



■ Doyle &
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Landscape
Architecture

Rathcoole Residential
Further Information Response (Landscape)

18-008 Rathcoole Residential



Project Ref: 18-008
Client: Romeville Developments Ltd.
Date: 14/04/2023





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1.0 - Introduction

The South Dublin County Council Request for Additional Information contained a series of landscape related requests; namely item 2, 3, 4, 5, 6, 7 and 8. These information request items have been referenced below in an effort to close out on the query items raised. The landscape specific items along with support information have been prepared by Doyle + O'Troithigh Landscape Architecture; and where other design disciplines have prepared the supporting information, these have been referenced below to ensure a cohesive response. The architectural inputs have been provided by Wilson Hill Architects, engineering inputs in terms of SUDS and drainage have been provided by Aecom Consulting Engineers and arboricultural consultancy has been provided by Arborist Associates.

2.0 - Additional Information Required

2.1 - Item 2 - Layout

The applicant is requested to reconsider the following aspects of the scheme layout:

(a) The applicant should consider alterations to the east and west ends of each block to provide wraparound units and west/east-facing mid block units, minimising instances where gardens side/back onto the street, and maximising active frontage onto streets and open spaces.

Refer to response including support drawings as provided by Wilson Hill Architects.

(b) The submitted site section shows that the garden walls would not be tall enough to ensure privacy at some points along the central street.

Refer to response including support drawings as provided by Wilson Hill Architects.

(c) Additional site sections or landscape details should specify the proposed boundary treatment between the rear gardens, specifically whether larger retaining walls are being utilised to step down the hill.

Refer to response including support drawings as provided by Wilson Hill Architects.

2.2 - Item 3 - Public Realm.

There are concerns with the lack of information submitted in relation to the landscape scheme for the proposed development. The applicant is requested to provide detailed landscape design for the proposed development. The applicant shall provide a fully detailed landscape plan with full works specification, that accords with the specifications and requirements of the Council's Public Realm Section. The applicant shall provide the following additional information:

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.

Refer to supporting 'Landscape Design Rationale' Report as enclosed with this FI submission. This report has been prepared to describe and reference the landscape and external works proposed as part of the scheme.

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.

Refer to planting plans as enclosed with this FI submission. The planting plan have captured and promoted the planting of native species where possible along with a focussed approach to support pollinator-friendly planting. Refer to drawing no. PP-01-PP to PP-04-PP inclusive for reference.

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.

Refer to the landscape plan LP-01-PP to LP-04-PP inclusive for reference. The landscape drawings include all hard and soft landscape details including levels, SUDS features and section cut lines. For all landscape sections detailed information refer to drawing no.'s LS-01-PP to LS-03-PP inclusive. Refer to landscape details drawings LD-01-PP to LD-07-PP (inclusive) for all supporting details to the aforementioned landscape plans. For all softworks details, refer to Planting plans drawing no. PP-01-PP to PP-04-PP inclusive for reference. For all boundary information refer to drawing no. BP-01-PP for reference and for Play Rationale and detail refer to drawing no. PR-01-PP and PR-02-PP for reference.

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

As part of SDCC Development Plan 2022-2028, the Overarching GI1 Policy notes to *'protect, enhance and further develop a multifunctional GI network, by using an ecosystem services approach, protecting, enhancing and further developing the identified interconnected network of parks, open spaces, natural features, protected areas, and rivers and streams that provide a shared space for amenity and recreation, biodiversity protection, water quality, flood management and adaptation to climate change.'* The landscape scheme as put forward incorporates Green Infrastructure as an integral part of the overall design and as specifically required under GI1 Objective 4. Refer to drawing no. GI-01-PP ('Green Infrastructure') which illustrates the full assessment of

assessment of South Dublin County Council's Development Plan 2022-2028 and its requirements. This approach specifically strives to enhance connectivity between the open spaces, enhance corridors links and biodiversity value, promotes connectivity with the wider regional GI network and improves pedestrian and cycling infrastructure.

Given the sloping nature of the site, in a north-south directions, along with the fact that access to Stoney Hill Road is restricted to key 'entry' points due to levels and constraints, an east-west development arrangement through the site is considered to be the most appropriate design response. The hedgerow arrangements current form, runs largely in a north-south orientation and it is considered inevitable, in order to provide any form of logical residential development on site, that the same hedgerow loss within the core of the site lands will require removal. Notwithstanding the above, every effort has been made to retain hedgerow runs where possible as part of the long-term strategy of the site (where levels, hedgerow condition and where long-term suitability allows). The landscape scheme as put forward fully incorporates Green Infrastructure as an integral part of the design and as specifically required under G11 Objective 4. Some 45% of the sites featured hedgerows scheduled for retention include:

- The western hedgerow, some 61 linear metres, along Stoney Hill Road which will be bolstered with additional hedgerow planting of similar species to allow longevity in the future.
- The southern hedgerow, some 126 linear metres, running in an east-west arrangement shall be retained and augmented where necessary. It is furthermore envisaged that a woodland planting mix with native elements, a Miyawaki forest planting arrangement and wildflower meadows shall be planted adjacent these hedgerows with a view to increasing the overall sites biodiversity as well as rationalizing the 'shape' of the existing hedgerows so that they translate well in the new landscape setting.
- The eastern hedgerow (in-part), some 40 linear metres, running in a north-south direction through the proposed open space shall be retained. It is proposed that this hedgerow will be infilled as necessary with species of a similar nature along with feature specimen trees to fully compliment and reinforce the hedgerow arrangement.

Furthermore, the design actions or 'design components' which are proposed as part of the overall scheme and contribute to Green Infrastructure policies include:_____

- To establish a network of ponds, swales, filter drains and bio-retention tree pits.
- Construction of attenuation tanks
- Bolstering of existing Green Infrastructure by the use of Miyawaki forest, woodland planting with native tree species and recognizing the All-Ireland Pollinator Plan in plant selection.

- Connecting spaces with ecological value
- Addition of active and passive recreational spaces such as multi-functional open green, natural play, formal play, exercise zones and rest stop.
- Allow for suitable additional tree planting (such as Miyawaki style planting) to extend canopy cover and to focus on sequestering carbon in an efficient and timely manner.

v. Demonstrate how natural SUDS features can be incorporated into the design of the proposed Development

The Development Plan Policy G14: Sustainable Urban Drainage System requires the '*provision of Sustainable Urban Drainage Systems (SuDS) in the County and maximize the amenity and biodiversity value of these systems.*'

G14 Objective 1: notes specifically '*to limit surface water run-off from new developments through the use of Sustainable Drainage Systems (SuDS) using surface water and nature-based solutions and ensure that SuDS is integrated into all new development in the County and designed in accordance with South Dublin County Council's Sustainable Drainage Explanatory Design and Evaluation Guide, 2022.*'

As part of the scheme development, a holistic approach has been adopted with regard to open space provision and Sustainable urban Drainage Solutions (SuDS). Both the Consulting Engineers (Aecom Consulting Engineers) and the Landscape Architect have coordinated to develop landscape proposals which offers multifunctional spaces whilst providing for '*ecology and sustainable water management*' as required under G14 Objective 3 (South Dublin County Development Plan 2022-2028)

Proposed SuDS features proposed within the development include: (For locations of the SuDS features refer to landscape plan LP-01-PP to LP-04-PP along with supporting details inclusive for reference. For further engineering details refer to supporting information as supplied by Aecom Consulting Engineers.

- Interconnecting tiered Retention Ponds – landscaped shallow basins with side slopes in the order of 1:3 (maximum) which can provide for both stormwater attenuation and treatment. The ponds are designed to control flow rates by storing floodwater and releasing it slowly once the risk of flooding has passed. The stored water will change in level, and ponds have been designed to function in both dry and wet weather. These are designed to support emergent and submerged aquatic vegetation along their shoreline which collectively treat run off by adsorption. Runoff from each rain event is detained and treated in the pond. The retention time promotes pollutant removal through sedimentation and the opportunity for biological uptake mechanisms to reduce nutrient concentrations.

- The retention ponds aim to include a grass buffer strip at the upper edge in order to reduce runoff speed and remove suspended solids. Suitable soils, often referenced as an 'engineered soil' with a clay element to absorb pollutants are proposed to support good rates of plant establishment. The ponds as proposed for the scheme offer excellent opportunities for the provision of wildlife habitats, provide visual appeal in the landscape and a new intervention in terms of supporting and enhancing the green infrastructure of site lands.
- SuDS tree pits and Bio-retention tree pits. These proposed pits are located in the streetscape; and the details as provided have captured commentary received previously from SDCC Parks Department in terms of design. The tree pits aim to attenuate surface water run off by exploiting the soil/stone mix which is contained within the underground tree pit.
- Conveyance swales or Grass Swales – these offer shallow open depressions within the open grassed zones in the order of 250-300mm depth. The grass swales promotes the conveyance of storm water at a slower, controlled rate and acts a filter medium removing pollutants and allowing stormwater infiltration.
- Filter Drains – these are shallow excavations filled with stone that create temporary subsurface storage of stormwater runoff which are used to filter and convey stormwater to downstream SuDS components. It is proposed that the filter drain is installed along the edge of road network to the south of the scheme where they will integrate well with the adjoining open-space. The stone finish will be finished with a geotextile and topsoil arrangement which will support a grass finish.
- Permeable paving – paving designed to allow low percolation or infiltration of stormwater through the surface into the soil below where the water is naturally filtered and pollutants are removed.
- Other SuDS features including porous asphalt in home zone areas, rainwater butts, grasscrete for the temporary turning head and a stormtech attenuation tank.

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.

Refer to the enclosed Landscape Plans (LP-01-PP to LP-04-PP inclusive) and Green Infrastructure Plan (GI-01-PP) for reference. The key landscape proposals associated with the scheme in order to mitigate and compensate for the impact of the development include:

- Additional SuDS measures have been included as part of the re-design of the

landscape scheme. The SuDS measures as included in the scheme include a network of interconnecting retention ponds, SuDs tree pits and bio-retention tree pits, conveyance swales, filter drains and permeable paving. See the response to 3(v) above for further detail.

- Construction of attenuation tanks.
- Bolstering of existing Green Infrastructure by the use of Miyawaki forest, wetland planting, native shrubs and recognizing the All-Ireland Pollinator Plan in plant selection.
- Adopting suitable species for wet wildflower meadows as well as species enriched dry meadow grass land.
- Connecting spaces within and beyond the site lands with ecological value
- Addition of active and passive recreational spaces such as kick about areas, natural play, exercise zone and seating.
- Protect feature hedgerows and augment as necessary with suitable native species.

vii. The applicant shall provide play and recreation opportunities for children and teenagers as appropriate to the scale and character of proposed development. Proposals shall be submitted in the form of a Proposed Play Rationale and Layout Plan (separate to, but related to the Landscape Masterplan), using Nature-based Solutions.

The Layout Plan shall comprise the following:-

- **showing types of play and play area(s),**
- **target age groups,**
- **landform (included levels and contours) and boundaries,**
- **gates and planting,**
- **design and construction details of play opportunities and facilities in respect of land form, planting, boundaries, equipment and safety surface.**
- **All play equipment and ancillaries shall conform to European Standards EN 1176 and EN 1177 Playground equipment and surfacing, and to BS/EN standards 2017/18 for Playground Installations for HIC (Head Injury Criterion) and CFH (Critical Fall Height).**

Refer to Landscape Plans (LP-01-PP to LP-04-PP inclusive) and Play Rationale drawings (PRP-01-PP and PRP-02-PP) for detailed reference with regard to play elements. The layout and detailed information provided addresses all query items raised in this specific further information item.

It is furthermore confirmed that all play equipment and ancillaries conform to European Standards EN 1176 and EN1177 Playground equipment and surfacing , and to BS/EN Standards 2017/18 for Playground Installations for HIC (Head injury Criterion) and CFH (Critical Fall Height).

2.3 - Item 4 - SuDS

The use of an underground tank under public open space is not supported by County Development Plan policy. The development should utilise natural SUDs to the extent that underground storage is not needed, if possible. The SUDs layout should reflect the pre-existing water flows on site, and greenfield run-off rates should be achieved, and the direction of run-off maintained where this is appropriate.

The applicant is requested to submit the following:

(i) A drawing to show how surface water shall be attenuated to greenfield run off rates.

Refer to response including support drawings as provided by Aecom Consulting Engineers.

(ii) Submit a drawing to show what SuDS (Sustainable Drainage Systems) are proposed. Examples of SuDS include permeable paving, filter drain, bio-retention tree pits, rains gardens, swales or other such SuDS.

Refer to response including support drawings as provided by Aecom Consulting Engineers. Refer also to Landscape Plans (LP-01-PP to LP-04-PP inclusive), Green Infrastructure Plan (GI-01-PP), Planting Plans (PP-01-PP to PP-04-PP inclusive) and associated Landscape Details (LD-01-PP to LD-07-PP) as necessary for reference with regard to the SuDS proposals. The SuDS measures as included in the scheme include a networks of interconnecting retention ponds, SuDs tree pits and bio-retention tree pits, conveyance swales, filter drains and permeable paving. See the response to 3(v) above for further detail.

(iii) SUDs Management - The applicant is requested to submit a comprehensive SUDS Management Plan to demonstrate that the proposed SUDS features have reduced the rate of run off into the existing surface water drainage network. A maintenance plan should also be included as a demonstration of how the system will function following implementation.

Refer to response including support drawings and documents as provided by Aecom Consulting Engineers.

(iv) Additional natural SUDS features should be incorporated into the proposed drainage system for the development such as bio-retention/constructed tree pits, permeable paving, green roofs, filtration planting, filter strip etc. In addition, the applicant should provide the following:

The SuDS measures as included in the scheme include a networks of interconnecting retention ponds, SuDS tree pits and bio-retention tree pits, conveyance swales, filter drains and permeable paving. See the response to 3(v) above for further detail.

a. Demonstrate how the proposed SUDs scheme has been designed to incorporate and adhere to the natural route of groundwater through and out of the site.

Refer to response including support drawings as provided by Aecom Consulting Engineers. Refer also to Landscape Plans (LP-01-PP to LP-04-PP inclusive), Green Infrastructure Plan (GI-01-PP), Planting Plans (PP-01-PP to PP-04-PP inclusive) and associated Landscape Details (LD-01-PP to LD-07-PP) as necessary for reference with regard to the SuDS proposals.

b. Demonstrate how the proposed natural SUDS features will be incorporated and work within the drainage design for the proposed development.

Refer to response including support drawings as provided by Aecom Consulting Engineers. Refer also to Landscape Plans (LP-01-PP to LP-04-PP inclusive), Green Infrastructure Plan (GI-01-PP), Planting Plans (PP-01-PP to PP-04-PP inclusive) and associated Landscape Details (LD-01-PP to LD-07-PP) as necessary for reference with regard to the SuDS proposals.

c. Tree pits incorporating SUDS features should include a deep cellular water storage/attenuation area below the surface which acts as a soak away allowing surface water to infiltrate into the ground.

For SuDS tree pits and bio-retention tree pits location refer to Landscape Plans (LP-01-PP to LP-04-PP inclusive); and for reference to detail with a below ground attenuation arrangement refer to landscape detail LD-03-PP.

d. It is unclear how much attenuation in total is provided by the proposed bioretention tree pits for the development. The applicant shall submit a report and drawing showing how much surface water attenuation in m3 is provided for the development.

Refer to response including support drawings as provided by Aecom Consulting Engineers.

e. The applicant is requested to refer to the recently published 'SDCC Sustainable Drainage Explanatory, Design and Evaluation Guide 2022' for acceptable SUDS tree pit details.

For SuDS tree pits and bio-retention tree pits location refer to Landscape Plans LP-

(LP-01-PP to LP-04-PP inclusive); and for reference to detail with a below ground attenuation arrangement refer to landscape detail LD-03-PP. It is noted that the detail as supplied has been reviewed in accordance with the 'SDCC Sustainable Drainage Explanatory, Design and Evaluation Guide 2022' and from previous engagement with SDCC Public Realm Section on other projects of a similar nature.

f. The applicant is requested to submit a Landscape and SUDS Management and Maintenance Plan including long term design objectives, management responsibilities and maintenance schedules for all landscape areas and proposed SUDS features for the approval of the Public Realm Section.

Refer to response including support drawings as provided by Aecom Consulting Engineers. The management of the SuDS features in terms of landscape management and maintenance has been included within the 'Landscape Specification and Maintenance Report' as included within this Further Information Submission.

g. Underground attenuation tanks are only permitted in exceptional circumstances and where all other natural SUDS measures have been utilised. If all other methods have been utilised and it is demonstrated that underground attenuation is required, it cannot be proposed under public open space areas and such areas will not be taken in charge by Public Realm. SUDS measures are only accepted as an element of public open space where they are natural in form and integrate well into the open space landscape supporting a wider amenity and biodiversity function.

Refer to response including support drawings as provided by Aecom Consulting Engineers.

2.4 - Item 5 - Green Infrastructure

The applicant is requested to submit a Green Infrastructure Plan which shall be submitted as part of the suite of Landscape Plans that are required for a development. The Green infrastructure Plans should include the following information:

- **Site location plan showing the development site in the context of the wider GI as shown on the Council's GI Plan for the County.**

Refer to GI-01-PP (Green Infrastructure Plan) which include the site location in the context of the wider GI as shown on the Council's GI Plan for the County.

- **Site survey and analysis, identifying existing GI Infrastructure and key assets within the site.**

Refer to GI-01-PP (Green Infrastructure Plan) which includes the site survey and analysis whilst also identifying existing GI Infrastructure and key assets within the site.

- **Indicate how the development proposals link to and enhance the wider GI Network of the County.**

Refer to GI-01-PP (Green Infrastructure Plan) which graphically illustrates how the development proposals link to and enhance the wider GI Network of the County.

- **Proposed GI protection, enhancement and restoration proposals as part of the landscape plan, where appropriate, for the site.**

Refer to GI-01-PP (Green Infrastructure Plan) and Landscape Plans (LP-01-PP to LP-04-PP inclusive) which collectively graphically illustrate the proposed Green Infrastructure Protection, enhancement and restoration proposals as part of the landscape plan, where appropriate for the site.

- **Proposals for identification and control of invasive species where appropriate, for the site.**

An invasive weed survey (copy of the detailed report enclosed with this application) was carried out in March 2023 and it was noted that at the time of the review, no invasive plant species as outlined in the 'Invasive Species Ireland Website' as supported by the Department of Arts, Heritage and the Gaeltacht were present on site.

2.5 - Item 6 - Green Space Factor

5. Green Space Factor (GSF)

A Green Space Factor (GSF) Worksheet shall be submitted by the applicant for the proposed development detailing how they have achieved the appropriate the minimum Green Space Factor (GSF) scoring established by their land use zoning.

Minimum required scores for different land use zonings are as follows:

**RES-N 0.5
RU 0.7**

Developers can improve their green factor score by retaining existing landscape features and incorporating new landscape features and GI interventions. Completed Green Space Factor (GSF) worksheets should be submitted to SDCC with the Green Infrastructure Plan and Landscape Plan for a proposed development. Please obtain a worksheet from SDCC Public Realm.

South Dublin County Council's Development Plan 2022-2028 references the 'Green Space Factor' which notes that 'the quantity and quality of the green infrastructure provided by the new development will be improved by the implementation of a Green space Factor (GSF) for South Dublin. The GSF is a measurement that describes the quantity and quality of the landscaping and GI across a defined spatial area.'

As part of this application, the 'Green Space Factor Guidance Note' has been considered in detail in preparing the GSF's specifically for this site. The score sheet has been prepared on the basis of the 'South Dublin Green Space Factor Guidance Note' and previous informative workshops/engagements we have had on other schemes with SDCC's Public Realm Department. It is noted that a score of 0.5 is required as a minimum green space factor score for 'Res-N' with a minimum land use score of 0.7 is required for the 'RU-Zoned Lands.' Refer to drawing no.'s LPR-01-PP and LPR-02-PP and supporting completed 'Green Factor Score Sheet' (Appendix A) which notes that the 0.7 score requirement has been successfully achieved for the 'RU-Zoned lands'. For the 'Res-N' lands a recorded Green Space Factor Score of 0.28 is referenced. Whilst every effort has been made in this Further Information response to achieve the score requirements, there are site specific constraints in terms of housing density requirements and supporting infrastructure, along with the topographical challenges of the site which have given rise to this issue. However, as per the aforementioned guidance document, it is noted that further engagement with the SDCC Public Realms' Department will be carried out to determine alternative/site specific GI solutions as part of the compliance process and we would welcome a Condition of planning permission that provides for this.

It is acknowledged that a large proportion of the 'non-exhaustive list of interventions' on page 5 of the Guidance notes have already been captured within the proposed scheme, however further alternative site-specific interventions or compensatory measures could be facilitated within the proposed site layout. Subject to agreement with SDCC's Public Realm Section, these could include a range of compensatory measures, including, for example, the provision of orchards for residents to grow fruit, the provision of bird boxes and the provisions of bee bricks at select locations within the new development. The applicant welcomes further engagement with SDCC's Public Realm in an effort to address and agree upon site specific interventions and to compensate as necessary as part of the compliance process and we would welcome a Condition of planning permission that provides for this.

2.6 - Item 7 - Street Trees

Street trees shall be provided fully in Public Realm areas and not within private or management company driveways and include SUDS features. All streets should be tree lined and include SUDs tree pits. DMURs requires street trees every 14-20 m along streets, and this has not been achieved. A specific street tree planting plan should be submitted for agreement with the Public Realm.

Additional street trees have been proposed as part of this application; however a number of street trees have also been included within private or management company driveways to adopt a visual continuity of tree planting within the streetscape. Whilst every effort has been made in this Further Information response to achieve the street tree requirements, there are a small portion of the streetscapes where the required tree planting is below the specified requirements and this is due to the site specific

constraints in terms of housing density requirements, supporting infrastructure, underground services and the necessary set back associated with light standards which have given rise to this issue. For detail with regard to the tree numbers and species, refer to the Planting Plans (PP-01-PP to PP-04-PP inclusive) as enclosed with this application.

2.7 - Item 8 - Maintenance of Hedgerows at higher altitudes

Policy NCBH11 Objective 5 of the South Dublin County Development Plan 2022 – 2028 reads: To ensure that intact hedgerows / trees will be maintained above the 120m contour line within the County ensuring that the strong rural character will not be diluted and that important heritage features and potential wildlife corridors are protected. It may be necessary for the proposed blocks to be broken up to allow for maintenance of the existing hedgerows, or significant mitigation measures employed.

Noting that the proposed development includes removal of some hedgerows, the applicant is requested to set out how they are complying with policy NCBH11 Objective 5 of the County Development Plan.

Refer to Arboricultural support information as provided by Arborist Associates. It is noted that the net site area is located between the contour arrangement of 133m and 142m and as stipulated by the South County Development Plan 2022-2028, notes that '*intact hedgerows/trees will be maintained above the 120m contour line*'.

It is noted that whilst there is some fragmentation of existing hedgerows and with some exhibiting more ornamental species at this location, there are again site specific constraints in terms of housing density requirements and supporting infrastructure to allow for full protection of all hedgerows within the proposed built development. This is furthermore compounded given the sloping nature of the site, in a north-south direction, along with the fact that access to Stoney Hill Road is restricted to key 'entry' points due to levels constraints, an east-west development arrangement through the scheme is considered to be the most appropriate design response.

The hedgerow arrangement, in its current form, runs largely in a north-south orientation and it is considered inevitable, in order to provide any form of logical residential development on the site that the some hedgerow loss within the core of the site lands will require removal. Notwithstanding the above, every effort has been made to retain hedgerow runs where possible as part of the long-term strategy of the site (where levels, hedgerow condition and long-term suitability allows).

The landscape scheme as put forward incorporates Green Infrastructure as an integral part of the design and as specifically required under GI1 Objective 4. Some 45% of the sites featured hedgerows scheduled for retention include the following which will be suitable for maintenance and protection going forward:

- The western hedgerow, some 61 linear metres, along Stoney Hill Road which will be bolstered with additional hedgerow planting of similar species to allow longevity in the future.
- The southern hedgerow , some 126 linear metres, running in an east-west arrangement shall be retained and augmented where necessary. It is furthermore envisaged that a woodland planting mix with native elements, a Miyawaki forest planting arrangement and wildflower meadows shall be planted adjacent these hedgerows with a view to increasing the overall sites biodiversity as well as rationalizing the 'shape' of the existing hedgerows so that they translate well in the new landscape setting.
- The eastern hedgerow (in-part), some 40 linear metres, running in a north-south direction through the proposed open space shall be retained. It is proposed that this hedgerow will be infilled as necessary with species of a similar nature along with feature specimen trees to fully compliment and reinforce the hedgerow arrangement.



User Input	
Zoning lookup	Minimum GI Score
RU	0.7

User input indicated by Orange fields

1. Enter Development Site Area m ² HERE▶			
Surface Type (see tab for detailed descriptions)	Factor	Proposed Surface Area m ²	Factor Values
1. Short Lawn	0.3	612158	1923,654
2. Tall Lawn (wild, not mown)	0.5	444,63	222,34
Permeable Paving	0.3	601,57	180,486
Vegetation			0
4a. Vegetation-Shrub below 3m	0.4	1931,63	764,772
4b. Vegetation-Shrub / Hedgerow above 3m	0.5	2657,67	1326,435
4c. Vegetation-Pollinator friendly perennial planting	0.5	3585,84	1792,92
4d. Vegetation-Preserved hedgerow	1.2	402,93	482,556
Trees			0
5a. New trees	0.6	612,15	367,5
5b. Preserved trees	1.2	0	0
7. SuDS intervention (rain garden, bioswale)	0.6	1238,62	773,172
Green Roof			0
9a. Green Roofs - Intensive green roof (substrate is 200-1200mm in depth)	0.7	0	0
9b. Green Roofs - Extensive green roof (substrate is 80-200mm in depth)	0.6	0	0
10. Green wall	0.4	0	0
11. Retained Open Water	2	0	0
12. New open water	1.5	375,15	563,04
Total Equivalent Surface Area of Greening Factors		11844,93	

Green Factor Numerator 8396.88

Minimum Required GI score	Final GI score	Result
0.7	0.70	Pass



User Input	
Zoning lookup	Minimum GI Score
RES-N	0.5

User input indicated by Orange fields

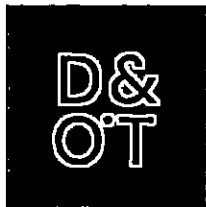
1. Enter Development Site Area m ² HERE▶			
Surface Type (see tab for detailed descriptions)	Factor	Proposed Surface Area m ²	Factor Values
1. Short Lawn	0.3	5407,76	1622,328
2. Tall Lawn (wild, not mown)	0.5	0	0
Permeable Paving	0.3	2531,26	759,378
Vegetation			0
4a. Vegetation-Shrub below 3m	0.4	686,75	274,7
4b. Vegetation-Shrub / Hedgerow above 3m	0.5	0	0
4c. Vegetation-Pollinator friendly perennial planting	0.5	1192,97	596,485
4d. Vegetation-Preserved hedgerow	1.2	512,4	614,88
Trees			0
5a. New trees	0.6	200	120
5b. Preserved trees	1.2	0	0
7. SuDS intervention (rain garden, bioswale)	0.6	30,64	18,384
Green Roof			0
9a. Green Roofs - Intensive green roof (substrate is 200-1200mm in depth)	0.7	0	0
9b. Green Roofs - Extensive green roof (substrate is 80-200mm in depth)	0.6	0	0
10. Green wall	0.4	0	0
11. Retained Open Water	2	0	0
12. New open water	1.5	0	0
Total Equivalent Surface Area of Greening Factors		14310,4	

Green Factor Numerator 4006.16

Minimum Required GI score	Final GI score	Result
0.5	0.28	Fail

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

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