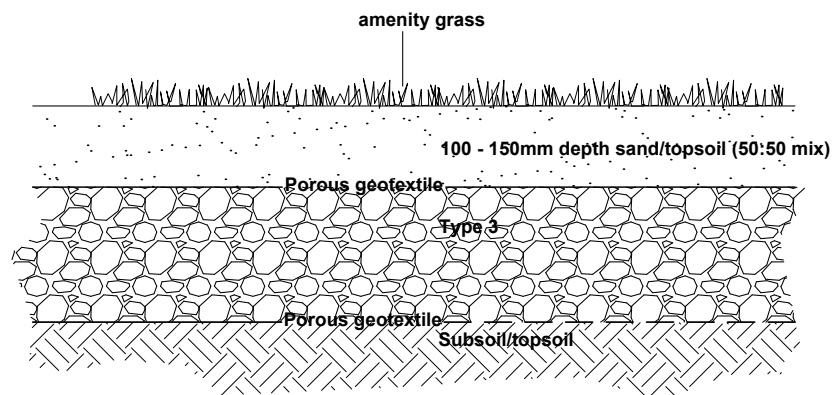
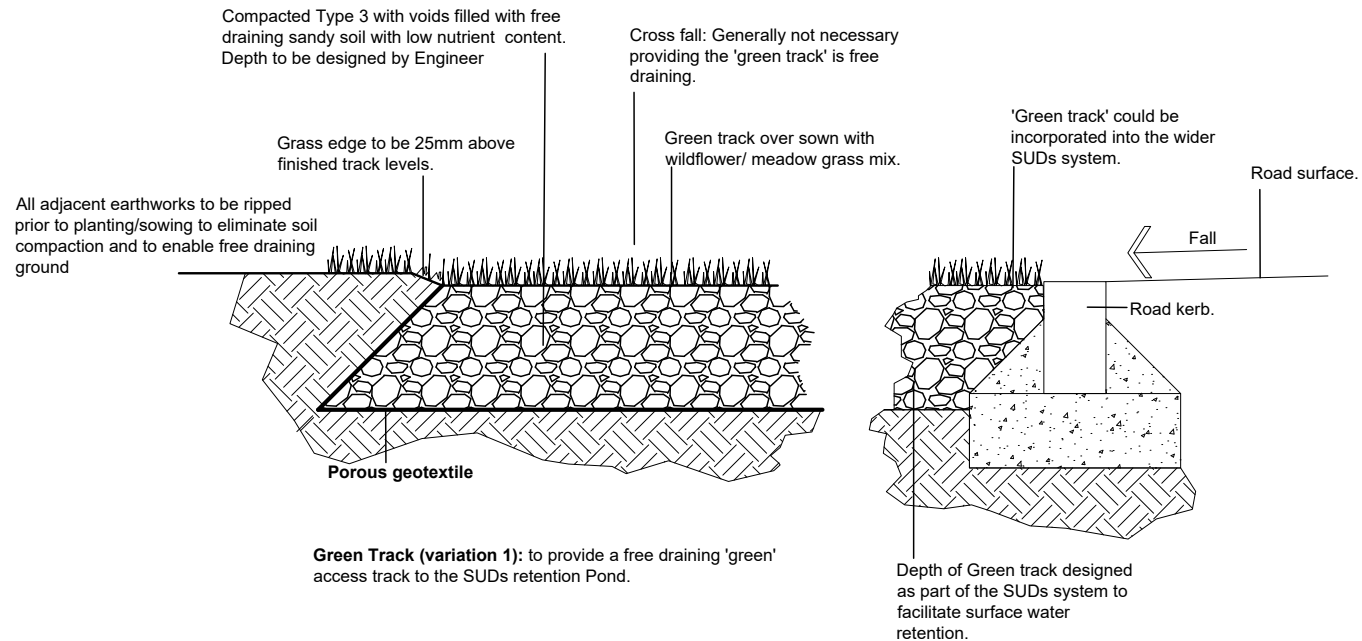
For sloping sites, consider more robust structure planting and use species of different heights. Access points for maintenance can be provided on one side along, where the gradient is max 1:4.

Access

Providing access to SuDS features for larger vehicles is often necessary in order to allow for their long-term maintenance. However, gravelled roads which surround basins and ponds can take away from their natural appearance. 'Green access tracks' are ideal for access that is infrequently used, they are unobtrusive and blend in with the wider amenity area. Green tracks and paths can become part of the drainage system and facilitate water retention. Besides access for maintenance, also consider amphibian migration routes and access for wildlife.

- Where there are roads proposed within 500m of a SUDS feature, underpasses or wildlife kerbs should be provided
- Vegetation cover should be carefully chosen and designed to remove problem areas for future maintenance operations e.g. mowing on steep slopes and around engineer structures such as manhole covers and head walls.
- Layout and extent of the access track should be carefully considered at early stages of the design to minimise visual and character impacts. A 'green track' solution would be encouraged to merge the track with the landscape.





Green access track profiles



Wildlife kerbs allow amphibians to bypass gully grids

Further guidance and Regulations

- Ciria Manual
- RSPB & WWT: Sustainable Drainage Systems
- Scottish Water Sewers for Scotland 4
- PKC Water Safety Policy
- ROSPA Guidelines
- PKC Flood Risk Guidance

Did you know?

Applicants can request a waiver from Scottish Water to allow for unconventional design solutions that do not accord with technical standards. Early engagement with Scottish Water and Perth and Kinross Council is recommended in all cases, especially in these scenarios.

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