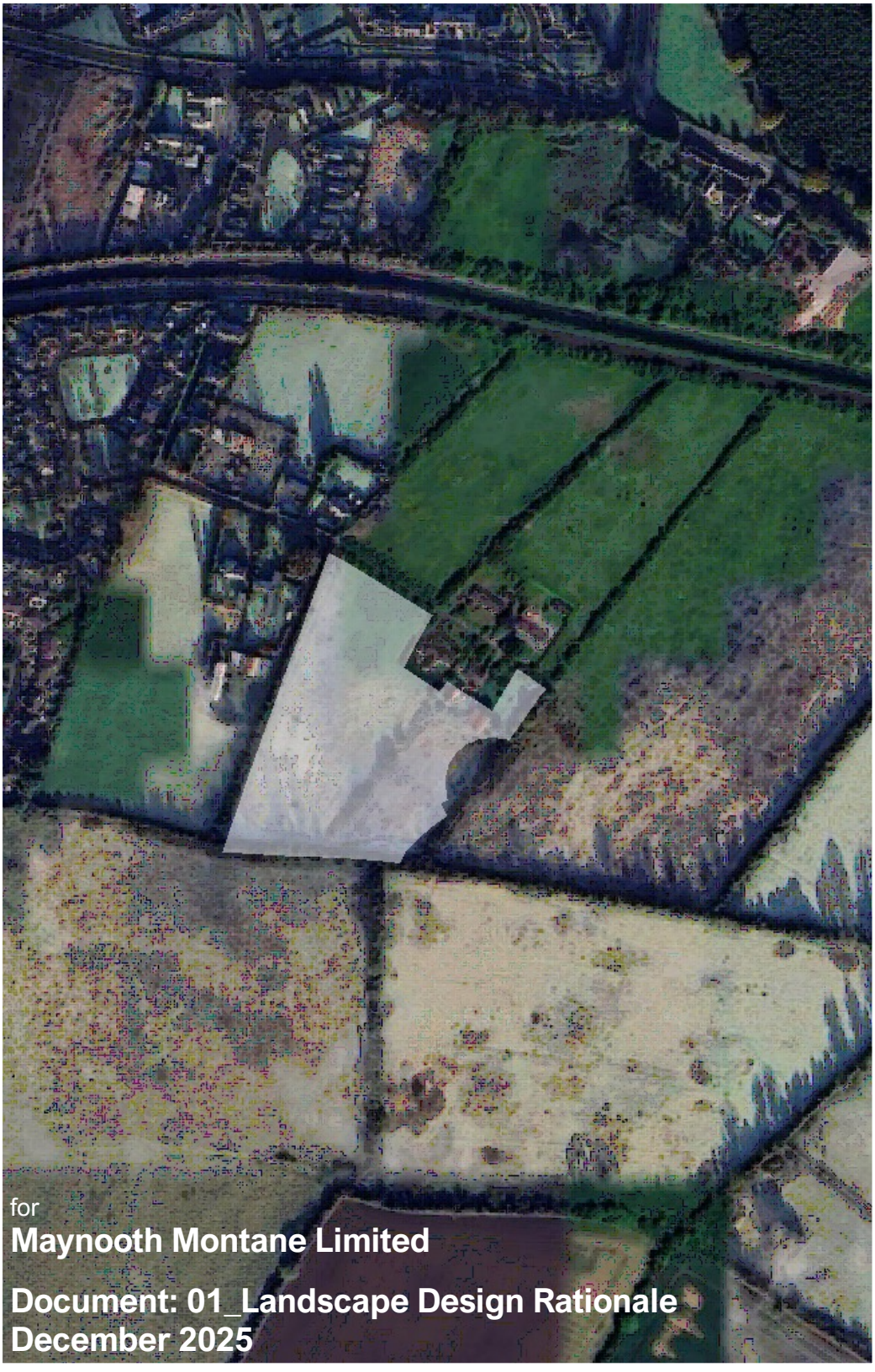
Proposed Residential Development at Railpark West, Maynooth, Co. Kildare

Landscape Design Rationale



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Existing Site Conditions

Introduction

The landscape design strategy for the Railpark West development in Maynooth, Co. Kildare focuses on establishing a strong *genius loci* that complements the architectural form while integrating the scheme seamlessly with its surrounding environment. The proposal aims to create a distinctive and cohesive landscape character that provides a high-quality setting, enriching both the visual identity and the amenity value of the area.

In parallel, the Biodiversity Action Plan supports a biodiversity-led approach by retaining key hedgerows, enhancing ecological corridors, and introducing new habitats such as native hedgerows, wildflower meadows and SuDS-linked planting, contributing to a measurable net gain in biodiversity.

The design prioritises strong pedestrian connectivity to existing and future routes, along with a series of spaces that support both passive and active recreation. The site extends to 2.77 hectares and has an irregular shape, loosely divided by a north–south hedgerow.

Overview

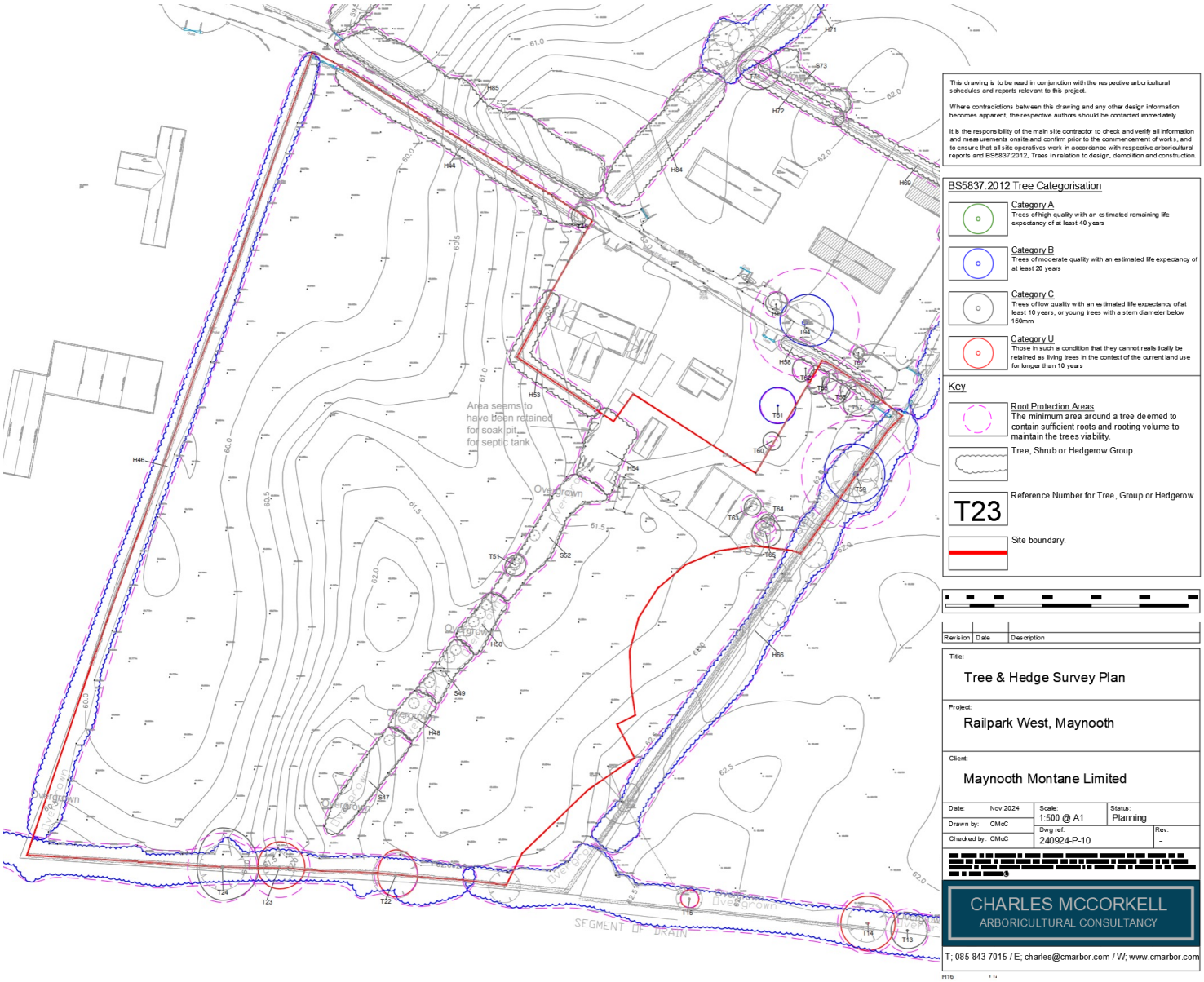
Site Description

The site of the proposed development is located south of local road Parklands Grove and comprises two fields with old agricultural hedgerows bounding all sides. Hedgerows predominantly comprise Hawthorn. Elder, English Elm, Bramble, Dog Rose. A fragmented hedgerow divides the two fields in a north-south direction.
As indicated in the submitted Tree Survey the perimeter hedgerows are categorised as moderate quality. Neutral Grassland forms the vegetative cover of the site.

The site is relatively flat with minor topographical changes from +58.00m OD along the north western boundary to +64.00m OD mid site and towards the eastern boundary.

Tree Survey Constraints Plan

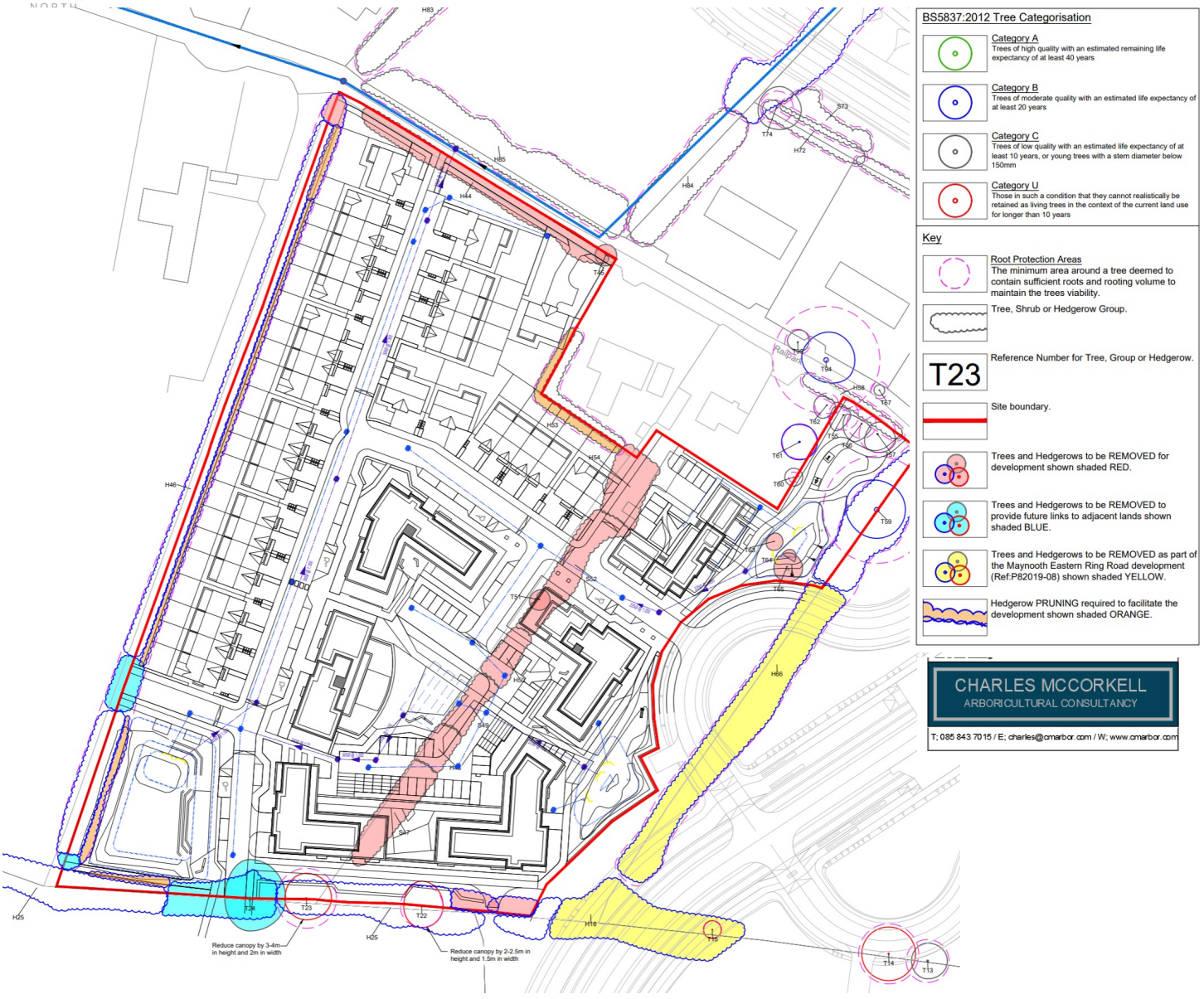
The main vegetation on the site consists of agricultural field hedgerows made up of predominantly Hawthorn. Elder, English Elm, Bramble, Dog Rose and range in height from 5-6m.



Tree Impacts Plan

To facilitate the proposed development or as part of management, it will be necessary to remove the vegetation as indicated on the submitted Tree Impacts Plan.

The loss of vegetation is to be mitigated within the landscaping of this completed development which will see new trees, hedges and shrubs planted using a mix of species and sizes to complement this development, the change in land use and secure the tree cover for the future.



Green Infrastructure Strategy

Green Infrastructure Gains

While some sections of hedgerow must be removed to accommodate the proposed development, the overall approach prioritises the retention, enhancement, and long-term management of a sustainable hedgerow network appropriate to the new site context. To maintain green infrastructure connectivity, new tree and hedgerow planting will be introduced to reinforce and link with the existing hedgerow structure.
Wherever practicable, existing hedgerows will be trimmed, strengthened, and structurally reinforced to form continuous green corridors that support wildlife movement and preserve the established landscape character.
These measures are supplemented by:

- Native woodland belts along the side slopes of the detention basins and key boundaries;
- Mixed native hedgerows both within the site and along its perimeter; and
- Pollinator-friendly perennial and ornamental grass planting in key nodal areas and raingardens.

Collectively, these interventions support the LAP objective for KDA lands to "embed green infrastructure and biodiversity within the development pattern," while also contributing to improved microclimate, shelter, and visual integration of the proposed built form.

The summary tables below provide analysis of retention, removals and new planting for the proposed development.

HEDGEROW SUMMARY TABLE

Description	Linear M
Total Hedgerows within Application Boundary	**714**
Hedgerows Removed due to Site Constraints	**294**
Hedgerows Retained and Protected	**420**
New Native Hedgerows to be Planted in open spaces	**352**
New Native Hedgerows to be planted in front gardens & around apartments	**365**
Hedgerow Planting Net Gain	**423**

TREE SUMMARY TABLE

Description	Quantity
Total Trees within Application Boundary	**12**
Trees Removed due to Current Condition	**0**
Trees Removed/Coppiced due to Site Constraints	**6**
Trees Retained and Protected	**6**
New Trees to be Planted	**201**
Total Trees to be Removed	**6**
Tree Planting Net Gain	**195**

Proposed Layout

Proposed Development

The development will comprise a Large-Scale Residential Development (LRD) on a site at “Railpark West”, in the townland of Railpark, Maynooth, Co. Kildare.

The proposed development is for 139 no. units comprising 36 no. houses (ranging in heights up to 3 storeys), 95 no. apartments (5 no. blocks ranging in heights up to 5 storeys partially over podium parking) and 08 no. duplexes (1 no. 3/4 storey Block).

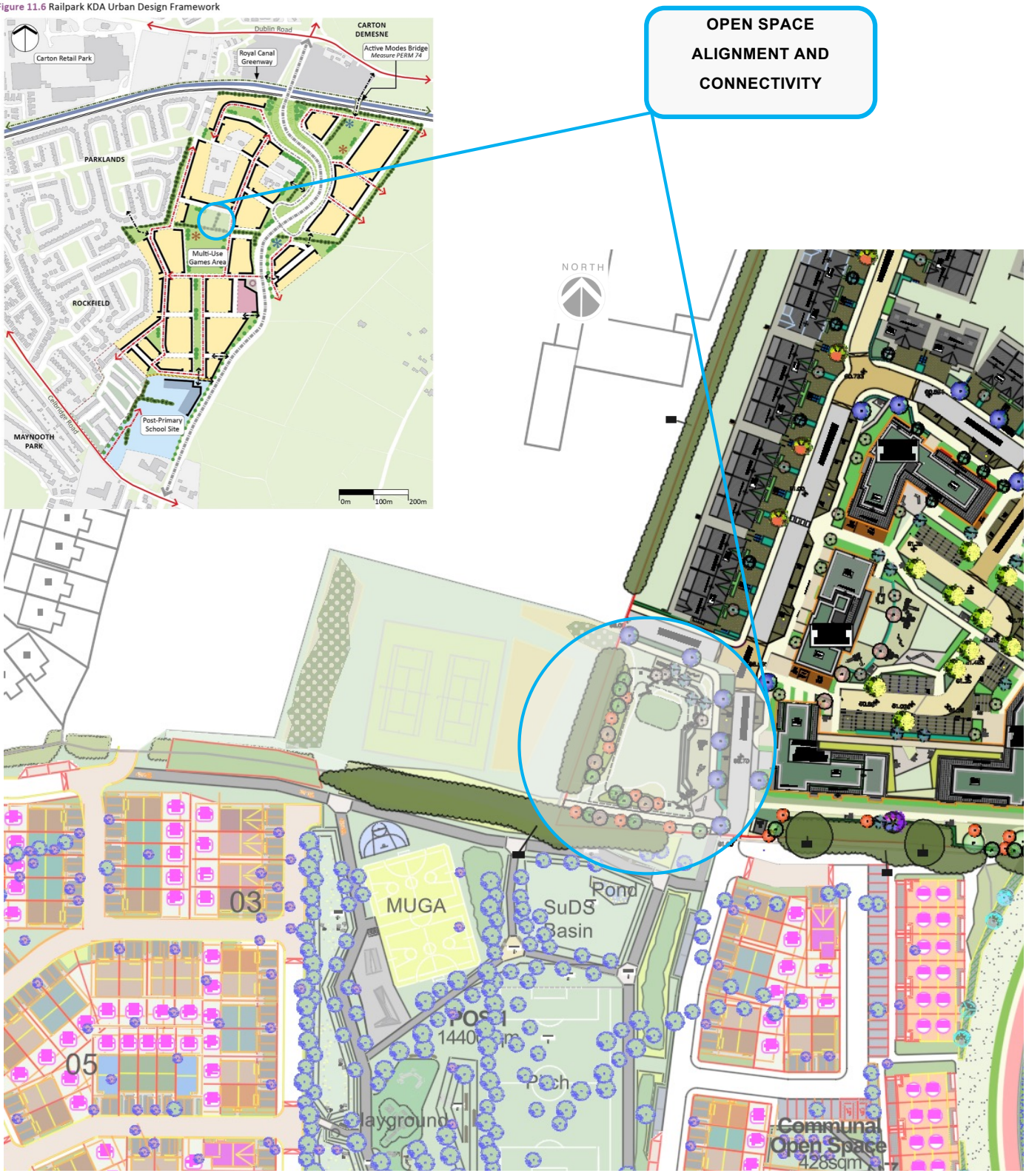
The proposal includes for a new vehicular/pedestrian/cyclist access from the permitted Maynooth Eastern Ring Road (MERR) to the east and the adjoining development to the South, and pedestrian/cyclist access (and vehicular access for one of the proposed houses) to Parklands Grove/Old Railpark to the north of the site.
The development also includes all car and bicycle parking at surface and podium underdeck level, new streets and footpaths, bin stores, residential private open spaces, public & communal open spaces, boundary treatments, waste management areas, landscaping and all associated site development works.

Landscape Design Strategy

Landscape Design Context

The proposed site is located within the Railpark KDA Urban Design Framework, and the landscape design has therefore been developed to complement and support this broader vision. A key element of the scheme is the southwest open space, forming part of the 3-hectare strategic open space at the core of the KDA. As planning for the remaining lands within the Railpark KDA is still pending, the proposed layout has been carefully coordinated to align and maintain strong connections with adjoining sites

Figure 11.6 Railpark KDA Urban Design Framework



Landscape Design Strategy

Landscape Design Approach

The landscape design has been shaped by a series of practical considerations, including the needs of future users, day-to-day management requirements, and full compliance with relevant building regulations.
Although the site is located close to Maynooth town centre, the surrounding rural environment has strongly influenced the selection of planting species. The design prioritises the retention of existing trees and hedgerows where feasible and sustainable. However, certain sections of internal and perimeter hedgerows must be removed to accommodate necessary vehicular and pedestrian connections. To mitigate these losses, the proposal includes substantial replacement planting—over 203 new trees and 352 linear metres of mixed native hedgerow—supporting biodiversity and helping integrate the development within its landscape context through the use of native and pollinator-friendly species.
Universal access is a central principle of the design approach, ensuring that both passive and active needs of residents are met, supporting social interaction, and fostering a sustainable and inclusive community.
The overarching vision is to create a connected, green, and climate-resilient neighbourhood that:
• Retains and reinforces existing hedgerows and trees as the foundation of a site-wide green infrastructure network;
• Provides a hierarchy of public and communal open spaces that are visible, overlooked, and easily accessible to all residents;
• Incorporates sustainable drainage features as attractive and multifunctional amenity spaces;
• Offers inclusive play and recreation opportunities for all age groups, in line with CDP and LAP objectives for healthy, active communities.

Landscape & SuDS Integration with Public Open Space

Multi-Functional SuDS Features Integrated into Usable Open Space

The landscape design integrates Sustainable Urban Drainage Systems (SuDS) as multi-functional features that enhance the overall quality, biodiversity and amenity value of the public open spaces throughout the development, in accordance with the Kildare County Development Plan objective which requires SuDS to contribute in a “significant and positive” way to open space design.

SuDS elements including shallow basins and bio-retention are intentionally shaped and landscaped to read as natural amenity features rather than engineered infrastructure.

Detention Basins

- Side slopes are gently graded to allow informal recreation and safe public access during dry periods, while seasonally wet areas are planted with wet grassland species to provide ecological interest throughout the year. Gently grading 1:5 side slopes so basins feel like natural depressions usable for informal play with curvilinear, naturalistic edges rather than rectangular engineered shapes.
- Seating terraces oriented toward SuDS features
- Native woodland planting around basins
- Pollinator-friendly meadows in adjacent dry zones
- Layered planting structure to provide habitat: wet grassland, managaed grass, wildflower meadow, woodland and trees.
- Circulation routes, seating nodes and viewing points are positioned to integrate SuDS into the user experience of the space, ensuring they function as landscape focal points and biodiversity assets.

Rain Gardens

Rain gardens are designed as micro-habitats that support a variety of pollinators and invertebrates, with species selected to provide nectar, shelter and structure throughout the growing season. Moisture-tolerant native plants, including sedges, flowering perennials and marginal species are arranged to deliver layered habitat complexity. These features help to strengthen ecological connectivity across the site and contribute to local biodiversity networks.

The proposed design delivers a high-quality, climate-resilient open space in which SuDS perform combined hydrological, ecological and placemaking functions, consistent with best practice, KCC Sustainable Drainage Systems Document and Kildare County Council Taking-in-Charge Requirements.

The SuDS strategy enhances the ecological value of the open space through native and pollinator-friendly planting that provides habitat, forage and seasonal interest, thereby improving both biodiversity and visual amenity.

Designed with gentle topography, naturalistic edges and integrated pathways, the SuDS features do not detract from usability; instead, they help to define and strengthen the overall landscape character.

By presenting SuDS as visible and attractive landscape assets, such as planted basins and rain gardens, the scheme establishes a recognisable identity and focal point that encourages public engagement, increases day-to-day usability and supports long-term community acceptance.

This multifunctional approach enables the development to meet open space standards while delivering nature-based drainage solutions that contribute meaningfully to climate adaptation, ecological enhancement and high-quality placemaking.

SuDS & Surface Water Drainage Strategy

Sustainable Urban Drainage Systems

The surface water drainage strategy has been developed in collaboration with Kavanagh Burke Engineers to ensure that runoff is managed through nature-based solutions that enhance overall water management. The selection of landscape features is informed by the site's infiltration characteristics and includes permeable paving within private parking areas, rain gardens, and shallow grassed detention basins at three key locations.
Sustainable drainage measures are fully integrated into the site's landscape structure rather than treated as standalone engineering elements:

• Detention basins and soakaway – Three detention basins and one soakaway are designed to accommodate storm events inclusive of a 30% climate-change allowance and 10% urban-creep allowance. These features use shallow, permanent profiles with landscaped side slopes that contribute positively to the public realm.

• Street-edge raingardens – Located along key streets, these raingardens receive runoff from adjacent hard surfaces via dropped kerbs. Each incorporates a layered bioretention system and a specialised planting mix to improve water quality, support biodiversity, and introduce year-round visual interest.

This integrated approach aligns with the CDP's emphasis on nature-based solutions and fulfils the LAP requirement that KDA developments demonstrate climate-resilient design.

Open Space Hierarchy

Open Space Strategy

The hierarchy of open space is defined by the range and quality of functions provided within each area, illustrating both the landscape structure of the site and the intended use of spaces at a strategic level. Primary open spaces accommodate a broader mix of activities, while secondary open spaces typically support a single function and offer more modest amenities for residents.
Primary open spaces include opportunities for equipped and natural play such as kickabout areas, boulders, and repurposed tree stumps and logs. In shaping the functionality of these areas, access and circulation are essential considerations. The distribution of well-serviced open spaces has been developed alongside pedestrian movement networks and the overall open-space hierarchy, ensuring strong internal connectivity. Pedestrian routes link seamlessly to open spaces and provide opportunities for future connections to adjoining lands.

A clear open-space hierarchy is provided as follows:
• Primary Open Space – Positioned at strategic locations within the development, which includes a equipped play area (catering for toddlers through to teens), kickabout area, seating, and planting, all within an overlooked setting.
• Secondary Spaces – landscape spaces aligned with retained hedgerows which may incorporate detention basins with gentle 1:5 side slopes, seating, nature-based play elements, and informal exercise stations. These spaces deliver both amenity and flood-risk mitigation.
All open spaces are directly fronted by homes and the crèche, ensuring passive surveillance, a sense of ownership, and alignment with LAP urban design principles for KDA neighbourhoods.

Biodiversity Measures

Biodiversity Measures

The Biodiversity Action Plan (BAP) for the Railpark West LRD integrates ecological survey findings with the landscape and SuDS design strategy to deliver a biodiversity-led development that aligns with the National Biodiversity Action Plan 2023–2030, the All-Ireland Pollinator Plan and Kildare County policies.
The ecological baseline identifies the site as predominantly GS1 neutral grassland with WS1 scrub and several WL1 hedgerows/WL2 treelines, of which H1, H2 and H5 are of **high local ecological value** as wildlife corridors and bat foraging/roosting routes. Protected species recorded include Common and Soprano Pipistrelle and Leisler's Bat. No invasive alien species were found.

The landscape design retains all key hedgerows except for minor sections required for access, reinforcing them with new native woodland belts and understorey planting to enhance connectivity. Biodiversity enhancements are outlined in the table below. In addition microhabitat enhancements include Bird and bat boxes, log piles and pollinator nesting features provide further ecological value.

Section	Feature Type	Key Details	Quantities / Extent
Hedgerow Creation, Reinforcement & Corridors	Native Hedgerows	Double-row hedgerows; integrated with SuDS & routes; retained/augmented at Railpark Lane & MERR; native species corridor.	352 m length
Pollinator-Friendly Grassland, Meadows & Planting	Wildflower Meadows & Grassland	Species-rich meadows; minimal mowing around SuDS.	1,466 m²
New tree planting	Site wide	Native and pollinating species (root barriers included where required)	201 No.
SuDS-Based Habitat Creation	Raingardens	Bioretention soils; gravel storage; native/perennial planting.	225 m²
Green/Blue Roofs	Green & Blue Roofs	On all apartment blocks; urban cooling; pollinator habitat; rainwater attenuation.	1,777 m²
Native Woodland Clusters & Tree Planting	Native Trees & Woodland Belts	Oak, Rowan, Birch, Scots Pine; along SuDS edges, Railpark Lane, MERR	485 m²

Summary Table of Enhancements

Biodiversity Measures

Conclusion

The integrated ecology and landscape design delivers a strong, measurable biodiversity outcome for the site.
It provides **8.06% natural and semi-natural habitat**, meeting the **8% quantitative requirement**, while also ensuring the **retention and enhancement of all major hedgerows** to strengthen ecological corridors across the development.
The scheme incorporates **extensive new meadow and woodland habitats**, increasing structural and species diversity and improving connectivity for pollinators, bats, and other wildlife.
A **robust five-year ecological monitoring programme** is included to secure the long-term success of these habitats and ensure they establish as intended. Collectively, these measures result in a **clear net gain in biodiversity value** for the Railpark West KDA.

Habitat Type	Area (m^2)	Notes
Wildflower Meadows	1,466	Species-rich pollinator habitat
SuDS Habitat Areas	225	Wet meadow & bioretention features
Native Woodland / Tree Planting	485	Native woodland belts & tree zones
TOTAL Habitat Area	2,176	Used in percentage calculation
Site Area	27,000	2.7 hectares
Habitat Percentage	8.06%	Exceeds the 8% requirement

Table of Habitat Percentage

Vegetative Typologies

Large/Parkland Trees

Aesculus hippocastanum

Fagus sylvatica

Pinus sylvestris

Street Trees

Crataegus 'Stricta'

Acer 'Elsrijk'

Betula pendula

Sorbus 'Sheerwater Seedling'

Small to Medium Trees

Prunus avium

Malus sylvestris

Corylus avellana

New Tree Planting

A total of 201 new trees are to be planed throughout the site, comprising a number of native and pollinating species. Proposed tree planting will improve the diversity of tree planting in the landscape.

Green infrastructure and biodiversity play a major role in the public realm strategy. Native tree planting in combination with the augmentation of all existing public realm hedgerows will provide enhanced linkages or corridors for wildlife in the area.

The proposed tree species are selected for longevity, suitability to local soil conditions and microclimate, biodiversity (native species) and where requires suitability to close proximity to residential buildings.
Proposed tree sizes will be planted in a range of sizes to ensure maturity at different times.

Additionally, improved biodiversity is proposed to be achieved by the planting of pollinator friendly species. Tree species have been specified in accordance with the *All Ireland Pollinator Plan* (2015-2020).

Vegetative Typologies

Hedge, Shrub, Bioretention, Groundcover and Bulb Planting

Native mixed species hedgerow planting is primarily used along the boundaries of public open space where it is provided within the space to establish and grow, augmenting existing vegetation in these areas.

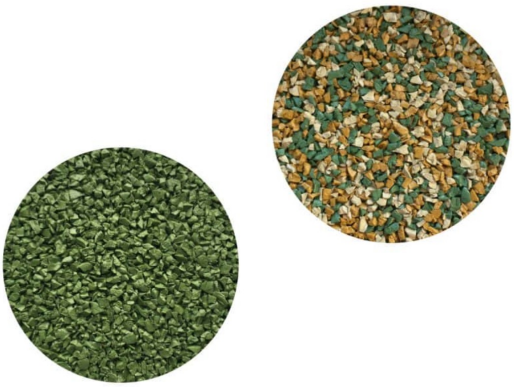
An evergreen mixed hedgerow of hazel and holly planting is utilised to define and reinforce sub-spaces within the streetscape environment.

The lower shrub layer of planting includes pollinator friendly species providing year round interest and biodiversity around buildings and within dwelling curtilages creating vegetative buffers for privacy and shelter to adjoining residences.

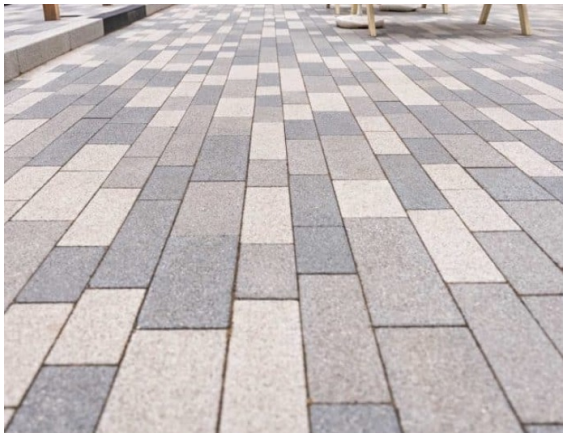
Wildflower meadows to the outer edge of lawn areas will be established where frequent mowing of grass will not be required. Re-used cut logs from the felling will be incorporated into the space as natural play elements.

Materials Palette

Driveways -Permeable paving



Play Surfaces



Block paving

Homezone

Public open space-bound surfaces

Composite Age Friendly Seating

Informal Precast Concrete Seating

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Landscape Architecture