ALTEMAR

Marine & Environmental Consultancy

Biodiversity Enhancement Plan for a Proposed Mixed-Use Large-scale Residential Development (LRD) at Kilbride, Arklow, Co. Wicklow.

Open wetland glimpses

Open edge of wetland providing long views over a natural landscape

21st May 2025

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.

On behalf of: Certain Assets of Dawnhill and Windhill Limited.

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Introduction

Biodiversity Enhancement Plan (BEP)

This BEP is primarily the result of consultation between the ecologists (Altemar) and Landscape Architects (NMP Landscape Architects) of the proposed development project as well as the wider team. The BEP cross-references both landscape and biodiversity elements. It initially describes the proposed project. The landscape elements of the proposed project have involved consultation and reiterations of the landscape masterplan, to enhance biodiversity across all landscape components on site. These biodiversity enhancement measures are outlined and will be implemented and would be seen to improve biodiversity on site.

Description of the Proposed Project

The proposed mixed use Large scale Residential Development will result in the demolition of an existing dwelling, outbuilding and agricultural shed and the construction of a local and 666 No. residential units with a mix of semidetached, detached, and terraced houses along with duplex apartments and apartments. These will comprise 1, 2, 3 and 4 bed houses. All residential units will have associated private open space facing north/ south/ east/ west. The proposal will also deliver 3 No. retail units, 3 No. community/ medical units and 1 No. creche unit.

New pedestrian/ cyclist link connecting into Arklow Town Centre is proposed via a new boardwalk and bridge across the marsh and over the Avoca River adjoining the existing greenway and the Main Street. A new road is also proposed connecting to the north to Kilbride Road. Alterations to the surrounding road network to provide a section of the regional road and upgrades to provide pedestrian facilities are also included. Vehicular access to the site will be from the new proposed regional road. The development will also provide for landscaping, public open spaces and all associated site development works to enable the development including boundary treatments, attenuation storage area and other service provision including ESB substation.

The proposed site outline, location, and site plan are demonstrated in Figures 1-4.

Overall Landscape Masterplan

The landscape design statement for the proposed development has been prepared by NMP Landscape Architects. This was carried out in consultation with Altemar Limited. The landscape design statement details the following:

'Landscape Masterplan

Landscape design proposals for Kilbride Residential Development are driven by ecological influences in response to the sites context and relationship with surrounding character. Experienced sequentially as routes of discovery and exploration which weave themselves across the lands revealing a sensorium of spatial typologies.

The landscape design has been planned in such a way so as to maximise the site's orientation and anticipated microclimate to create habitable, quality spaces which respond to human comfort, encouraging residents and public into a safe and surveilled space. A number of potential routes through the site have been identified to benefit connections with its surroundings and provide a better amenity for the wider community. Pedestrian and cycle routes complement this strategy underpinning the sustainable credentials associated with the development.

In addition, it is anticipated that the development will offer a net gain to biodiversity through the development of additional habitat connecting existing surrounding ecological stands with continuous tree canopies for bat and bird roosting and provision of specific plants for wildlife to forage through.

An increased number of trees, areas for surface water treatment and wildflower meadows, coupled with best practice maintenance will ensure a sustainable landscape for the future. Edge conditions and relationships with neighboring developments are sensitively integrated and screened.

The primary objectives of the design are to encourage biodiversity through varied tree and shrub planting, create a series of interlinking spaces which 'blur' the boundaries and create 'moments' for interactions, crafting a sense and extension of the community for the wider neighbourhood. The following pages will demonstrate through illustrations and narrative the spatial experience for each area of significance

Character Area A

The southern most portion of the site provides a transition to the marsh land and will be partially inundated with flood water. It lends itself well to a more ecological character, blending wetland type plants with wildflowers and lawn. The space has fantastic views to the wetland. Exercise areas, play and a large lawn for kick abouts, picnics and general flexibility of space make it exceptionally useable. This will be the point the boardwalk joins the development.

Character Area B

The core space of character area B forms a depression as a flexible lawn space also serving attenuation. The 'sunken' nature protects it from the adjacent road, it has more of a parkland character and the main link for the cycle route crosses its western edge. its eastern edge is programmed with play and exercise and there are ample seating opportunities. Ecologically a series of rain gardens have also been provided for to double as informal play areas surrounded by native planting.

Character Area C

The core open space for character area C is similar to a linear park. With residential units on its southern edge the sunken space takes it well below road level, again protecting it from the adjacent road, noise and fumes. It has a gathering garden with seating and picnic tables and adjacent play area. The pocket spaces infront of the residential units create a buffer space but also provide significant habitat opportunities.

Character Area D

The core open space for character area D is similar to a local park in character. It has a perimeter route, play area, exercise, central lawn for kick abouts and a gathering area. It has an abundance of ecological and bio-diversity opportunities with rain gardens, boulders, logs and informal play integrated. Plenty of seating opportunities are also provided for.

Boardwalk

The proposed boardwalk will link with the approved bridge scheme across the Avoca River. It will create greater connectivity and amenity within and around Arklow Town to proposed and existing walking trails and will create a more direct link to the town acting as a great amenity for the new proposed development but also adjacent existing schools and residential communities. It also acts as a significant opportunity for visitors and local residents to engage with and learn from nature. The design is light footed in its approach hovering over the marsh land, helping to retain, augment and protect the existing marsh.'

Figure 1. Proposed site outline & site location

Figure 1. *Proposed site outline and location context.*

Figure 2. Proposed site outline

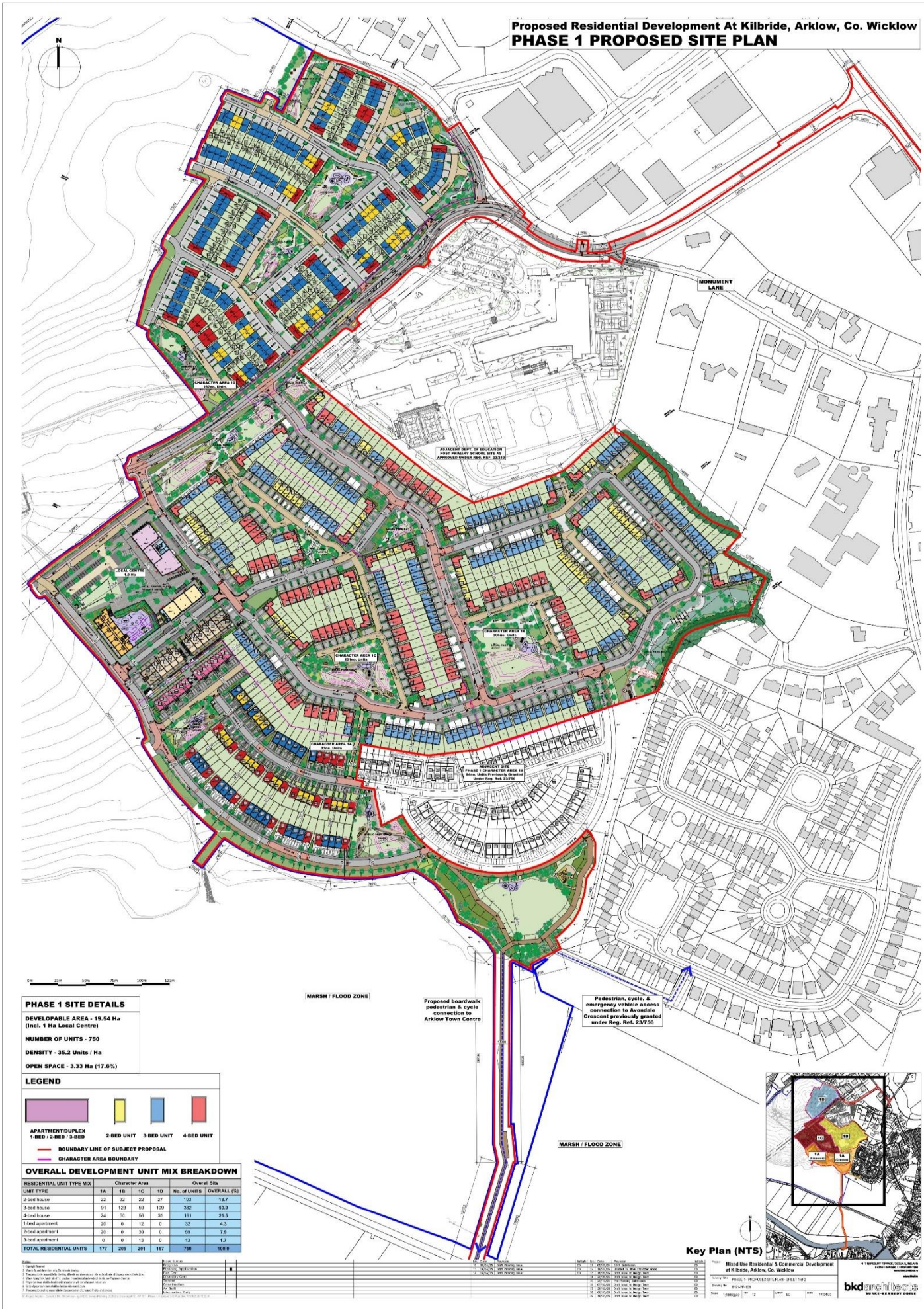


Figure 3. Proposed site plan -sheet 1

Figure 4. Proposed site plan -sheet 2

Figure 5. Proposed overall landscape general arrangement plan

Figure 6. general arrangement plan – sheet 1

Figure 7. general arrangement plan – sheet 2

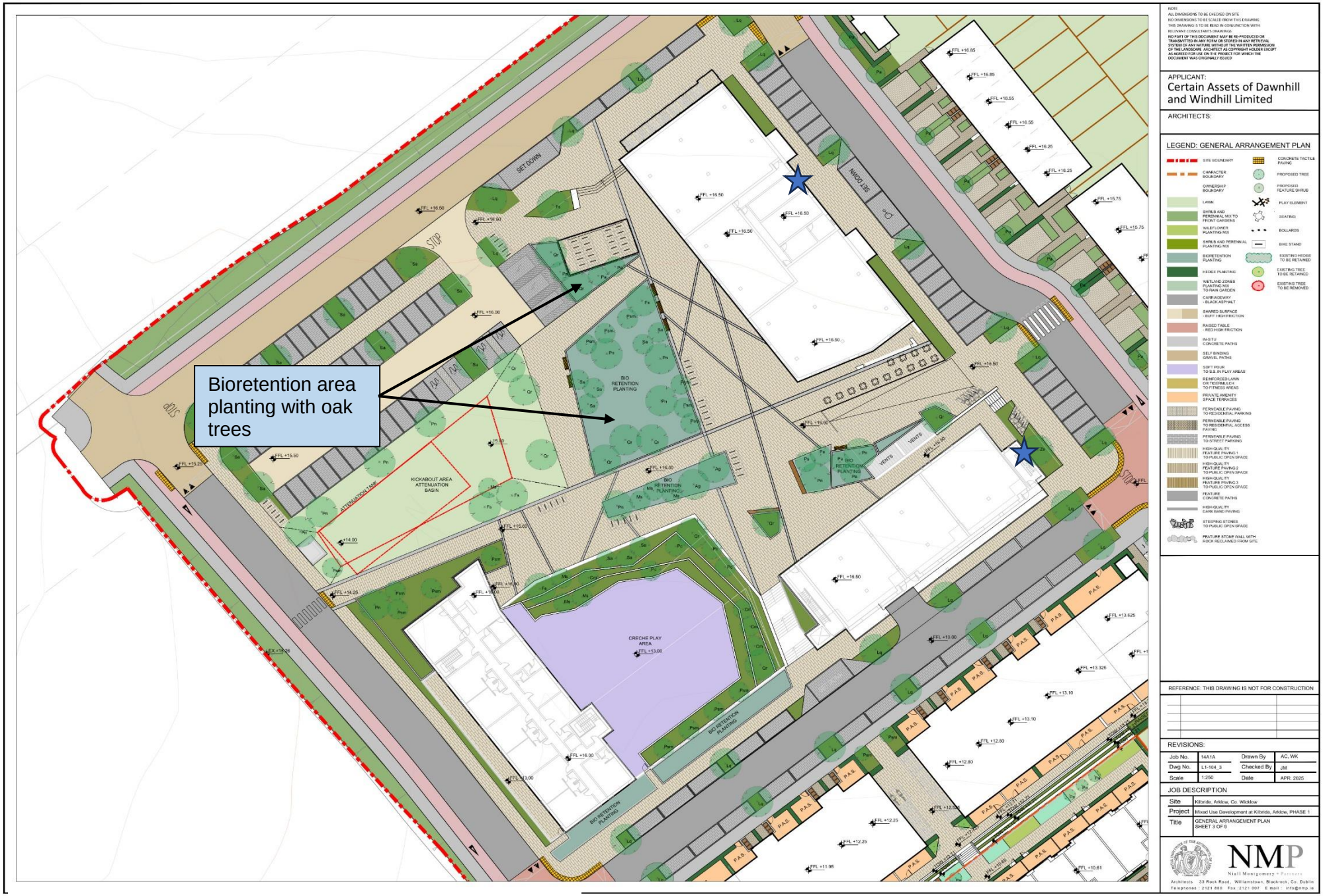


Figure 8. general arrangement plan – sheet 3

Figure 9. general arrangement plan – sheet 4

Figure 10. general arrangement plan – sheet 5

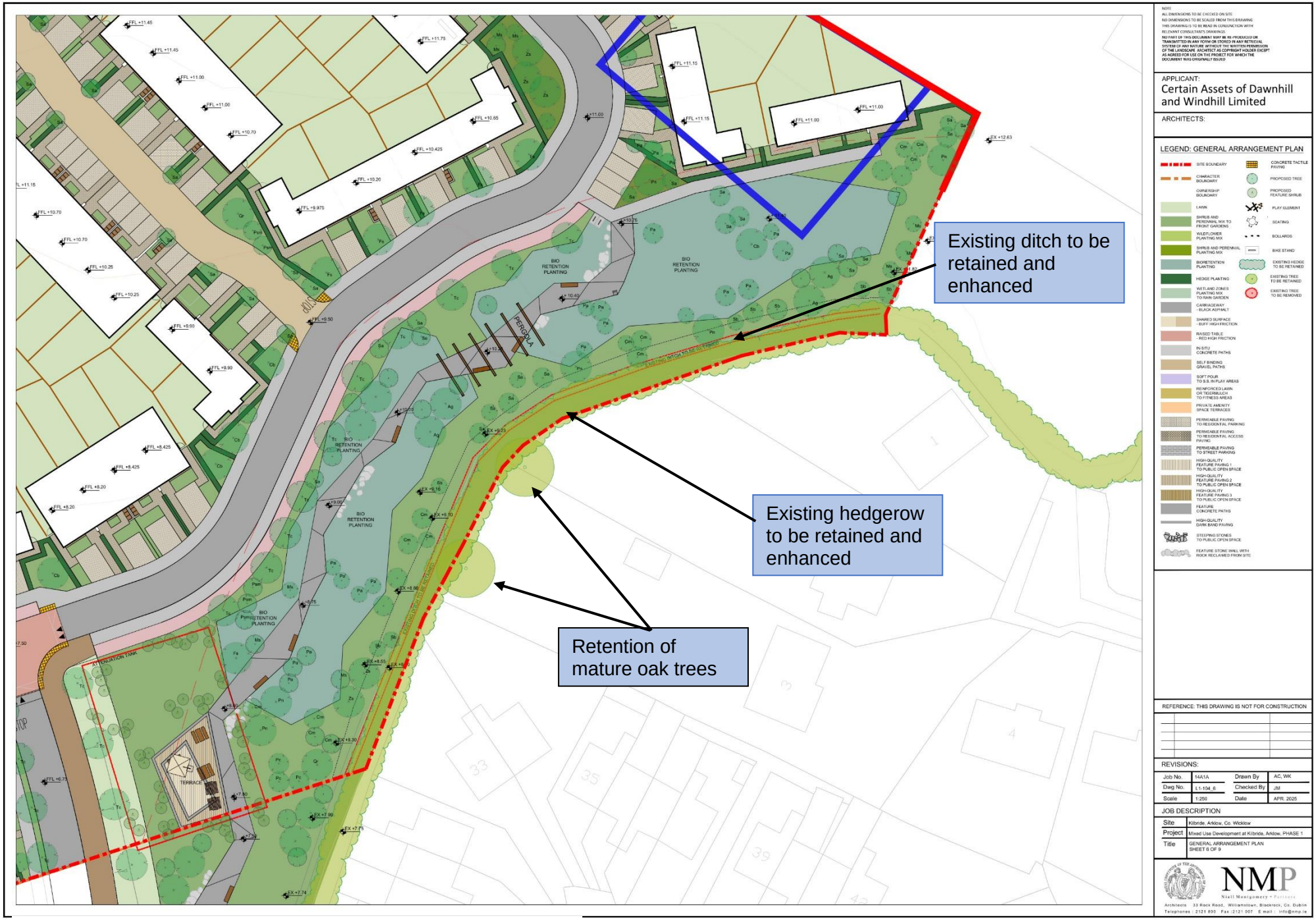


Figure 11. general arrangement plan – sheet 6

Figure 12. general arrangement plan – sheet 7

Figure 13. general arrangement plan – sheet 8

Figure 14. general arrangement plan – sheet 9

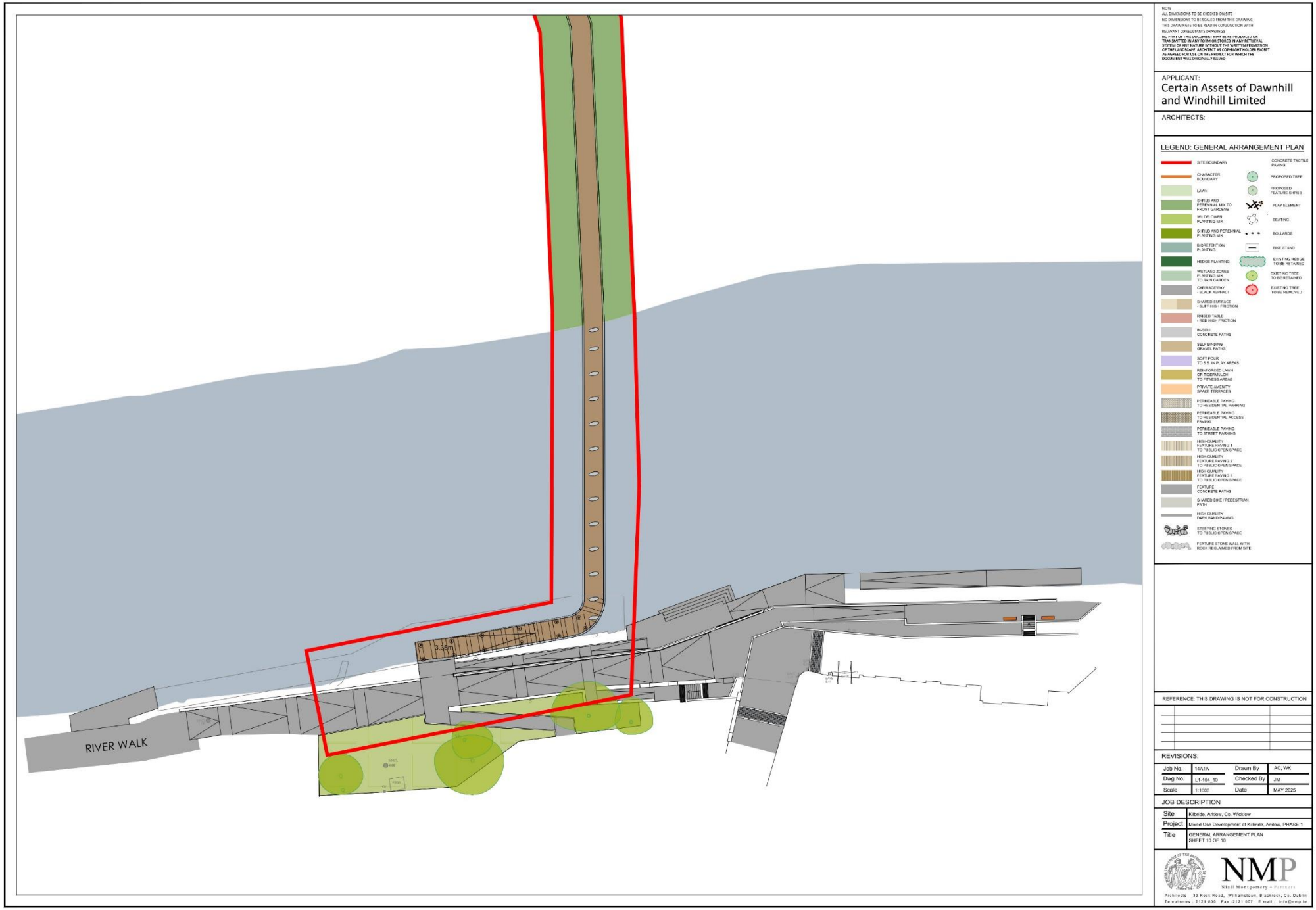


Figure 15. general arrangement plan – sheet 10

Biodiversity Enhancements

Tree Planting

A significant number of trees are proposed for planting (1278 No.). This will include a large variety mix of native and non-native tree species such as Common Oak *(Quercus robur),* Hawthorn *(Crataegus monogyna),* Mountain Ash *(Sorbus aucuparia),* Wild apple *(Malus sylvestris),* Beech *(Fagus sylvatica)* and Rowan *(Sorbus aucuparia).* In addition, a number of mature oak trees are to be retained on site as part of the proposed development. A number of bird boxes are proposed on the retained mature oaks. The incorporation of fruit trees such as wild apple *(Malus sylvestris),* pear *(Pyrus chanticleer),* Wild cherry *(Prunus avium)* and Paperbark Cherry *(Prunus serrula)* into the planting schedule will further enhance biodiversity on site and will be an important food source for birds particularly in autumn and winter months.

As outlined in the landscape design statement in relation to the tree plan on site:
'The tree planting layout for the development is hugely significant to the success and design of the overall site. It is of paramount importance that any trees that are considered of good quality from the arborist report be protected. In the illustration to the right, we have indicated the existing hedgerows that are to be retained and existing to be removed.

Overall, number of existing hedgerows are to be retained. Along with existing trees, much of the development will contain a vast variety of proposed trees. Proposed planting styles and types will vary depending on use.

Within the public realm, plants will be more robust, evergreen and require less maintenance. Street trees will be tried and tested urban species. Scale of planting and transition in shrub planting from low medium and high to create defensible space has been planned according to programme, thresholds and spatial hierarchy. Within the semi-private apartment courtyards, the palette will be softer, colorful and generally more shade tolerant.'

WOODLAND TREE PLANTING

Carpinus betulus

Fagus sylvatica

Pinus sylvestris

Quercus robur

Pyrus callerayana

Sorbus aucuparia

Crataegus monogyna

Malus sylvestris

STREET TREES + SMALL FEATURE TREES + PODIUM TREES PLANTING

Betula utilis 'Multistem'

Liquidambar

Gleditsia triacanthos

Prunus serrulata

Arbetus unedo

Magnolia grandiflora

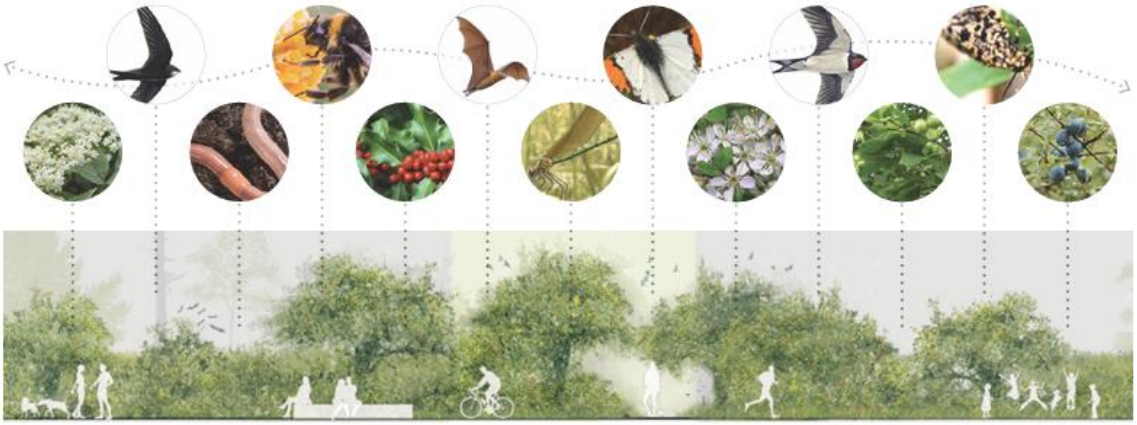
Acer campestre

Tilia cordata

Native Hedgerows

The native hedgerow along the eastern boundary will be retained and enhanced, improving the habitat for foraging and nesting birds, supporting pollinators and will contribute to an overall positive net gain for biodiversity on site. The hedgerow enhancement mix will include yew *(taxus baccata),* hornbeam *(Carpinus betulus),* Hawthorn *(Crataegus monogyna),* Blackthorn *(Prunus spinosa),* Field Maple *(Acer campestre) and* Hazel *(Corylus avellana).*

As outlined in the landscape design statement *'It is proposed to retain as much existing hedgerow as possible. With this in mind, the goal and aim is to replace and further enhance the removal of hedging here by creating bio- rention / swale / planting, which will greatly improve bio- diversity and ecology on site.'*



Proposed Nature's Highway

Existing Hedgerow

Native Wildflower Meadows

Native wildflower meadows are proposed throughout the open space areas of the development. Similar to hedgerows, these habitats will support pollinators and potential ground nesting birds, contributing to an overall positive net gain for biodiversity on site. The native wildflower meadows will feature a diverse selection of species such as Birdsfoot trefoil, black meddick, corn marigold, corn poppy, corncockle, cornflower, cowslip, devils' bit scabious, meadow buttercup, lady's bedstraw, lesser knapweed, mayweed, meadowsweet, mullein, ox-eye daisy, purple loosestrife, ragged robin, ribwort plantain, teasel, wild carrot, and yellow rattle.

Nesting Habitats

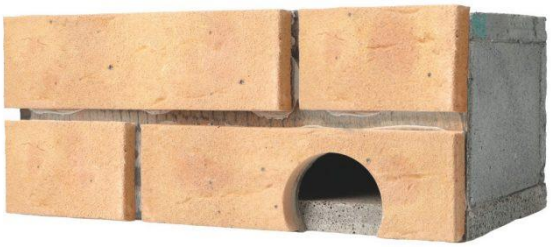
The landscaping elements proposed are meant to provide sufficient foraging and nesting habitats, with additional areas to promote insect life, bat and bird species.

The planting schedule has been composed to include native and non-native species to fulfil these principles. Scented plants and pollinator friendly plants have been proposed as well, to attract birds, bats and insects. Swift boxes, bat boxes and bird boxes will be located along the site to provide different potential wildlife habitats.

As seen in Figures 16-28, areas on site have been selected for a series of enhancement measures. These areas have been selected as they provide the optimal locations on site for the enhancement measure requirements.

Swift Bricks

A total of 3 areas on site have been selected for swift brick colonies (min 8 bricks per colony). All 3 will be located within the 'Local Centre' area of the development. They will be integrated seamlessly into the building façade and would have associated callers to assist in the initial colonisation. The areas that have been selected are along the northern building façades, clear of windows and doorways beneath and have a straight drop to the ground. As the majority of the development consists of two-storey houses, it was deemed that there were no other suitable locations to place swift boxes on site.

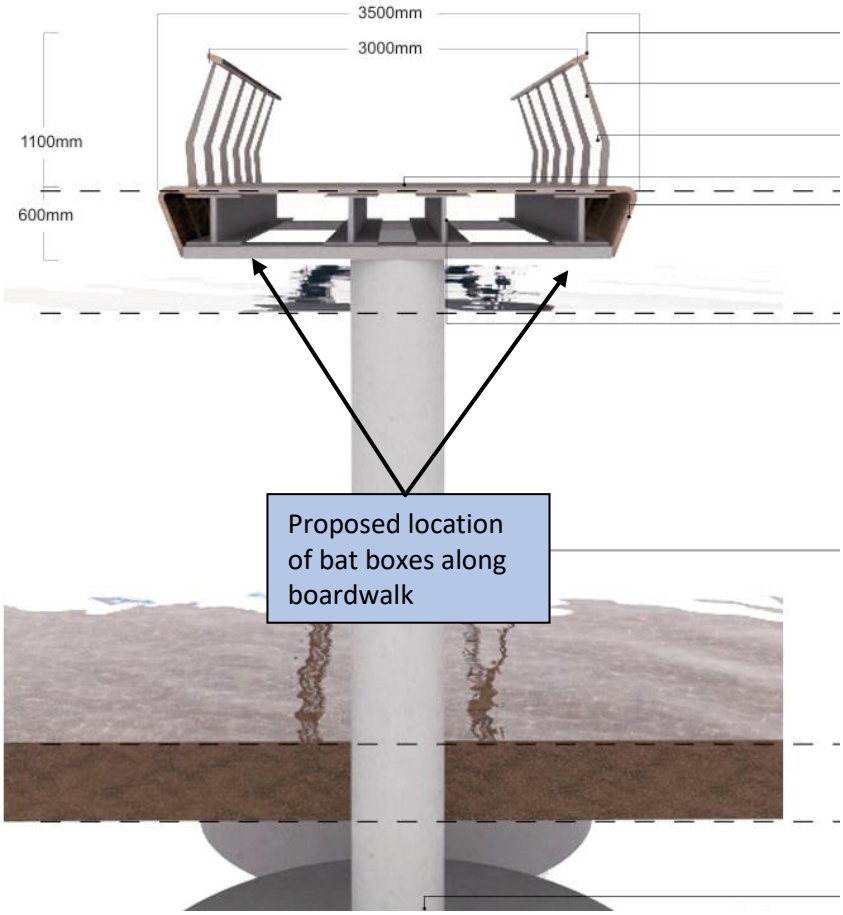


Bird Boxes

To improve nesting habitats for local breeding birds, 50no. bird boxes will be installed at various locations on site. 40 bird boxes will be installed within the main housing development area on the existing mature oak trees, the proposed oak trees and Austrian Pine trees. With regards to the boardwalk, the remaining 10 bird boxes will be placed here. The proposed locations of bird boxes are demonstrated in figures 16-28.

Bat Boxes

In total, 18 areas of the site have been selected for inclusion of a bat box. As bat foraging was noted within the marsh and there is limited potential for roosting within the marsh and over the Avoca River, 12 bat boxes will be placed along the steel beams of the boardwalk, where lighting will be low. In addition, 6 bat boxes will be placed in the main housing development area in areas of low lighting and surrounding vegetation which includes 3 placed along the riparian corridor.



Proposed bat boxes for boardwalk
https://www.veldshop.nl/en/schwegler-bat-access-panel-1fe.html

Proposed bat boxes for trees
https://www.veldshop.nl/en/schwegler-bat-access-panel-1fe.html

Figure 16: Locations of biodiversity enhancements (sheet 01- bird boxes (blue) & bat boxes (red)

Figure 17: Locations of biodiversity enhancements (sheet 02- bird boxes (blue)

Figure 18: Locations of biodiversity enhancements (sheet 03- bird boxes (blue) & swift boxes (yellow)

Figure 19: Locations of biodiversity enhancements (sheet 04- bird boxes (blue)

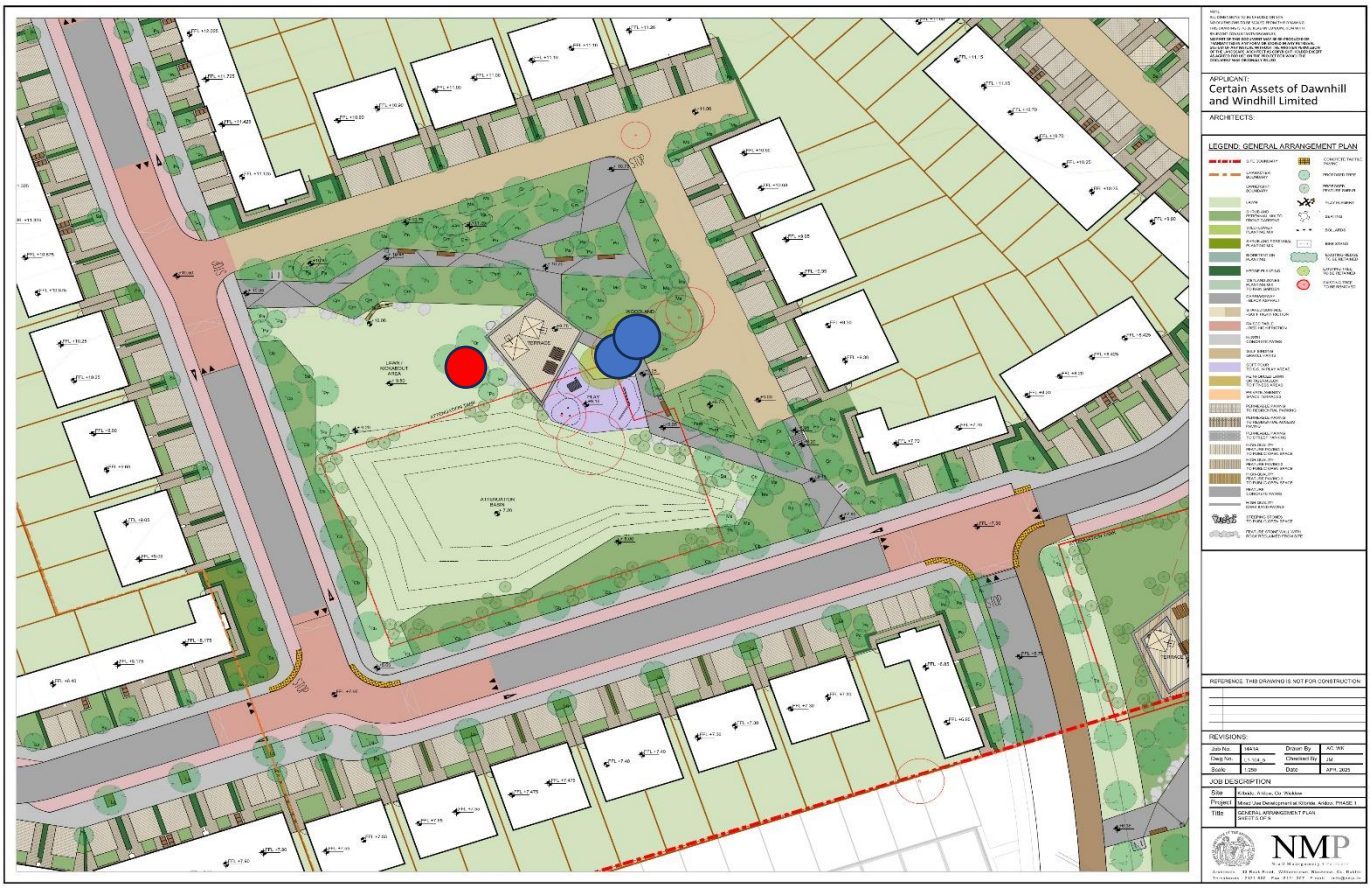


Figure 20: Locations of biodiversity enhancements (sheet 05- bird boxes (blue) & bat boxes (red)

Figure 21: Locations of biodiversity enhancements (sheet 06- bird boxes (blue) & bat boxes (red)

Figure 22: Locations of biodiversity enhancements (sheet 07- bird boxes (blue) & bat boxes (red)

Figure 23: Locations of biodiversity enhancements (sheet 08- bird boxes (blue) & bat boxes (red)

Figure 24: Locations of biodiversity enhancements (sheet 09- bird boxes (blue) & bat boxes (red)

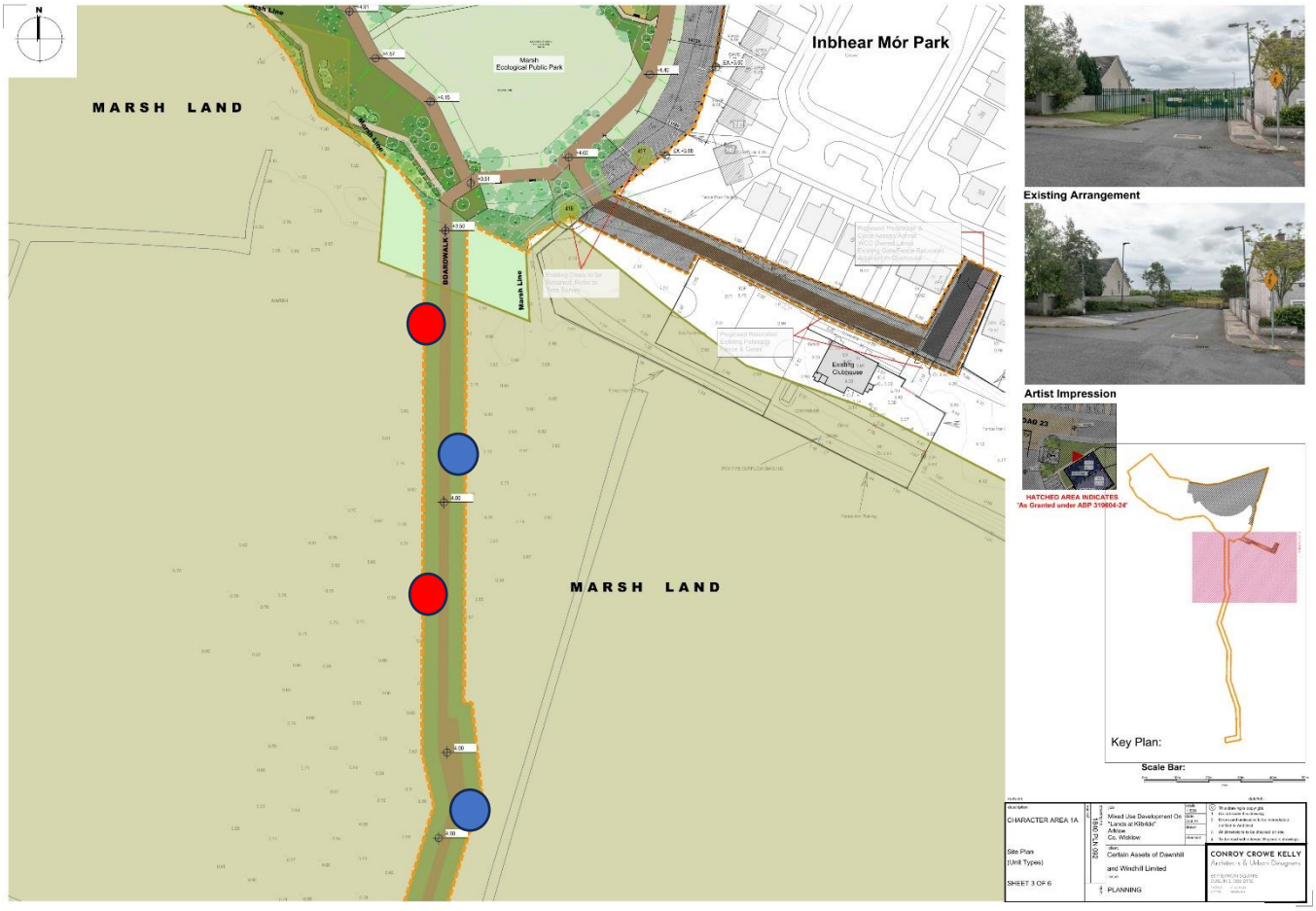


Figure 25: Locations of biodiversity enhancements (sheet 10- bird boxes (blue), bat boxes (red)

Figure 26: Locations of biodiversity enhancements (sheet 11- bird boxes (blue) and bat boxes (red)

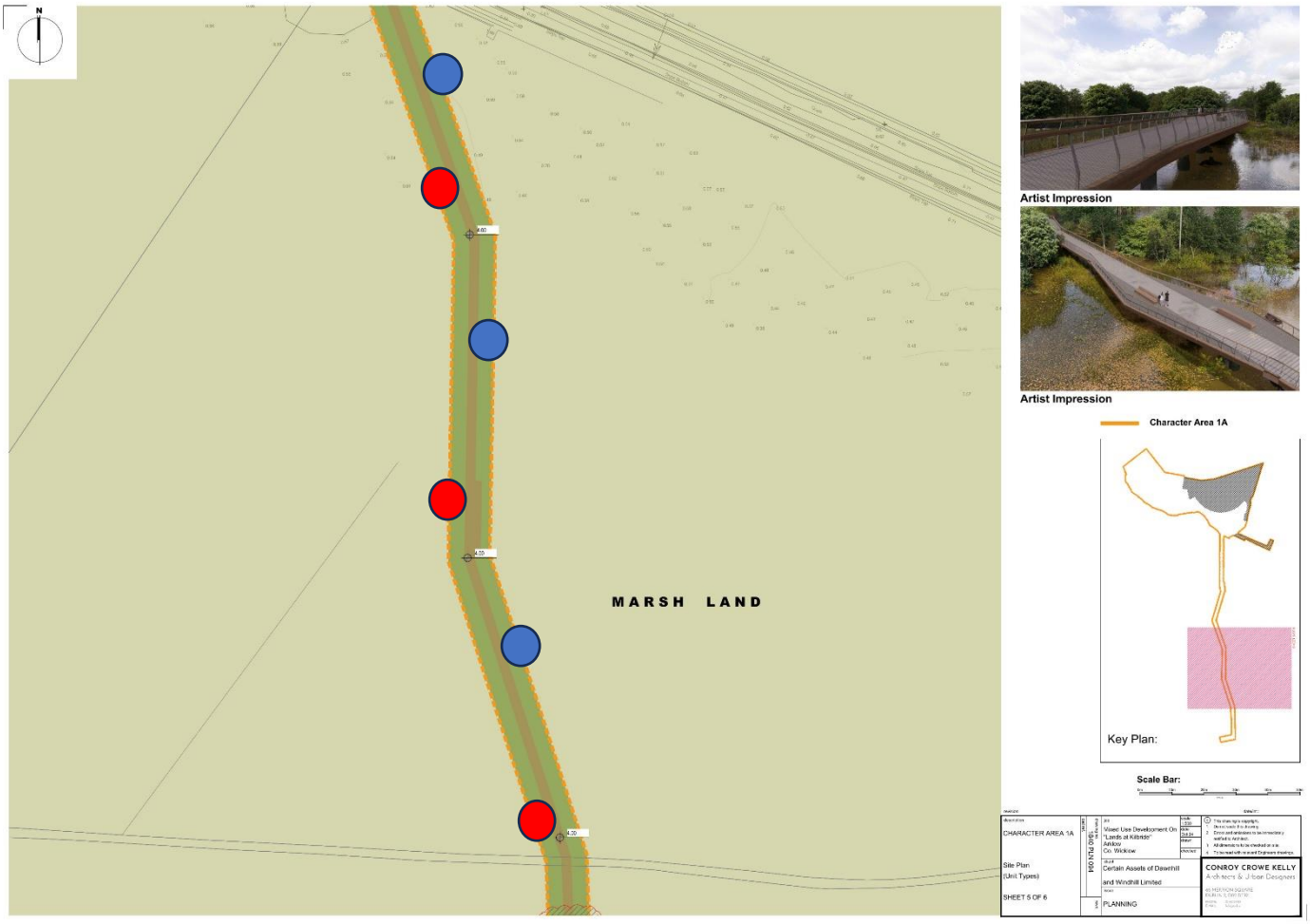


Figure 27: Locations of biodiversity enhancements (sheet 12- bird boxes (blue) and bat boxes (red)

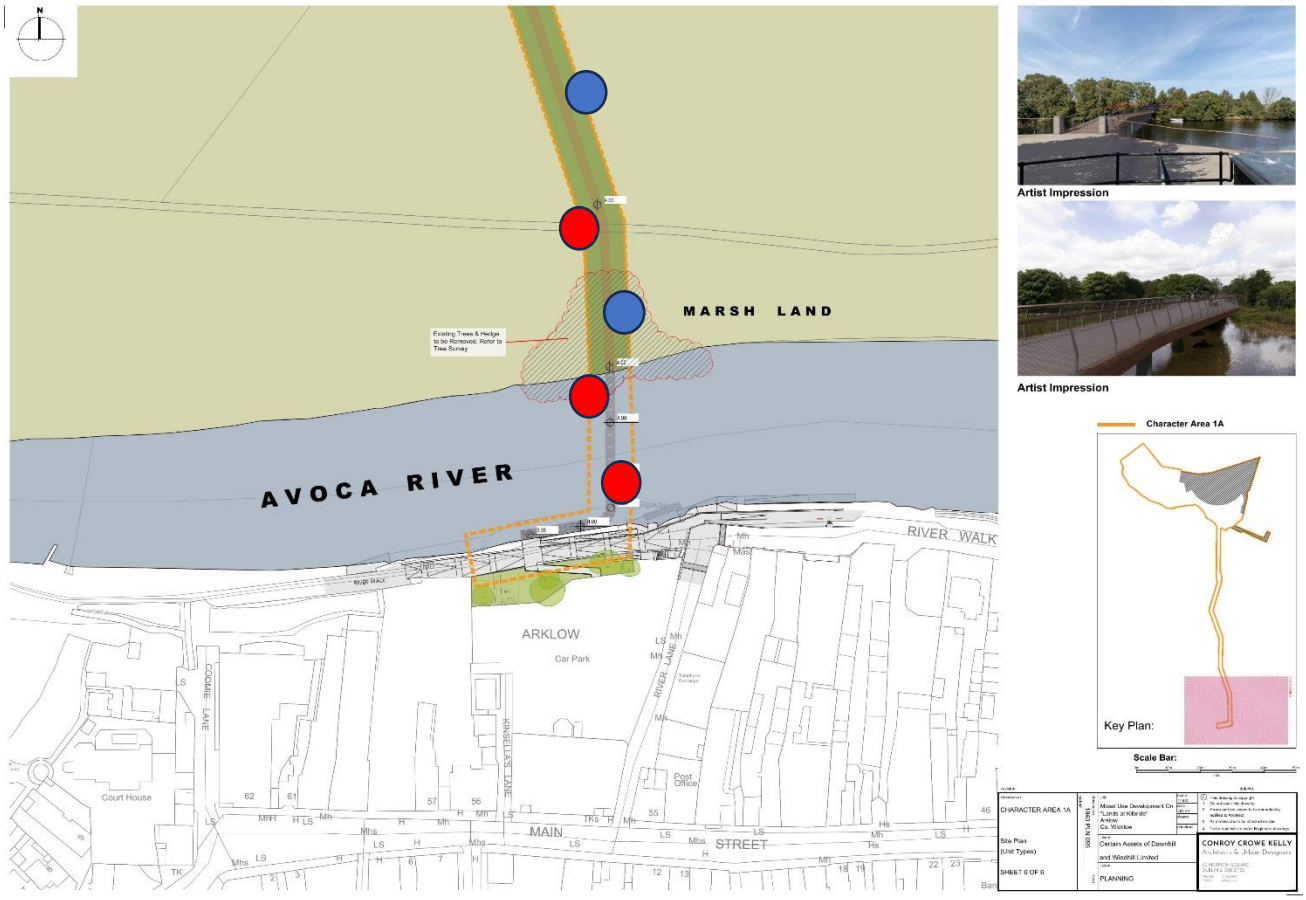


Figure 28: Locations of biodiversity enhancements (sheet 13- bird boxes (blue) and bat boxes (red)

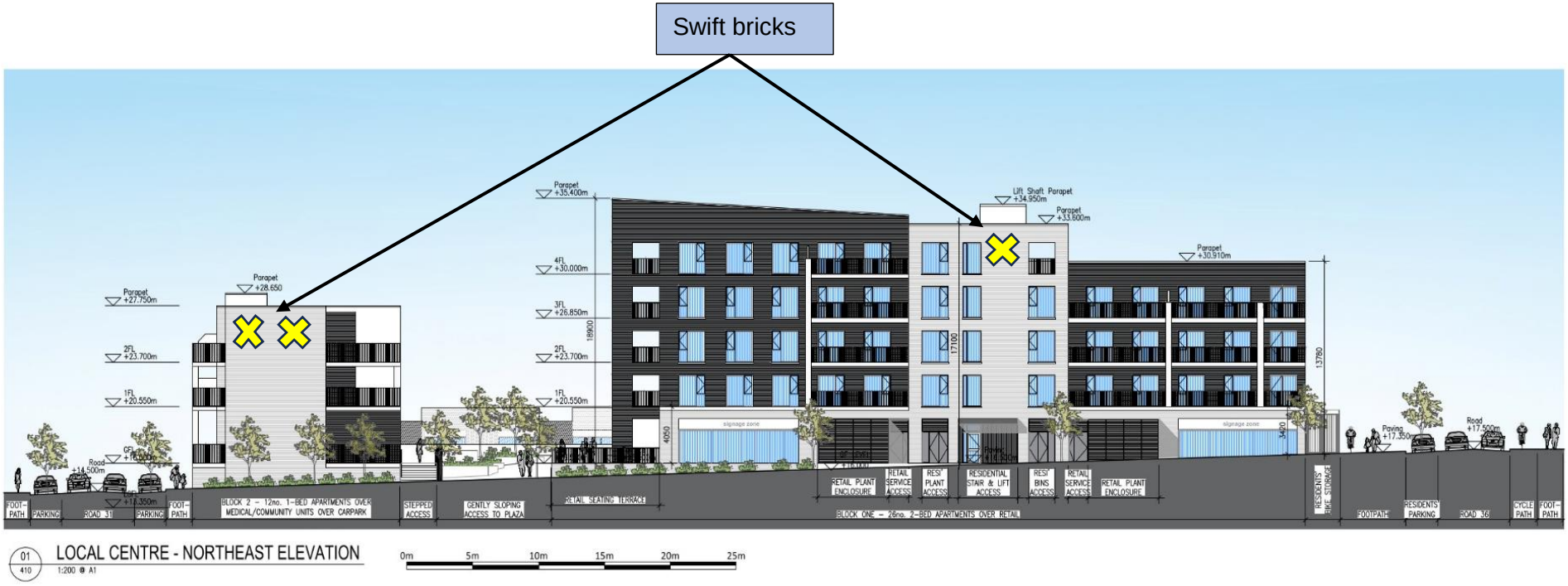


Figure 29: Site elevations demonstrating location of swift bricks

Conclusion

The Biodiversity Enhancement Plan has been prepared by Altemar with the support of Landscape Architects (NMP Landscape Architects) and Architects (BKD & CCK Architects). It involves the implementation of significant biodiversity enhancement. The proposed planting schedule outlines the heavy reliance on native and pollinator friendly species.

The landscape elements of the proposed project have involved consultation and reiterations of the landscape masterplan, to enhance biodiversity across all landscape components on site. These biodiversity enhancement measures are outlined and will be implemented. The works in relation to the Biodiversity Enhancement Plan will be overseen by a project ecologist to ensure that the specifications outlined will be carried out. Currently the site consists primarily of a greenfield site and is of moderate biodiversity value. The proposed biodiversity enhancement measures are sufficient to maintain and will enhance the current biodiversity value of the site.