

see space differently



→ **LECKWITH QUAY**  
*LANDSCAPE STRATEGY*  
ON BEHALF OF PHIL WORTHING

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*LANDSCAPE BRIEF*

The overriding aim of the Welsh Governments Technical Advice Note 12 with respect to housing layout and design is to:-

- Create places with the **needs of people in mind**, which are **distinctive** and respect **local character**;
- Promote layouts and design features which **encourage community safety and accessibility**;
- Focus on the quality of the places and living environments for **pedestrians** rather than the movement and parking of vehicles;
- Avoid inflexible planning standards and encourage layouts with **reduced road widths**; promote energy efficiency in new housing;
- Secure the most **efficient use of land** including appropriate densities; and, consider and balance potential conflicts between these criteria.

Landscape criteria for this specific project:-

## Site

- Topography – respond sensitively while making most of site;
- New road bridge - how to integrate into site;
- Existing bridge (Scheduled Monument) – protect and enhance bridge and setting;
- Outdoor space - how to give residents access to usable outdoor space while protecting existing natural capital and increasing biodiversity.

## Access to River

## Natural Capital

- Ancient woodland;
- Riparian habitat;

*LANDSCAPE RESPONSE*

**PEOPLE** - Spaces within the garden cater for different functions, seating, eating, growing and play space provide for a variety of uses simultaneously and opportunities to create community bonds. For those residences which are directly adjacent to communal space, an area of semi- private space will be designated.

**DISTINCTIVE** – Unique site specific design. A structured layout with naturalistic planting in defined areas will provide a legible, useable space which feels welcoming and homely. Mixed perennial, shrub and tree planting will give continually changing seasonal interest and high biodiversity values.

**LOCAL CHARACTER** – Responding to surroundings

**COMMUNITY SAFETY AND ACCESSIBILITY** – Strong community bonds will be fostered by communal areas enabling community activities and events. The landscape will improve accessibility to the river and woodland. The site will have reduced vehicular access creating a safe **PEDESTRIAN** prioritised environment.

The site specific design responds to the **TOPOGRAPHY**, a **NEW BRIDGE** will connect the site to the city and transport links whilst the **EXISTING BRIDGE** will connect the site to its past and become a marker point on the riverside walk.

A riverside walk with **ACCESS TO THE RIVER** will enable activities on and by the river. Green fingers will cross the site from the woodland to the river. The opportunity to connect with both **ANCIENT WOODLAND** and **RIPARIAN HABITAT** increases residents connection to nature, makes natural processes visible and nurtures a sense of place, all shown to improve wellbeing.



Site Boundary



*Ancient Woodland*

Retain as much as possible.

Ancient woodland is an exceptionally important resource, especially in terms of contribution to ecology, biodiversity, flood protection and social wellbeing.



*River Ely : Conservation Site*

Cardiff County Council Site of Importance for Nature Conservation



*Barrier: Noisy Road*

A232 and flyover provide a formidable barrier to the site's long northeast boundary and a lot of noise on the site.



*Bridge: Scheduled Monument*

The old bridge as well as its setting are protected due to its Scheduled Monument status.



*Slope*

A significant characteristic in parts of the site. Although it can be challenging to build on it does offer the opportunity to provide something different either in the build environment or with green assets.



*Footpaths*

Essential source of connectivity. Within the site provision for cycling should be provided.







Site Boundary



Woodland

This is one of the defining features/characteristics of the site, while retaining as much of the ancient woodland as possible the trees should be drawn into and across the site. Trees in residential settings contribute to the Natural Capital, quality of place and many other facets including supporting stronger market values and decreased residential sales times.



Riverside edge

Bringing the experience of the water into the site. The river is an inviting feature for people, encouraging and managing access to it from within the site is important.



Acoustic Barrier

Investment into quality infrastructure to reduce the impact of noise into the site, allow for a better built environment response and increase house values.



Enhance Scheduled Monument

The old bridge as well as its setting are protected due to its scheduled monument status. This could be an important access point into the site and even a nexus around which the site is established.

Connections

The scheduled monument bridge will connect to the pedestrian and cycle route of the Ely Trail, which reaches St Fagans to the north and Cardiff Bay to the south. Pedestrian routes within the site will connect to public footpaths.

The River Ely is navigable by small boat from the site to Cardiff Bay. It is also navigable upstream from Peterston-Super-Ely by Canoe or Kayak.







LANDSCAPE CONCEPT

The site is sandwiched between ancient woodland and the River Ely. Both are defining features of the site and the woodland and riverside characters should have influence over the whole site.

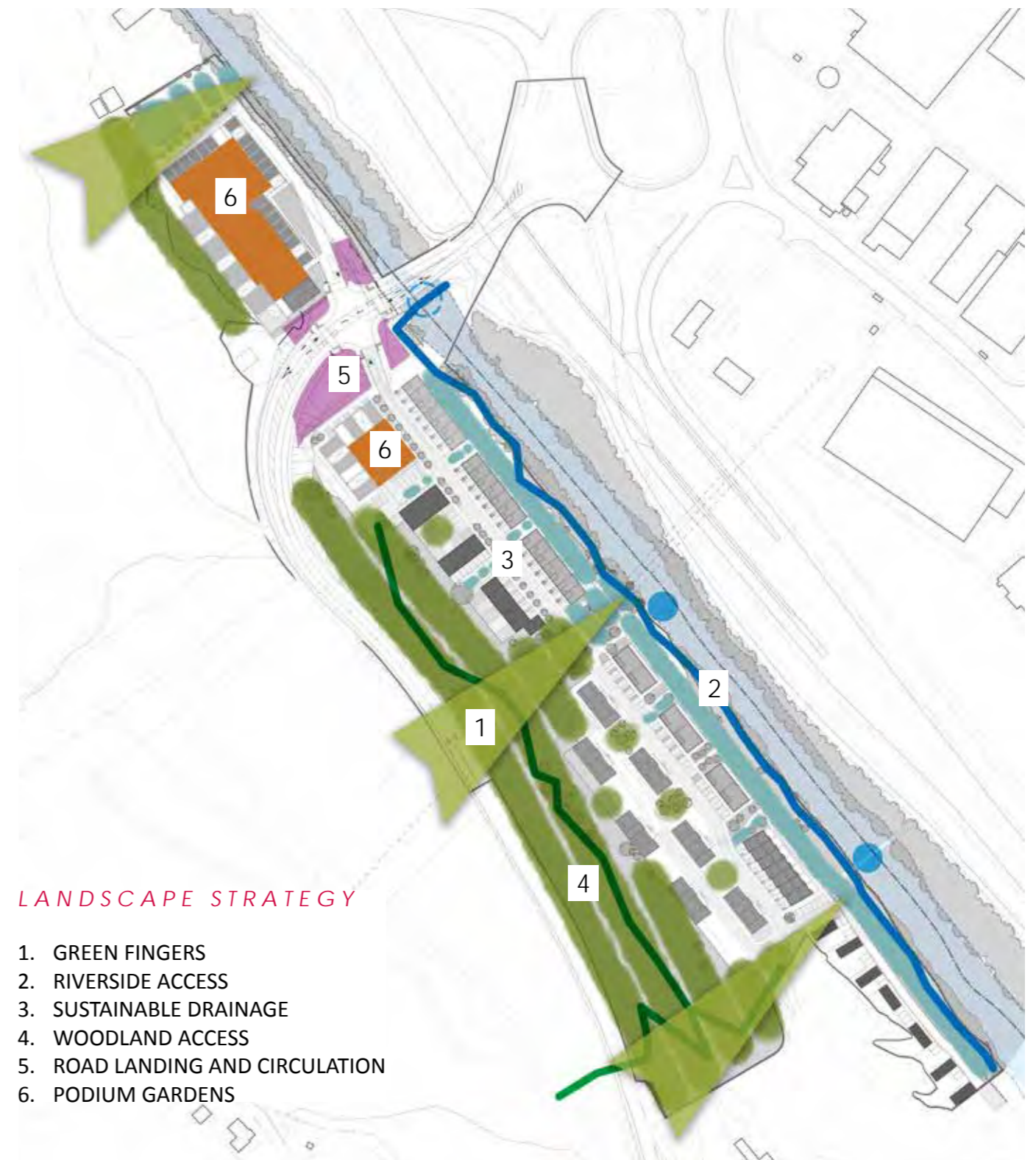
'Green Fingers' of woodland planting will connect the two as wildlife corridors across the site.

The riverbank vegetation will be maintained and enhanced its habitat function a priority. The waterside character of the site will be enhanced by planted swales and a retention pond with wetland area, as part of the drainage infrastructure.

The river and woodland offer many opportunities for activities, which should be facilitated by making them accessible, this will give the residents a supportive environment for a healthy active lifestyle, and access to nature which will support their wellbeing. This access must be balanced with its effect on the habitat and wildlife through careful design and low impact construction.

The road designation prioritises pedestrian and alternative use, such as play. Shared space streets make space for people and community and limit the dominance of cars through the site.

Shared podium gardens enclosed by the apartment blocks bring a naturalistic environment to the hardest landscape on the site and cater for the needs of residents.



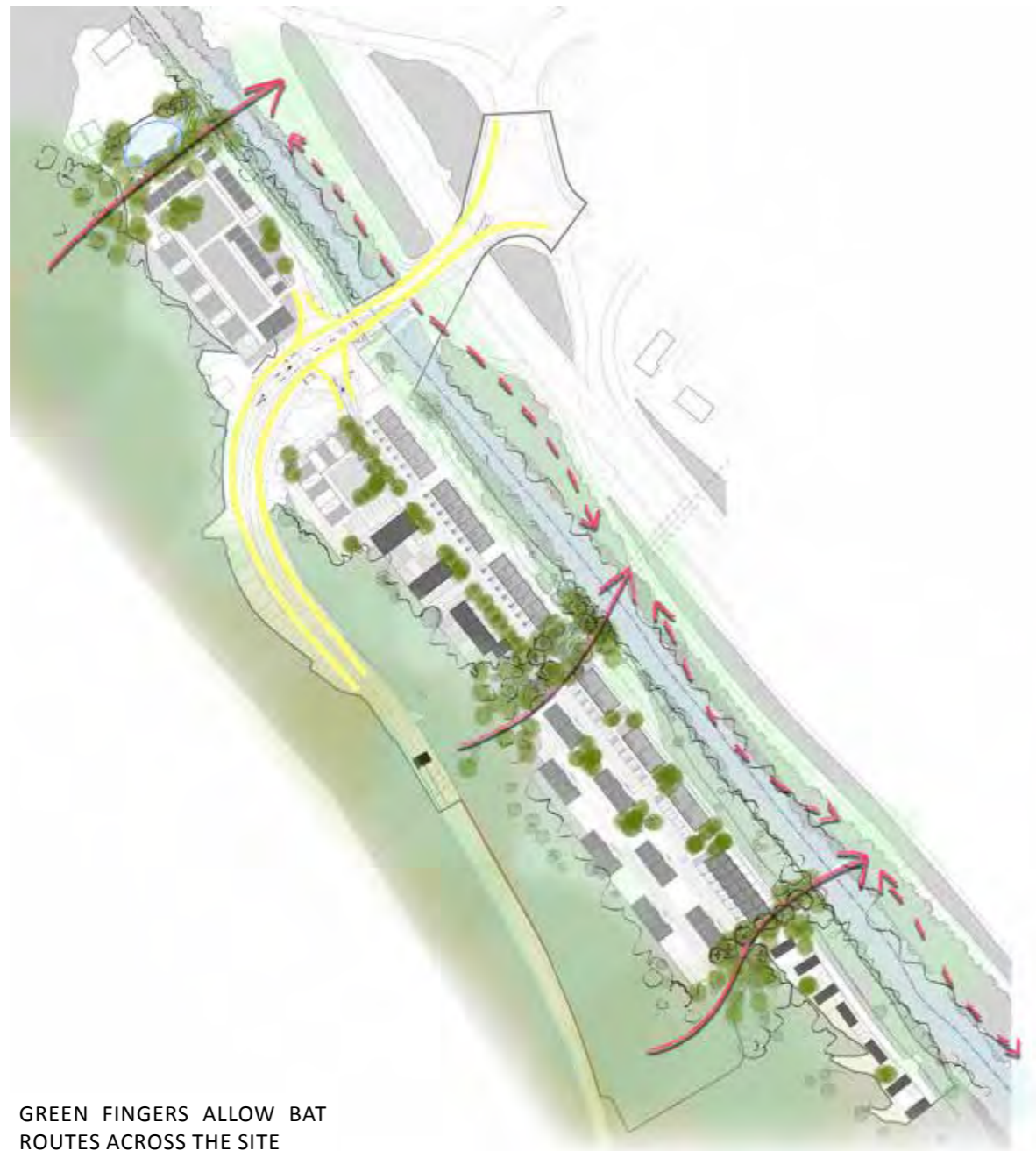
LANDSCAPE STRATEGY

1. GREEN FINGERS
2. RIVERSIDE ACCESS
3. SUSTAINABLE DRAINAGE
4. WOODLAND ACCESS
5. ROAD LANDING AND CIRCULATION
6. PODIUM GARDENS



*GREEN FINGERS*

Running across the site wooded 'green fingers' will connect the Ancient woodland to the river. They will be vital wildlife corridors connecting the woodland and riverbank habitats and provide a strong connection to the natural environment for the residents.



GREEN FINGERS ALLOW BAT ROUTES ACROSS THE SITE

*HABITAT CONSIDERATION*

*Dark corridors*

The Green Fingers will be dark corridors across the site, providing trees as a buffer from the built environment and shield from the necessary lighting on site. The canopy cover allows bats to 'hop-over' without being put off by light when crossing roads.

Mitigation measures to limit impact to bats and other wildlife:

- Low level light output
- Low height light fittings with shades
- Only when and where necessary
- Dark corridors to allow bats to cross site.

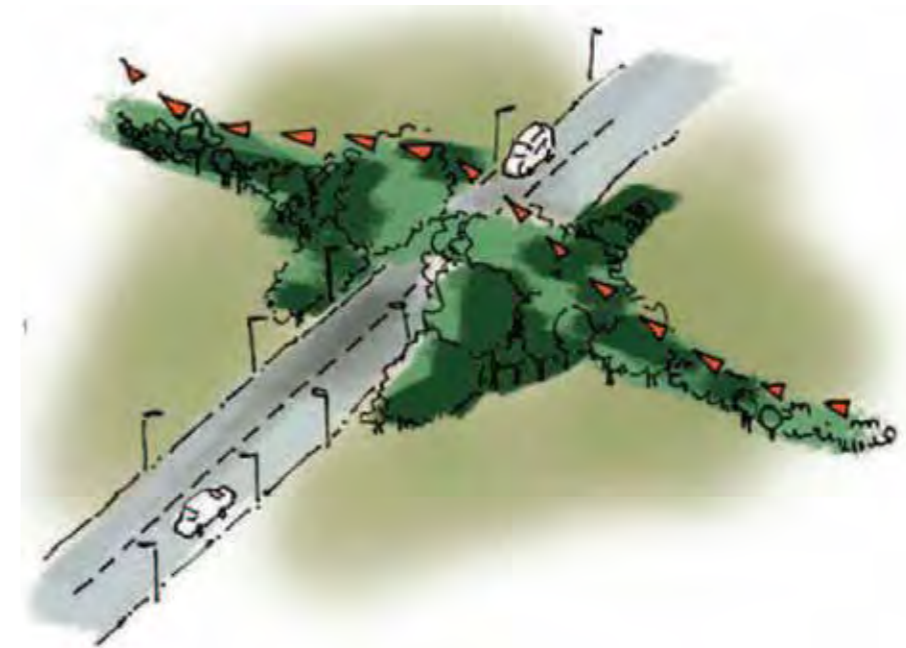


ILLUSTRATION OF CANOPY COVER ALLOWING BATS TO 'HOP-OVER' ROADS



*PLAY*

The play spaces will enable active and creative play to help children stay healthy, happy and aid development. Natural play equipment will enable this type of free, creative play. Additionally, the natural materials will soften the appearance of the play equipment within the gardens and aesthetically connect to the ancient woodland.

3 areas for play are provided across the site, 2 LAP and 1 LEAP, in accordance with the six acre standard for Wales.



*PLAY PRECEDENTS*

← Western Riverside Development, Bath

This open play area at one end of a communal courtyard has simple wooden play features



South Gardens, Elephant Park, London

Creative play integrated in the landscape design, natural materials are used which softens the appearance of the play equipment. Wood-chip is used to make some planting beds accessible and play opportunities, such as stepping logs, run through them.

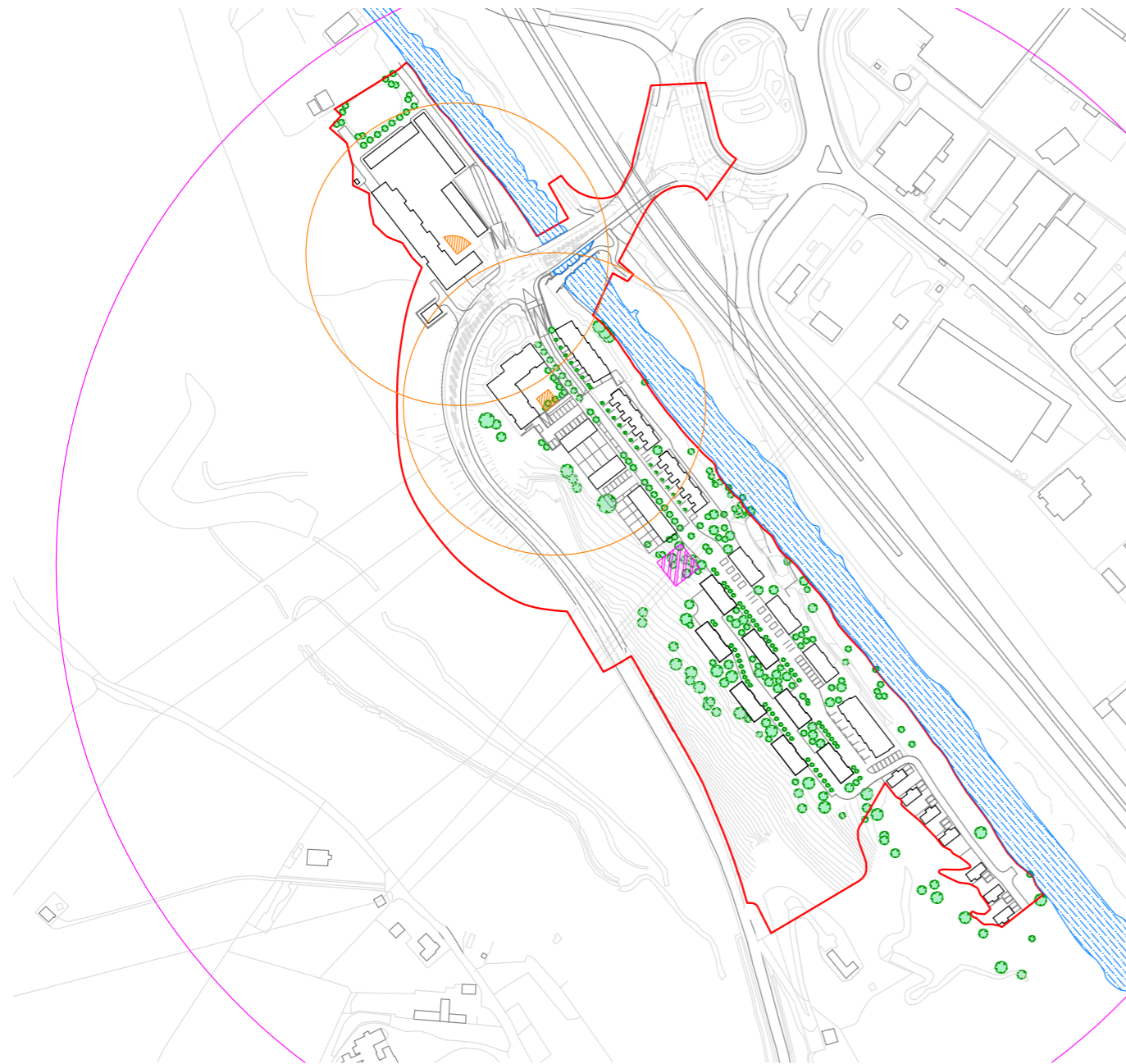




**PLAY AREA PROVISION**

3 areas for play are provided across the site, 2 LAP and 1 LEAP, in accordance with the six acre standard for Wales.

- 100m Walk to LAP
- LAP
- 400m Walk to LEAP
- LEAP



**NATURAL PLAY**

The larger play area (LEAP) is suited to becoming a natural play area, emphasising its proximity to the woodland and making the most of the natural features and materials found on site. This type of play area fits more softly into the larger landscape setting and will be appreciated by a wide age range.





*OLD LECKWITH BRIDGE*

Old Leckwith Bridge is a Scheduled Monument and its landscape setting should respect this. High quality landing space either side of the bridge will ground it in the site and connect the site to the popular Ely Trail



*HIGH QUALITY LANDING SPACE*

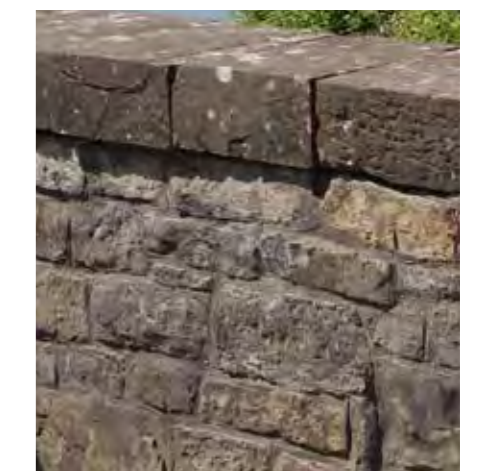
- Subtle lighting to highlight bridge and create shimmering reflections in and from the river.
- Seating for people to enjoy the historic setting and landmark viewpoint.



FROM TOP:  
VIEW OF SCHEDULED MONUMENT BRIDGE FROM EXISTING ROAD BRIDGE; VIEW OF SCHEDULED MONUMENT BRIDGE FROM ELY TRAIL; VIEW UPSTREAM FROM SM BRIDGE.

*MATERIALS*

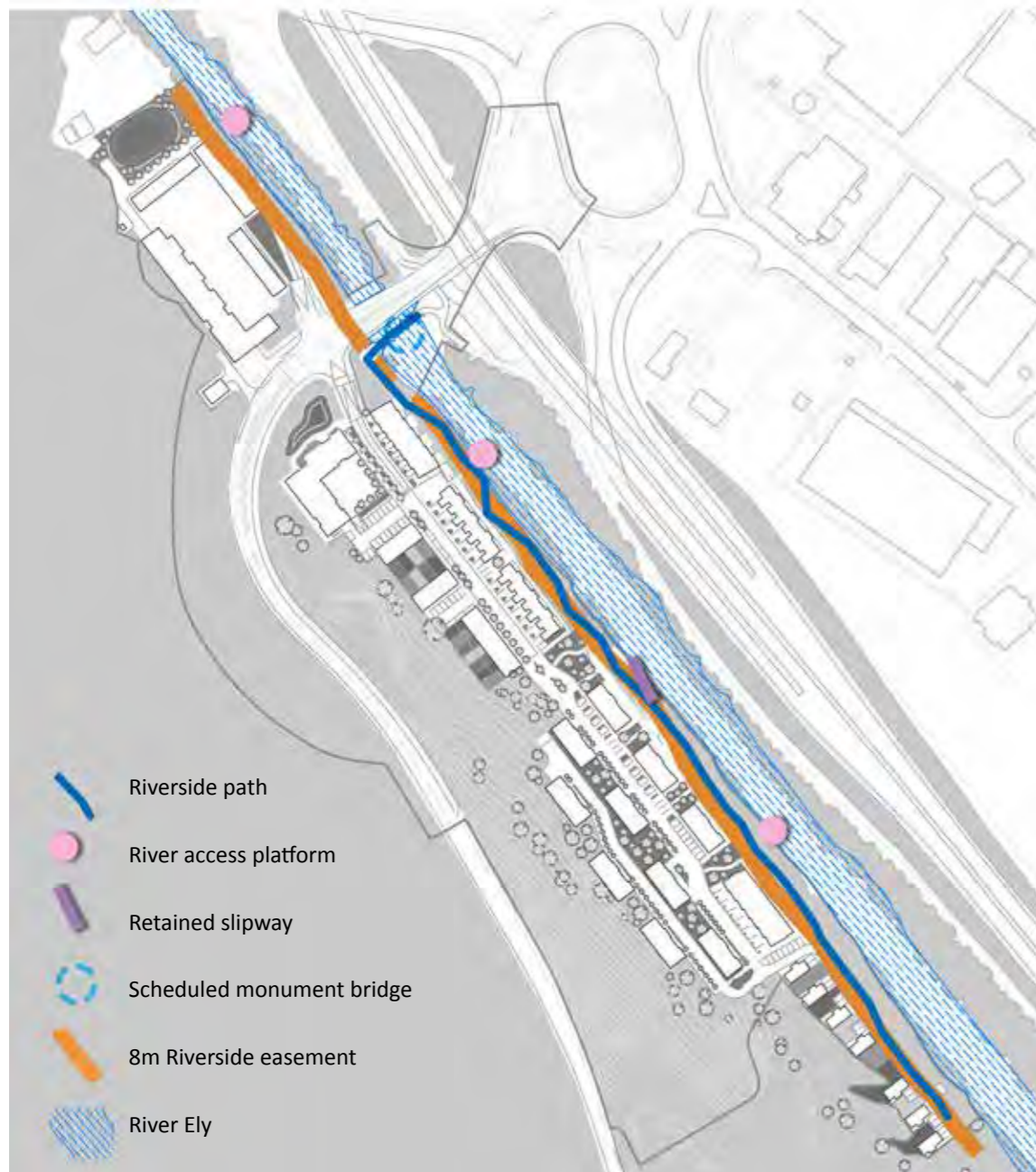
- Natural stone, sourced from the local area to match the bridge.
- Hard wood benches
- Stainless steel light fittings





RIVER ELY

The River Ely is a distinctive characteristic of the site and will appeal to residents as a recreational feature and calm environment, bringing them closer to nature.



RIVERSIDE PATH AND RIVER ACCESS

A riverside path will run the length of the site. Small pontoons over the water will enable access to the river. Multiple access points along the riverside path will limit 'desire lines' and preserve and enhance the riverbank habitat. The riparian habitat must have full consideration in choice of non-leaching materials and construction. Habitat features can be integrated in the construction of the pontoons.

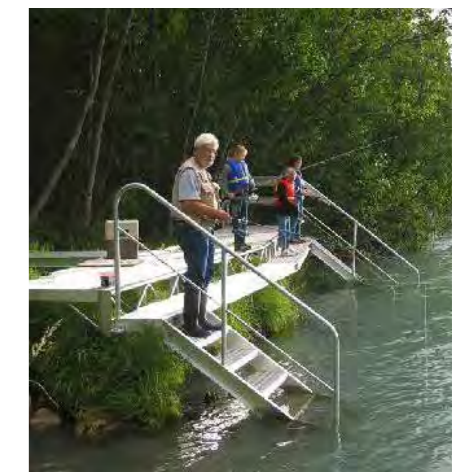


ACTIVITIES

**Walking, Running and Cycling** - The Ely trail on the other side of the river can be accessed via the scheduled monument bridge. This provides an off road route to Cardiff Bay. The trail will connect to St Fagans 3 miles to the north west of the site on completion of an underway development currently in between.

**Canoeing / Kayaking** - The River Ely is navigable downstream to Cardiff Bay and upstream from Peterston-Super-Ely by Canoe or Kayak. It is also navigable by small boat from the site to Cardiff Bay.

**Fishing** - Species in the River Ely include Salmon, Sea Trout, Roach, Gudgen, Chub, Dace and Rudd. Licences are required, fishing from boats is not permitted.





HABITAT CONSIDERATION

- Undisturbed riverbank for otters and other wildlife.
- Ledges under new pontoons if necessary to allow wildlife movement.
- Sensitive pontoon and path construction with minimum impact to riverbank and bed.
- Restricted lighting to maintain dark corridor for bats and other wildlife.

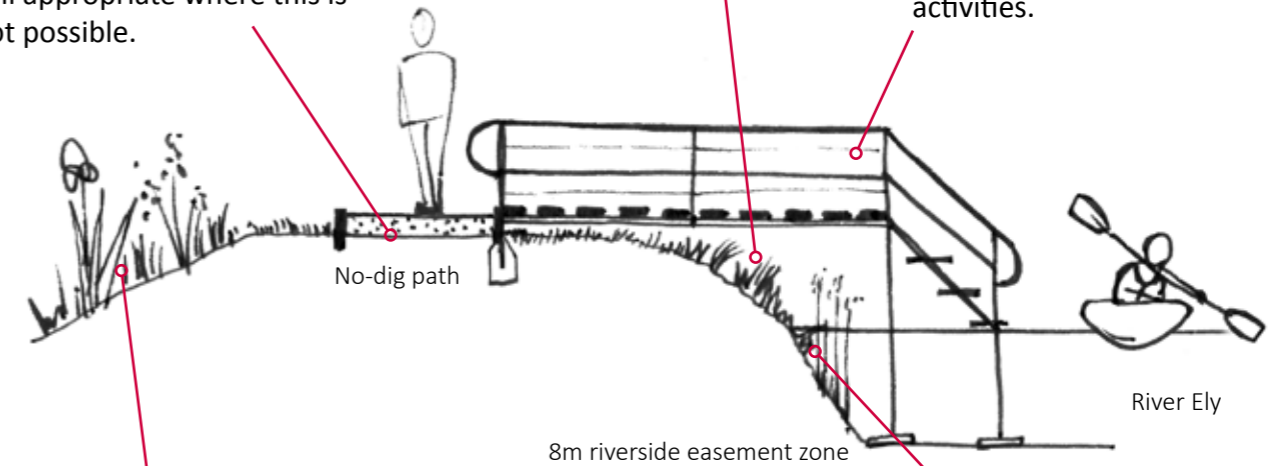
VEGETATION

Existing vegetation will be maintained and enhanced. Invasive and inappropriate species will be removed, including Japanese knotweed and Himalayan balsam along the riverside. They should be replaced with native species as found on the site and in the local area.

Where possible the footpath will be outside of the 8m Riverside Easement Zone, the no-dig construction means the path is still appropriate where this is not possible.

Space remaining under the platform for mammals to travel along the riverbank.

New river access platforms protect riverbank habitat whilst allow access to the river for activities.



New river side marginal planting, including Yellow Flag-iris *Iris pseudacorus*, Ragged Robin *lychnis flos-cuculi*, Purple Loosestrife *lythrum salicaria*, Common Spike-rush *Eleocharis palustris* and Meadowsweet *Filipendula ulmaria*

Existing riverbank vegetation retained, with invasive species removed.

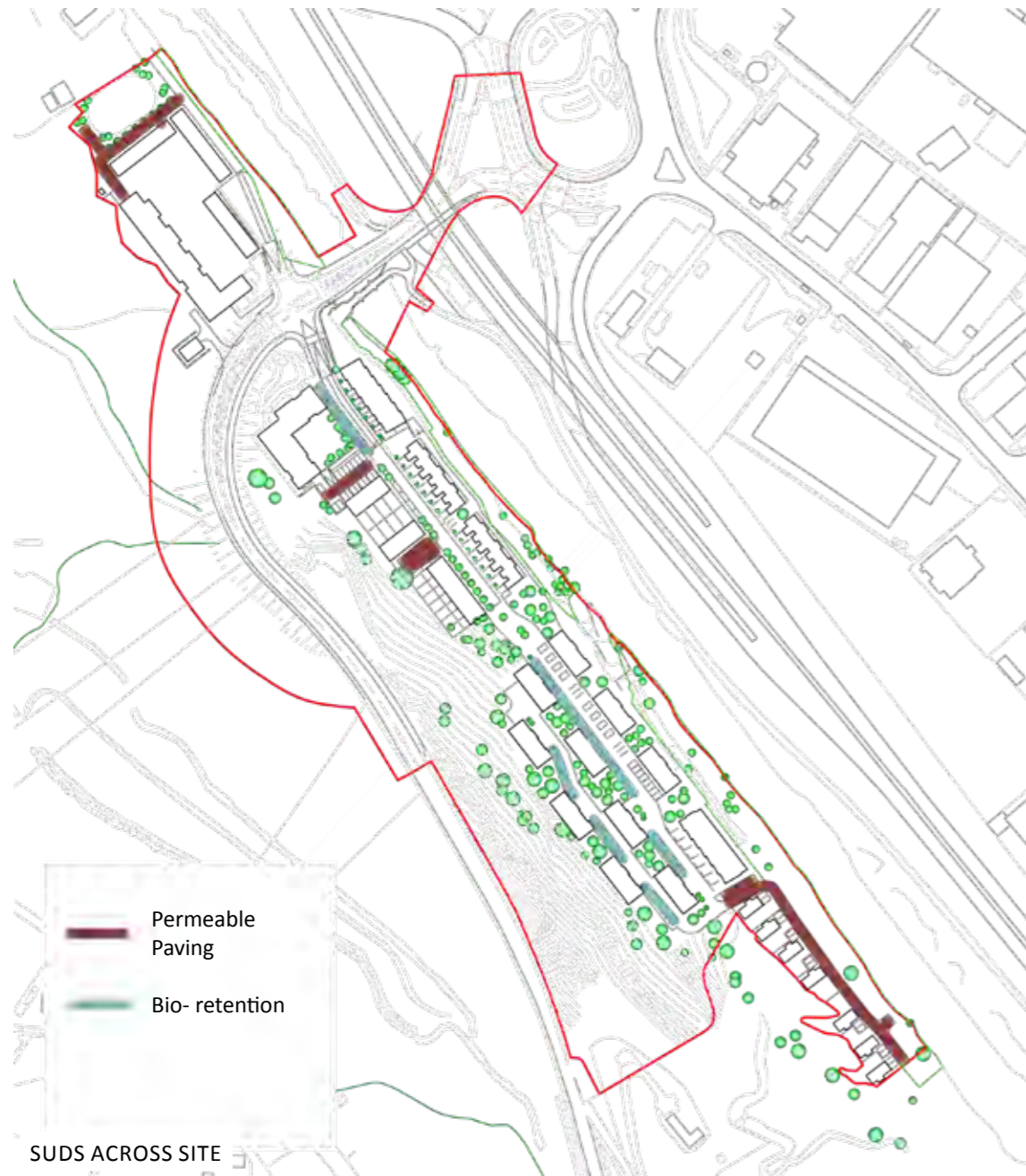


PRECEDENTS

← Lower Mill Estate, Gloucestershire. Naturalistic riverside vegetation gives character and identity to site.

→ Western Riverside Development, Bath. Walkway is close to river level with no wall, creating strong connection to the river and increased accessibility for water activities.





**BIO-RETENTION**

Roadside bio-retention areas can be included throughout the shared space streets and incorporated in the traffic calming measures. 'Hard' or 'soft' options can be used depending on the available space.

They will be one of the main features which connect the Woodland and Riverside, therefore it is necessary for them to be designed and maintained to support wildlife as well as serve a drainage function.

Additionally, the marginal vegetation will establish the riverside character of the site.



ILLUSTRATIVE SECTION OF ROADSIDE BIO-RETENTION

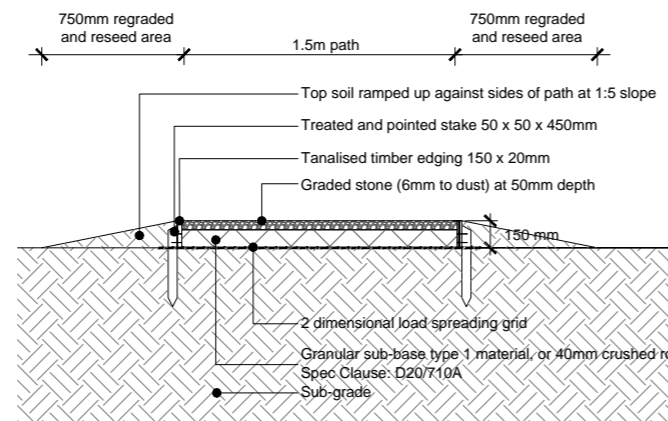




FOOTPATHS

New footpaths in the woodland and along the riverside will make them accessible to residents whilst limiting the impact to the habitat. The route should follow the contours as far as possible to limit need for steps and reduce water flow along path as well as making it more accessible.

- Path waymarked and signed
- Surface of woodchip used if necessary
- No dig construction to avoid root damage.
- Drainage channels across path at key hillside runoff points.
- Path connects to external public footpaths.



TYPICAL CONSTRUCTION DETAIL OF NO-DIG PATH



FOOTPATH ROUTES

VEGETATION

New woodland planting in the position of the existing road and in key locations across the site alongside new tree planting of street trees and garden trees of predominantly native woodland species will compensate for the loss of woodland during development.

Existing vegetation will be maintained and enhanced throughout the woodland. Invasive and inappropriate species will be removed, including Leylandii and non-native conifers at the woodland edge. They should be replaced with native species as found on the site and in the local area.

HABITAT CONSIDERATION

- Bat boxes to increase roosting opportunities.
- Bird boxes to support owls, spotted fly catcher and small woodland birds.
- Consideration of Badger sets when setting route of woodland path.
- No lighting to woodland path to avoid disturbing bats and other nocturnal wildlife.
- Opening a path through the woodland will create edge habitat with more light where wildlife such as butterflies and reptiles will flourish.



Within the site there will be two street typologies, depending on the level of traffic. The primary access route (orange) will be the widest carriage way.

The low traffic roads which access properties or parking will be shared space (green) as described in more detail on the following page.

Along the river will be a car free route for pedestrians and cyclists (purple).



SHARED SPACE

Pedestrians will have priority and there will be no kerbs, road signs or road markings, which removes the assumption that the space is designed primarily for motorists. Drivers will slow accordingly, expecting to meet other users of the space.

Visual cues can be given by choice of surface material and permeable barriers such as planting and street furniture.

This type of space will make a more comfortable pedestrian environment and allow for a variety of use, strengthening the sites connection to its surroundings by creating green corridors between the ancient woodland and the river with tree planting, planted bio-retention areas and permeable paving. The incorporation of swales will slow water run-off, after heavy rain fall events, entering the river.



Goldsmith Street, Norwich. Different paving and colour is used to denote primary function and bollards used as warning at key crossing point to the central landscape space.  
↓ This space is a good example of the pedestrian green space between housing blocks leading to the river on the north east of the spine road.



PRECEDENTS

Marmalade Lane, Cambridge. Semi-private front gardens merge into the street space, focus is on community and play.



BO01, Vastra Hamnen, Malmo, Sweden.

Extensive use of swales in this coastal development breaks up the hard surface. Street edges are not parallel which gives an unstructured feeling and creates space for alternative uses.  
↓ Trees and planting between parking limit the dominance of cars in the space; as below examples in Copenhagen and U.S.





ISSUES

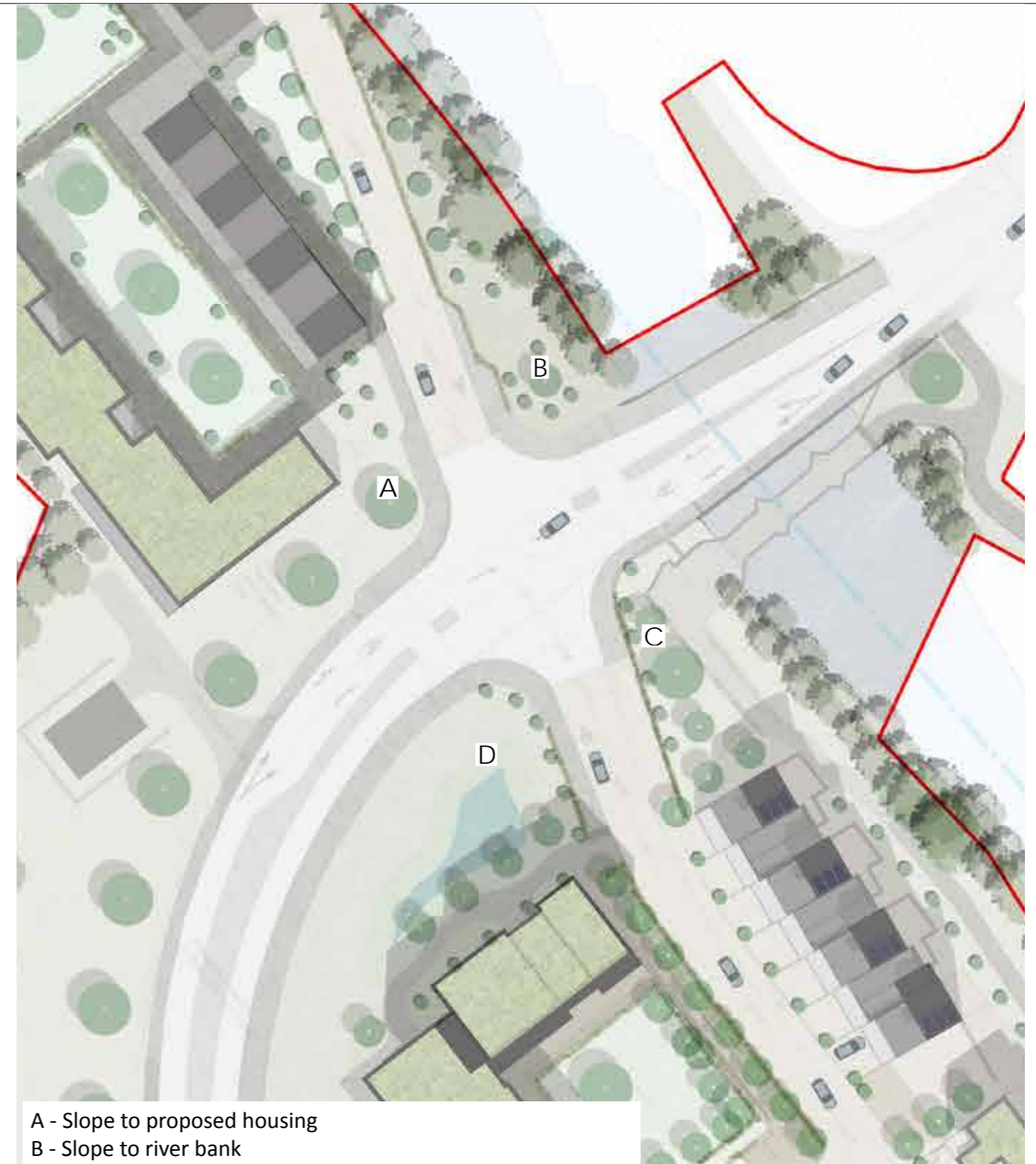
- High level of road junction relative to site.
- Infill requires stabilisation and revegetation of steep banks.

The four areas adjacent to the road junction have different constraints and issues, however they all should be planted with dense vegetation to provide visual and acoustic screening of the road.

Habitat features can be incorporated in bank stabilisation, e.g. Habitat infill to gabions, hedgehog boxes, choice of native plants. Suitable barriers must be included to limit road deaths of wildlife.

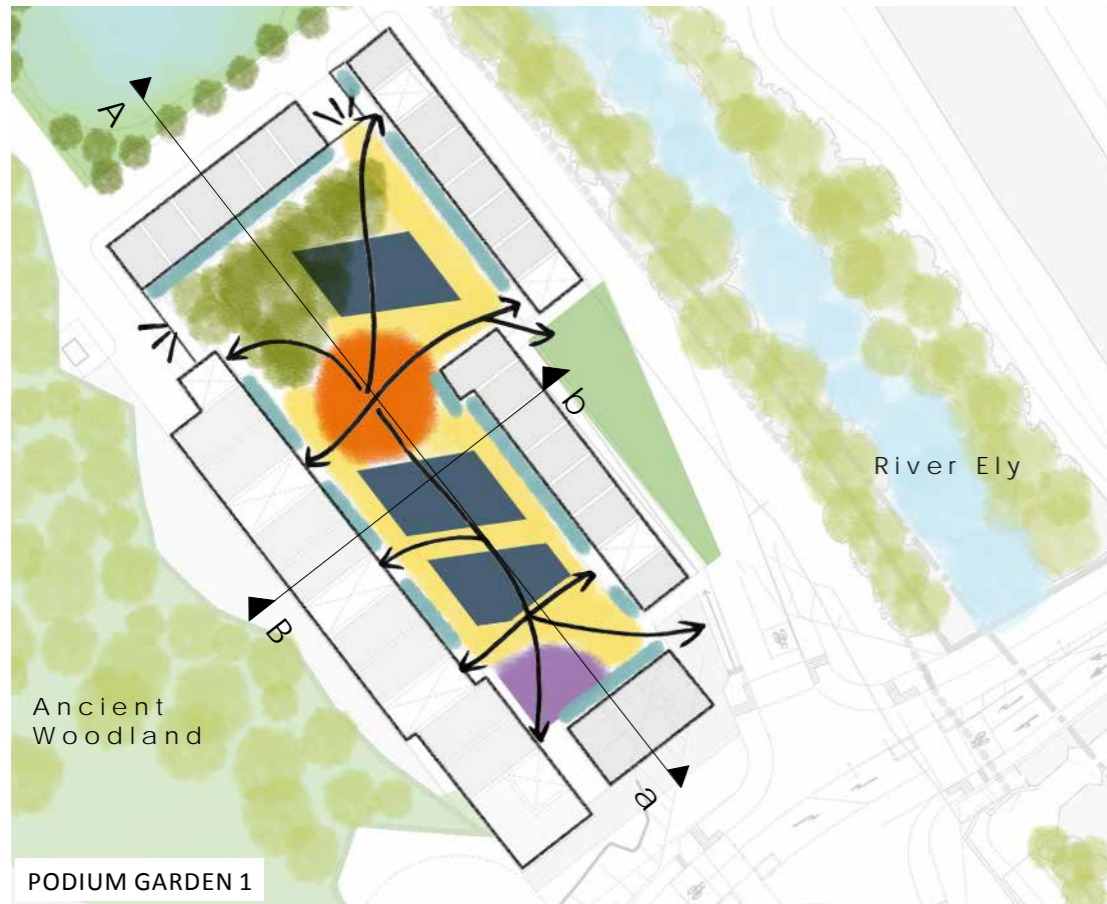
Possible bank stabilisation measures:

- Spiling - using growing materials, typically salix, which will root into the bank, strengthening over time and creating habitat.
- Terrace - Stabilising the bank in sections using walls, making the ground easier to access on foot, and easier to plant in to.
- Retaining gabions - can be filled with a variety of materials, where structurally appropriate, to increase their habitat potential.



A - Slope to proposed housing  
 B - Slope to river bank  
 C - Steep bank to retained wall of scheduled monument bridge  
 D - Highways drainage and water treatment.





PODIUM GARDENS

The podium gardens will be communal and have a variety of functions, including play, relaxation and growing. 'Rooms' of different sizes defined by formal hedges and walls surrounded by informal naturalistic planting will support a variety of functions. A large central space would be adaptable for various community events and a play space should provide a safe and sheltered children's area. Semi-private defensible spaces can create a buffer zone between the communal garden and private homes. To the western end of podium tree planting densifies to create a link to the adjacent ancient woodland.







Section A-a

Defensible Space  
Woodland  
Function - retreat  
Wild Space  
Function - grow  
Wild Space  
Community  
Wild Space  
Function - meet  
Wild Space  
Function - retreat  
Wild Space  
Defensible Space



Section B - b

Defensible Space  
Wild Space  
Function - meet  
Path  
Wild Space  
Defensible Space



South Gardens, London



This project has community, wellness and ecology at its heart. A naturalistic layout of paths and versatile lawn areas is interspersed with small trees and shrubs. The planting design simulates a woodland edge. Strategies for insect, bird and bat habitats are embedded as sculptural objects. Lessons have been taken from permaculture techniques by planting nitrogen-fixing trees and companion plants near productive fruit trees.



Beech Gardens, The Barbican, London



The planting design consists of naturalistic swaths of perennials and grasses with groups and scatterings of multi-stemmed trees and shrubs to give a three-dimensional framework throughout the year. Plant mixes are designed for the different micro-climates around the site, species are chosen to create continuous and successive waves of colour over long periods of time and are repeated over the whole area, creating maximum impact.



**Both examples show how extensive use of small trees and naturalistic planting can soften the built environment. Inspired by these two projects naturalistic planting will be incorporated around a formal structure of functional rooms, to provide continual seasonal interest, biodiverse habitat and opportunities for residents to connect with nature.**



**COMMUNITY MEET** The communal podium garden will be used by residents for a variety of activities, by giving functions a designated space conflict of use can be avoided.

**MEET**

**RETREAT**

A central flexible space facilitates and encourages **community** activities, with a large BBQ, long table with benches and canopies to cover the area in bad weather.

A spine of partially hedged and walled functional 'rooms' run through the garden. Seating areas for family or groups to **meet** and dine are provided in some, whilst private, more enclosed, sitting areas for **retreat** and relaxation are provided in smaller 'rooms'.

Between the 'rooms' naturalistic planting will form the 'wild' space, with informal paths running through and some small seating areas, providing residents the opportunity to connect with nature.



**GROW** One 'room' could be a vegetable garden, which could be run as a single community garden or individual plots for interested residents to **grow** food, depending on the residents wishes and the formation of a residents association.





*DEFENSIBLE SPACE*

An area of semi-private defensible space is allocated to the apartments adjacent to the communal garden to allow privacy. This will be defined by a mid-height wall (1100 mm) and different paving material. Residents will be able to further define their space with furniture and planters.

*PRECEDENT IMAGES*



SKETCH SHOWING DEFENSIBLE SPACES IN THE SOUTHERN CORNER OF THE GARDEN, ADJACENT TO THE PLAY SPACE.







