

Landscape Design Services

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Land Use, Planning & Transportation Department,

South Dublin County Council, County Hall, Tallaght, Dublin 24

LAND USE, PLANNING & TRANSPORTAT**25N-DEP9**2

-8 AUG 2023

Additional Information
Planning Ref: SD22A/0466
July 2023

Regarding:

Reg. Ref. SD22A/0466.

Applicant:

Barry & Susanne Coleman

Development Description:

The development will consist of: Demolition of an existing single storey plus dormer three-bedroom dwelling house and the construction of four two-storey three-bedroom semi-detached dwellings; Three separate vehicular accesses are to be created off Templeville Drive, with one to the south and

two to east of the site with all ancillary site works and landscaping.

Location:

124, Templeville Drive, Templeogue, Dublin 6W, Co. Dublin, D6W W282

Site Area:

0.078 hectares

A Dhuine Uaisle,

We have been appointed as consultant landscape architects on this project to assist in the preparation of a response to the AI order. This letter, which presents a comprehensive Landscape Design Rationale, and its enclosures (relevant drawings and completed SDCC Green Space Factor worksheet) address various landscaping issues raised in the local authority's Request for Additional Information on Register Reference SD22A/0466 (AI Order 0208 requested on 22nd February 2023). Please refer to enclosed drawings, 6 no. copies, prepared by the landscape architects, as scheduled below, as part of our response.

Drawing No.	Drawing Title	Scale	Prepared By	Dwg Size
23_235-PDFI-01	Site Layout & Landscape Master Plan -	1:200	Landscape	A3
	Ground Level		Design Services	
23_235-PDFI-02	Site Layout & Landscape Master Plan -	1:200	Landscape	A3
	Roof Level		Design Services	
23_235-PDFI-03	Green Infrastructure Plan (Protection,	1:100	Landscape	A2
	Enhancement & Restoration Proposals)		Design Services	



23_235-PDFI-04	Planting Plan & Outline Planting	1:100	Landscape	A2
	Schedule		Design Services	
23_235-PDFI-05	Green Infrastructure Construction	1:20,	Landscape	A2
	Details	1:50	Design Services	
23_235-PDFI-06	Boundary Treatment Plan	1:200,	Landscape	A3
		1:500	Design Services	
23-235-PDFI-07	Green Infrastructure Construction	1:20	Landscape	A1
	Details		Design Services	
23-235-PDFI-08	General Landscape Specification Notes	nts	Landscape	A3
			Design Services	
23-235-PDFI-09	Typical Planting Details & General	1:50	Landscape	A3
	Landscape Specification Notes		Design Services	
23-235-PDFI-10	Green Space Factor Worksheet	nts	Landscape	A4
			Design Services	

1) Response to Al Decision Order 0208, Item no. 5.1 Landscape Design Proposals

Item 5. 1. i. "The applicant shall submit a comprehensive Landscape Design Rationale, the objective of this report is to describe the proposed landscape and external works as part of this proposed housing development."

LDS Response: The design team has evolved the site plan and landscape proposals to include a more appropriate site layout plan to respond to the concerns raised by the local authority, and this cover letter describes the measures taken in the form of a comprehensive Landscape Design Rationale. Please refer to the supporting drawings and document enclosures when reviewing this AI submission.

The site layout and landscape design has evolved accordingly to respond to the issues raised in the AI order 0208, to align with the goals of the CDP, and has concentrated co-ordination between the design team members to improve natural SuDS proposals at the site. A fully detailed landscape plan and outline hard and soft landscape specification has been prepared by us in response to Item 5.1 of the AI order, illustrating ground and roof levels of the development. In design development, we have taken cognisance of other relevant issues raised in the AI order, particularly in relation to waste collection, natural SuDS, potential overlooking issues in adjoining rear gardens, and boundary treatments.

Existing Site: There are no extant trees on the site or stands of vegetation, save for several topiary small shrubs in the front garden onto Templeville Drive. There is no vegetation in the rear garden except for a short-cut lawn; in short, there is no vegetation on the site worthy of retention.

Waste Collection: We proposed to relocate the bins from the side access lanes of the dwellings to easier-to-access areas near the front entrances of the dwellings, and make an attractive feature of them, using them to organise and structure the landscape. We have specified green-roofed bin dock shelters for each dwelling, to store three no. 240L bins each, with stainless steel tensioned wires on one side to

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grow climbing plants up, and FSC wooden slats to the other, to present a neat appearance to the entrance.

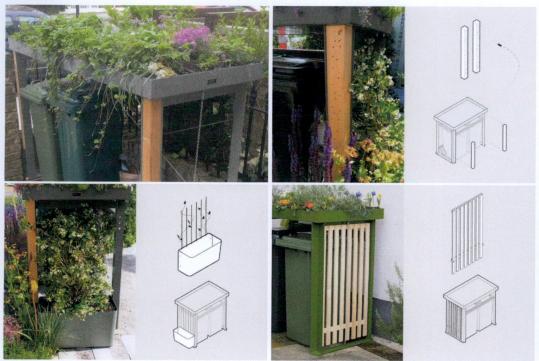


Figure 1. Precedent images of specified, green-roofed bin dock store, 'Triple Bin Dock' by Front Yard Company, UK.

Natural SuDS: Parts (iii) and (v) of Item 5.1 'Landscape Design Proposals' and Item 5.2 'Sustainable Drainage Systems' request the design team to co-ordinate and develop design proposals relating to natural SuDS. The local authority is referred to the civil engineering drawings for a comprehensive illustration overview of the team design response to this item. The landscape drawings illustrate the civil engineering layouts as provided to us, in the background, to show the impacts of drainage proposals on landscape proposals. We have developed the landscape plan iteratively along with the SDCC Green Space Factor worksheet¹, a completed copy of which forms an enclosure to this submission. In relation to specific natural SuDS drainage proposals presented in the landscape design, the developed proposal now includes measures such as rain gardens, semi-intensive biodiverse green roofs to dwellings and bin shelters, permeable paving, and constructed tree pits.

Potential Overlooking: Item 4 of the Al order states that 'The applicant is requested to examine options for reducing potential overlooking of the rear garden of 126 Templeville Drive from the double bedrooms

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¹ Developers can improve their green factor score by retaining existing landscape features and incorporating new landscape features and GI interventions. Several landscape and GI surface types and interventions have been assigned a 'weighting' in the worksheet, based on their contribution to ecosystem services. Factors with a higher weighting will make a higher contribution to the overall score of a proposed development.



to the rear of the first floor of houses 3 and 4. One option around this might include the reduction in the size of the ope and provision of supplemental light by way of a rooflight.'

In consideration of how landscape proposals might help to screen views, the landscape plans illustrate a hornbeam hedgerow planted to the rear and side of the proposed dwellings, and a row of pleached hornbeam trees, planted with crowns meeting, to provide immediate screening and a sense of privacy. Hornbeam² is pollinator-friendly, providing nectar and pollen for bees and the many other types of pollinating insects.





Figure 2. Hornbeam hedgerow in full leaf during the summer; and during the winter months, when it continues to hold its now-golden leaves on the plant, providing valuable habitat for wildlife and screening for views.





Figure 3. Pleached Hornbeam trees, when planted with crowns meeting as shown, provide valuable screening to views in/out of gardens. Pleached trees have a clear stem, and the horizontal branches are close together, often twisted into the branches of the neighbouring tree. Pleached and espaliered trees are ways of bringing trees into smaller gardens without overwhelming them.

Item 5. 1. ii. "The applicant is requested to submit a fully detailed Planting Plan to accompany the landscape proposals for the entire development. The applicant should propose native species where possible to encourage biodiversity and support pollinators within the landscape."

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² Hornbeam has naturalised in Ireland and has been described as 'as tough as they come. It's beautiful, useful, and its year-round leaf cover makes it a winter haven for wildlife.' https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/british-trees/a-z-of-british-trees/hornbeam/



Please refer to our drawing 23_235-PDFI-04 'Planting Plan & Outline Planting Schedule'. The planting palette rationale has been to concentrate on the planting of pollinator-friendly trees and decorative multistemmed trees, appropriate boundary hedgerows, resilient amenity perennial planting and rain-gardens, short-cut grass lawns and resilient green roofs, with all planting material to have been grown in Irish plant nurseries. The larger trees specified (minimum 18-20cmg in size to align with the requirements of the CDP) have been chosen for their climate-resilient properties such as pollinator-friendly *Betula nigra* 'Heritage' (River Birch), which has been chosen for its particular resilience in an expected 2°C global temperature increase by 2050, and pollinator-friendly *Carpinus betulus* (Hornbeam), chosen for its foliage-holding properties during winter months to assist with screening to local views in and out of rear gardens.

Similarly, planting stock for container-grown plants and bulbs in amenity planter beds has been specified as pollinator-friendly, low-maintenance plants, which should establish easily and help absorb cloud-burst rain events, detaining and absorbing water on site. All planting stock has been specified as Irish nursery-grown pollinator-friendly plants (in the supporting outline landscape specification keys shown on the landscape drawings). We have noted in our landscape keys that appropriate Plant Passports should be provided for new tree planting. All the proposed new trees are selected with their mature size, shape, and form in mind, and specified to be grown in an Irish nursery. This is a decision based on sustainability and circular economy principles, as transport, long-term maintenance and pruning are kept to a minimum. Native³, naturalised, and pollinator-friendly plant species have been primarily specified because of their speed of establishment, their associated reduced need for maintenance and after-care, and their biodiversity potential.

Item 5. 1.iii "The landscape Plan shall include hard and soft landscape details; including levels, sections and elevations, detailed design of SUDs features including swales and integrated/bio-retention tree pits."

LDS Response: Please refer to the enclosures attached to this design rationale letter prepared as part of this submission, which includes landscape plans and key specifications for ground and roof level, and the supporting typical construction details and specifications for included GI and SuDS measures.

Item 5. 1.v "Demonstrate how natural SUDS features can be incorporated into the design of the proposed Development'

LDS Response: The design team has reviewed the submission and identified potential areas where we can improve the performance of the detailed design in relation to issues raised by the local authority in the above Al item. These measures are outlined below from a landscape perspective, but again the reviewer is referred to the civil engineering drawings and reports for an informed response to this item.

Our natural SuDS design, an iterative process developed with the consulting civil and structural engineer, takes cognisance of the recently published interim guidance document on same prepared by the

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³ Please note that we have omitted Ash from our planting proposals because of the presence of Ash Die-Back Disease in Ireland, and the advice from the Forest Service/the Department of Agriculture that it is likely that young ash plants for planting are the highest risk pathway for spread of this disease into Ireland.



DOHLGH4; 'SuDS, the SDCC 'Greater Dublin Regional Drainage Code of Practice Pre-Planning Guidance', the SDCC's CDP 2022-2028, and the 'SDCC SuDS Explanatory, Design and Evaluation Guide'5 and maximises the opportunities and benefits we can secure from surface water management. In relation to safety, the current SDCC guidance sets out that all parts of a SuDS design should be fully accessible to people. 'Natural' SuDS elements and landscape features such as permeable paving, greenblue roofs and SuDS tree pits can assist in the following goals, according to CIRIA6:

- improve public health and wellbeing.
- increase amenity space.
- provide aesthetic improvements.
- improve air quality.
- reduce urban heat island effect.
- enhance wildlife habitat for biodiversity.
- reduce flood risk.
- filter pollution and improve water quality.

Specific measures taken in the design are outlined as follows:

- a) Permeable paving: The design team has provided 'flexible-base' construction permeable paving throughout the development. Using salvaged or recycled materials such as durable natural stone setts is a positive circular economy design principle in construction. Permeable paving measures specified in the developed design include the following:
- To pedestrian areas: a locally-sourced pre-cast concrete paving unit, 'Pembroke' by Kilsaran, laid with 'SUDSFlow' proprietary joint spacers. This paving unit is A-rated in accordance with the Green Guide Specification Edition 4, A+ rated when used with a prepared recycled sub-base.
- To pedestrian areas: a 100% free-draining honeycomb UV-stable polypropylene gravel stabilisation grid; this grid to contain at least 30% recycled plastic content, to retain locallysourced angular gravel aggregates, 6-10mm single size e.g., 'Ballylusk'.
- To car-parking areas: a 100% free-draining honeycomb UV-stable polypropylene gravel stabilisation grid; this grid to contain at least 30% recycled plastic content, to retain locallysourced angular gravel aggregates, 6-10mm single size e.g., 'Ballylusk'. This paving build-up must be suitable to be trafficked with wheelchairs, mobility devices and buggies.
- To property entrances: salvaged natural stone setts. Deeper-sized setts than to normal pedestrian paving have been specified to cope with the weight and axle-turning movements associated with vehicles. Salvaged setts have been specified to consider circular economy

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^{4 &#}x27;Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas: Water Sensitive Urban Design, Best Practice Interim Guidance Document', prepared by the Department of Housing, Local Government and Heritage, December 2021.

⁵ 'SDCC SuDS Explanatory, Design and Evaluation Guide', McCloy Consulting and Robert Bray Associates, 2022 ⁶ CIRIA C753, 'The SuDS Manual', published by CIRIA, 2015



principles, laid on permeable bedding layers and prepared recycled sub-bases to engineer's design detail and specification



Figure 4. Pre-cast concrete unit paving, laid with proprietary spacers



Figure 5 . 'Nidagravel' grid filled with angular gravel





Figure 6. Proprietary paving spacers by SUDSFlow which can be used to make traditional paving 'permeable'

- b) Green Roofs: The detail design has been developed and rationalised to identify areas suitable for an 'semi-intensive biodiverse' type green roof build-up (plug plants and turfed roll planting into 150-200mm depth low-nutrient growing medium on 40mm depth combined egg-crate drainage layer)
 - 'Semi-intensive biodiverse' type green roofs have been located on the highest south-facing
 roofs of the proposed dwellings to ensure their healthy establishment; at the first-floor roof
 level of each dwelling. Safe access for maintenance and occasional watering has been
 considered by the architect and provided for through an opening rooflight and folding stair.
 - 'Semi-intensive' type green roofs have also been provided in a proprietary 3 bin-shelter now provided to each dwelling.

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Figure 7. Bauder visualisation showing a build-up of semiintensive bio-diverse green roof with a 150-200mm undulating growing medium, planted with plug plants, and occupied with biodiversity features such as dead logs and piles of stones and sand



Figure 8. Image illustrating 500mm width gravel trim to the base of all walls and roof penetrations, dead log piles and small boulders on a bio-diverse semi-intensive type green roof



Figure 9. Image illustrating an opening Velux rooflight used to gain access for maintenance purposes to a bio-diverse type green roof



Figure 10. min. 300mm width gravel perimeter trim to roof parapet, required as a fire break under the FLL and GRO green roof guidelines

- c) Rain garden planter beds: Each dwelling has an amenity planter bed with a 200mm deep depression or 'free-board' in the centre of the planter bed to detain surface water temporarily during cloud-burst events of rain.
 - We have specified 'tough' planting to this planter bed which can tolerate temporary inundation, such as ornamental grasses, strap-leaved flowering perennials, ferns, and bulbs.
 - · 'Resilient' tree planting of Betula nigra River Birch
 - Detailed with bio-retention type soils and gravel filtration layers, rain-gardens can help to
 collect run-off from buildings and paving and detain it temporarily to filter through specialised
 soils. This improves the quality of the water leaving the system, thereby alleviating the
 pressure on downstream water treatment facilities.

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Figure 11. 'Arborflow' by GreenBlue Urban SuDS tree pit, filled with bio-retention type soils



Figure 12. Betula nigra 'Heritage' planted to each SuDS tree pit







Figure 13. Images of simple rain garden strip in a car park, south county Dublin. Check-dam, gravel mulch and moisture-tolerant perennial planting shown

d) SuDS tree pits:

- Four no. SuDS tree pits (TP-01, TP-02, TP-03 and TP-04, all located in the front garden spaces of the proposed dwellings and extending the pits under parking area paving, as detailed on the landscape plans) have been specified in co-ordination with the consulting civils engineer to attenuate and slow surface water run-off⁷.
- These tree pits have been planted with a fastigiate or columnar shaped tree, Betula nigra 'Heritage', which has been identified by Sheffield University as having good resilience in our climate to predicted temperature increases over the next 50 years.
- Such tree pits can attenuate surface water run-off underneath by utilising the void within
 the rootzone of each tree. Collecting rainwater and diverting it into a tree pit can help to
 passively sustain an urban tree's water supply.

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⁷ Policy G14 'Sustainable Urban Drainage Systems', GI objectives 1, 2, 3, 4, 5; Policy G15 'Climate Resilience', GI Objectives 1 and 3, Draft CDP for SDCC, 2022-2028



- Research shows that urban trees that have access to stormwater have increased growth rates during the establishment period.⁸
- The surface of the SuDS tree pits illustrated on the drawings have an 'open' permeable surfacing (permeable paving, topsoil) over the whole of the pits to ensure rainwater and air to reach the soil directly from above, with the addition of supplementary inlets to ensure that rainwater and air reach the lower levels of the pits.
- The engineered SuDS tree pits all have drainage included as part of their design to
 prevent the soil from becoming waterlogged and have been detailed so that rainwater
 passes through the soil before it drains out of the tree pit.
- Proprietary tree pit details and specification such as 'Arborflow' by GreenBlue Urban incorporate details and principles such as proprietary soil cells and root management membranes, soil and rootball aeration, proprietary stormwater panels, ground preparation, permeable paving, silt trap chambers, etc.
- SuDS tree pits are ideal for use particularly where space is at a premium, and they can
 reduce the velocity and flow rate of surface water run-off. When designed for a given
 catchment area, they can contribute to meeting stormwater discharge rates.
- Surface water is discharged into surrounding subsoil and absorbed by tree roots. Details
 such as drainage channels can trap silt and other organic material such as leaves,
 filtering out harmful pollutants. Modular systems such as the 'Arborflow' can be filled
 underground with good quality soil, increasing the chances of the tree to reach its full
 growth potential.

Item 5. 1. iv "Significantly reduce the impacts of the development on existing green infrastructure within and adjacent to the proposed development site".

Item 5. 1. vi. "Submit green infrastructure proposals and a green infrastructure plan that will mitigate and compensate for the impact of the proposed development on this existing site and show connections to the wider GI Network. These proposals should include additional landscaping, SUDS measures (such as permeable paving, green roofs, filtration planting, above ground attenuation ponds etc) and planting for carbon sequestration and pollination to support the local Bat population."

We reviewed using a SWOT analysis the previously-submitted planning information concerning landscape, natural SuDS drainage, and GI to identify areas where we could rationalise and possibly improve the design response for GI at AI submission stage, with the assistance of the architect and engineer.

Green Infrastructure (Site Context & Analysis): The EU defines Green Infrastructure (GI) as: "a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air

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⁸ Denman, L. (2006, September). Are street trees and their soils an effective stormwater treatment measure? *Treenet: Proceedings of the 7th National Street Tree Symposium, 2006*, Adelaide, SA. and Grey, V., Livesley, S. J., Fletcher, T. D., and Szota, C. (2018). Establishing street trees in stormwater control measures can double tree growth when extended waterlogging is avoided. *Landscape and Urban Planning, 178*, 122–129.



quality, space for recreation and climate mitigation and adaptation." Chapter 4 of the South Dublin County Council County Development Plan, alongside the associated maps, sets out the Green Infrastructure Strategy for the County.

Our GI Site Survey and Analysis has been informed by information gleaned from a desk study review of 'Map 13 Green Infrastructure', prepared by the Land Use Planning and Transportation Department of South Dublin County Council; 'Figure A 4.1 Green Infrastructure Strategy Map', forming part of South Dublin County Council's County Development Plan 2022-2028; Chapter 4 'Green Infrastructure' of the CDP itself; remote viewing of OS (now Táilte Eireann) mapping and aerial photography; and a site survey walk-about to better understand the receiving environment, habitats etc., of the local area.

The subject site at Templeville Drive is near the Village Core of Templeogue on the R137 road, west of the County Boundary between South Dublin and Dublin City. The site is zoned objective 'RES' and is close to the GI Corridor area of the Dodder River Valley⁹ (the river is within a 360.00m radius of the subject site, and the Dodder River Valley is a proposed Natural Heritage Area). The subject site's location and immediate context encompasses a range of habitats, from river valley and woodland habitats to urban and peri-urban. The area has a landscape character type of 'Urban Fringe/Peri-Urban', as illustrated on Figure 4.3: 'Key Elements of South Dublin County Council's GI network', in Chapter 4 of the CDP.

The Dodder River is a regionally important Riparian Corridor, being identified as a key GI asset within the Dublin Metropolitan Area Strategic Plan (MASP) which forms part of Ireland's 'Regional Spatial and Economic Strategy' (RSES). The RSES provides for 'Enhanced GI' as a key Regional Strategic Outcome for local authorities to achieve. The Dodder River Corridor is identified as a **Primary GI Corridor** (ref. Figure A 4.1 'Green Infrastructure Strategy Map', SDCC CDP 2022-2028) and **Strategic Corridor 1** (ref. Table 4.1 Strategic Green Infrastructure Corridors, SDCC CDP 2022-2028)

As the subject site is located within or close to a Core or Corridor (the Dodder River Valley), as illustrated on Figure 4.4: 'Green Infrastructure Strategy Map' of the CDP, the development should, at a minimum, protect any existing GI assets and enhance same (for example, not breaking a GI Corridor but enhancing same with a connecting piece of planting, retaining hedgerows or woodlands).

The County's GI network contains several smaller green spaces that are dispersed throughout its built-up area. These include local-scale greens and parks and other green spaces. Such spaces serve as **Stepping Stones** for species to move throughout the broader network of Corridors and Core areas and contribute to a range of additional local benefits around recreation and stormwater management. Such spaces within a 500m radius of the subject site include St. Mary's College to the north-west, the Green off Cypress Drive to the west, the Provincial Missionaries institution to the south-west and Cypress Park to the south.

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⁹ SDCC CDP Chapter 4 'Green Infrastructure' 4.3.1 'Components of the GI Network'

¹⁰ SDCC CDP Chapter 4 'Green Infrastructure' RSO 10: Enhanced GI 'Identify, protect and enhance GI and ecosystem services in the Region and promote the sustainable management of strategic natural assets such as our coastlines, farmlands, peatlands, uplands woodlands and wetlands (NSO 8, 9)'.



Green Infrastructure (Protection, Enhancement & Restoration): The development is a 'small-scale development' in terms of the SDCC CDP. Our team's GI and landscape strategy has been aligned with the CDP's policies and objectives to:

- to consider objectives to protect or restore existing on-site GI assets.
- to provide for connection to local or primary GI corridors.
- to include appropriate elements which allow the site to act as a local stepping stone.

The GI measures chosen by the team in design development to respond to the matters raised in the AI have been informed by the non-exhaustive list of alternative GI interventions contained in the CDP, to resolve difficulties where an applicant or developer may find difficulties in meeting GI objectives due to site-specific constraints, such as the following:

- "the use of natural features such as woodland, hedgerows, trees, water courses, ponds and grasslands or other natural methods to strengthen GI assets and provide connections to the wider GI network
- the incorporation of nature-based solutions such as SuDS schemes, permeable paving, green and blue roofs, green walls, swales, SuDS tree pits, rain gardens, ponds to support local biodiversity and mitigate potentially harmful effects of development
- the provision of new native tree and plant species as well as pollinator-friendly species within developments, consistent with the National Pollinator Plan
- · Where possible, no net loss of existing trees/hedgerows on site
- The provision of bird boxes (as building facades for nesting sparrows or swift brick), bat boxes, hedgehog passes, and other wildlife interventions as required in landscape settings
- The provision of bee bricks in new development
- The retention of heritage features such as old walls, bridges and so on, that have habitat value
- The provision of allotments/orchards for residents to grow fruits and vegetables
- Use of recycled/upcycled or locally sourced natural materials within the development"

Our drawing 'Green Infrastructure Plan (Protection, Enhancement & Restoration Proposals)' illustrates the various measures the design team has undertaken at FI stage to respond to the issues raised by the local authority in relation to GI, which include the following:

- Provision of 'semi-intensive biodiverse' type green roofs to the top roof of each of the proposed dwellings
- Provision of 'semi-intensive' bio-diverse, green-roofed bin shelters to each dwelling with larch
 posts drilled for solitary bee nesting and over-wintering, and trellis to support climbing plants,
 flowers in bloom from April to November and early spring bulbs. The growing substrates to this
 roof are made from recycled secondary waste with a low nutrient level. Timber cladding is FSCcertified new European softwood. Plants and plugs are certified by FloraLocale.
- Retention of existing boundary walls where indicated on the Boundary Treatment Plan as a circular economy measure.
- Integration of bat-boxes, bee bricks and bird nesting boxes into the walls of the proposed building
 as illustrated on the architect's drawings, and a bird/bat-box hung from the new River Birch trees
 in the front garden of each dwelling.

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- Placing of bird-houses in each front garden to the proposed dwellings, with an integrated insect house, '5823C Wings' by Vestre
- Planting of pollinator-friendly trees, min. 18-20cmg in size, grown in Ireland. Trees specified have been chosen for their climate-resilient properties, such as *Betula nigra*, which has chosen for its resilience in an expected 2° temperature increase by 2050, and their pollinator-friendly properties: both River Birch and Hornbeam
- Planting of Hornbeam boundary hedges that retain leaf cover during the winter to preserve shelter habitat for wildlife during the cold winter months. Hornbeam is 'naturalised' in Ireland.¹¹
- Permeable paving generally (flexibly-laid construction), with salvaged stone setts in vehicle manoeuvring areas (positive circular economy principle)
- Small rain-garden planter beds to each dwelling with appropriate moisture-tolerant plants and bio-retention type soils
- Amenity planter beds planted with Irish nursery-grown pollinator-friendly plants including ornamental grasses, bulbs, flowering perennials, and decorative multi-stemmed trees which should establish quickly and require little maintenance.

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¹¹ Naturalisation is an ecological phenomenon through which a species, taxon or population of 'exotic' (as opposed to native) origin integrates into a given ecosystem, becoming capable of reproducing and growing in it, and proceeds to disseminate spontaneously. In some instances, the presence of a species in a given ecosystem is so ancient that it cannot be presupposed whether it is native or introduced.





Figure 14. 3 no. combined bat brick tubes ('2FR' multiple bat tubes by Schwegler), refer to architect's drawings of elevations for exact locations



Figure 15. Wall greening system provided to certain elevations of the proposed dwellings, with stainless steel rod/tensioned wire/mesh system to provide a trellis for self-clinging climbing plants to grow up

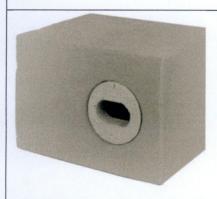


Figure 16. Brick Box Type 25' for installation on rear elevation of building to accommodate swifts (3 no.)



Figure 17. '5823C Wings' by Vestre, a combination of 3 differently sized bird houses mounted on a 2.00m height pole, with an integrated insect hotel.

Qualifications of Landscape Architect

We confirm that Landscape Design Services is a fully-qualified Landscape Architectural design practice, and that the staff designated to work on this project are suitably qualified and competent.

i. Colm Kenny is a Registered Landscape Architect Member of the ILI (the Irish Landscape Institute, the professional institute for landscape architects in Ireland); a Registered Surveyor member of the SCS (Society of Chartered Surveyors of Ireland, the professional institute for quantity surveyors in Ireland), and a Chartered Quantity Surveyor member of the RICS (Royal Institution of Chartered Surveyors). Colm has over 10 years experience in Quantity Surveying having worked as a Senior QS in a number of Dublin Cost Consultancies, and over 15 years experience in all stages of landscape design and construction for both hard and soft landscape schemes.

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ii. Joanne Coughlan is a Registered Architect member of the RIAI (the Royal Institute of Architects Ireland) and a qualified Landscape Architect member of the ILI (Irish Landscape Institute), with 19 years' post-qualification professional practice and practical experience in architectural and landscape design.

We are available to meet or speak with you at your convenience to discuss the above if required. We trust that you find the above submission and accompanying drawings in order and await acknowledgement of this Additional Information to the Planning Application Reg. Ref. SD22A/0466 in due course.

Is mise le meas,

Joanne Coughler

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