

4.00 DESIGN PROPOSAL – SPECIALIST INPUT

4.01 Civil and Structural Engineering:

4.01.1 Overview:

CS Consulting Engineers are responsible for the civil engineering strategy for Site 4 Kishoge, collaborating with DTA Architects, Metec Mechanical and Electrical Consulting Engineers, Bernard Seymour Landscape Architects, and other Design Team members to create an integrated design for roads, infrastructure, and sustainability.

The key infrastructure for Site 4 is the South Link Street, developed as part of the Clonburris SDZ under Planning Permission SDZ20A/0021. Access, watermain installation, and site spurs are already approved and under construction. The road design features a 7m carriageway, cycle track, footpath and spurs for both northern and southern site access.

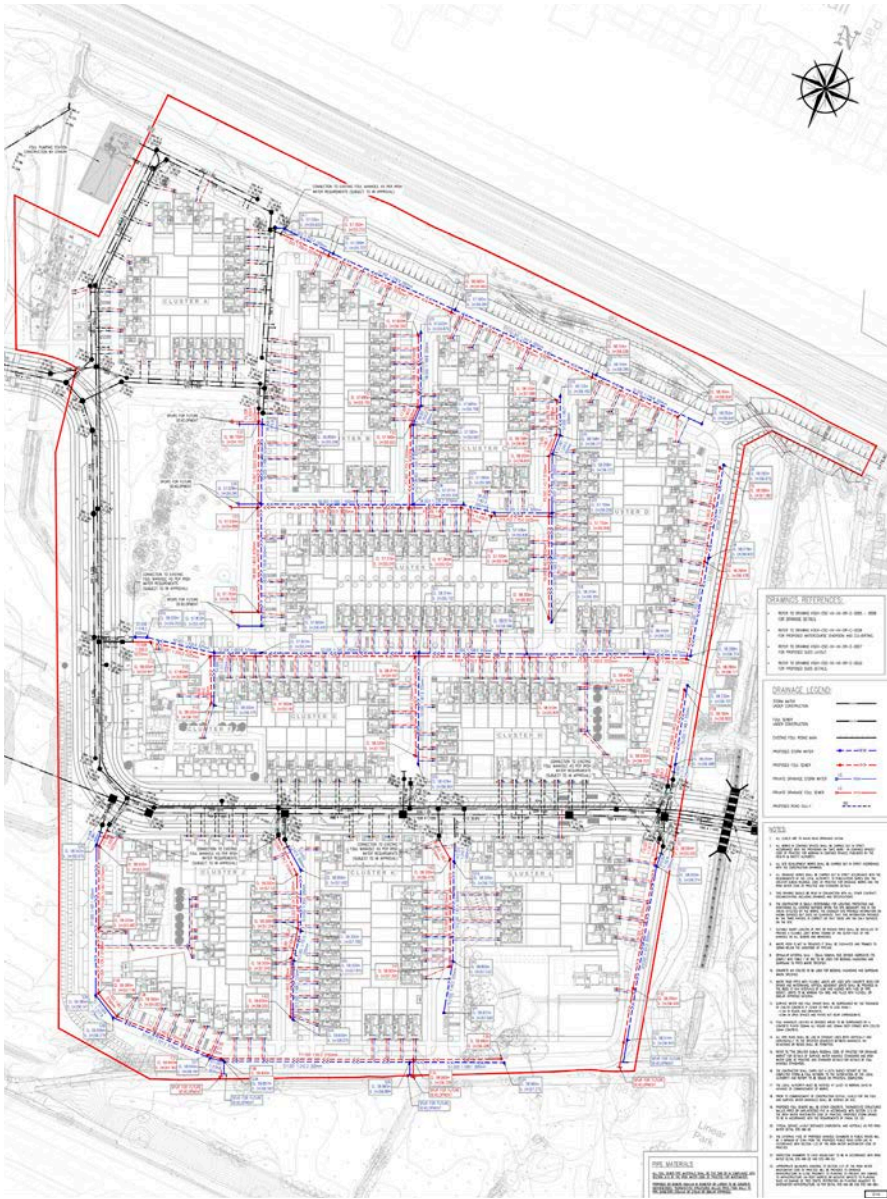
CS Consulting regularly coordinates with the South Link Street design team to minimize the requirement for changes and ensure future connections to Site 4.

The internal road layout, managed by the Site 4 Design Team, complies with DMURS and SDZ guidelines. The design includes a 6.0m/ 5.5m road width, 2.0m footpaths, and traffic-calming measures such as 4.5m kerb radii and junction tables to control vehicle speeds. On-street parking with 6m clearance is provided, with pedestrian access prioritized through raised junctions and cycle access points. Traffic planning adheres to South Dublin County Development Plan 2022-2028 and TII guidelines, ensuring safety and compliance with parking standards. Swept Path Analysis has been conducted to ensure vehicle manoeuvrability, and traffic impacts will be assessed using the TRICS database to align with surrounding infrastructure capacity. The overall design prioritises safety, accessibility, and sustainability, in line with planning and transport standards.

CS Consulting’s core package of information includes:

- Engineering Services Report
- Construction and Environmental Management Plan
- Resource and Waste Management Plan
- Traffic and Transport Assessment
- Residential Travel Plan
- DMURS Statement of Compliance
- And full suite of Road, Drainage, SuDS, Swept Path, and related drawings.

For full details, refer to CS Consulting’s package of information submitted as part of this Part 10 Application.



CSC - Proposed Drainage Layout



CSC - Proposed SUDs Layout

4.01.2 Traffic, Transport and DMURS Compliance:

CS Consulting has assessed the proposed road network design and evaluated the impact of the residential development within the Clonburris Strategic Development Zone, focusing on the surrounding road network, internal road layout, car and bicycle parking, and facilities for cyclists and pedestrians.

Key Observations and Conclusions:

- The development layout and density align with those examined in the Clonburris SDZ Transport Assessment, which used the Southwest Dublin Local Area Model (LAM). Therefore, the conclusions of the LAM remain valid
- The proposed development includes sufficient car and bicycle parking, meeting the requirements of the Clonburris SDZ Planning Scheme and the South Dublin County Development Plan 2022-2028
- Swept Path Analyses for refuse vehicles and fire tenders confirm that the development’s access and internal layout can accommodate these vehicles as needed
- The site benefits from proximity to high-quality public transport services, providing easy access to Dublin City and local centres.

The assessment confirms that the proposed development is well supported by the surrounding road network, includes adequate car and bicycle parking, and has an access and internal layout that complies with the Design Manual for Urban Roads and Streets. With above noted, CS Consulting confirmed that the design is DMURS Compliant.

For full details refer to CS Consulting’s Traffic and Transport Assessment, DMURS Statement of Compliance and related reports submitted as part of this Part 10 Application.

4.01.3 Storm Water

Planning permission (ref: SDZ20A/0021 – South Link Street) has been granted for the provision of stormwater infrastructure to serve the development. The permission allows for the installation of a main stormwater drainage system along the link street, with pipe sizes ranging from 1500mm to 300mm in diameter. The system is designed to convey unattenuated flows from the site to an overall attenuation basin located to the west, with construction currently in progress.

Stormwater drainage spurs have been accommodated within the permitted design. The proposed site layout incorporates these spurs, and their locations have been coordinated with the appointed contractor. Adjustments have been made to relocate the stormwater spurs to more suitable locations for future connections to properties facing the South Link Street. Additionally, main sewer manhole locations have been adjusted to align with future road intersections to ensure they serve the development correctly. These changes involve minimal intervention, with the original number of spurs and manholes maintained, only repositioned for better connectivity.

The stormwater drainage design meets the four main criteria set out by the GSDS and the Regional Code of Practice for Drainage Works:

- River Water Quality Protection: This is achieved by treating runoff within Sustainable Drainage Systems (SuDS) features, such as swales, bioretention areas, and blue/green roofs within the development site
- River Regime Protection: Attenuation of runoff from the site ensures protection, while external impacts are addressed by the permitted development under planning reg ref; SDZ20A/0021
- Level of Service (Flooding): The site is outside the 1000-year coastal and fluvial flood extent areas, meeting the required level of service. Flood risk outside the site is addressed by the permitted development
- River Flood Protection: Attenuation and/or long-term storage within the SuDS features will provide protection, with external flood risks managed under the permitted development.

In summary, the stormwater management for the development is designed to meet all necessary criteria and integrates with the approved infrastructure under the SDZ20A/0021 planning permission.

For full details, refer to CS Consulting’s package of information submitted as part of this Part 10 Application.

4.01.4 SuDS Devices

To manage surface water runoff and mitigate flood risks, the proposed development incorporates several Sustainable Drainage Systems (SuDS) strategies, designed to handle extreme rainfall events and align with climate change predictions. The key features of the SuDS strategy include:

- Permeable Paving: Used for all car parking spaces across the site. Provides interception and primary treatment for rainwater runoff. The unlined permeable paving allows for direct infiltration of rainwater, while a perforated overflow pipe ensures drainage to the surface water system and attenuation storage
- Bioretention Areas: Shallow landscaped depressions, under-drained with engineered soils and enhanced vegetation, will manage and treat runoff at source. These areas will promote biodiversity and can be incorporated into central courtyards or open spaces
- Tree Pits: Some hardstanding areas will direct surface water runoff into tree pits to allow for local infiltration. The tree pits will be equipped with an overflow pipe leading to the main surface water drainage network and attenuation system
- Shallow Drainage Channels: Proposed along the access road in the northern catchment, these grass-covered channels will treat, convey, and attenuate runoff at source. These channels will infiltrate water into the ground, where the subgrade is suitable.

Benefits of SuDS Integration:

- Biodiversity and Ecology: SuDS elements such as bioretention systems create and link habitats, supporting existing and new wildlife, thus enhancing biodiversity and improving urban ecosystem quality
- Amenity and Economy: Open green spaces provide opportunities for walking, cycling, and sports, improving physical and mental health and enhancing community well-being
- Water Quality: SuDS filter out contaminants and sediment from runoff, reducing the volume entering sewers and drains, which reduces the likelihood of combined sewer overflows and the need for additional water treatment
- Flood Risk Management: By mimicking natural drainage patterns, SuDS reduce the volume of runoff, store water, and slow water flow, which helps manage flood risks in urban areas
- Climate Resilience: The vegetation in bioretention systems and tree pits captures and stores carbon, improves air quality, regulates temperatures, and reduces pollution.

This comprehensive SuDS strategy, integrated into the development, ensures effective flood risk management, improves water quality, enhances biodiversity, and contributes to climate resilience, all while providing community benefits.

Regarding section 4.01.8 (Flood Risk Assessment by JBA Consulting), CS Consulting has designed flood mitigation measures, providing 170m³ of compensatory storage. This storage, located along the northern boundary between the road and the channel, offsets the flood risk, with the ground sloped as per the design by CS Consulting, with input and modelling verification by JBA Consulting.

For full details, refer to CS Consulting’s package of information submitted as part of this Part 10 Application.

4.01.5 Foul Water

Planning Permission (ref: SDZ20A/0021 - South Link Street) has been granted for the necessary infrastructure, which includes the installation of a main foul water drainage system along the South Link Street. This system will transport the foul effluent to a designated foul pump station located to the northwest of the site, with construction currently in progress.

Key Points:

Foul Water Drainage Network:

- The proposed foul drainage infrastructure includes spurs and manholes designed to connect the development to the existing foul network. These spurs have been designed in alignment with the permitted overall infrastructure scheme
- The network will carry foul water to a pump station, facilitating the proper disposal of effluent.

Coordination with Contractor (JB Barry):

- Coordination of the underground services in the South Link Street has been managed with the appointed contractor, JB Barry
- Localised/ detail modifications to the original design have been made, such as the relocation of the foul drainage spurs and the main sewer manholes, ensuring that these are placed in more suitable locations for future connections, coordinated with the Site 4 developed design.

Pre-Connection Enquiry:

- CS Consulting submitted a Pre-Connection Enquiry to Irish Water on 16/04/2024, referring to the South Link Street Connection Agreement (CDS2200702401)
- This agreement includes the required foul connections, as well as the link to the foul pump station, ensuring that the site will be properly serviced according to the approved infrastructure plan.

It is submitted the foul water drainage system for the development will be integrated into the South Link Street network, ensuring appropriate and efficient foul effluent management for the new development. The infrastructure will be aligned with the approved designs, minimising the need for any substantial changes while optimising connectivity.

For full details, refer to CS Consulting’s package of information submitted as part of this Part 10 Application.

4.01.6 Site levels/ Topography

The site has a cross fall of approximately 5 metres, sloping down from the south (+60.00) to the north (+55.00). The vertical design levels for the roads and drainage have been set based on the required outfall invert levels for both foul and storm water drainage. To achieve these levels, the proposal is to raise the site by an average of 1.3 meters across the development.

In addition to the required raising of the site, excavation of approximately 0.5 meters below ground level will be necessary to remove root balls and other vegetation. As a result, the total depth of infilling required will be approximately 1.8 meters (1.3 meters for the vertical raise and 0.5 meters for excavation).

The minimum Finished Floor Level (FFL) for the site will be set at +56.224, which ensures that the levels are 500mm above the water level of the adjacent attenuation pond, which is at +55.724. This will provide the necessary protection against flooding while accommodating the infrastructure requirements.

For full details, refer to CS Consulting's package of information submitted as part of this Part 10 Application.

4.01.7 Mains Water

CS Consulting submitted the Pre-connection enquiry to Irish Water on 16/04/2024, referencing the South Link Street Connection Agreement (CDS2200702401). This agreement covers the watermain connections along the South Link Street, serving the development lands and the associated foul pumping station. The development will utilise the approved infrastructure connection points under this CDS number to connect the site with the mains water supply.

A Confirmation of Feasibility has been received from Uisce Éireann and is included as part of this application.

For full details, refer to CS Consulting's package of information submitted as part of this Part 10 Application.

4.01.8 Flood Risk Assessment

JBA Consulting was appointed to conduct an independent flood risk assessment for the site and surrounding areas. CS Consulting provided assistance to JBA Consulting by contributing expertise on the site's civil strategy, including levels, drainage, and related infrastructure.

The JBA Consulting Flood Risk Assessment (FRA) evaluated the flood risks associated with the proposed development at Site 4, Kishoge, Clonburris, and outlined the mitigation measures to comply with The Planning System and Flood Risk Management Guidelines (DoEHLG & OPW, 2009).

Key Findings include the followings:

- **Flood Zones:** The site is mainly in Flood Zone C, with a small part in Flood Zone B, at risk from the Kilmahuddrick Stream. The Griffeen River poses no flood risk.
- **Flooding Risk:** The extreme 0.1% AEP flood event on the Kilmahuddrick Stream causes localised flooding in the southeast corner.
- **Assessment Scenarios:** Multiple scenarios were assessed, including post-development and climate change models, ensuring no additional flood risk downstream of the railway line.
- **Mitigation Measures:** Approximately 170m³ of compensatory storage is proposed to balance floodplain volume loss, ensuring baseline conditions during the 0.1% AEP event.
- **Infrastructure Design:** Mitigation measures include appropriate site planning, Finished Floor Levels (FFLs) above critical flood levels with a 300mm freeboard, and flood-resilient infrastructure.
- **Culvert Design:** The culvert crossing the Kilmahuddrick Stream is designed to comply with Section 50 requirements, ensuring flow continuity and minimizing backwater effects.

JBA Consulting conclude that with the proposed mitigation measures, the development will not increase flood risk to the site or surrounding areas. The Justification Test has been passed, and the design complies with the South Dublin County Council Development Plan 2022-2028 and SFRA. This ensures the development remains resilient to both current and future flood risks while aligning with sustainable flood management practices.

For the full Flood Risk Assessment (FRA), refer to the JBA Consulting report submitted as part of the Part 10 application.



Extract from JBA Consulting, Flood Risk Assessment, Showing Flood Compensation Storage Area Location and Representation



Site 4 -Proposed Site Sections - DTA Architects Drawing: 3004 (Note: Existing Site Levels Shown for Reference)

4.02 Mechanical and Electrical Engineering:

4.02.1 Site Utilities Overview:

Based on site studies and surveys, there appear to be minimal or no utility services traversing Site 4, with the exception of one ESB line. Metec has coordinated with ESB Networks (David Connolly, responsible for the Clonburris area) for the diversion/ relocation of the existing overhead power line. Currently, 220kV power lines run to the north of Site 4, with a pylon located in the northeast corner. As of January 2025, the scheduled diversion of these power lines is underway, transitioning to an underground system as part of the EirGrid West Dublin project.

There are no issues anticipated regarding the provision of power to the development. Site 4's infrastructure will be integrated into the Distributor Road Network (South Link Street), from which medium voltage infrastructure spurs will loop into the site.

Additionally, Site 4 has ample access to essential services, most of which will be delivered through the South Link Street (currently under construction).

For further information, please refer to Metec's Utilities Report, submitted as part of the Part 10 application.

4.02.2 Utilities and Site Lighting:

The proposed plan includes connecting to ESB Networks, OpenEir, and Virgin Media networks at each entrance point to Site 4 along the South Link Street. Metec has agreement in principle with ESB Networks for the installation of 8 substations across Site 4. These substations will feed mini-pillars, each providing power to up to 8 dwellings, ensuring a consistent power supply for each unit. Substation locations are coordinated with DTA Architects and integrated such that are accessible in compliance with ESN requirements but are not visually obtrusive. Additionally, Metec have agreed with ESB Networks that Cluster A can connect to the substations provided for the Irish Water pump station, which is currently under construction in the northwest corner of the site.

Communication ductwork will be installed to each dwelling from both OpenEir and Virgin Media networks, ensuring broadband capacity for every unit.

As part of this application, Metec has developed a site lighting design for Site 4, coordinated with the lighting proposal currently under construction for South Link Street. The design aims to balance functional lighting needs with ecological considerations. In line with the ecological strategy, the lighting plan incorporates darker areas where possible, to encourage wildlife and minimize light pollution in sensitive areas. This approach ensures that the development provides necessary illumination for safety and accessibility while respecting and enhancing the local ecosystem.

Utility services and site lighting are detailed in the accompanying Utilities and Site Light. For more information, please refer to Metec's associated reports, submitted as part of the Part 10 application.

4.02.3 Climate Action and Energy Strategy:

Metec Consulting Engineers have completed an analysis of the options available to achieve compliance with near-Zero Energy Building (nZEB) standards as required under Part L of the Building Regulations, based on accepted technologies and available networks.

These have included the consideration of District Heating, Heat Pump Technology and Solar technology, and the options are outlined in the accompanying climate action and energy statement report.

In relation to the above the following are noted:

- SDCC's specification on space heating requirements and associated preferred systems
- SDCC have confirmed that all dwellings are to achieve minimum A2 BER rating
- SDCC have confirmed that District Heating will not be available for Site 4.

The following is provided and integrated into the proposal as follows:

- A2-Rated and nZEB compliant targeted homes, high energy performance design
- Integration of Exhaust Air Heat Pumps (EAHP) and Monobloc Air-to-Water Heat Pumps (AWHP), customised to suit the requirements of various dwelling types
- With Mechanical Heat Recovery provided throughout, reusing waste heat within buildings to maximise energy efficiency
- Supplemented by renewable energy in the form of Solar PV, providing clean energy generation, supporting Part L compliance and contributing to EU Taxonomy improvements
- Metec Consulting Engineers have established target values for passive design elements within all dwellings, including U-values for walls, floors, roofs, and glazing, as well as airtightness levels and thermal bridging standards
- These measures are aimed at ensuring best-practice standards across all dwelling types, with the goal of achieving the target energy rating for the development.

The above is detailed Metec's Climate Action And Energy Statement, submitted as part of the Part 10 application.



Extract From Metec Consulting Engineers - Site Public Lighting Report



Extract From Metec Consulting Engineers - Site Utility Report

4.03 Ecology and Landscape:

4.03.1 Ecology Report:

For the overall Ecology Report for the three sites constituting the Part 10 application lands, refer to EIAR reports: Ecological Impact Assessment, Biodiversity/ Habitat Management Plan, Invasive Species Management Plan prepared by JBA Consulting.

4.03.2 Ecological Strategy:

The design approach follows guidance and recommendations from Altermar Environmental Consultants with input from BSLA and CS Consulting, prioritising a balance between human habitation and ecological preservation, to create a resilient and sustainable living environment that contributes positively to both the residents' quality of life and the local ecosystem.

It integrates ecological principles with residential needs, through:

- Community-oriented design
- Integration of green and blue space
- Fostering biodiversity and wildlife protection
- The provision of flood/ water management
- Consideration of long-term environmental sustainability
- While providing integration with and connectivity to the surrounding natural areas.

The core Ecological Strategy are summarised as follows:

1. Sustainable Landscaping:

Green/Blue Infrastructure:

The overall landscaping strategy incorporates green and blue infrastructure principles, creating a network of green spaces and water features (SuDS) such as roadside swales and bioretention areas that foster biodiversity and provide ecosystem services such as water filtration and flood management.

Ecological Linkages:

The design ensures that all ecological features, including the ponds, green corridors, roadside swales/ bioretention areas and riparian areas, are interconnected, allowing for wildlife movement across the site and beyond.

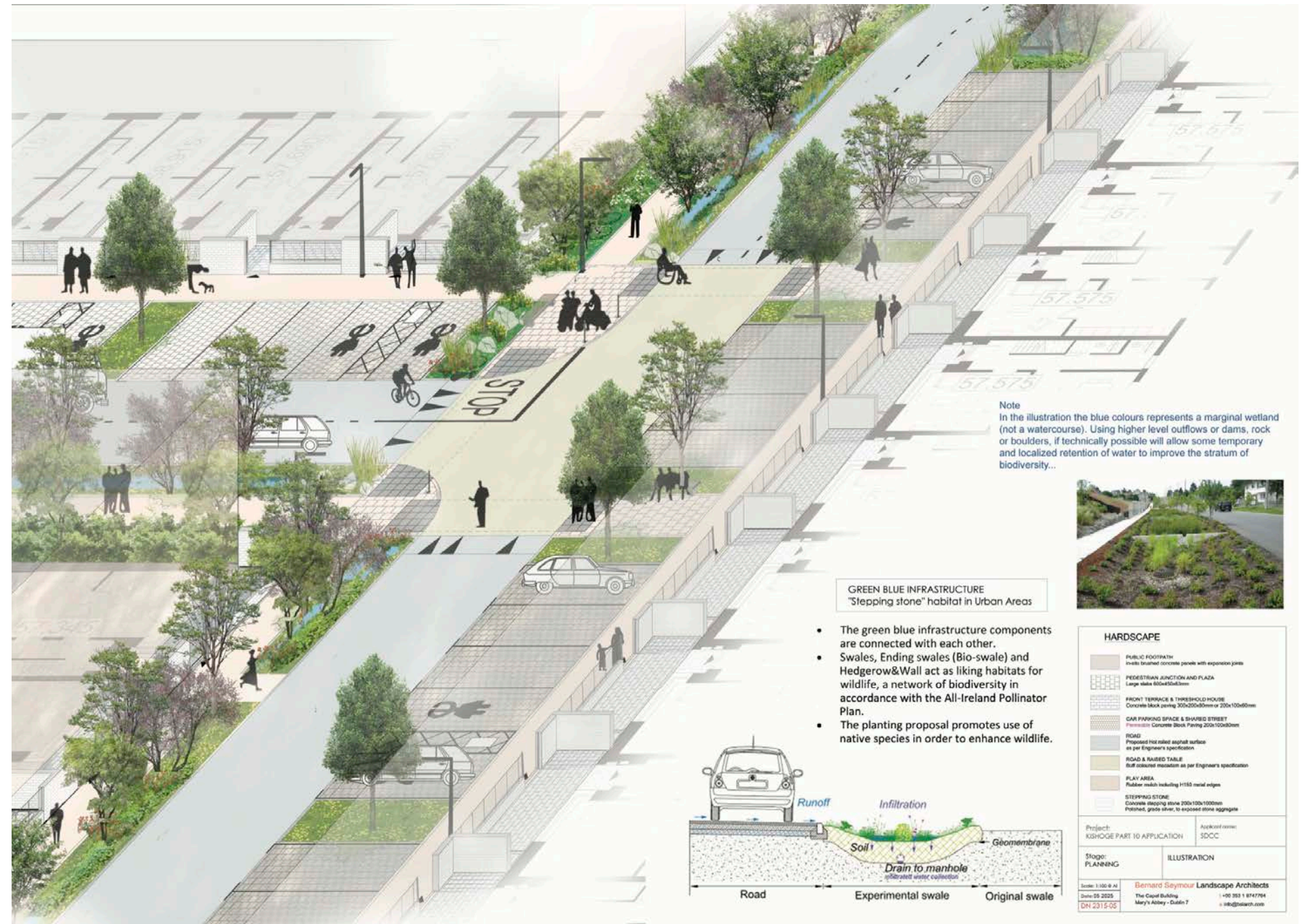
2. Flood Risk Mitigation:

Floodplain Compensation:

A loss of approximately 170m³ of floodplain has been identified in the southeast corner of the site (near Grange House). To offset this, an equivalent flood storage capacity will be created along the northern boundary, between the road and the channel. The ground will be sloped accordingly, as per the design by CS Consulting and JBA Consulting (refer to section 4.01 above), ensuring enhanced flood resilience.

Kilmahuddrick Stream Protection:

The Kilmahuddrick Stream plays a critical role in preventing flooding on-site. The development will protect the stream and its riparian corridor, in order to maintain its natural flood control feature.



Axonometric Drawing, Extracted From the Landscape Design Statement by BSLA

3. Grange House Biodiversity and Wetland Area Pond and Water Management:

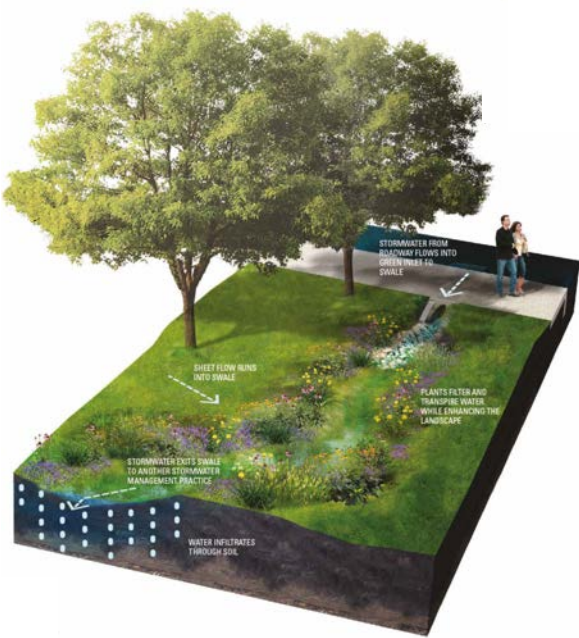
Protected Wildlife Area:
Grange House and its surrounding environment will be designated as an enhanced biodiversity area. This zone will feature a pond designed to support native biodiversity including insects and amphibians, particularly frogs, and will incorporate low-level lighting to benefit nocturnal wildlife, such as bats. To further protect this area, proposed railings along the perimeter will ensure a secure wildlife and aquatic habitat, while remaining an attractive visual and natural amenity.

Dual-Pond System:
Within the Grange House curtilage will incorporate an upper and lower pond system that will serve as a habitat for amphibians and other aquatic life. Water supply for the ponds will come from an existing ditch located to the south. In line with flood protection requirements, a new overflow and ditch will be introduced to the east, with a connection to the Kilmahuddrick Stream. A non-return valve will be installed in the stream connection to prevent backflow and ensure flood protection. A physical connection will be provided under the road to ensure continued water flow and wildlife movement.

4. Tree Preservation:

The proposal aims to preserve as many mature trees as possible within this area, maintaining their ecological and aesthetic value. The Arboricultural Report by John Morris Arboricultural Consultancy outlines the constraints and opportunities presented by trees on or near the site. It also shows how these trees have impacted the site's design and layout. The report includes:

- A Tree Schedule that provides information for each tree
- A Tree Constraints Plan that illustrates the location and constraints posed by trees
- An Arboricultural Impact Assessment that considers the impacts of the proposed development to those trees
- An Arboricultural Method Statement that outlines how retained trees will be protected during construction, and
- A Tree Impact & Protection Plan that illustrates the impact of the proposal upon trees and protection measures that should be adopted during construction.



Typical Bio-Swale Detail - Extracted From the Landscape Design Statement by BSLA

5. Private Back Garden Design and Boundary Treatment:

Tree Placement:
To foster biodiversity and create a more manageable private garden, the design proposes planting one tree in a designated corner. A standard shed zone is available in the another corner for practicality, without disrupting the overall garden's ecological balance. This allows for the placement of a shed in one corner of the garden while the tree has a greater chance of being left in situ.

Connecting Green Corridor:
To enhance the ecological value of private gardens, alternate trees are proposed to be planted along the opposite boundary to form a continuous green corridor, promoting wildlife movement and creating a more diverse habitat for birds and insects.

Climbers and Green Walls:
For boundary walls, a selection of scented climbers (such as honeysuckle) will be introduced to encourage insects. These will be trained and supported with wiring to allow growth along walls, enhancing vertical green space and providing a valuable habitat for pollinators and small animals.

Wildlife Installations:
Bird boxes will be incorporated into the design, encouraging local bird populations to settle in the area. Bat boxes will be strategically placed in dark areas, especially around Grange House, to offer safe roosting spaces.

6. Canal and National Heritage Area Protection:

National Heritage Area Protection:
The nearby canal, designated as a proposed National Heritage Area (pNHA), will be preserved. The development ensures no construction occurs within or affects this protected zone, which is clearly marked on the proposed site layout drawings. This will also be strictly maintained in place during construction.

Connection to Heritage Area:
Green and blue corridors will ensure a seamless ecological connection between the Grange House area and the canal, promoting wildlife movement and ecological connectivity.

7. Riparian Corridor Management:

Riparian Zone:
In accordance with Inland Fisheries Ireland's guidelines, no development (including footpaths) will occur within a 10 metres buffer zone in the riparian corridor (10 metres from top of bank). This buffer will serve as an important safeguard for aquatic life and support the overall ecological integrity of the area. Footpaths will not encroach within the 10 metres buffer zone as per Inland Fisheries Ireland guidance. The area will be maintained as a meadow or tall grass to provide habitat for wildlife while being cut once a year to manage growth.

8. Engagement of Residents:

To promote local biodiversity, it is proposed that each resident will receive a Biodiversity Welcome Pack, encouraging them to plant native shrubs and trees such as apple or crab apple trees. These species support local wildlife, including pollinators, and contribute to preserving the genetic diversity of native plants. The northern part of the site is the largest and potentially the most ecologically significant, featuring Kilmahuddrick Stream and new SuDS. With no mature trees, it offers monitoring potential and allows residents to track its evolution over time.



Detailed Masterplan, Extracted From the Landscape Design Statement by BSLA

4.03.3 Landscape Proposal - Concept Overview:

An integrated Building and Landscape proposition is a central design driver of the overall proposal. Refer to the Landscape Design Statement from BSLA.

BSLA as the project Landscape Architects have developed and coordinated a design, in conjunction with DTA Architects, that addresses both the feasibility and conceptual development of the landscape for the new Clonburris residential development. This design aligns with the strategic objectives outlined in the Clonburris Strategic Development Zone (SDZ) framework. The approach focuses on sustainable development, ecological balance, and enhancing community well-being. By considering both environmental and aesthetic factors, as well as practical and social aspects, the design creates a high-quality, integrated residential neighbourhood.

The following are noted and confirmed:

1. Planning Strategy and Context:

The planning strategy has been developed within the context of Clonburris Strategic Development Zone (SDZ), which aims to create a sustainable, mixed-use, and vibrant community. The site falls under a designated SDZ, offering unique opportunities for long-term urban growth and the creation of a connected, sustainable urban environment:

- Clonburris SDZ – Primary Objectives: The primary goals include the creation of a highly integrated, accessible, and sustainable urban development. This entails the provision of well-designed public and private spaces, promotion of active transportation, and conservation of natural resources
- Context and Site Overview: The site is situated within an evolving urban landscape, with good access to transport networks, retail, and local services. The existing land configuration offers opportunities for enhancing green and blue infrastructure, creating attractive open spaces, and developing resilient urban ecosystems.

2. Site Opportunities and Constraints:

The development offers both opportunities and constraints, which have been thoroughly analysed by BSLA:

Opportunities:

- Mature Trees and Green Spaces: There are mature trees present, which provide significant aesthetic, ecological, and environmental value. These will be preserved where possible, with specific trees identified for transplantation to maintain their presence on the site
- Biodiversity Potential: The site's topography and proximity to green corridors allow for the integration of diverse plant species, which supports biodiversity and helps to mitigate the environmental impact of urbanization
- Transport Connectivity: The development's location benefits from proximity to major transport links, which offers opportunities for sustainable mobility, such as walking and cycling paths integrated into the design
- Ponds have been introduced to encourage biodiversity on site.

Constraints:

- As highlighted in the Arborist's Report, the development will require the removal of a significant number of mature trees, which poses a challenge in maintaining ecological balance. However, the report also identifies opportunities for transplanting certain trees to strategic locations, which coupled with the significant new tree planting as proposed, will help to mitigate the impact
- Topographical Challenges: The existing site has varying topography that requires careful grading and drainage planning to manage stormwater and optimize usability of open spaces.

3. Landscape Strategy and Approach:

The landscape strategy is aimed at creating a cohesive and sustainable environment by integrating green and blue infrastructure, which supports biodiversity, social interaction, and environmental resilience.

Refinement with Collaboration:

- The landscape strategy has been refined in consultation with DTA Architects, CS Consulting Engineers, and Altamar Environmental Consultants (Site 4 project ecologist) to ensure a holistic and coordinated approach. This collaboration ensures the landscape complements the architectural design and meets sustainability and environmental standards
- Sustainable and Integrated Neighbourhood: The overall landscape design seeks to create an integrated social residential neighbourhood that fosters community interaction and enhances the quality of life. The design prioritises pedestrian-friendly spaces, accessible green areas, and resilient urban infrastructure.

4. Green and Blue Infrastructure:

The design promotes an interconnected green and blue infrastructure system that supports both ecological and social functions. This includes:

- Green Infrastructure: A network of green spaces, including street trees, parks, and landscaped areas, forms the backbone of the development. These spaces will provide aesthetic and recreational benefits while also supporting biodiversity
- Blue Infrastructure: Sustainable Urban Drainage Systems (SuDS) such as swales and rain gardens will be integrated into the design to manage stormwater, reduce flooding risks, and enhance water quality. The blue infrastructure will also serve as aesthetic features, providing ecological habitat and improving residents' quality of life
- Biodiversity Connectivity: The green and blue infrastructure components will be linked through ecological corridors, ensuring that they form a cohesive network that supports local wildlife. This network will be designed to facilitate the movement of species across the site and ensure a balanced, sustainable ecosystem
- Link the planting strategy to the SUDS, in tandem with the Ecology
- Use native species with undercover and Native Wetland (if there is enough water retention, a bio-swale is formed)
- The layering of the space between individual dwellings and street frontages to provide a variety of buffer zones (front gardens, planting, pavements, verges/ swales, parking zones etc) to create privacy, transition, threshold and differentiate public/ private spaces.

5. Streetscape and Hierarchy:

The streetscape design embodies the hierarchy of the development, seamlessly blending aesthetics and functionality. It establishes a well-structured network of roads, pathways, and tree-lined avenues, complemented by inviting communal spaces and home zones. This thoughtful arrangement enhances connectivity, promotes walkability, cycling, and fosters a sense of community:

- Street Design: The streets are designed with a hierarchy, incorporating tree-lined avenues, pedestrian walkways, and cycling lanes. These are designed to encourage active transportation, reduce vehicular traffic impact, and improve the aesthetic quality of the streetscape
- Public and Communal Spaces: The design includes multiple public and communal spaces that encourage social interaction and enhance the sense of community. These spaces are designed to be flexible, serving both passive recreational needs and active social gatherings
- Sustainable Street Features: Sustainable elements such as permeable paving, green verges, and integrated SuDS elements will be included to manage water runoff, reduce heat island effect, and enhance the overall sustainability of the streetscape.
- All adhering to the SDZ indicative street widths (refer to section 3.06.1 above and BSLA associated design report).

6. Public and Communal Open Space:

- Public Green Space and Habitat Protection Area: The existing curtilage of Grange House will be transformed into a public amenity/ park and green space, serving as the focal point for social and recreational activities. This area will feature play zones, open lawns, and shaded areas, providing a central gathering space for the community. Additionally, a portion of the curtilage will be designated as a protected habitat, with the creation of a pond to support aquatic wildlife and enhance biodiversity. This area will offer both recreational opportunities and a natural habitat, balancing community needs with ecological preservation. Grange House will be a hub for biodiversity and will be an interesting place for the residents of Clonburris to come as a community to gather and take in their surroundings. Wildlife installations will be placed in strategic locations in this area. This will hopefully give the residents a better understanding of how easy it is to create a biodiverse environment which they could do in their own garden.
- Community Gardens: The design includes shared community garden spaces primarily located near Apartment Blocks F, H, and J, with additional pockets situated on the northern aspect for the triplex apartments at key street corners. These spaces are designed to foster social interaction and create a sense of community ownership. The planting strategy aims to enhance this connection, encouraging residents to engage with and take pride in the landscape, while also providing a welcoming environment for relaxation and informal gatherings.

7. Residential Streets Planning Strategy:

The residential streets will be designed to prioritise pedestrians and cyclists while maintaining vehicular access. Key features will include:

- Traffic Calming Measures: Measures such as narrowed roads, raised tables, and clearly demarcated pedestrian crossings will ensure safe and comfortable environments for non-motorised users
- Bicycle and Pedestrian-Friendly Design: Dedicated bike lanes and pedestrian pathways will encourage sustainable transportation, reduce traffic congestion, and create a safer environment for residents
- Planting Buffers: Green buffers, including tree planting and hedges, will be used to create visual and noise separation between roads and residential properties, enhancing privacy while also improving the environmental quality of the streets.

The landscape design for the new housing development at Clonburris has been developed with careful attention to sustainability, community integration, and environmental responsibility. The strategic incorporation of green and blue infrastructure, along with thoughtful streetscape planning, will create a resilient, vibrant, and connected neighbourhood. By emphasising biodiversity, sustainable water management, and high-quality open spaces, the design seeks to provide a long-lasting, positive impact on both the local environment and the residents' quality of life.



Green-Blue Infrastructure Diagram, Extracted From the Landscape Design Statement by BSLA

4.03.4 Landscape Masterplan:

The following are noted in particular:

- Landscape is treated as an integral component of streetscape identity for the new Clonburris
- Proactive engagement with public realm and exploit the opportunity for links with the adjoining amenity space to provide opportunities for amenity as well as active and passive surveillance
- A holistically considered, rich and varied landscape proposition, of varying character/ conditions, comprised of a number of key components including: new streets of varying types - arterial/ link, local streets, intimate streets (homezones) with developed layering with defined pocket spaces as nodal points/ punctuations, defining junctions and including safe children's play areas
- Develop a creative Accessibility and Movement strategy to underpin universal design principles: the pedestrian crossing implemented with the change of material (coloured asphalt) works in tandem with the "Little Plaza" to create an attractive nodal point
- Create safe civic spaces and streets and with clear frontage/ address/ activation and passive surveillance to all public spaces
- Provide clear definition of new streets and a civic realm of characterful, varied and safe public and semi-public spaces and spatial sequences
- Clearly define and delineate new site boundaries, existing site features and public/ private thresholds. Consider active and passive surveillance on all sides to ensure safety of building: all the private terraces alongside the public footpath are closed with a 1.1m railing following by a diverse evergreen hedge offering interesting flowering and fructification (Ex. Escallonia, Cotoneaster lacteus, Ilex, Viburnum, Ligustrum, etc)
- Establish a hierarchy of tree species that are scaled appropriately in relation to the road network but are strongly identifiable to "home" in respect of seasonal effect, leaf texture, blossom, and berries
- Coordinate strategy with the Ecologist to enhance the planting strategy: provide food and shelter for insects, birds, and butterflies and strike a balance between wilder areas to boost the green infrastructure and a more garden like regime closer to front doors (with biodiversity welcome pack for each householder, see Ecology, section 4.03.1 above).

For full details refer to the project Landscape Architect's (BSLA) report and associated drawing package included as part of this Part 10 Application.



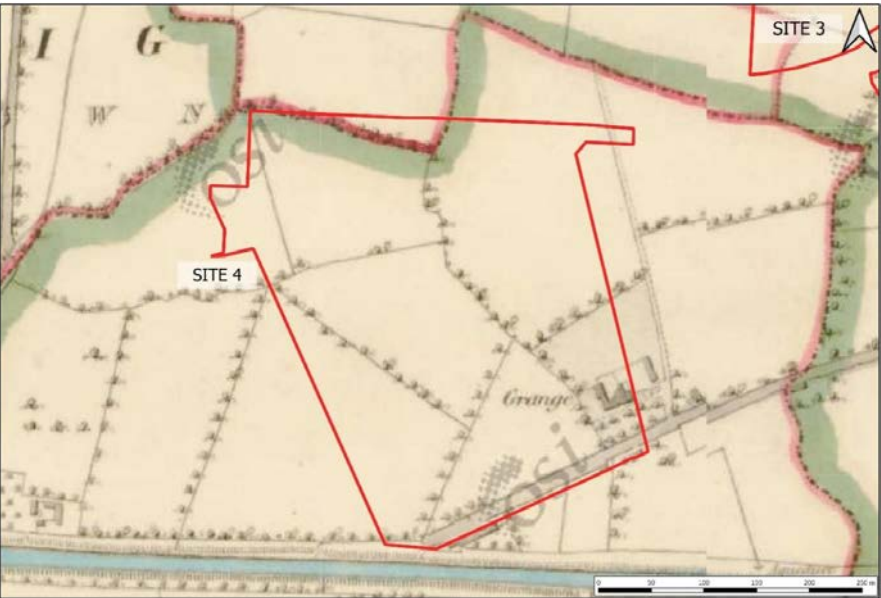
Landscape Masterplan, Extracted From the Landscape Design Statement by BSLA

4.04 Archaeology:

The Cultural Heritage chapter of the EIAR, prepared by IAC and informed by a testing report from John Cronin and Associates Archaeology, concludes that there are no recorded monuments or built heritage sites within the study area. Grange House, located in the southern part of the site, is not listed in official heritage registers but is noted as important in the Clonburris SDZ.

The site is primarily characterised by a large mature nursery, modern developments in the southeast and southwest, and ongoing construction of the Clonburris infrastructure scheme. Historic maps show Grange House and a small demesne in the post-medieval period, but the demesne no longer exists due to the current developments. Archaeological testing in the southwest corner revealed the remains of a post-medieval brick kiln, now under new road infrastructure. A site inspection confirmed the findings, and the site, mostly covered in trees and shrubs, was not tested due to mature planting. Overall, the site has low to moderate archaeological potential.

For further details refer to the EIAR report included as part of this Part 10 Application.



Historical Map of Site - Extract From IAC Report

4.05 Fire Safety:

Jensen Hughes, the project's Fire Safety Consultant, has developed a fire strategy for the development in line with the relevant Building Regulations, specifically TGD B 2006 + A1:2020 and the updated TGD B (March 2024), with a transition period until 1st May 2025.

The fire strategy covers the following core areas:

- Building Regulation Guidance
- Means of Escape
- Fire-fighting Facilities
- External Fire Spread
- Active Fire Safety Systems
- Additional Provisions

Key considerations integrated into the design include:

- Fire tender access and turning facilities for fire appliances, verified by CS Consulting's vehicle tracking analysis
- Provision of hydrants
- Firefighting shafts, where applicable
- Dry risers, where relevant

The development includes a range of apartment types, including duplexes, triplexes, and standard apartments, varying in height. The fire strategy ensures compliance with TGD B and relevant British Standards for means of escape, and includes fire detection and alarm systems. The strategy also addresses the potential external spread of fire, with considerations for green roofs that limit fire spread and photovoltaic panels to reduce risks of electrocution.

Regarding Apartment Block F, the finished top floor exceeds 15 metres in height, which, under the updated TGD B document (published March 2024), necessitates the installation of a sprinkler system. The design of this apartment block has accounted for this requirement, with the appropriate mechanical and electrical systems, including plant and equipment, sized by the project M&E consultant (Metec Consulting Engineers) and integrated into the proposed design.

The Site 4 scheme has been designed with a fully compliant and rational fire safety strategy, ready for subsequent Fire Safety Application following the lodgement of the Part 10 submission.

4.06 Access:

4.06.1 Access Compliance Requirements:

The Irish Building Regulations have been updated with Universal Design in mind since the introduction of the Disability Act in 2005. The technical guidance for these Regulations is provided in the Building Regulations 2022 Technical Guidance Document M (TGD M 2022), which focuses on Access and Use.

The proposed development scheme complies with the current Part M of the Building Regulations, which came into effect on December 2, 2022, with some transitional arrangements. TGD M 2022 outlines materials, construction methods, and standards suitable for compliance with Part M, although alternative approaches can be used as long as they satisfy the regulations. O'Herlihy Access Consultancy has worked with the Site 4 Design Team to ensure compliance with these requirements.

The Site 4 Design Team is committed to achieving universal access in the development, including incorporating universal design into several apartment units, in line with the "Universal Design Guidelines for Homes in Ireland" by the Centre for Excellence in Universal Design, to the greatest extent possible. Refer to Section 3.07.4 above for Site 4 specific UD dwellings.

4.06.2 Universal Access Strategy:

The Universal Access Strategy for the proposed development includes the following measures:

- Accessible Approach and Circulation: independently accessible routes to entrances and around buildings will be provided, in line with Sections 1.1 and 2.1 of Building Regulations TGD Part M 2022 (TGD M), including level access, gently sloped or ramped access, and pedestrian crossings
- Accessible Car Parking: a minimum of 5% of car parking spaces will be accessible, as per Sections 1.1.5 and 2.1.5 of TGD M, designed to meet the specified guidance (20 no. provided of the 404 total, equate to 5%)
- Accessible Main Entrance: the main building entrance (individual dwelling/ house or shared entrance in the case of apartment buildings) will be independently accessible, avoiding segregation based on ability, and will comply with Sections 1.2 and 2.2 of TGD M (e.g., accessible entrance doors, lobbies)
- Horizontal and Vertical Movement: the design will allow people to move conveniently and comfortably within the space, ensuring access to all relevant facilities, in line with Sections 1.3 and 2.3 of TGD M (e.g., internal doors, corridors, lifts, and stairs)
- Accessible Communal Facilities: communal areas will be designed to facilitate active participation where appropriate, in compliance with Sections 1.5 and 2.5 of TGD M (e.g., accessible switches, outlets, and controls)
- Communication Aids: adequate aids, such as signage, visual contrast, lighting, and audible aids, will be provided to ensure independent access and use, in line with Sections 1.6 and 2.6 of TGD M
- Accessible Apartments: apartments will be designed in accordance with Section 3 of TGD M, including 1200mm by 1200mm level landings at entrances, 800mm wide doors, adequate circulation, and accessible WCs suitable for visitors.

4.07 Sound/ Acoustics:

The acoustic consultant, AWN Consulting as part of the EIAR team have surveyed the site and reviewed the proposed Site 4 design. They have advised that the main noise impact to the new development will be from the railway line and further impacted by the Dart+ expansion. The secondary impact is associated with the South Link Street.

AWN Consulting advise future daytime noise levels at Site 4, along the northern boundary facing the rail line and Adamstown Avenue, are expected to range from 60 to 65 dB LAeq,16hr. With the Dart+ Southwest railway expansion, these levels could rise by approximately +3 dB. Noise levels decrease to between 55 and 60 dB LAeq,16hr beyond the first row of development buildings and further drop to 45 to 50 dB LAeq, 16hr deeper into the site. At buildings along the proposed Clonburris South Link Street/ Road, noise levels are higher, within the 60 to 65 dB LAeq,16hr range.

During the night, traffic noise levels along the northern boundary are projected to be between 50 and 55 dB LAeq, 8hr, with a +3 dB increase due to the railway expansion. These levels reduce to between 45 and 50 dB LAeq, 8hr beyond the first row of development, and further decrease to 40 to 45 dB LAeq, 8hr deeper into the site. At buildings along the proposed Clonburris South Link Street, noise levels are projected to be between 55 and 60 dB LAeq, 8hr.

To address the noise levels, AWN Consulting references BS 8233 as the relevant standard for indoor ambient noise levels. AWN recommend that the facades along the boundaries to the railway line and South Link Street (highlighted in red on AWN's diagram, see below and refer to the EIAR document) achieve enhanced performance. Since windows and glazed elements are typically the weakest in terms of sound insulation, AWN Consulting suggests using high-performance glazing, such as quality double glazing or standard triple glazing, in these areas. Additionally, the new external façade and building envelope, constructed to current Building Regulations or better, will incorporate high-performance insulation and materials to enhance both thermal and acoustic performance, further assisting in noise reduction. Allowance for this has been made in the overall external wall depth of nominally 562.5 mm.

For a detailed analysis, please refer to the Noise and Vibration section of the EIAR document, prepared by AWN Consulting, which is included as part of this Part 10 Application.



Extracted From the Noise and Vibration Section of the EIAR - Site 4

4.08 Daylight/ Sunlight Assessment:

4.08.1 Daylight, Sunlight, and Overshadowing Assessment:

Daylight, Sunlight, and Overshadowing Assessment:

3D Design Bureau have conducted a comprehensive Daylight, Sunlight, and Overshadowing assessment for the proposed Site 4 Kishoge development, utilizing specialist 3D software to analyse the proposal. The assessment was based on 3D models, survey data, and design details provided by the Design Team.

The evaluation followed the BRE 209 guidelines and the BS EN17037 National Annex, which recommends illuminance levels of 100 lux for bedrooms, 150 lux for living rooms, and 200 lux for kitchens. These values represent the median illuminance, which must be exceeded at least 50% of the assessment points in each room for half of the daylight hours.

The assessment covered three key areas to determine the daylight and sunlight levels for the dwellings and amenity spaces:

- Daylight provision in the proposed development Spatial Daylight Autonomy (SDA)
- Sunlight provision in the proposed development Sunlight Exposure (SE)
- Sunlight provision to the amenity spaces in the proposed development Sun on Ground (SOG).

4.08.2 Daylight and Sunlight Provision in the Proposed Development:

In relation to Spatial Daylight Autonomy (SDA), 3D Design Bureau (3DDB) confirm:

“Achieving full compliance with Spatial Daylight Autonomy (SDA), considering both states - with and without trees in the calculations - is a testament to the design team's commitment, attention to detail, and careful consideration of daylight provision. Their close collaboration with 3DDB ensured optimal results within the assessed units. These results should be regarded as excellent, particularly for a scheme of this scale.”

In relation to Sunlight Exposure (SE), 3D Design Bureau (3DDB) confirm:

“The same level of design diligence is evident in the Sunlight Exposure (SE) calculations, where the scheme achieves c.98% compliance in both states: without deciduous trees and with all trees included in the calculation.”

4.08.3 Sunlight Provision to Amenity Spaces:

All external communal amenity spaces associated with the duplexes, triplexes and apartment blocks H and J fully meet the BRE guidelines. This also includes the public amenity space within the curtilage of Grange House.

The communal amenity spaces for Apartment Block F fall slightly short of the BRE guidelines, with approximately 25% of the spaces receiving 2 hours of direct sunlight on March 21st. However, there are a number of significant mitigation and compensatory measures in place, including the following:

- When assessed using Average Sun Hours (ASH), the results show a notable improvement, especially on June 21st, when these spaces are more likely to be actively used
- In addition to the nominal 500 m² of communal amenity space at the ground floor, which is partially overshadowed by the apartment blocks as above, the development includes two roof terraces/ communal gardens
- One located on the first floor, dedicated to and serving the 6-storey block, the other on the 4th floor, dedicated to the 5-storey block
- That are ideally positioned to benefit from excellent orientation and receive southern/ optimal sunlight exposure

In addition, Apartment Block F benefits from:

- Its strategic positioning adjacent to Griffen Valley Park,
- Close proximity to the Grand Canal walk, the Linear Park to the east, and a wealth of surrounding amenities
- Which enhance the quality of the amenity spaces and overall residential experience/ amenity.

In relation to Sun on Ground (SOG), 3D Design Bureau (3DDB) confirm:

“In the SOG analysis, although one of the spaces is under performing future occupants will have access to all other amenity areas that are fully compliant with the BRE guidelines.”

4.08.4 Assessment Summary:

3D Design Bureau (3DDB) confirm:

“In conclusion, it is 3DDB's opinion that the design of the proposed development has yielded very favourable results in both the impact assessment and scheme performance, demonstrating a thoughtful approach to daylight and sunlight access and provision.”

For a comprehensive analysis, please refer to the Daylight and Sunlight Impact Assessment prepared by 3D Design Bureau, which is included as part of this Part 10 Application.

4.09 Landscape and Visual Impact Assessment (LVIA)

Long Distance Verified Views have been prepared by Modelworks with the Impact Assessment prepared by Doyle & O’Troithigh Landscape Architecture.

Doyle & O’Troithigh advise that the visual impact of the proposed development (associated with Site 4) is minimal. They note that, the development is largely screened by existing built structures and vegetation, with only minor glimpses of the upper sections of residential buildings visible through trees. The loss of vegetation was expected due to the removal of trees at the SDCC Parks Depot. Overall, the design of the buildings blends well into the natural surroundings, with minimal visual impact on the landscape. The buildings sit below the skyline and align with the ridgeline of neighbouring developments, ensuring the impact on the environment remains minimal.

For full details of Doyle & O’Troithigh’s assessment and the associated CGI images, please refer to the document provided by Doyle & O’Troithigh and Modelworks, which is included as part of this Part 10 application.



LVIA View Map



LVIA View 02



LVIA View 12



LVIA View 07



LVIA View 13



LVIA View 10

- Site 3
- Site 4
- Site 5



LVIA View 18

5.00 HOUSING QUALITY ASSESSMENT

5.01 Demonstration of Compliance - Overview:

This Housing Quality Assessment (HQA):

- Sets out and demonstrates, on an itemised heading basis, the compliance of the design proposal
- With the relevant criteria contained in the Sustainable Urban Housing: Design Standards for New Apartments, Guidelines For Planning Authorities (2023 update).

Reference should be made to:

- The supporting DTA Architects detailed HQA Schedule, DTA Architects drawing sheets 8000 to 8004, included as part of this Part 10 application.
- Page 91 of this Report.

To demonstrate compliance with the Sustainable Urban Housing Guidelines criteria, the compliance of the design proposal is described under the following headings:

- 5.02 Dwelling Mix
- 5.03 Dwelling Design and Accessibility
- 5.04 Dwelling Floor Areas
- 5.05 Dual Aspect Ratios
- 5.06 Floor to Ceiling Heights
- 5.07 Lift and Stair Cores
- 5.08 Internal Storage
- 5.09 Security Considerations
- 5.10 Private Open Space
- 5.11 Communal Open Space
- 5.12 Public Open Space
- 5.13 Communal Facilities
- 5.14 Children's Play
- 5.15 Car Parking
- 5.16 Bicycle Parking and Storage
- 5.17 Refuse Storage
- 5.18 Access

5.02 Dwelling Mix:

The proposal comprises of 436 dwellings, with the following mix:

- 133 no. 3-Bed 2-Storey Houses
- 8 no. 4-Bed 3-Storey Houses
- 53 no. 2-bed Duplex Apartments
- 53 no. 3-bed Duplex Apartments
- 57 no. 2-bed Triplex Apartments
- 62 no. 2-bed Apartments
- 62 no. 1-bed Apartments
- 3 no. 1-bed Age Friendly Apartments
- 5 no. 2-bed Garden Apartments

Refer to Residential schedule of Accommodation and Mix below and included in the package of DTA information (DTA Drawing sheets 8005 and 8006) as part of this Part 10 Application.

5.03 Dwelling Design and Accessibility:

A variety of dwelling types and sizes have been provided to meet diverse demographics and housing needs. Orientation and aspect have directly informed the design and dwelling configurations and layouts. A large proportion of dwellings have been designed in line with the "Universal Design Guidelines for Homes in Ireland" – refer to 3.07 above for details on same.

Detailed design drawings of all dwelling types are:

- Submitted with this application, refer to DTA Architects 4000 Series drawings
- Included in this Report starting at page 22.

All dwellings meet or exceed the minimum requirements established by the Sustainable Urban Housing: Design Standards for New Apartments, as demonstrated in the attached DTA Architects HQA Schedule, refer to DTA Architects drawing sheets 8000 to 8004, submitted as part of this Part 10 Application.

5.04 Dwelling Floor Areas:

All minimum floor area requirements for both apartments and houses have been met. In addition all standards for room areas, room minimum dimensions and aggregate room areas have been met throughout.

For detailed information on the required and provided floor areas for each unit, please refer to the Housing Quality Assessment Schedule included in this Report.

5.05 Dual Aspect Ratios:

The Design Standards for New Apartments - Guidelines for Planning Authorities (2023 update), state that projects with greater design flexibility, such as large apartment developments on greenfield sites or standalone brownfield regeneration areas, should aim for at least 50% of apartments to have dual aspects.

The proposed design provides for:

- 244 no. dual aspect apartments
- Out of a total 295 apartments (including duplex and triplex units), representing 83% of the total
- And as such far in excess of the above 50% requirement.

For the minority single aspect apartments, of these:

- 14 no. are south facing (with component of west)
- 21 no. are west facing (with component of south)
- 16 no. are east facing (with component of south)
- And as such have optimised orientation to ensure high levels of internal daylight and amenity.

As such, the proposed design achieves and exceeds the minimum requirements for dual aspect apartments.

In addition, all 141 no houses are dual aspect.

5.06 Floor to Ceiling Heights:

Dwellings provide a floor to ceiling height of 2700mm in all habitable rooms. There are a small number of dwellings (6 no. total) where a localised reduced floor to ceiling level of 2475mm is provided, to accommodate external level changes.

As such, all dwellings and all habitable rooms exceed the Building Regulations minimum floor to ceiling height to 2400 mm.

SCHEDULE OF ACCOMMODATION

1.0 RESIDENTIAL SCHEDULE OF ACCOMMODATION BY CLUSTER

2301-KSG	UNIT TYPE								
	2 STOREY HOUSE (H1,H3)	3 STOREY HOUSE (H2)	DUPLEX (D1,D2)	TRIPLEX (T1,T2,T3,T4)	AGE FRIENDLY APARTMENTS (AF)	GARDEN APARTMENTS (GR1,GR2)	1B APARTMENTS	2B APARTMENTS	TOTAL UNITS
CLUSTER A	10	0	14	6	0	0	0	0	30
CLUSTER B	19	0	6	6	0	0	0	0	31
CLUSTER C	13	0	6	3	0	0	0	0	22
CLUSTER D	12	0	22	6	0	0	0	0	40
CLUSTER E	29	0	0	9	0	0	0	0	38
CLUSTER F	0	0	0	0	0	0	43	24	67
CLUSTER G	9	0	10	9	0	0	0	0	28
CLUSTER H	9	0	12	6	3	0	16	14	60
CLUSTER J	7	8	12	3	0	5	3	24	62
CLUSTER K	21	0	8	3	0	0	0	0	32
CLUSTER L	4	0	16	6	0	0	0	0	26
TOTAL UNITS	133	8	106	57	3	5	62	62	436

PERCENTAGE UNIT TYPE	31%	2%	24%	13%	1%	1%	14%	14%	100%
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OVERALL UNIT MIX				
	1 BED	2 BED	3 BED	4 BED
2 STOREY HOUSE			133	
3 STOREY HOUSE				8
DUPLEX		53	53	
TRIPLEX 2B/3P		57		
AGE FRIENDLY APARTMENTS	3			
GARDEN APARTMENTS		5		
APARTMENTS	62	62		
TOTAL UNIT NO.	436	65	177	8
PERCENTAGE OF BEDROOM NO. %	15%	41%	43%	2%

SUB SECTOR	KSG4-S1	KSG4-S2A	TOTAL
HOUSES	101	40	141
DUPLEX / TRIPLEX UNITS	115	48	163
APARTMENT UNITS	100	32	132
TOTAL	316	120	436

7.0 SITE STATISTICS

	GROSS	NET
TOTAL GROSS FLOOR AREA (m2)	46956.7	
TOTAL SITE AREA (ha)	11.68 ha	10.67 ha
KSW-S1 DEVELOPMENT AREA (ha)		7.65 ha
KSW-S2A DEVELOPMENT AREA (ha)		3.02 ha
OVERALL NET DENSITY (dwellings/ha)		
KSW-S1 NET DENSITY (dwellings/ha)		42
KSW-S2A NET DENSITY (dwellings/ha)		40
TOTAL BUILDINGS FOOTPRINT (m2)	25067.0	
SITE COVERAGE	21%	
PLOT RATIO	2.5	

Note: South Link Street Excluded in Net Site Area

SITE DENSITY CALCULATIONS REGARDING SDZ AREAS	
KSW-S1 DEVELOPMENT AREA (ha)	6.12 ha
KSW-S2A DEVELOPMENT AREA (ha)	2.87 ha
OVERALL NET DENSITY (dwellings/ha)	49
KSW-S1 NET DENSITY (dwellings/ha)	52
KSW-S2A NET DENSITY (dwellings/ha)	42

Note:KSW-S2A is Nom. 70% of KSW-S2

8.0 DUAL ASPECT RATIO

UNITS/APT.BLOCKS	NO. OF UNITS	DUAL ASPECT	SINGLE ASPECT	DUAL ASPECT %
DUPLEXES	106	106	0	100
TRIPLEXES	57	57	0	100
AGE FRIENDLY APT.	3	3	0	100
GARDEN APT.	5	5	0	100
APT. BLOCK. F	67	34	33	50.7
APT. BLOCK. H	30	19	11	63.3
APT. BLOCK. J	27	16	7	59.3
TOTAL	295	240	51	81.4

5.07 Lift and Stair Cores:

5.07.1 Apartment Blocks F, H and J:

The design of vertical circulation in apartment blocks F, H, and J prioritises ease of access for residents. At ground level, the primary vertical circulation core, consisting of both a lift and stairwell, is accessible directly from the entrance lobby, which can be reached from both the exterior footpath and the shared amenity courtyard. Each block includes a secondary stair core for fire escape purposes. Additionally, in Blocks F and H, a third stair core is provided to serve the second-floor access deck, which connects the main apartment blocks to the entrance of the upper units in Duplex Type D2, ensuring the provision of reduced and compliant travel distances in terms of Building Regulations B and means of escape in case of fire.

The stair and lift provision locations are as follows:

Apartment Block F:

- 1 no. stair and lift core, accessed from the exterior perimeter of the building and from the internal courtyard (serving the 6-storey volume)
- 1 no. stair core (fire escape), accessed from the internal courtyard (serving the 6-storey volume)
- 1 no. stair and lift core, accessed from the internal courtyard (serving the 5-storey volume)
- For the 6-storey volume, there are 9 apartments served by 2 cores, giving nominally 4.5 apartments per floor per core, thereby being significantly below the Design Standards for New Apartments guidance of a maximum of 12 apartments per floor per core
- For the 5-storey volume, there are 5 apartments served by a single core, giving 5 apartments per floor per core, thereby being significantly below the Design Standards for New Apartments guidance of a maximum of 12 apartments per floor per core.

Apartment Block H:

- 1 no. stair and lift core, accessed from the exterior perimeter of the building and from the internal courtyard
- 1 no. stair core accessed from the exterior perimeter of the building, serving the access deck at second floor
- 1 no. stair core (fire escape) accessed from the internal corridor and the exterior perimeter of the building
- There is a maximum (at 2nd floor only) of 14 apartments served by three cores, giving nominally 4.7 apartments per floor per core, thereby being significantly below the Design Standards for New Apartments guidance of a maximum of 12 apartments per floor per core.

Apartment Block J:

- 1 no. stair cores and 1 no. lift cores accessed from the exterior perimeter of the building and from the internal courtyard
- 1 no. stair core, accessed from exterior perimeter of the building serving the access deck at second floor
- 1 no. stair core (fire escape), accessed from the internal corridor and the exterior perimeter of the building
- There is a maximum (at 2nd floor only) of 13 apartments served by three cores, giving nominally 4.3 apartments per floor per core, thereby being significantly below the Design Standards for New Apartments guidance of a maximum of 12 apartments per floor per core.

Additionally:

- In each block the primary stair core contains a Building Regulations Part M fully compliant stair
- All UD compliant lift cores are UD compliant, in accordance with the Universal Design Guidelines for Homes in Ireland.

A further description of the apartment block layouts can be found in section 3.07.4 above.

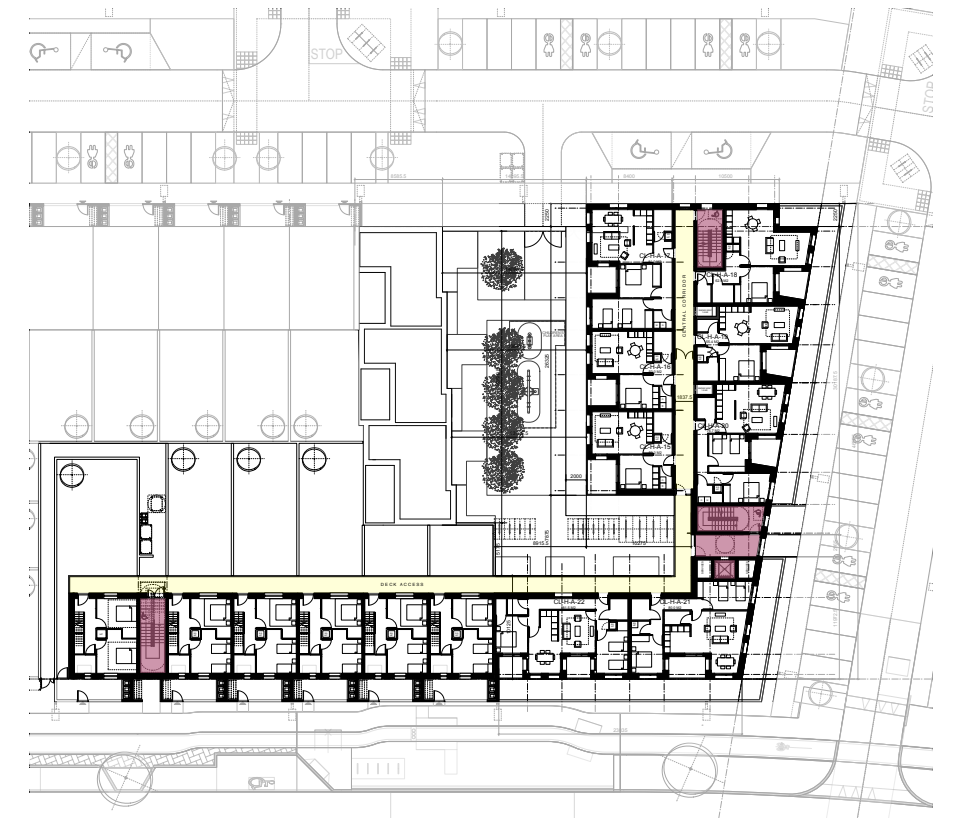
5.07.2 Duplexes and Triplexes:

For all Duplexes Types D1 (41 no. two-bedroom dwellings), ground level Duplexes D2 (12 no. three-bedroom dwellings) and Triplexes Types T1, T2, T3 and T4 (57 no. two-bedroom dwellings):

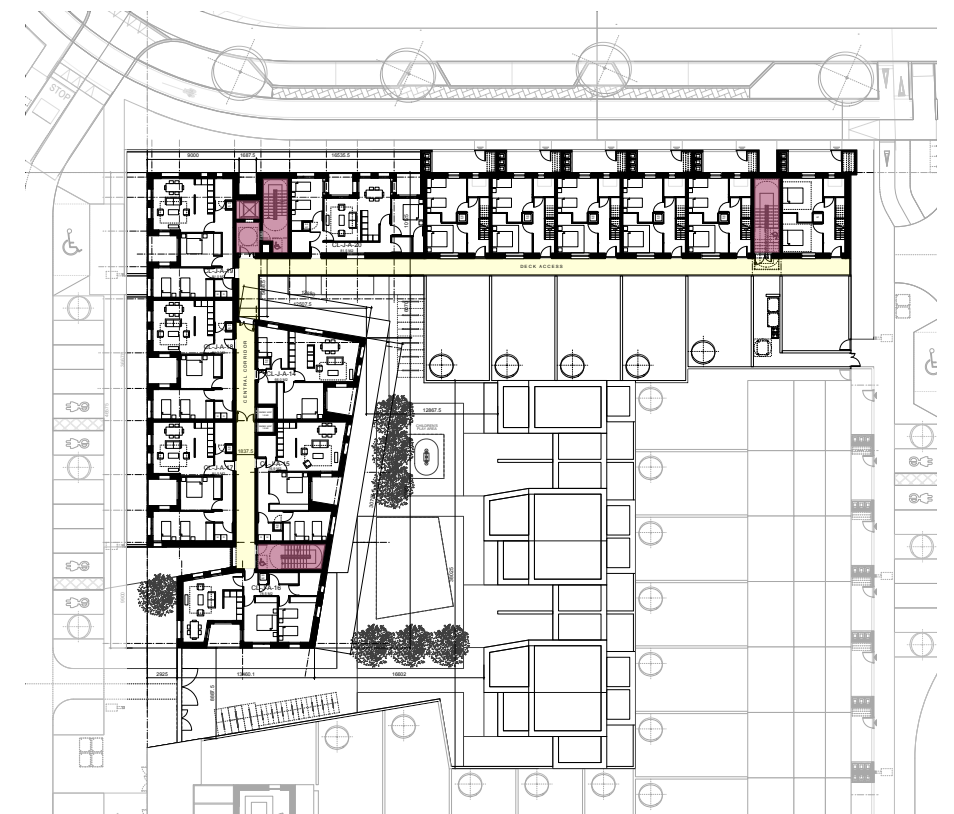
- Ground floor level dwellings are own front door accessed directly at street level
- Upper floor dwellings are own front door accessed at street level, with a dedicated internal private staircase serving the apartment level above
- For upper level Duplexes Type D2 (12 no. two-bedroom dwellings), located in Clusters H and J, own front door access is provided from the access deck served by the stair and lift cores.



Block F - Typical Upper Floor Plan



Block H - Second Floor Plan



Block J - Second Floor Plan

5.08 Internal Storage:

In all instances dwelling achieve the provision required.

For confirmation of the storage areas, please refer to:

- The detailed DTA Architects HQA Schedule, drawing sheets 8000 to 8004
- The typology/ unit type drawings with associated schedule per DTA Architects 4000 Series drawings
- included as part of this planning application submission.

5.09 Security Considerations:

For all Houses, Duplexes, and Triplexes:

- A front privacy buffer of 2250mm depth is provided, with integrated bin and bike stores, railings and front gates. In localised instances including corner Triplexes the privacy buffer is much deeper, with the security line created by the built brick wall, enhanced with additional landscaping along the footpath and gates omitted
- All back gardens are enclosed with nominal 2100mm high walls and/ or fencing
- To avoid liminal unlit areas, all dwellings are accessed directly from the street facing perimeter of the cluster, with private gardens occupying the centre of each cluster and inaccessible from the street
- All corner houses, duplexes, and triplexes feature windows on the gable walls for passive street surveillance in all directions.

Apartment Blocks F, H, and J:

- A dual access strategy is implemented for all apartment blocks, with primary access (pedestrian) from the perimeter footpath and a second access (pedestrian/ cycle/ maintenance and service) from the secure shared/ semi-private courtyard garden
- All street facing ground floor apartments have a front privacy buffer of 2250mm (matching the house/ duplex/ triplex condition as above)
- All courtyard garden facing ground floor apartments include a landscaped privacy buffer zone of nominally 1400mm
- Access control (e.g., fob or similar, subject to SDCC approval) will be provided for all gates, stair core entrance doors, and elevators
- Balconies and windows directly overlook the courtyard gardens, access decks, and garden apartments in Blocks H and J, providing direct passive surveillance of the courtyard gardens
- All bike storage areas are accessible both from the internal corridors in the apartment blocks or from the internal courtyard garden, enhancing security. Additional short-term bike storage spaces are provided in the secure common courtyards.

5.10 Private Open Space:

5.10.1 Overview:

The private amenity space strategy across the scheme incorporates a mix of private walled/ fences secure gardens, terraces, and courtyard gardens. Particular attention was given to designing well-lit spaces that ensure high levels of privacy and security, achieved through the use of planted buffers, landscaping and screens. The overall apartment building design and layouts have been carefully planned to minimise overlooking between private spaces.

5.10.2 Private Amenity Space Provision:

For Houses:

- All houses feature generous back gardens, directly accessible from the main kitchen/ living/ dining spaces on the ground floor
- All gardens are compliant with and often exceed the minimum requirements of the DHLGH Design Manual for Quality Housing.

For Duplexes and Triplexes:

- Ground-floor level units in Duplexes and Triplexes have direct access to generous secure private gardens, directly accessible from the main kitchen/ living/ dining spaces
- Upper units in Duplexes and Triplexes have generous private terraces/ balconies
- Typically, and in line with the private/ communal space strategy for Site 4 (Refer to DTA Architects HQA Schedule, drawing sheets 8000 to 8004 for further details)
- These private gardens/ terraces/ balconies spaces achieve or exceed the area required for both private and communal private space combined per unit
- For the top floor units in T2 and T3, balconies/ terraces achieve the minimum required private amenity space, while an additional private landscaped amenity area at ground level which achieves the required shared amenity space.

For Apartment Blocks F, H, and J:

- All apartments in Blocks F, H, and J include private balconies/ terraces that meet or exceed the minimum private open space requirements as outlined in the Design Standards for New Apartments - Guidelines for Planning Authorities (2023 update)
- All garden apartments (Types Apartments GR1, GR2, AF): feature ground floor private courtyards that meet or exceed the minimum private open space requirements as outlined in the Design Standards for New Apartments – Guidelines for Planning Authorities (2023 update).

For detailed information on the required and provided private amenity areas for each unit, please refer to the DTA Architects Housing Quality Assessment Schedule, drawing sheets 8000 to 8004, included in this application.

5.11 Communal Open Space:

5.11.1 Communal Open Space Provision - For Duplexes and Triplexes:

While duplexes and triplexes are technically apartments, the primary intent behind the use of this typology is the provision of own front door units accessed directly from the street and with amenity similar to a standard house type, as opposed to a typical apartment block

In relation to the corresponding provision of communal space, here to be shared between only 2 or 3 no dwellings there a number of issues and constraints arising, including:

- Physical and organisational constraints around access and ‘ownership’
- Issues for SDCC around the logistics of management, access and maintenance of small effectively privatised but in fact communal spaces to the rear of buildings.

In consideration of these, the strategy adopted is:

- To make a significant overprovision/ doubling of private space for each dwelling
- Such that the quantum achieves the required provision for both private and communal space
- And in doing so significantly enhance the amenity value of the dwelling.

5.11.2 Communal Open Space Provision - For Apartment Blocks F, H and J:

Communal Courtyard Gardens in Blocks F, H, and J:

The required communal open space for apartments in Blocks F, H, and J is provided for each block in a generous central, secure, hard and soft landscaped courtyard garden. In both Clusters H and J, the communal courtyard garden provides the communal open space requirements for the garden apartments and the top floor duplex units in Type D2 (directly accessed/ connected via the access deck).

These Courtyard Gardens:

- Serve as key organising spaces that define the character and cohesion of the block/ cluster
 - Feature well-designed, overlooked hard and soft landscapes, including tree planting
 - Are designed to be functional for a wide range of demographics, offering low-maintenance, attractive areas suitable for activities such as playing, growing, sitting, resting and meeting
 - Are defined by secure and clear boundaries, with secure access points
 - Include access to secure bicycle parking, with maintenance and emergency vehicle access
- The required communal open space is exceeded in all three courtyards as set out below:

Block F:

- Required: 383 m2
- Provided: 598 m2 (513 m2 GF + 55 m2 1F terrace + 30 m2 4F terrace)

Block H:

- Required: 235 m2
- Provided: 240 m2

Block J:

- Required: 250 m2
- Provided: 309 m2.

5.12 Public Open Space:

Under the SDZ Planning Scheme, there is no requirement for Public Open Space within Site 4 due to its close proximity to Griffeen Valley Park, the Linear Park, the Grand Canal, and other public amenities.

However, a public amenity is provided within the grounds of Grange House, which includes:

- A 778 m² garden/ recreation area, including a children's play area
- An additional 1565 m² of ecological conservation space around a new pond/ water feature.

In addition, junctions between the South Link Street and new roads are articulated as localised pocket spaces, assisting with defining character and wayfinding at an urban level.

5.13 Communal Facilities:

The SDZ Planning Scheme does not require communal facilities, given the proximity (within 1km or a 10-minute walk) to essential community and future planned infrastructure such as education, healthcare, sports, arts, faith spaces, and retail/ hospitality. As such no internal communal facilities are proposed for the development.

Refer to Stephen Little Associates (SLA) Planning Report specific to Site 4 (KSG4) for further details.

5.14 Children's Play:

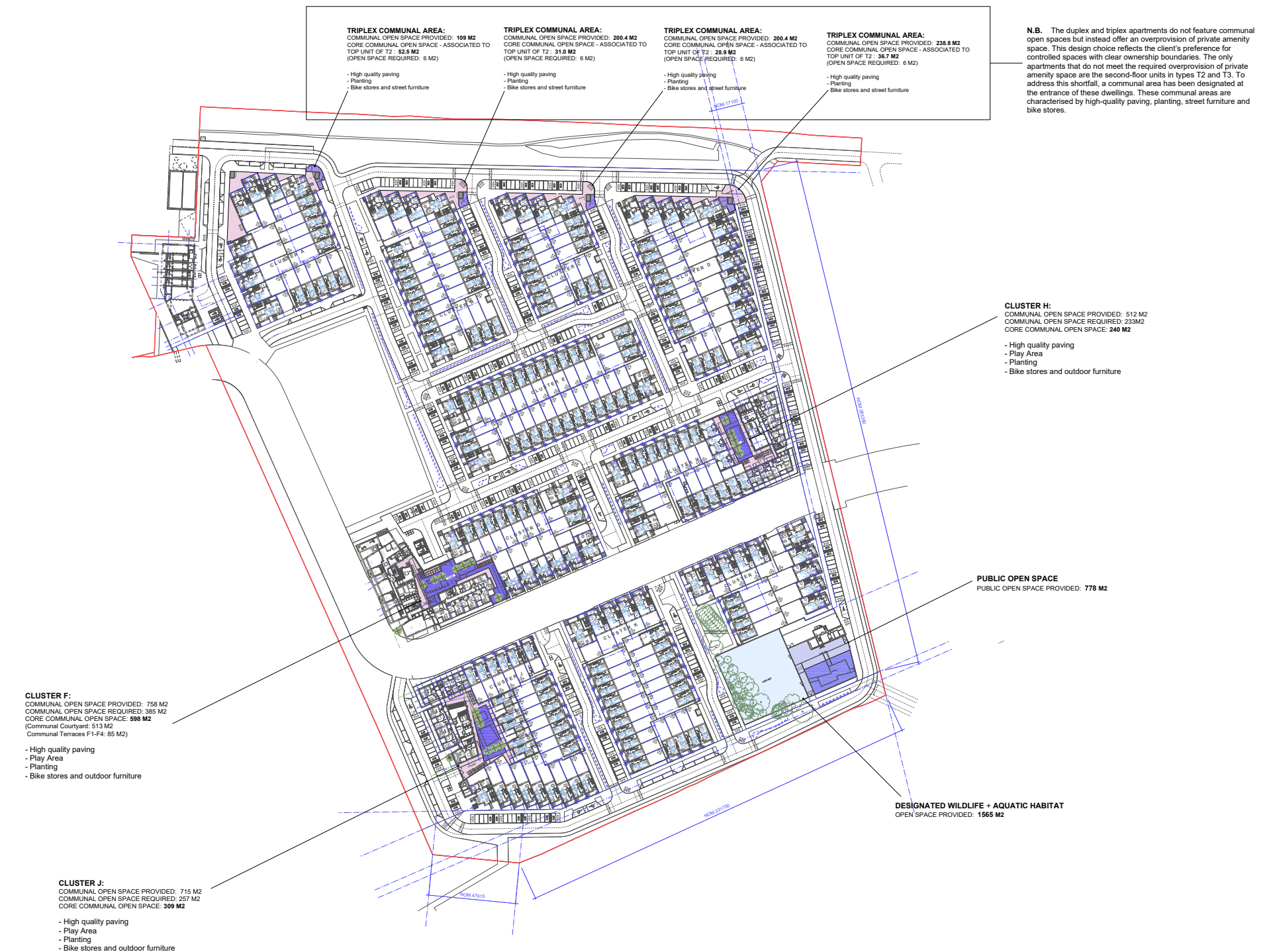
The Design Standards for New Apartments - Guidelines for Planning Authorities (2023 update) highlight the importance of creating safe play areas for children of all ages within new apartment developments. These play areas should be integrated within the apartments' communal open space/ grounds.

Accordingly:

- Each apartment block F, G and H features a centrally located communal courtyard garden (refer to 5.11.2 above)
- Each communal courtyard garden contains a dedicated children's play area
- Designed for safety and easy surveillance
- And located to minimize noise disturbance to ground floor units and maintain residential privacy.

In addition:

- A publicly accessible children's play area is provided within the public amenity in the grounds of Grange House
- Nearby, Griffeen Valley Park (to the west of Site 4) and Linear Park (to the east of Site 4) offer large play areas, sports fields, and additional amenities.



Site 4 - Communal and Public Open Space Diagram

Apartment Block F - Communal Garden



Apartment Block H - Communal Garden



Apartment Block J - Communal Garden



5.15 Car Parking:

5.15.1 Requirement and Compliance Overview:

The proposed scheme is well-connected, with bus routes passing through the site, adjacent pedestrian and cycle paths, and Kishoge Train Station located nearby.

Car parking is integrated along the new streets, with green spaces alternated between parking areas to create a leafy, calm streetscape. The parking provision for Site 4 is detailed as follows:

Requirement:

- Maximum car parking spaces required as per SDZ: 504 no.
- Required number of car parking spaces for the non-residential uses on the site (as per SDCC Development Plan 2022-2028 and the Design Standards for New Apartments) is 28 no.
- Total maximum number of car parking spaces: 532 no.

Proposed Provision:

- Proposed number of parking spaces: 408 no.
- The South Link Street provides 48 additional car parking spaces
- Total in Site 4 = 456 no.

The 408 no. car parking spaces is within the maximum allowable provision of nominally 532 no. spaces, ensuring compliance with the SDCC Development Plan 2022-2028 requirements.

5.15.2 EV Parking:

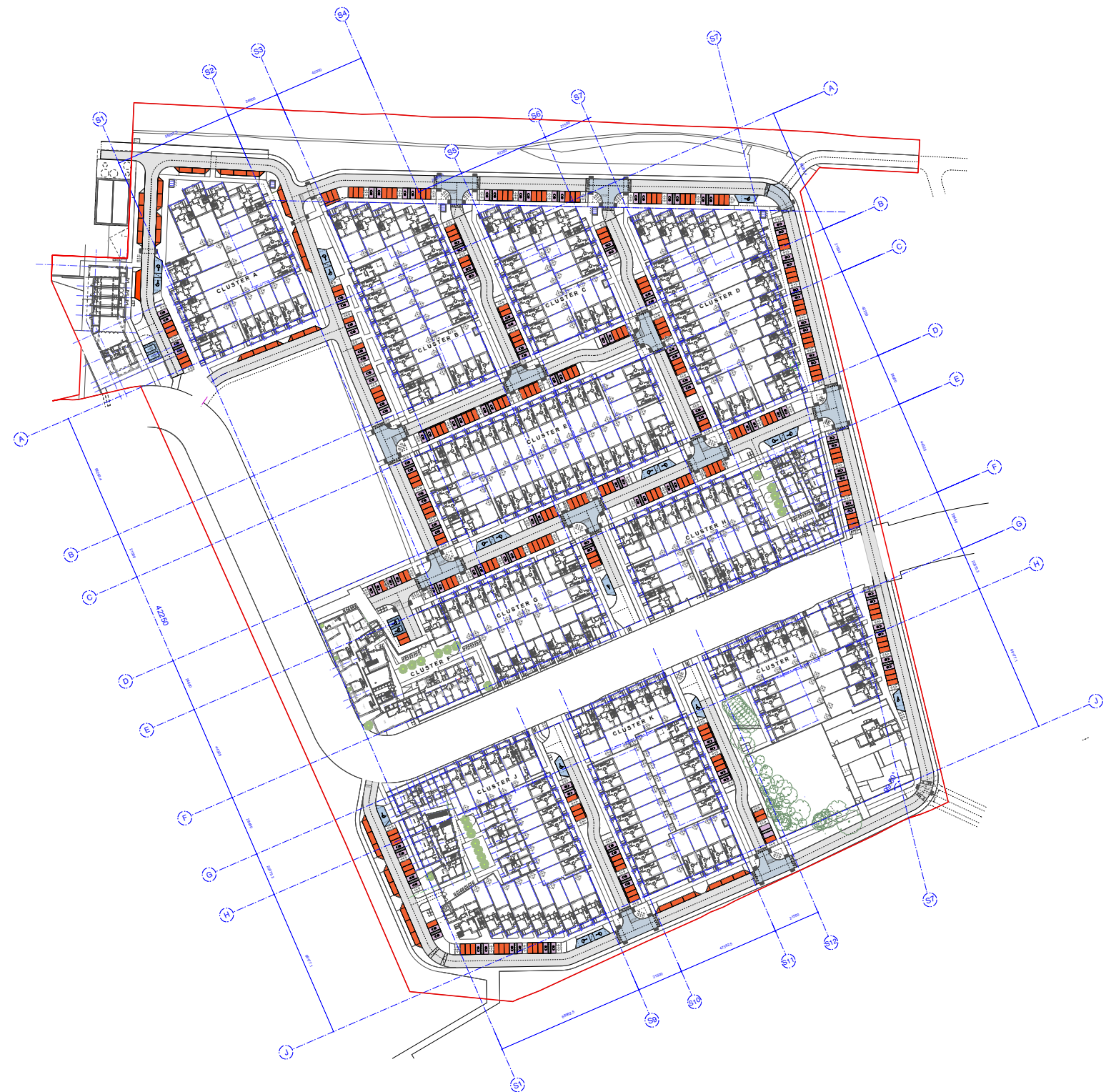
Provision of:

- 134 no. EV parking spaces (33% of total spaces)
- And 100% ducting infrastructure included for future EV charging points
- Thereby exceeding the requirements of the SDCC Development Plan 2022-2028 for 20% EV spaces.

5.15.3 Accessibility:

Provision of:

- Provides 22 accessible parking spaces (5% of total spaces)
- Thereby meeting the requirements Building Regulations TGD M Access for 5% accessible car parking spaces.



Site 4 - Car Parking Diagram

5.16 Bicycle Parking and Storage:

5.16.1 Requirement and Compliance Overview:

The Design Standards for New Apartments - Guidelines for Planning Authorities (2023 update) states that:

- A minimum of 1 no. cycle storage space per bedroom is required for all new apartments
- 1 no. cycle space per 2 no. apartments should be provided for visitors/ short-term bicycle parking.

The proposed design complies with and exceeds these requirements by providing:

- Local bike storage outside Duplexes and Triplexes
- Communal bike storage areas within the Apartment blocks
- Guest bike spaces located at the corners of each cluster and within the Courtyards of the Apartment blocks.

The provision of private bike storage for each Duplex, Triplex and Apartment unit type is set out below.

5.16.2 Long Term Bicycle Parking Provision:

The following long term bicycle parking mix is provided, in accordance with:

- SDZ Planning Scheme requirements
- SDCC Development Plan 2022-2028
- NTA, Cycle Design Manual, update of 2023

For Duplexes:

Type D1:

- Lower Unit: Storage for 1 no. bike at the entrance, storage for 1 no. bike in the garden
- Upper Unit: Storage for 3 no. bikes at/ adjacent to the entrance

Type D2:

- Lower Unit: Storage for 2 no. bikes at the entrance, storage for 1 no. bike in the garden
- Upper Unit: Storage for 2 no. bikes in the communal bike store area of the relevant Apartment blocks (H and J).

For Triplexes:

Types T1, T2, T3, T4:

- Storage for 2 no. bikes per unit / 6 no. bikes per block
- Lower Unit: storage for 2 no. bikes in the private garden
- Middle Unit: storage for 2 no. bikes at/ adjacent to the entrance
- Upper Unit: storage for 2 no. bikes at/ adjacent to the entrance.

For Apartments:

For Block F:

- Based on unit mix, the requirement is 91 no.
- The provision, located in the secure bike storage room within the block or secure sheltered, bike locations in the communal Courtyard Gardens 92 no.

Fie Block H:

- Based on unit mix, the requirement is 59 no. (including garden Type AF)
- The provision, located in the secure bike storage room within the block or secure sheltered, bike locations in the communal Courtyard Gardens is 66 no.

For Block J:

- Based on unit mix, the requirement is 73 no. (including garden Types GR1 and GR2)
- The provision, located in the secure bike storage room within the block or secure sheltered, bike locations in the communal Courtyard Gardens is 80 no.

Non-Residential:

- 5 no. for childcare/ creche (in communal Courtyard Gardens of Blocks F)
- 1 no. for Retail (within floor plan, BOH area)
- 1no. Employment (Grange House, rear yard)
- 5no. Community (Park Pavilion, storage room)

Totals:

- Requirement = 588
- Provision = 591
- Therefore compliant
- Refer also to DTA Architects detailed Schedule of Information, drawing/ sheet 8006.

5.16.3 Breakdown of Long Term Bicycle Spaces Provided as Above:

Cargo Spaces:

- Requirement: 5% (as per SDCC Development Plan 2022-2028 and the NTA Cycle Design Manual)
- Provision: 30 no. (5.1%)
- Location: In the secure, sheltered, private, long-term bicycle storage locations in the communal Courtyard Gardens of Blocks F, H and J.
- Cargo EV requirement is 10% of 30, being 3 no., 1 no. for each of Blocks F, H and J.

EV Spaces:

- Requirement: 10% (as per SDCC Development Plan 2022-2028 and the NTA Cycle Design Manual)
- Provision: 208 no. (35%) (It is proposed that all bicycle stacking systems will have EV compatibility
- Integrated).
- Location: In the secure, sheltered, private, long-term bicycle storage locations in Blocks F, H and J.

Standard Spaces:

- Requirement: See overall calculation as above
- Provision: 353 no. bike spaces
- Location: At Duplexes and Triplexes as above.

5.16.4 Short Term Bicycle Parking Provision:

The requirement for short-term bicycle parking spaces:

- Is 1 no. cycle space per 2 apartments, being 295/ 2 = 148 no.
- Plus 9 no. for the Childcare Facility (based on the Childcare Facilities, Guidelines for Planning Authorities, from Irish Government and SDCC Development Plan 2022-2028)
- Plus 1 no. for Retail (based on NTA Cycle Design Manual)
- Plus 1 no. for Employment (Grange House – based on NTA Cycle Design Manual))
- Plus 6 no. for Community (Park Pavilion – based onNTA Cycle Design Manual))

Giving a total requirement of 165 no.

The provision of guest/ short-term bicycle parking spaces is as follows:

- In Apartment blocks F, H, and J, within the internal courtyards
- Throughout the site, in clusters of 6 (3 Sheffield stands) at the corners of each cluster
- Including 9 no. at the Childcare Facility
- Including 1 no. for Retail, at Cluster F
- Including 1 no. Employment at Grange House
- Including 6 no. for Community at the Park Pavilion

- Totalling 202 no. spaces
- Therefore compliant
- Refer also to DTA Architects detailed Schedule of Information, drawing/ sheet 8006.

5.16.5 Breakdown of Short Term Bicycle Spaces Provided as Above:

Cargo Spaces:

- Requirement: 5% (as per SDCC Development Plan 2022-2028 and the NTA Cycle Design Manual)
- Provision: 10 no. (5%)
- Location: In the secure, sheltered, private, short-term bicycle storage locations in the communal Courtyard Gardens of Blocks F, H and J.
- Cargo EV requirement is 10% of 10, being 1 no., provided at Courtyard Gardens of Blocks F.

EV Spaces:

- Requirement: 10% (as per SDCC Development Plan 2022-2028 and the NTA Cycle Design Manual)
- Provision: 19 no. (10% of 202 - 10 no. cargo bikes = 192)
- Location: In the secure, sheltered, private, short-term bicycle storage locations in Blocks F, H and J.

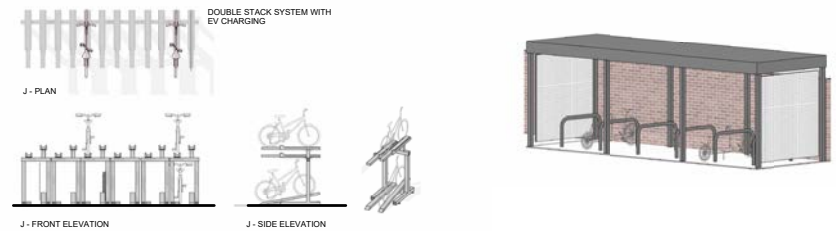
Standard Spaces:

- Requirement: See overall calculation as above
- Provision: 173 no. bike spaces
- Location: Throughout the site.

5.16.6 Houses:

For House Types H1, H2, H3:

- Storage for 2 no. bikes is provided at the entrance
- Some end of terrace Houses have direct access to their private back garden from the street and in these cases the bike storage is accommodated within the private back garden.



Proposed Bicycle Storage - See DTA Architects Drawing: 5010

5.17 Refuse Storage:

5.17.1 Overview:

Refuse storage, in purpose designed and designated enclosures throughout, is set out as below for each dwelling Type and non-residential accommodation, with requirement calculations based on standard weekly collection and relevant standards/ guidelines as confirmed by the specialist consultant (AWN).

For details on waste storage requirements and related, refer to the EIAR chapter prepared by AWN Consulting.

5.17.2 For Residential Uses:

For all Houses, D1 Type Duplexes, Type D2 Ground level Duplexes and all Triplexes:

- Each unit has 3 no. wheelie bins
- Housed in purpose designed and designated enclosures
- Located at/ adjacent to the unit entrance/ within the privacy buffer zone.

For Type D2 upper level in Cluster H/ J:

- Located in designated refuse storage rooms on the ground floor of the Apartment building H/ J
- Accessed via the access deck and stair/ lift cores.

Apartment Blocks F, H, J (including garden apartments Types AF, GR1, GR2):

- Communal refuse collection areas
- Located in designated refuse storage rooms on the ground floor of the Apartment building
- Accessed from both the building corridors via lobbies and directly from the communal courtyard garden.
- Block F provision: 9 no. x 1100L bins, 6 no. x 240L bins
- Block H provision: 5 no. x 1100L bins, 4 no. x 240L bins
- Block J provision: 5 no. x 1100L bins, 3 no. x 240L bins.

5.17.3 For Non-Residential Uses:

Retail Unit:

Provision: 3 no. x 1100L bins, 4 no. x 240L bins
Located within the retail unit and with direct service access to the street (enclosed and secure).

Childcare Facility:

- Provision: 3 no. x 1100L bins, 4 no. x 240L bins
- Located within the Childcare Facility and with direct service access to the street (enclosed and secure).

Community Park Pavilion:

- Provision: 2 no. x 1100L bins, 2 no. x 240L bins
- Enclosed and secure within a designated refuse storage room, with direct access from outside/ the street (enclosed and secure).

Grange House:

- Provision: 2 no. x 1100L bins, 2 no. x 240L bins
- Noted, allowance with specific use to be defined in future application.

5.18 Access:

The design proposal has been developed with a focus on accessibility, to include:

- Full compliance with the Building Regulations Technical Guidance Document M
- Universal Design, with UD and UD+ residential units designed according to the 'Universal Design Guidelines for Homes in Ireland'
- The implementation of Universal Design principles in the common areas/ general circulation areas of Apartment blocks
- Including accessible entrance doors, horizontal circulation routes with adequate turning spaces at key locations within the building, and throughout the courtyards.

Refer to section 4.06 above for further details.



Quality Housing for Sustainable Communities, Department of the Environment, Heritage and Local Government 2007
Sustainable Urban Housing: Design Standards for New Apartments, Department of Housing, Local Government and Heritage, 2023

** Note: The apartments contained in Duplexes and Triplexes have an over provision (50%+) of private open space to substitute for the requirement of communal open space

Extracted From the Housing Quality Assessment, Sheet 1 of 5 - For Complete and Full Size HQA Schedule, Refer to DTA Architects Drawings/ Sheets: 8000 - 8004



Location Key Plan for CGI Images (Images prepared by O'Mahony Pike Architects)



CGI View 01 - Duplex Terrace to Ecological Corridor to North, Cluster D



CGI View 02 - Corner Triplexes, Local Street Beyond, Clusters B and E



CGI View 03 - Intimate Street, Clusters D and E



CGI View 04 - Childcare Facility Entrance and Drop-Off/ Collection Area, Cluster F



CGI View 05 - Variety of Form, Scale and Articulation, Clusters G and H



CGI View 06 - Apartment Building, Secure and Private Courtyard with Age-Friendly Dwellings, Cluster H



CGI View 07 - Apartment Building, Aspect Eastward to Linear Park, Cluster H



CGI View 08 - 'Grange' Landmark Building, Articulated Ground Floor and Form, South Link Street, Cluster F



CGI View 09 - Apartment Building J, Aspect Westward to Griffen Valley Park, South Link Street



CGI View 10 - Transitions in Type, Scale and Materiality Along the South Link Street



CGI View 11 - Community Park Pavilion, Forming Interface Between Residential and the Park, Cluster A



CGI View 12 - View West Along Site 4 Extent of South Link Street



CGI View 13 - Fine Grain Frontage to Grand Canal, Cluster J



CGI View 14 - Typical Two Storey Residential Streetscape, Clusters J and K



CGI View 15 - Local Intimate Street, Landscaping and Retained Mature Trees to Grange House Amenity Space, Clusters K and L

