

# *Green Infrastructure Plan*

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Rathcoole, Co. Dublin

03/07/23



# Green Infrastructure: Methodology

The site shall be visited to review the landscape inventory on site and determine the existing green infrastructure on site and in the surrounding area. Colleagues on the design team shall be consulted notably the ecologist and arborist for their views and suggested proposals. These shall be incorporated into the Landscape Design.

The proposed landscape seeks to provide

1. Green space within 100m of every home.
2. Support an increase in species and new habitats in around the new development
3. Provide a variety of open areas with a range of habitats and amenity spaces to meet the need of both nature and people(residents)
4. Be equipped to cope with the effects of climate change and weather events, this includes the integration of Suds into the landscape design, detention basins and tree pits.
5. The landscape design be developed to fit into the landscape setting and the surrounding countryside.

The proposed landscape design seeks to use native landscape materials in a high development low impact way, ie the use of natural materials, soil rocks and planting (pollinator) to achieve a sustainable landscape that will increase the range of species and or improve the existing landscape habitat on site.

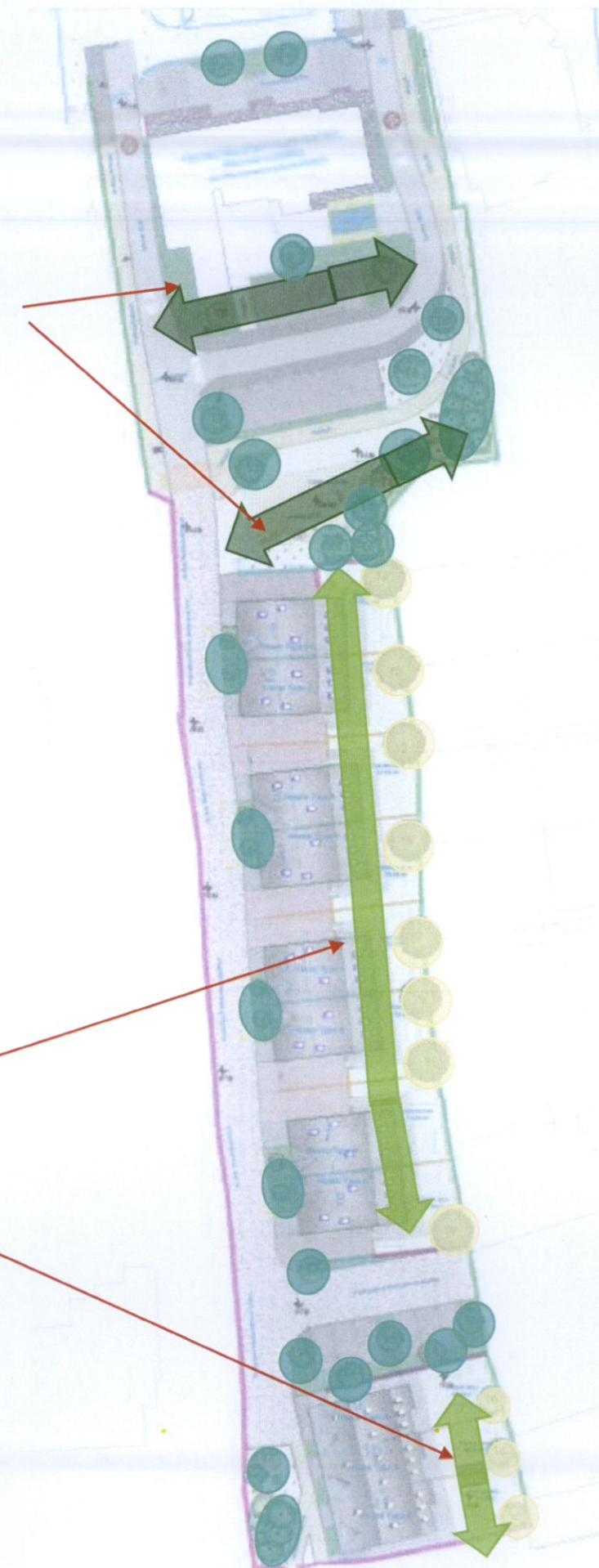
The landscape design shall be a collaborative approach with the design team to provide a sustainable landscape that shall provide. The sustainable nature of the design requires it to be used by both nature and people, with

1. Connectivity – a well-connected green space network that can serve both humans – amenity and nature – biodiversity. These shall link to the external landscape wherever possible.
2. Multifunctionality, Provision of a number of ecosystems within the development, combined between human and natural needs. Liaise with the Arborist and ecologist.
3. Integration – interactions and links between grey and green infrastructure, Suds interventions. Liaise with the consulting Engineers on drainage.
4. Diversity – Enhancing the different structures that are in place – managed/artificial or natural and combine them as a sustainable landscape design. (Large or small)
5. Applicability – Considers if the proposals are realistic, this shall be developed by the design team . I,e if the solutions to sustainable issues are adaptable to the site or not.
6. Continuity – Sustainable, the landscape proposals may be realistic and useable into the future. A level of monitoring and periodic evaluation may be required. This would be seen in terms of maintenance and management.

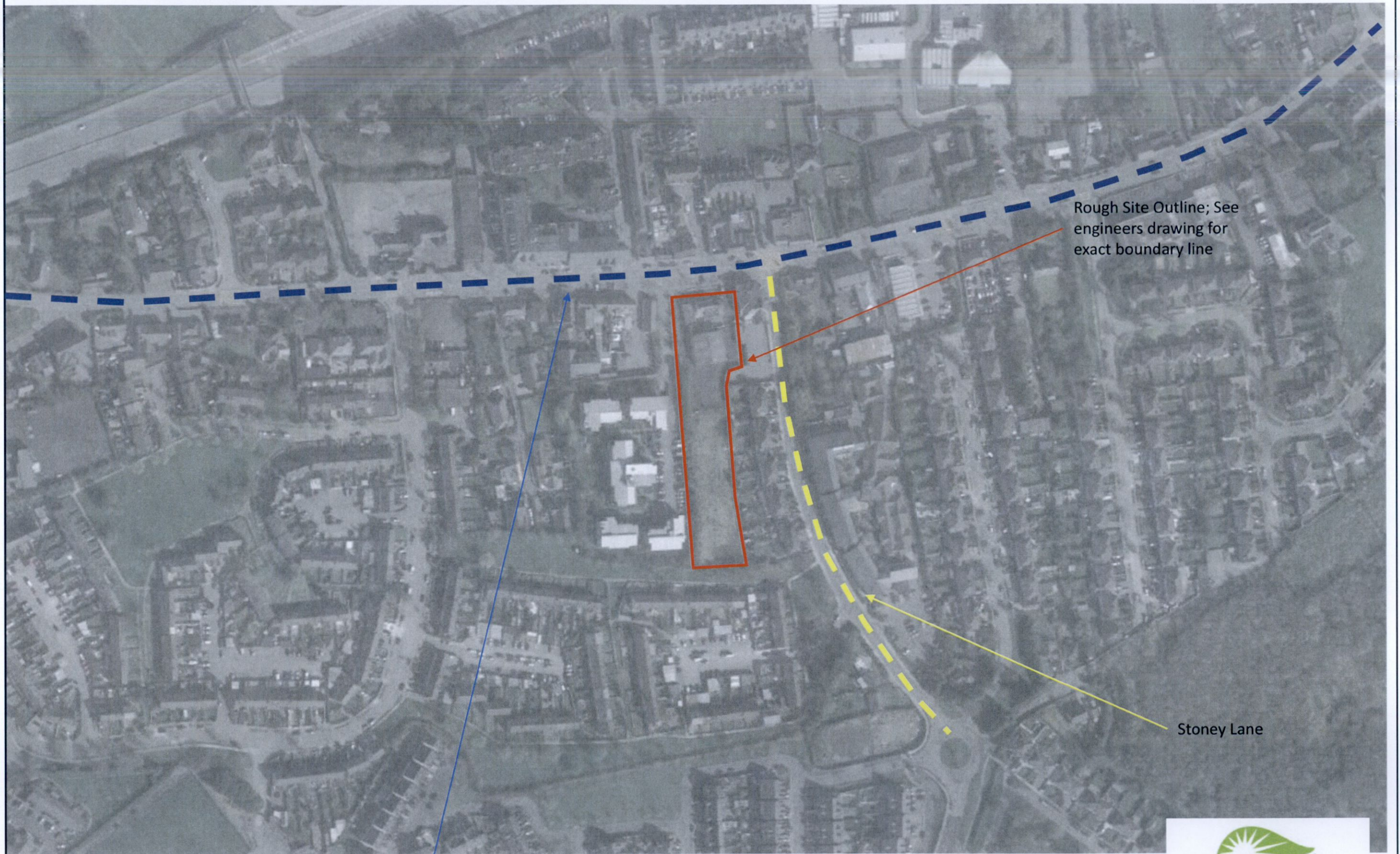
It is proposed to provide a landscape design that is a total design combining all elements, roads, green spaces and housing into one total. A combination of all elements, amenity, suds, living and connectivity to create a unique environment in which people and nature may reside and wish to live in.

Secondary Green Linkage

Strong green buffer



# Green Infrastructure Context



Rough Site Outline; See engineers drawing for exact boundary line

Stoney Lane

Main Street Rathcoole

# Existing Green Infrastructure in the area:

Rough Site Outline



Open Space

Areas of Strong Green Infrastructure



# Proposed Green Infrastructure:

Strong green buffer

Climber on wall

Secondary Green Linkage

Miyawaki/ Mini Woodland

Detention Basin

Wildflower Meadow

Swift Box

Bug hotel

Bat Box

- Wildflower Meadow
- Miyawaki/ Mini Woodland
- Private Trees
- Public Street Trees
- Secondary Green Linkage
- Strong green buffer

# Green Space Factor:

Green Space Factor Tool  
South Dublin County Council



User input indicated by Orange fields

User Input	
Zoning lookup	Minimum GI Score
RES	0.5

1. Enter Development Site Area m <sup>2</sup>	5220m		
Surface Type (see tab for detailed descriptions)	Factor	Proposed Surface Area m <sup>2</sup>	Factor Values
1. Short Lawn	0.3	718	215.4
2. Tall Lawn (wild, not mown)	0.5	195	97.5
Permeable Paving	0.3	1107.5	332.25
Vegetation		0	0
4a. Vegetation-Shrub below 3cm	0.4	0	0
4b. Vegetation-Shrub / Hedgerow above 3cm	0.5	388	194
4c. Vegetation-Pollinator friendly perennial planting	0.5	0	0
4d. Vegetation-Preserved hedgerow	1.2	0	0
Trees		0	0
5a. New trees	0.6	450	270
5b. Preserved trees	1.2	0	0
7. SuDS intervention (rain garden, bioswale)	0.6	106	63.6
Green Roof		0	0
9a. Green Roofs- Intensive green roof (substrate is 1 metre or greater in depth)	0.7	0	0
9b. Green Roofs - Extensive green roof (less than 1 metre in depth)	0.6	0	0
10. Green wall	0.4	43	17
11. Retained Open Water	2	0	0
12. New open water	1.5	0	0
<b>Total Equivalent Surface Area of Greening Factors</b>		<b>3007.5</b>	

<b>Green Factor Numerator</b>	0.00
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Minumum Required GI score	Final GI score	Result
0.5	1189.75	0.23



# Green Space Factor +2 years:

User input indicated by Orange fields

User Input	
Zoning lookup	Minimum GI Score
RES	0.5

For this score we take the trees as existing, therefore they have changed from new trees to existing trees in the score sheet below. This takes the score up by 0.06. This brings the score to just below .3 which is still a good distance below the sought after score of .5.

We have been in consultation with SDCC parks department since to try and come to some agreement as to how we can maximise the GI on this small infill site.

In the next few slides, we have incorporated the council's comments and shown how we will fit them into our design to try and make sure our site has a positive impact on the GI in the area.

1. Enter Development Site Area m <sup>2</sup>		5220m	
Surface Type (see tab for detailed descriptions)	Factor	Proposed Surface Area m <sup>2</sup>	Factor Values
1. Short Lawn	0.3	718	215.4
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Vegetation		0	0
4a. Vegetation-Shrub below 3cm	0.4	0	0
4b. Vegetation-Shrub / Hedgerow above 3cm	0.5	388	194
4c. Vegetation-Pollinator friendly perennial planting	0.5	0	0
4d. Vegetation-Preserved hedgerow	1.2	37	44.4
Trees		0	0
5a. New trees	0.6		0
5b. Preserved trees	1.2	450	540
7. SuDS intervention (rain garden, bioswale)	0.6	106	63.6
Green Roof		0	0
9a. Green Roofs- Intensive green roof (substrate is 1 metre or greater in depth)	0.7	0	0
9b. Green Roofs - Extensive green roof (less than 1 metre in depth)	0.6	0	0
10. Green wall	0.4	43	17
11. Retained Open Water	2	0	0
12. New open water	1.5	0	0
<b>Total Equivalent Surface Area of Greening Factors</b>		<b>3044.5</b>	

<b>Green Factor Numerator</b>	<b>0.00</b>
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Minimum Required GI score	Final GI score	Result
0.5	1504.15	0.29

## Green Space Factor Issues:

We have liaised with the parks department regarding the Green score factor, and how the site will not meet the required 0.5 score. We have added the below interventions to help the site enhance the GI in the local area. The sites current restraints are that it has little to none existing green infrastructure. The site has no existing trees or hedges that can be retained, therefore our GSF score is heavily affected.

**1. The use of natural features such as woodlands, hedgerows, trees, water courses, ponds and grasslands or other natural methods to strengthen GI assets and provide connections to the wider GI network;**

- With this site having no existing trees or hedges, we are proposing to plant over 50 trees across the site, with 2 small pockets of woodland planting, hedgerows. The site will have a detention basin, and we have proposed to have wildflower planting surrounding it.

**2. 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;**

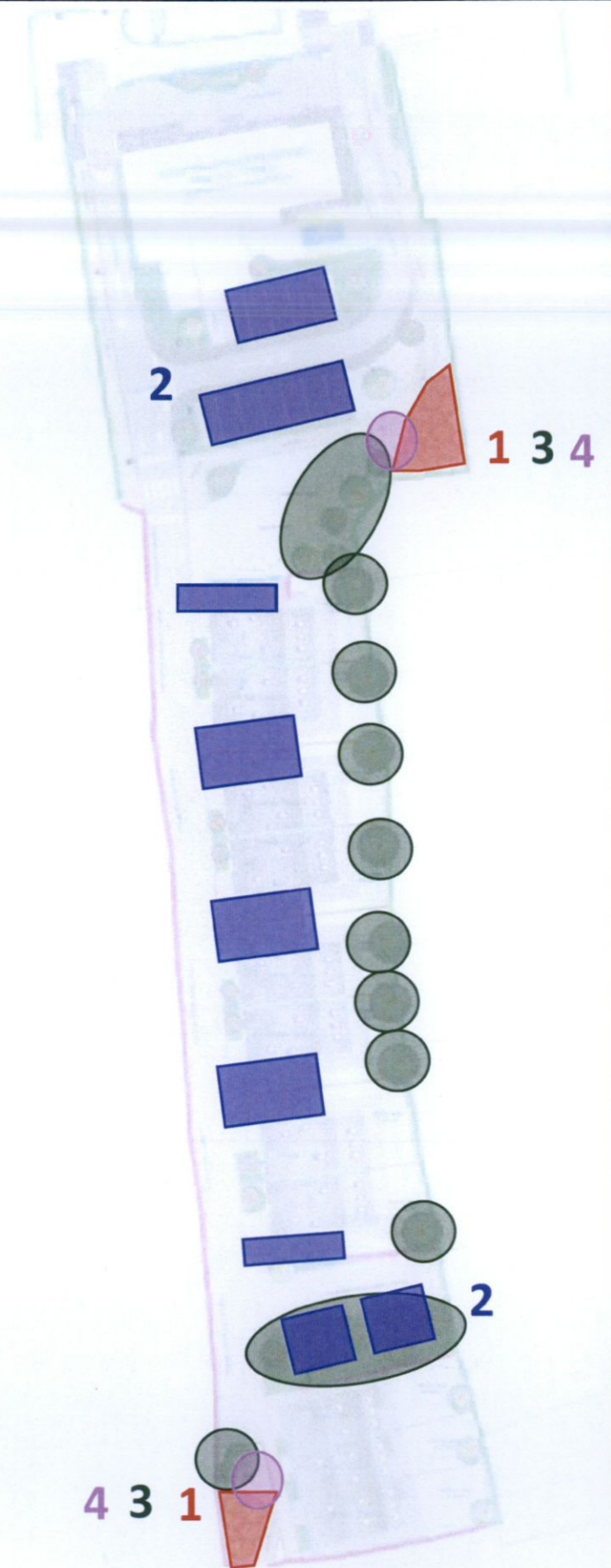
- The site will have lots of permeable paving throughout, with climber planting on selected walls, suds tree pits along the main access road, and a detention basin in the open space

**3. The provision of new native tree and plant species as well as pollinator friendly species within developments, consistent with the National Pollinator Plan;**

- We will include proposed native tree species and native shrub planting lists in our landscape rationale.

**4. The provision of bird boxes, bat boxes, hedgehog passes, and other wildlife interventions as required in landscape settings;**

- The addition of bird boxes, bat boxes and bug hotels have been added in two locations across the site. These will be installed near the mini woodland areas.





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### 5. Use of recycled / upcycled or locally sourced natural materials within the development;

- We are proposing to use roadstone materials in our landscape design. Roadstone headquarters are in Belgard which is just up the road from our site. Roadstone have lots of quarries near our site and this would allow us to have locally sourced natural materials.

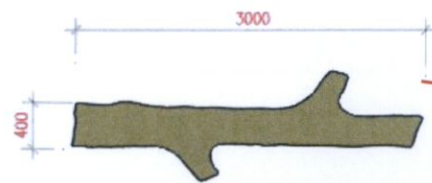
### 6. GI management / maintenance plans to be included as part of the landscape plans submitted for the Planning process. May include hedgerow / tree and grassland management plans;

- We produce a spec of works document with our drawings, and this will include management and maintenance plans on the upkeep, pruning and re planting in open space areas. We are proposing roughly 50 trees to be planted in open spaces and all of these once established will be preserved because they will be in public realm.

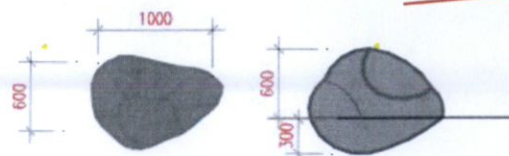
### 7. The provision of environmentally sensitive recreation and connectivity between GI areas. Those GI measures ultimately chosen will be dictated by the site-specific context and will be subject to agreement with the Council"

-See plan showing the area allocated for recreation and then the tree planting that is the connectivity between GI areas.

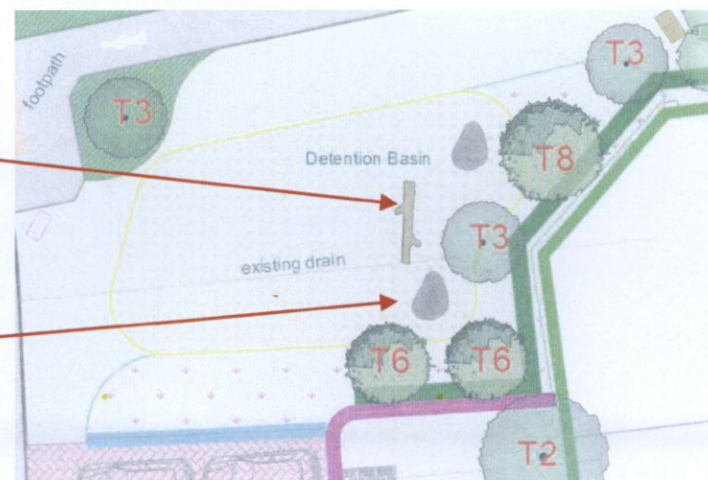
#### Timber logs



#### Rocks

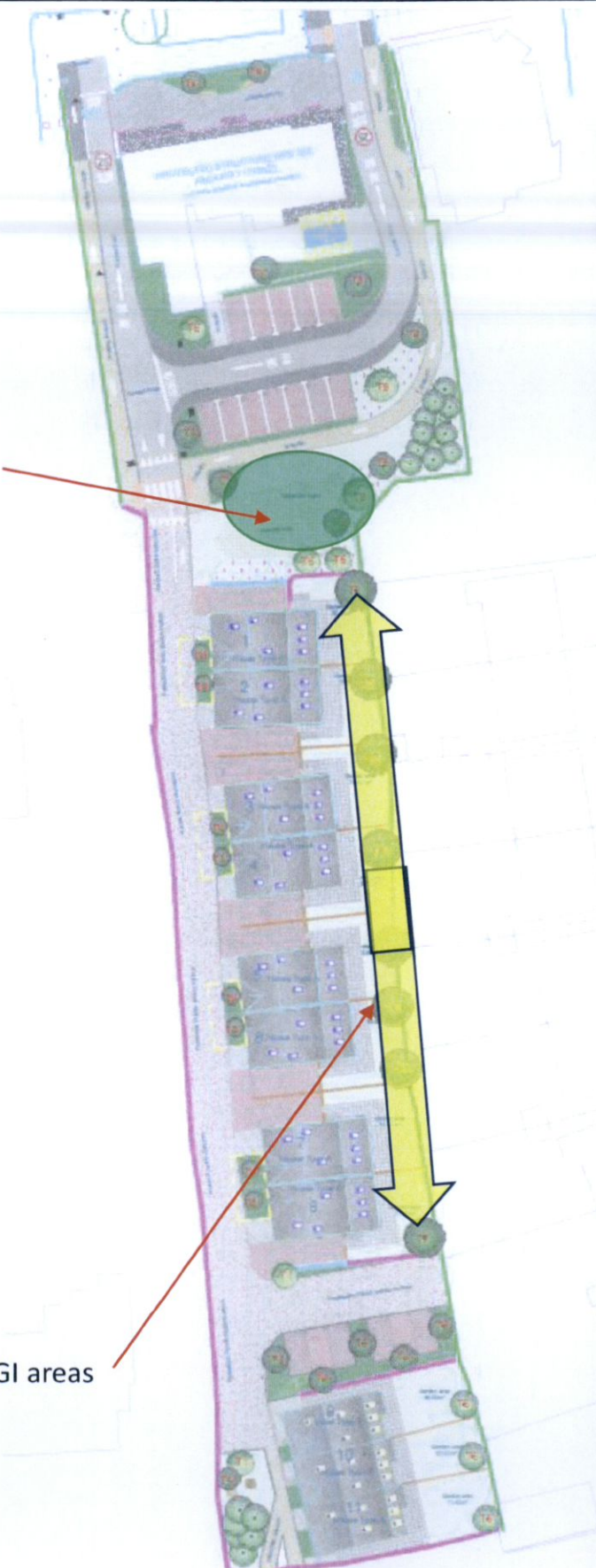


#### Recreational area



Connectivity between GI areas

Recreational area



# Proposed Green Infrastructure:



Wildflower meadow



Climbers on Wall



Miyawaki/ Mini Woodland Style planting



Bug Hotel, Bat Boxes and Swift Box



Bug Hotel, Bat Boxes and Swift Box



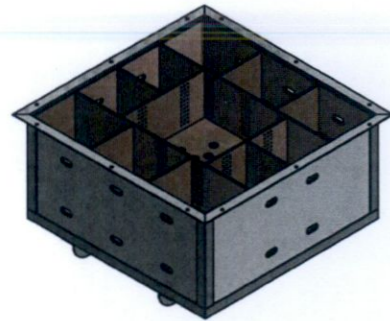
Permeable parking



Miyawaki/ Mini Woodland Style planting

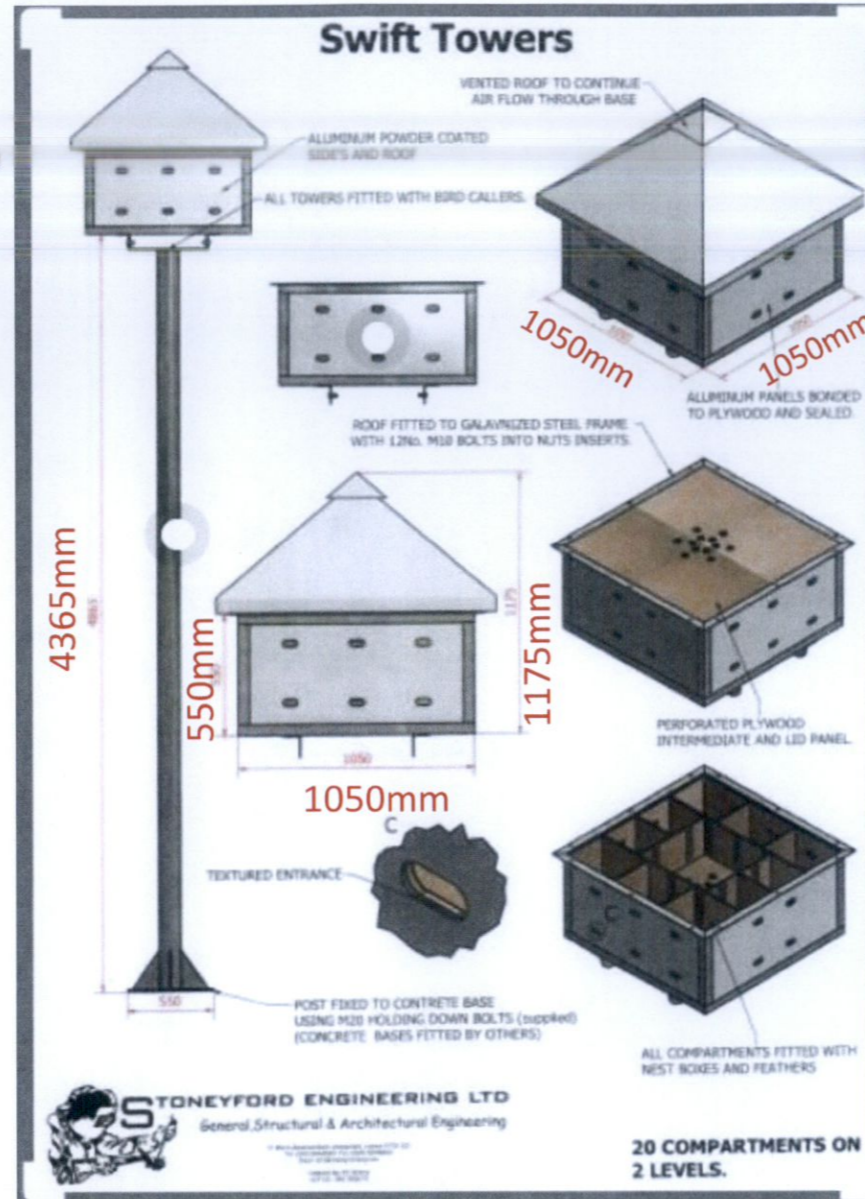
# Swift Boxes:

# SWIFT TOWERS



- \* Affordable, durable and secure nesting for swift colonies
- \* 4.5 meters high (custom heights up to 9 meters available)
- \* 20 Individual self-contained nest boxes
- \* All nest boxes fitted with nest concaves and feathers
- \* Heavy duty galvanized post and top frame
- \* Polyester powder coated side and roof panels
- \* Interior nest boxes made with marine grade plywood
- \* Entrance slits appropriately sized to deny admittance to competitor species
- \* Can be installed with audio caller or CCTV at request (wired, battery or solar powered audio callers available)

"We have worked closely with the Northern Ireland swift group to design, manufacture and install these swift towers"



Stoneyford Engineering  
17 Whitemountain Road  
Stoneyford, Lisburn  
BT28 3QZ  
Contact us: 02892648191  
info@stoneyfordeng.com

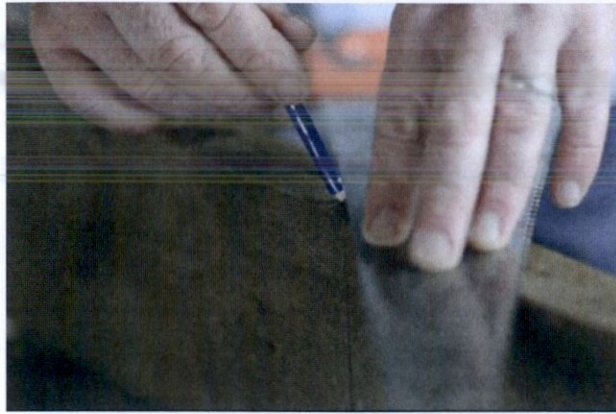
\*Or Similar approved

Swift Box  
Miyawaki/ Mini Woodland Style planting



# Bug Hotel:

## Step 1



Make a box using untreated timber approximately 2cm thick. You will need two pieces of wood of equal length for the sides and a smaller piece for the base. If you're making a pitched roof you will need a protractor to measure 45° angles. Otherwise make a flat roof the same size as the base.

## Step 2



Screw the pieces of wood together, leaving the front open. Paint the outside of the box with a weather-proof paint. If making a pitched roof, cut to size pieces of slate or similar material, and screw three holes in each one, where you want to attach it to the wood. Use clout nails to gently fix the slate to the wood. Cover the joint at the top with roof flashing.

## Step 3



Cut hollow canes such as bamboo into short lengths to fit in your bug box, sanding off any rough edges. You could also drill holes in pieces of wood or branch, making your holes different sizes to suit different insects. Fit the canes and wood into your box.

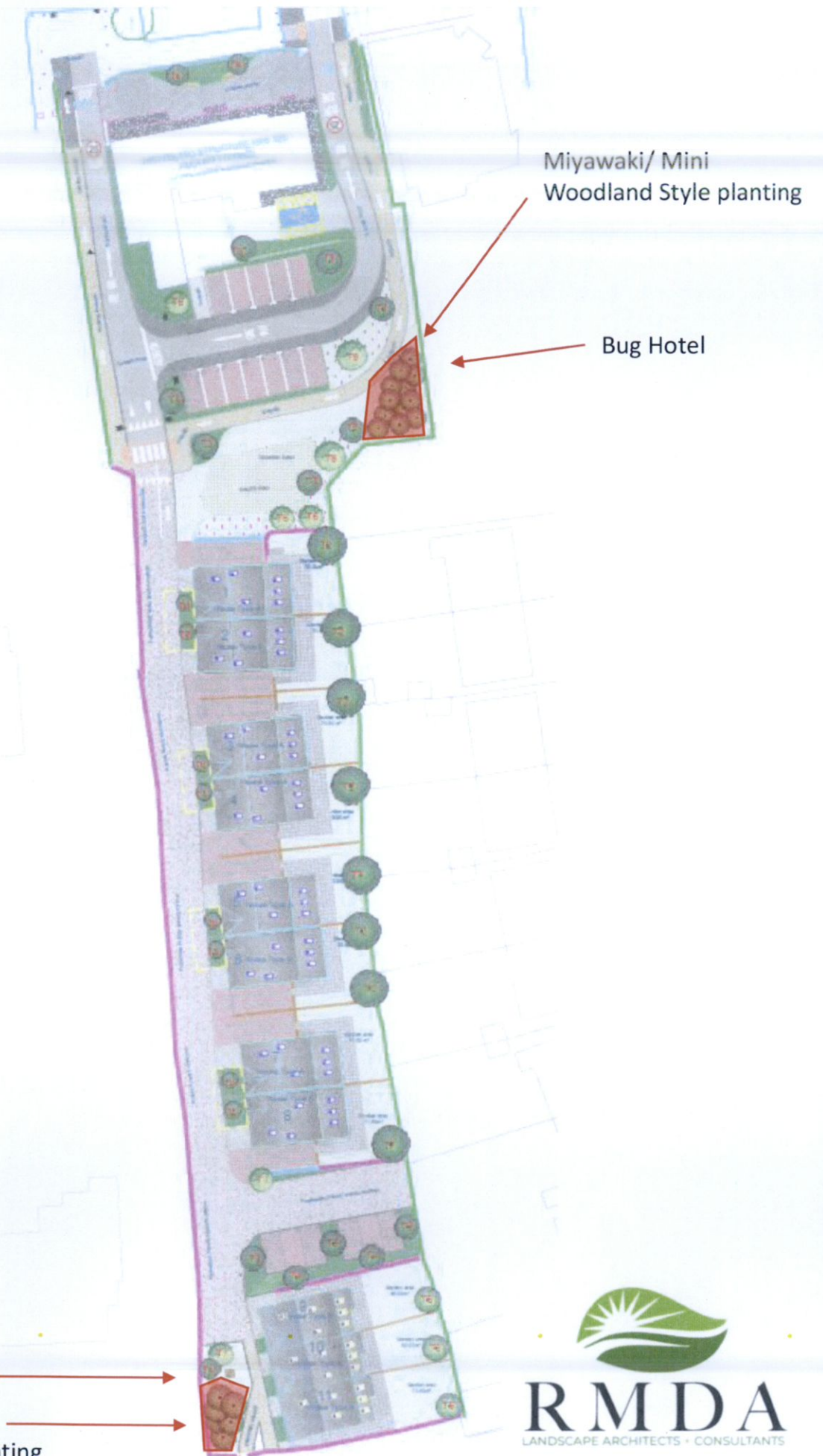
## Step 4



Drill a hole into the back or the base of your box and fix it on to a fence or wooden post, using a self-tapping screw.

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>•MATERIAL</li> <li>•Untreated timber</li> <li>•Hollow canes, such as bamboo</li> <li>•Pieces or branch or other wood</li> <li>•Wood saw</li> <li>•Nails (2.5cm)</li> <li>•Hammer</li> <li>•Drill</li> </ul> | <ul style="list-style-type: none"> <li>•Wood drill bit</li> <li>•Screws</li> <li>•Screwdriver</li> <li>•Self-tapping screws</li> <li>•Roof slate, optional</li> <li>•Roof flashing, optional</li> <li>•Clout nails, optional</li> <li>•Wooden post, optional</li> </ul> |
|--|---|

*\*Or Similar approved*



Bug Hotel →  
Miyawaki/ Mini Woodland Style planting →

# Bat Box:



## Product Description

- > When there isn't a building or tree to put a bat box on, the pole mounted bat box is the better choice. A weatherproof outer shell made of recycled plastic covers a large wooden roost chamber within the case. This shell is made to last for at least 20 years in the open air. The bats can easily pass around inside the box throughout the day thanks to the interconnecting roost chambers on all four sides.
- > Bats can adapt to microclimates inside the roost site during the day by switching from one side of the box to the other, in this **double chambered rocket box**. The rocket box is made of exterior plywood and is available in either a regular black finish or a custom colored finish.
- > The materials used are Douglas Fir roosting chamber and steel pole.
- > The box dimensions are H1060mm x W300mm x D300mm
- > The weight is 8kg box + 7kg pole

**Eire Ecology**

Moyglass, Loughrea, Co. Galway

Phone: +353 (0) 85 1179428

Email: info@eireecology.ie

*\*Or Similar approved*

**RMDA**  
LANDSCAPE ARCHITECTS · CONSULTANTS

# Green Infrastructure links to the wider area:

Creating New GI Corridors linking to the wider area



Open Space

Areas of Strong Green Infrastructure



# Tree Planting

## SCHEDULE OF IMPLEMENTATION:

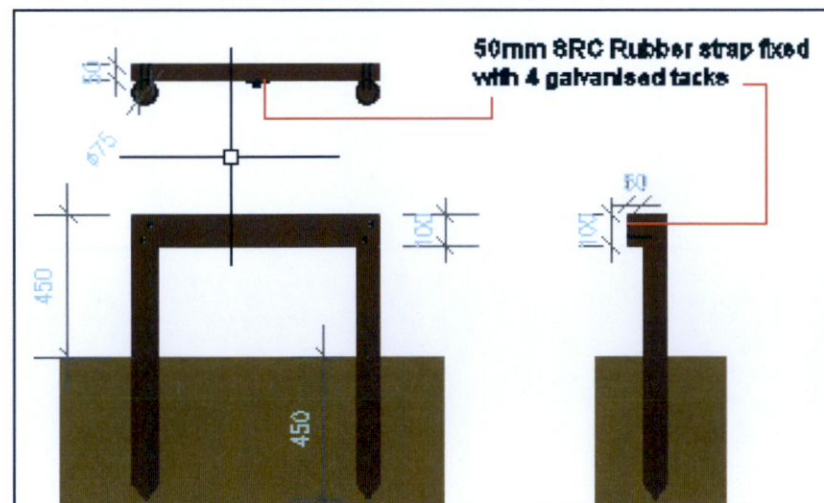
1. ALL TREE AND HEDGEROW PLANTING IS TO BE CARRIED OUT DURING THE FIRST WINTER SEASON, I.E. NOVEMBER TO FEBRUARY INCLUSIVE.
2. ALL LAWN AREAS ARE TO BE PREPARED AND SEEDED DURING THE GROWING SEASON, I.E. APRIL TO OCTOBER INCLUSIVE.
3. ALL CONTAINERISED SHRUB PLANTING MAY BE CARRIED OUT AT ANY TIME OF WHEN SOIL IS NOT FROZEN, WATERLOGGED OR EXCESSIVELY DRY.

## PLANTING NOTES:

ALL TREES, SHRUBS AND HEDGEROW PLANTS SHALL COMPLY WITH BS 3936, SPECIFICATION FOR NURSERY STOCK. ALL PRE-PLANTING SITE PREPARATION, PLANTING AND POST PLANTING MAINTENANCE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF BS 4428 (1989) CODE OF PRACTICE FOR GENERAL LANDSCAPE OPERATIONS (EXCLUDING HARD SURFACES).

ALL NEW TREE PLANTING SHALL BE POSITIONED IN ACCORDANCE WITH THE REQUIREMENTS OF TABLE 3 OF BS 5837: 2005 TREE IN RELATION TO CONSTRUCTION: RECOMMENDATIONS, WHICH SPECIFIES MINIMUM DISTANCES BETWEEN NEW PLANTING AND STRUCTURES.

### Typical double Tree staking detail

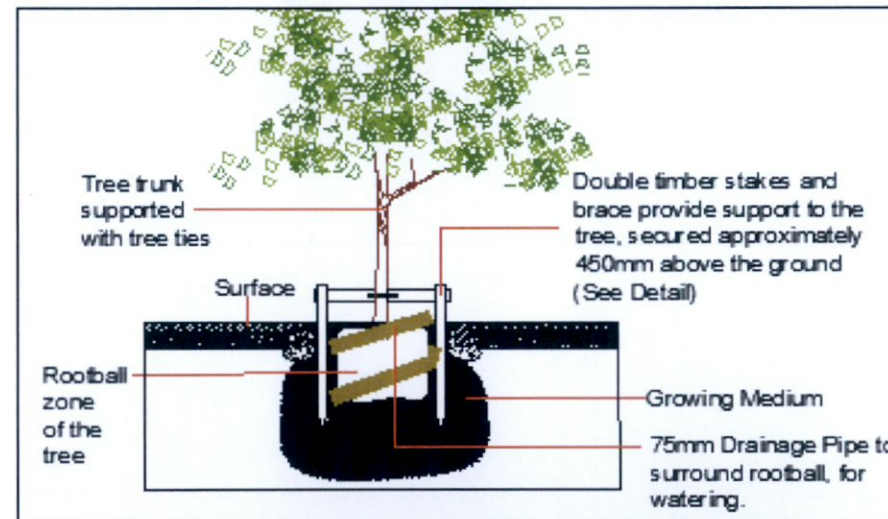


Tree Planting



Tree Planting

### Tree Planting Detail



### Shrub Planting Detail

