

LANDSCAPE DEVELOPMENT REPORT

Residential Development at Clonattin, Gorey

November 2020

Issue 5



1.0 INTRODUCTION

This report corresponds to the following drawing referring to the landscape and public realm proposals for the proposed development at Clonattin, Gorey.

Dwg. No.	Title	Scale
300	Landscape Masterplan	As shown
301	Detail Sheet 1	As shown
302	Detail Sheet 2	As shown
303	Detail Sheet 3	As shown

The site is irregular in shape and is bounded by Clonattin Village along the northern boundary, Individual agriculture lands along the eastern, southern and south-western boundary and individual dwellings along its north-western boundary. The topography of the lands varies with a general fall north- southwards across the lands of approx. 10.4m (highest level of +49.65 and lowest level is +39.20m).

The proposed scheme is a residential scheme consisting of houses and apartment blocks. It also includes a number of public spaces which form the focus of the overall development. The spaces contain a number of elements including water attenuation features, informal play spaces, a play facility, footpaths and tree planting. These spaces are accessed from the proposed footpaths associated with the proposed development.

2.0 LANDSCAPE STRATEGY

The landscape strategy to the external spaces within the proposed development is to produce a scheme with a strong identity and distinctive sense of place that fosters a connection and attachment between people and their surrounding environment. This will be achieved by creating a legible environment for people to live within and move through by using a hierarchy of materials and planting to create different zones and provide visual cues to how people may move through or use these spaces. This network of public spaces within the development will include:

- Space for informal play
- Play facility
- Provision of exercise stations
- Pedestrian paths for use by persons of all ages, walkers, runners, dog walkers etc.
- Kick about area
- Quality lighting provision
- Linear park





Fig.1: Concept images for public and amenity spaces within the proposed development

3.0 PROPOSED LANDSCAPE:

The proposed layout successfully utilizes the existing landscape elements including the topography and the existing hedgerow trees and river where achievable. The primary design consideration within the landscape was to consider the requirements of the future residents, through the provision of high quality public spaces with a strong landscape character. The proposed landscape strategy forms part of the overall green space network within the overall development

The site includes a series of primary and ancillary public spaces of varying scale and character that are distributed strategically through the development. These public spaces are programmed to provide a range of uses and respond to the surrounding natural and built environment.



Fig.2: Proposed Landscape Plan

3.1 THE CENTRAL PUBLIC SPACE:

The main public space lies in the center of the development. This central public space is divided into three zones. The northern zone is bound by proposed access roads from three of its edges and the potential school site from its northern edge. This zone includes a natural play facility, existing retained trees & hedgerows, proposed tree planting, feature ground modelling and walkways.

The intermediate zone is bound by proposed access roads from its four edges and includes proposed tree planting, shrub & lawn areas, feature ground modelling and spaces for passive recreation.

Finally, the Southern zone comprises an open attenuation feature with a proposed raised platform with controlled access, existing retained trees and proposed tree planting.

3.1.1 PROPOSED PLAY FACILITY:

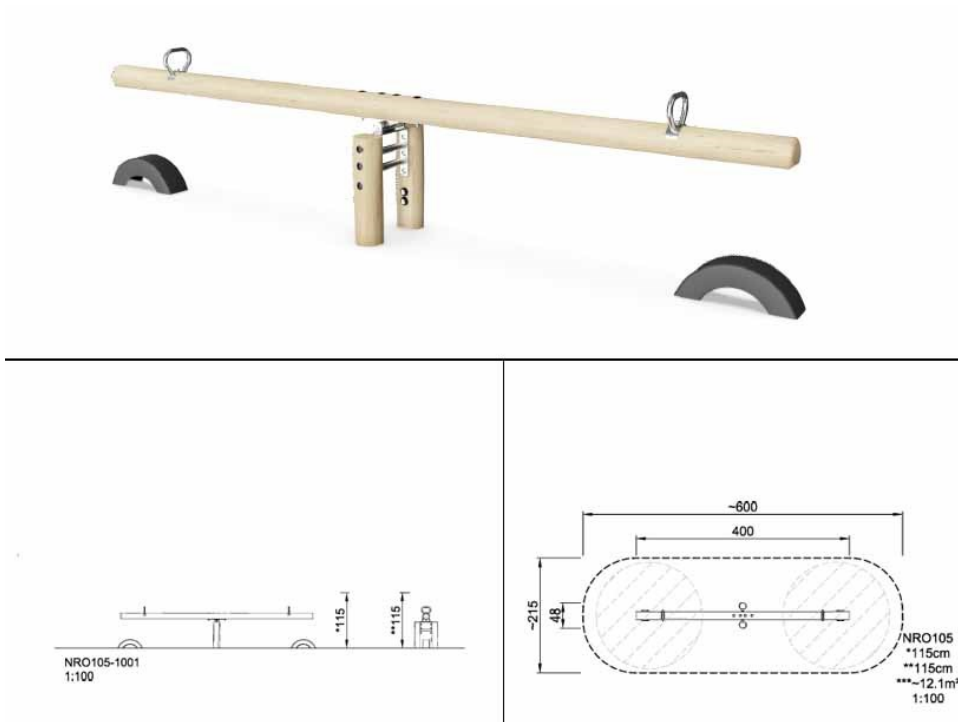
A natural play facility is proposed within the central public space, which is overlooked by the surrounding residential properties for the purpose of passive surveillance. This section outlines possible natural play equipment used in the play facility located in the centre of the development:



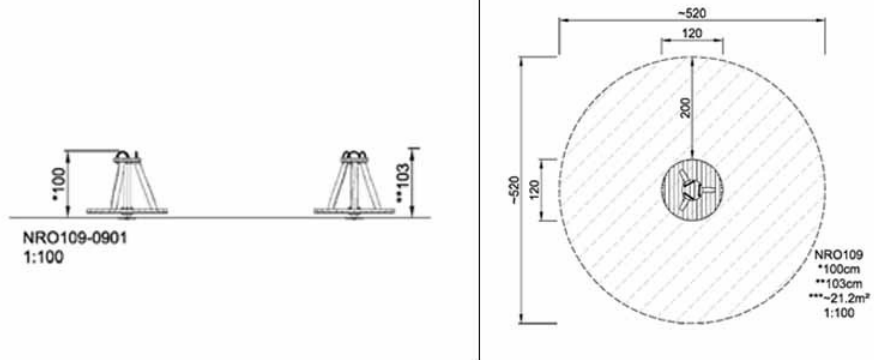
Fig.3: Section through proposed play facility



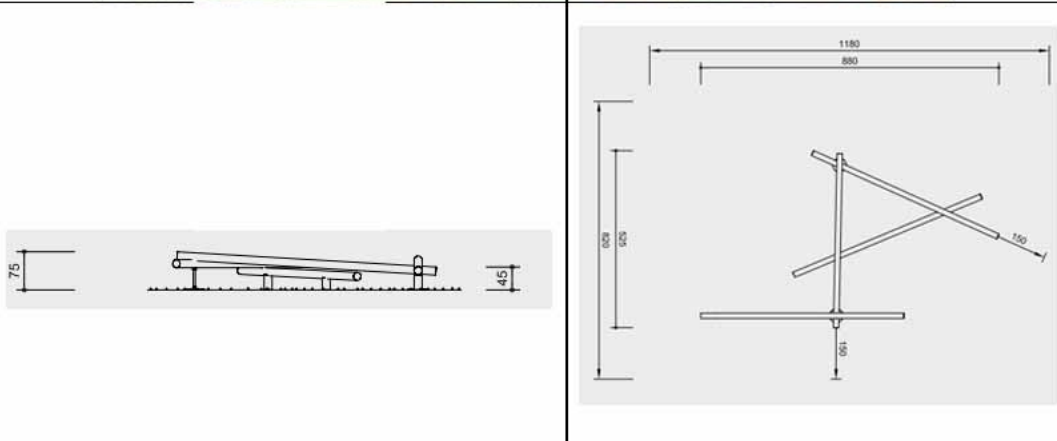
(1) Concept Image of Interactive living Structure



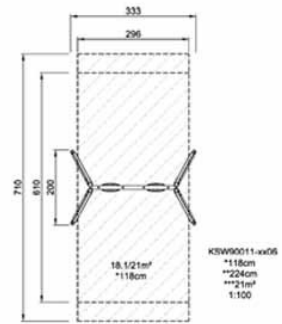
(2) Entry seesaw for 2 persons (4-12 yrs.), Kompan



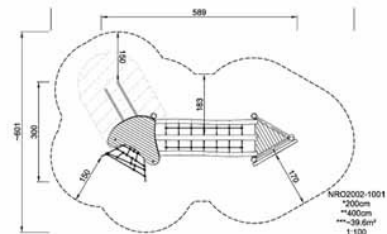
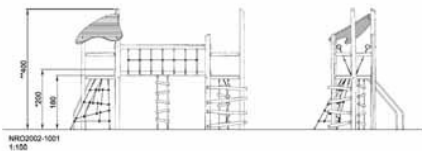
(3) Carousel (4-12 yrs.), Kompan



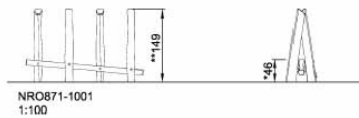
(4) Log balance beams (6-12 yrs.), Richter



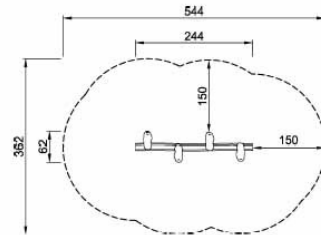
(5) Double Swing Hardwood (2-8 yrs.), Richter



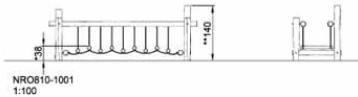
(6) Two Towers (6-12 yrs.), Kompan



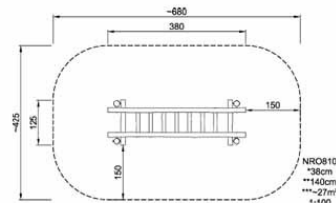
* = Highest designated play surface.
** = Total height of product.



(7) Balance Plus (4-12 yrs.), Kompan



* = Highest designated play surface.
** = Total height of product.



(8) Wobble Bridge (6-12 yrs.) ,Kompan,

3.2 THE LINEAR PARK:

A continuous pedestrian path creating a riverside walk links the three zones of the central public space together and extends to the north eastern corner of the development to the existing public space and play facility. This linear walk includes existing trees and hedgerows, proposed tree planting and proposed exercise stations. The nature of the walk and the proposed native planting reinforces the ecological value of the development as elaborated in the EIAR report prepared by the ecologist.

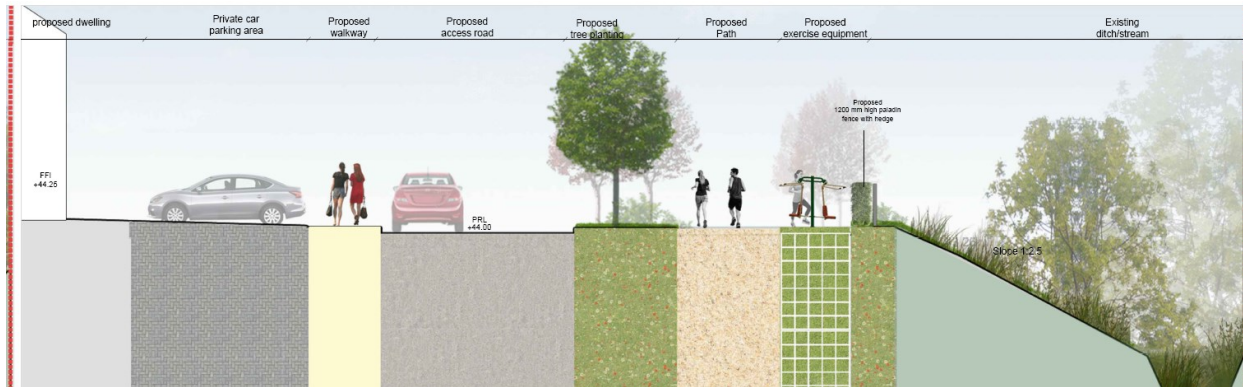


Fig.3: Section through proposed linear park

3.2.1 PROPOSED EXERCISE EQUIPMENT:

The exercise equipment proposed may include the below or similar approved:



(1) Sit up bench, Kompan or similar





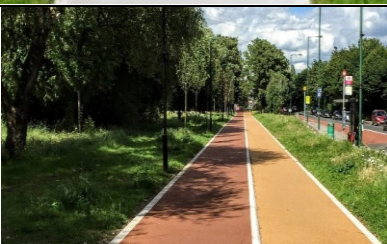
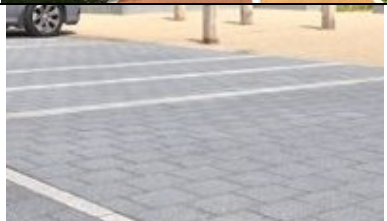

(2) Parallel bars, Kompan or similar



(3) Pull up station, Kompan or similar

4.0 PROPOSED FINISHES:

One of the primary aims of the design of the public spaces within the proposed development is to provide a scheme with a strong identity and distinctive sense of place that fosters a connection and attachment between people and their surrounding environment. This will be achieved by creating a legible environment for people to live within and move through by using a hierarchy of materials (paving, street furniture) and planting to create different zones and provide visual cues to how people may move through or use these spaces. While different paving materials and textures will be used to demarcate changes to levels, verges, paths and to guide the visually impaired, it is proposed that materials (e.g. paving, lighting, street furniture and tree planting) will be chosen from a limited palette to encourage visual cohesion within the scheme. The table below includes the proposed finishes and materials used in the public realm:

No.	Finish	Concept Image
1	Proposed bound gravel finish to pathways within public areas to engineer's specification	
1	Proposed brushed concrete finish to footpaths	
2	Proposed coloured bitmac to cycle route to engineer's specification	
3	Proposed permeable paving to car parking spaces to engineer's specification	
4	Proposed corduroy hazard warning paving flags to pedestrian crossovers/crossings	


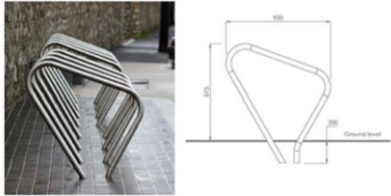

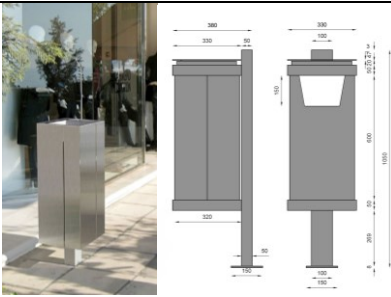
5	Proposed blister paving flags to pedestrian crossings	
6	Proposed cycle parking stands	
7	Proposed seating element within central park if considered appropriate	
8	Proposed litter bins within central park if considered appropriate	

Table 1: Proposed finishes

5.0 PROPOSED TREE PLANTING:

Tree, shrub and native grass planting are proposed and will be located within the public spaces. Existing hedgerow trees, where achievable will be retained and new tree planting will be provided where tree removal is required. It is proposed to use native tree planting where possible including Oak, Acer, and Prunus. Smaller specimen tree/multi-stem shrubs will also be used within private front gardens.

1511 Clonattin Indicative Planting Schedule		
Name	Specification	Size
Supply and protect the following:		
<i>All plant material to Landscape Architects approval</i>		
Street Trees		
Ac- Acer campestre	RB	20-25 cm
Trees to Public Spaces & Communal Amenity Spaces		
Ac- Acer campestre	RB	14-16cm
Ap- Acer platanoides	RB	14-16cm
Pa- Prunus avium	RB	14-16cm
Ps- Pinus sylvestris	RB, fthd	1.5- 1.8m high
Qp- Quercus petraea	RB	14-16cm
Qr- Quercus robur	RB	14-16cm
Trees to Small Private Front Gardens		
Ag- Acer ginnala	RB, fthd	MS 2-2.50 m high
Al- Amelanchier lamarckii	RB, fthd	MS 2-2.50 m high
Ap - Acer palmatum	RB, fthd	MS 2-2.50 m high
Ms- Malus sylvestris	RB, fthd	MS 2-2.50 m high
Mg- Magnolia grandiflora	RB, fthd	MS 2-2.50 m high
Pa- Prunus avium	RB, fthd	MS 2-2.50 m high
Pp- Prunus padus	RB, fthd	MS 2-2.50 m high
Sa- Sorbus aucuparia	RB, fthd	MS 2-2.50 m high
Vb- Viburnum x burkwoodii	RB, fthd	MS 2-2.50 m high
Marginal Plants		
Cp- Clatha paulustris		3 ltr.cg
Ca- Carex acutiformis		3 ltr.cg
Gr- Geum rivale		3 ltr.cg
Ip- Iris pseudacorus		3 ltr.cg
Ja- Juncys articulatus		3 ltr.cg
Emergent Plants		
Ap- Alisma plantago -aquatica		3 ltr.cg
Be- Berula erecta		3 ltr.cg
Bu- Butomus umbellatus		3 ltr.cg
Pc- Phragmites communis		3 ltr.cg
Ae- Aparganium erectum		3 ltr.cg
Grass areas		
Native grasses (to future specification)		
Amenity grasses (to future specification)		

All planting to Landscape Architects approval. All tree species shall be accompanied by Irish Provenance Certificates, where achievable.

6.0 OUTLINE OF OPERATIONS

Ground preparation will precede planting and will include weed clearance and amelioration where necessary. There will be a period of 12 months defects liability on all planting with plant failures being replaced in the following planting season.

Chemical use: all use of chemicals, such as herbicides, pesticides and fertilizers will require prior approval by the project ecologist and landscape architect.

Herbicide and Pesticide usage must be carried out in accordance with:

S.I. 155 of 2012 - European Communities (Sustainable Use of Pesticides) Regulations 2012

S.I. 159 of 2012 - European Communities (Plant Protection Products) Regulations 2012

PLANTING

Materials

All plant material shall be good quality nursery stock, free from fungal, bacterial or viral infection. Aphis, Red Spider or other insect pest, and physical damage. It shall comply with the requirements of the following sections of B.S. 3936, Specification for Nursery Stock, where applicable:

- Part 1 - 1992: Specification for trees and shrubs
- Part 2 - 1990: Specification for roses
- Part 4 - 2007: Specification for forest trees, poplars and willows
- Part 7 - 1989: Specification for bedding plants
- Part 9 - 1998: Specification for bulbs, corms and tubers
- Part 10 - 1990: Specification for ground cover plants

All plants shall have been nursery grown in accordance with good practice and shall be supplied through the normal channels of the wholesale nursery trade. They shall have the habit of growth that is normal for the species.

Except for any cultivated varieties or exotic species which do not set viable seed in Ireland, all plants shall have been grown from seed.

The Contractor will be deemed to have advised his suppliers of the relevant sections of this specification, including all protection required, at the time of enquiry and shall in all cases be liable to replace materials brought on site which are not in accordance with this specification.

Species

All plants supplied shall be exactly true to name as shown in the plant schedules. Unless stipulated, varieties with variegated or otherwise coloured leaves will not be accepted, and any plant found to be of this type upon leafing out shall be replaced by the Contractor at his own expense.

Bundles of plants shall be marked in conformity with the relevant part of B.S. 3936. The contractor shall replace any plants that are found not to conform to the labels. An inspection of plants shall be undertaken prior to planting to ensure quality control.

Extra Heavy Standard and Standard Trees

Extra Heavy Standard trees shall have a total height of 4.0 to 4.5 metres and a girth of 14-16 cm at 1m above ground level. Standard trees shall have a clear stem 1.70 m to 1.85 m in height from ground level to the lowest branch, a minimum girth of 8 cm measured at 1m above ground level and a total height of 2.5 to 3.0 metres.

Trees shall have a sturdy, reasonably straight stem, a well defined and upright central leader, with branches growing out of the stem with reasonable symmetry, or a well balanced branching head according to the Schedule. The crown and root systems shall be well formed and in keeping with the nature of the species. Roots shall be in reasonable balance with the crown and shall be conducive to successful transplantation.

Trees shall be supplied bare rooted unless otherwise specified. They shall have been regularly undercut or transplanted. They shall have been lifted carefully to avoid tearing of major roots and to preserve a substantial proportion of smaller and fibrous roots. Trees shall have been grown on their own roots. Budded or grafted trees will be rejected.

Transplants

Transplants shall not be less than three years old, and shall have been transplanted at least once. Trees of species not listed in B.S. 3936: Part 4: 1984 shall be sturdy, with a balanced root and shoot development. Sizes shall range from 600-900 and 900-1200 mm.

Trees shall be well furnished with lateral and fibrous roots, and shall be lifted without severance of major roots. Roots shall be of the habit normal for the species.

Salix shall have been stumped and transplanted at the end of the first year in the nursery.

Shrubs

Shrubs shall be of the minimum size specified in the schedules, with several stems originating from or near ground level and of reasonable bushiness, healthy, well grown, and with a good root system. Pots or containers shall be as scheduled. Plants shall not be pot bound, nor with roots deformed or restricted. Bare root material will only be accepted where specified.

Herbicides

Chemical use: all use of chemicals, such as herbicides, pesticides and fertilizers will need require prior approval by the project ecologist and landscape architect.

Within the proposed Nature Park the use of herbicides and pesticides should be minimised.

Where species is deep rooted and cannot be removed manually or is persistent it should be treated with localised and spot application of hormone weed killers.

Weedkiller Application

All weedkiller handling and application should be carried out in accordance with the manufacture's instructions, COSHH Regulations, using the necessary PPE and by trained personnel only.

Bulky Organic Manure/ Mushroom Compost

Bulky organic manure shall consist either of spent peat compost, mushroom compost, as described above, spent hops, or of well rotted farm manure. Farm manure shall consist of predominantly of faecal matter and

shall be free of loose, dry straw and of undigested hay. Manure shall be free of surplus liquid effluent. This shall be used on mounds only. Well spent mushroom compost shall be used in all ornamental planting areas.

Fertilisers

Controlled release fertiliser N:P:K 15:9:11 plus trace elements - Osmocote plus or similar approved applied at specified rates.

Fertiliser shall be supplied in sealed bags or containers bearing the manufacturer's name, the net weight and analysis.

Stakes for Standard Trees

Stakes shall be of peeled larch, pine or Douglas fir, preserved with water-borne copper-chrome-arsenic to I.S. 131, to a net dry salt retention of 5.3 kg. per cubic metre of timber. Stakes shall be turned, and painted one end. Sizes shall be as follows:-

for extra heavy standard trees: 2700 x 75 mm dia.
for standard trees: 2700 x 75 mm dia.

Set stakes vertically in the pit, to the western side of the tree station, and drive before planting. Drive stake with a drive-all, wooden maul or cast-iron headed mell, not with a sledge hammer.

Tree Ties

Tree ties shall be of rubber, P.V.C. or proprietary fabric laminate composition, and shall be strong and durable enough to hold the tree securely in all weather conditions for a period of three years. They shall be flexible enough to allow proper tightening of the tie.

Ties shall be min. 40 mm wide for standard trees. Provide a simple collar, free of rough or serrated edges, to prevent chafing. Provide for subsequent adjustment of the tie either by means of a buckle (nail tie to stake immediately behind it) or by leaving heads of securing nails slightly proud, to permit easy extraction and repositioning. All nails shall be galvanised.

Protection

The interval between the lifting of stock at the nursery and planting on site is to be kept to an absolute minimum. Plants shall be protected from drying out and from damage in transport. All stock awaiting planting on site shall be stored in a sheltered place protected from wind and frost, from drying out and from pilfering. Bare rooted plants not immediately required shall be heeled-in in a prepared trench, the bundles of plants first having being opened, the plants separated and each group separately heeled-in and clearly labelled. The roots shall be covered with moist peat or soil and shall be kept moist until planted. Pots shall not be removed until plants have been carried to their planting station. Plants packed in polythene must be stored in shade.

All forest transplants and bare root shrubs shall be wrapped in polythene from the time of lifting to conserve moisture. Except when heeled-in, they shall be protected in polythene at all times until planted into their final position on site.

Plants shall be handled with care at all times, including lifting in and despatch from the nursery. Plants or bundles of plants shall not be tossed, dropped or subjected to any stress likely to break fine roots.

Damage

Any roots damaged during lifting or transport shall be pruned to sound growth before planting. On completion of planting any broken branches shall be pruned.

Vine Weevil

Line out all container grown plants on level ground. Drench pots with 40 g of 40% Diazinon W.P. in 100 litres water. Allow to stand for at least three days before planting.

Setting Out

Setting out shall be from figured dimensions where indicated, and otherwise by scaling.

Transplants shall be planted at the spacings indicated, in staggered rows.

Transplants in mixtures shall be planted at the spacings indicated, in staggered rows or at random according to instructions on the contract drawings. Species shall be planted in groups in each area. Set out groups avoiding obvious repetition, regularity, and single lines of one species.

Shrubs and ground covers planted in mass shall be at the spacing indicated on the drawings. Shrubs shall not generally be planted closer to a kerb or to the edge of a planting area than a distance equal to half the spacing indicated for that species.

Ripping

Rip all disturbed ground a minimum of 600 mm deep with a subsoiler approved by the Landscape Architect in two transverse directions.

Topsoiling

Excavate for shrub beds and hedge trenches to 400 mm below finished levels. Dispose of material to tip off site or to areas of filling on site as directed by the Landscape Architect. Break up base of beds and trenches min. 150 mm deep. Remove topsoil from areas to be sown with wild-flower mix.

Decompact base of planting bed to allow drainage.

Load and carry topsoil from stockpiles on site, and backfill beds/trenches in layers each not more than 150 mm deep, lightly consolidating each as the work proceeds. Leave area slightly mounded, to allow for settlement.

Incorporate ameliorant and fertiliser, as specified.

Site Preparation

Weedkilling for the below areas – herbicide selection and usage will need to be approved by the project ecologist and landscape architect. prior to works taking place onsite.

Preliminary Weedkilling

Transplants: Weedkill full ground area. Apply a first treatment before 15th July, and a second not later than 15th September to kill regrowth.

Hedge Trench: Weedkill. Excavate trench 600 x 400 mm. Add ameliorants as follows, incorporate evenly into excavated material, and backfill:-

Organic Manure:	75 mm deep
Osmocote plus :	70 gm/m

Shrub Planting: Weedkill. Spread over all planting areas:-

Organic Manure:	50 mm deep
Osmocote plus :	75 gm/msq

Standard and Selected Standard Tree Planting

Excavate tree pits to 0.5 cubic metres volume (1.0 m diameter x 60 cm deep). The base of the pit shall be broken up to a depth of 15 cm and glazed sides roughened. Remove subsoil, stones and rubbish to tip on site as directed by the Architect/Engineer. Supply and drive the stake.

For planting in areas of made up ground, load and carry topsoil from stockpile on site. In undisturbed ground, backfill with excavated material. Mix the following ameliorants evenly throughout the topsoil while it is stacked beside the pit. (Quantities are calculated for a pit of the specified dimensions):-

Organic Manure:	0.047 cubic m (equivalent to manure 6 cm deep over 1 m dia of tree pit).
Osmocote plus :	250 gm

Trees shall be planted at the same depth as in nursery, as indicated by the soil mark on the stem of the trees. They shall be centred in the planting pit and planting upright. The roots shall be spread to take up their normal disposition. Fit tie. Clean a neat circle 1000 mm dia. of all grass.

Planting of Shrubs and C.G. Transplants

Remove all plastic and non-degradable wrappings and containers before planting. Make four vertical cuts with a sharp knife on the quadrants through the edge of C.G. rootballs to sever girdling roots. Excavate hole to min. 10 cm greater diameter than the root spread, and to a depth to allow planting to same depth as in the nursery. Spread out roots of bare root species. Backfill in layers of not more than 10 cm, firming each layer and on completion.

Replacements

The planting will be inspected in September following planting. Any tree or shrub found to have died from any cause except as provided below or the work of other contractors shall be replaced by the contractor at his own expense. Replacement planting shall conform in all respects with this Specification, including all specified excavation, provision and incorporation of all fertilisers and ameliorants, and weedkiller treatments.

Failures will not be charged to the Contractor in the following cases:-

- Damage by hares or rabbits, where not protected by fencing or shelters.
- Failure solely due to prolonged dry weather, except in where the contractor will be responsible for watering.

- Losses due to theft, vandalism or disturbance by other contractors.

Persistence of weed in planted areas will be regarded as a contributory cause of failure due to drought. Prolonged dry weather will not exonerate the Contractor if the scheduled aftercare operations have not been carried out as programmed.

GRASS SEEDING

Seed Mixture

An appropriate seed mix will be specified for the type of sward and level of maintenance

Fertiliser

10:10:20, N:P:K - supplied in bags bearing the names of the manufacturer, the analysis of the contents and the net weight. The contractor shall produce to the Landscape Architect the original delivery docket or invoice stating the quantity supplied for these works.

Pre-Seeding Weedkiller

Herbicide selection and usage will need to be approved by the project ecologist and landscape architect. prior to works taking place onsite.

Non-selective herbicide: Do not apply when rain is forecast within six hours. Do not apply when wind is likely to cause spray drift (over 24 kph/15 mph). Allow leaf symptoms to develop before carrying out any cultivations (at least 7 days).

Post Emergence Weedkiller

Apply selective weedkiller when grasses have reached the two-leaf stage or beyond, and when seedlings have emerged and have reached cotyledon or two-leaf stage (approx. 4 weeks after sowing). Do not mow within 7 days of treatment. Do not apply during drought. Apply on a fine, still, warm day.

Machinery

All machinery shall be in good and serviceable condition. Harrows and cultivators shall have their full complement of tines, which shall be sharp, effective, and set to give the specified depth of cultivation. Mowers shall be sharp and evenly set to the specified height, and shall in use avoid pulling or laying the sward.

Tractors for use in ripping shall be four-wheel drive or tracked. All tractors shall be fitted with position control to ensure even cultivation, at the minimum specified depth.

Weather

All work to soil shall be carried out in dry weather, and when the soil can be reduced to a friable condition, avoiding smearing or panning, and rutting and compaction by tractors.

Seeding shall be carried out in the fine, still weather. Seed shall not be permitted to fall onto hard surfaces or into planting areas. Any grass germinating there shall immediately be treated with a total weedkiller at the Contractor's expense.

Weedkilling

Application: Killing existing grass pre-seeding, and killing weeds germinating in re-spread topsoil. Apply non-selective weedkiller (For seeding from mid-August onwards, apply not later than 31st July).

If germinating weed grasses are less than 100 mm high and broad leaved weeds have not produced full-sized leaves, do not apply non-selective weedkiller. Apply non-selective herbicide @ 3.0 litres/hectare in water @ 200-300 litres/hectare 4 to 7 days before cultivating.

Ripping

Rip with a subsoiler approved by the Landscape Architect in two transverse directions. The first pass shall be across the maximum fall of the land and the second at right angles to this. Rip at 600 mm maximum centres, at a constant depth of 400 mm. Do not mix subsoil and topsoil layers during ripping.

Cultivations

Cultivate in transverse directions by disc or tine harrows and/or rotary cultivators, to the minimum depth specified in the operations schedule. Remove weeds and roots, metal items and rubbish. Produce a tilth as follows; Reinstatement areas 75mm and quality areas/verges 50mm and pick off stones and debris over that size.

If rotary cultivators are used, the ratio of tractor speed to tine speed shall be sufficient to avoid smearing at the base of the cultivation.

Final Grading

During cultivations, grade with a blade, lute or grader, to produce even, flowing surfaces, free from local humps and depressions.

Finishes

Topsoil shall stand 30 mm proud of manholes, paths and kerbs after cultivation and firming.

Fertiliser

During last stages of cultivation, apply fertiliser evenly over the full area of seeding in two equal passes in transverse directions, and incorporate into the seed bed up to 30 mm deep.

First Cut

Before cutting, pick off stones above the maximum diameter specified on the operations schedule. Roll if specified on the operations schedule to firm sod. The time for cutting and the height of the cut shall be as specified in the operations schedule.

Quality

The quality of the grass sward shall be even throughout with a constant sward and colour. The contractor shall make good any areas not of this quality. Make up and seed over any depressions which develop after seeding. Re cultivate and re-seed any areas which fail to germinate or which die off.

AFTERCARE

The operations are grouped under the following headings;

Newly planted trees
Shrub beds
Groundcover
General litter clearance

GRASS AREAS

Amenity Grass Areas

Maintenance Objective

To provide an even stand of vegetation of uniform height and colour comprising predominantly grass species, although a small percentage of dicotyledenous plants - no more than 5 per cent - will be accepted.

Maintenance Operations

- a) Mowing shall be carried out using a cylinder mower to maintain the vegetation length within the limits of 30 mm and 75 mm during April to August inclusive and between 50 mm and 90 mm during the rest of the year. (This will normally require mowing at up to once a week in the peak of the season and up to, 20 times per year).
- b) The arisings shall be let fly but must be distributed evenly over the surface and at no time shall the layer of clippings be of such a depth that will affect the growth of vegetation. At no stage must arisings come to rest on paved or planted areas.

Additional Operations

- a) All edges of grass areas, against buildings, footpaths, roadways, trees, posts and any other obstruction shall be kept neat, trimmed and tidy.
- b) Mowing strips against fences, etc. shall be 100 mm wide and may be maintained by the use of an appropriate approved herbicide.

Care of Newly Planted Trees - General

Young trees will need regular attention to ensure establishment. The most important operation is to keep the soil around the base of the tree free from weeds or grass and to ensure secure and correct staking.

Maintenance Objective

Establish a stable and healthily growing tree with a well-shaped framework for future growth.

Maintenance Operations

- a) Maintain a 1m. diameter circle of plant-free soil around the base of each isolated tree by hoeing or the use of approved herbicide other than a residual.

Allow for hoeing up of soil once every 4 weeks in the growing season (5 times per year). Allow for herbicide treatment once in the winter or spring and 3 additional treatments.

Note: In some areas this operation may be replaced by the application of bark mulch as ground cover.

b) Cut back any tall vegetation that is threatening to shade or smother the young tree (i.e. taller vegetation growing from outside the 1 m weed free area). Allow for cutting back regularly (3/4 times a year).

c) **Provisional item** Water the newly planted trees throughout the summer months (May to August) as required after any period of 4 weeks without significant rainfall (less than 5 mm). Apply sufficient water to thoroughly wet the top 150 mm of soil around the tree roots. This will normally require approximately 10 litres for a seedling or whip and 20 litres for a standard tree, include transport of water to the site.

d) Check stakes and ties for firmness and support and adjust as necessary. Allow for checking twice a year, preferably in late spring and late summer.

e) Firm the soil around the roots to ensure that the plant is securely planted in the ground and upright. Allow for firming once in the spring after planting.

f) Formative prune to remove any dead, diseased or damaged shoots and create a balanced form for future growth. Allow for pruning once in the season after planting.

Shrub Beds - General

The borders must be kept weed free, particularly of perennial weeds, to allow planting to give early cover. However, the plants may be required to be thinned so that the shrubs that are retained are able to achieve an attractive form. This may involve removing the intermediate plants soon after shoots are touching.

Maintenance Objective

Maintain shrub growth to cover as much as possible of the bed area and allowing the individual plants to achieve as nearly as possible their natural form. Maintain the borders free of visible weeds and shape and prune the shrubs to avoid obstructing pathways or blocking light to, or adhering to windows.

Maintenance Operations

a) After planting, if appropriate and in season for the species involved, prune shrubs to develop their desirable ornamental characteristics. At the same time remove intermediate plants that are restricting the natural and attractive development of their neighbours. Remove all arisings from site.

b) Lightly cultivate the surface soil, to a depth of approximately 50 mm, remove or bury all annual weed or natural litter and break any surface capping. Take special care to avoid unnecessary damage to the shrub plants and ensure that all the shrubs are firmly bedded in the soil. Leave the surface with a fine and even tilth with soil crumbs of less than 50 mm in diameter. Once a year operation in early winter.

Note: This operation is only essential where the soil is compacted or as a means of incorporating mulch. Not required where the areas are mulched.

c) Maintain the soil surface substantially free of weeds (less than 10 per cent weed cover) by hand removal and spot treating with Glyphosate, or approved equivalent. Spot treatment at approximately four-weekly intervals in the main growing season, to a total of five times per season.

Note: As an alternative the beds can be regularly hand-hoed at up to two-weekly intervals in the main growing season, to 6 times per year. This procedure is recommended for the first year after planting when the plants may be more sensitive to contact herbicide damage and residual herbicides may not be used.

Ground Cover - General

Described as dense, low-growing plants, which cover the ground and smother any weeds. Ground-cover needs careful establishment, to ensure that any perennial weeds are eliminated.

Maintenance Objective

Maintain a dense, weed free cover of healthy growth, clipped or pruned as necessary to give a neat and tidy finish and contained within the planted area.

Maintenance Operations

- a) Maintain the area substantially free of weeds (less than 10 per cent of weed cover at maximum) by hand removal or spot treating any emergent weeds during the growing season with Glyphosate, or approved equivalent. Spot treatment or weed removal at approximately four-weekly intervals in the main growing season, to 5 times per year in total. Frequency of sprays to drop, as the plants establish.
- b) Trim and tidy the plants once a year in the winter months, to remove dead vegetation or overgrowing branches. Remove all arisings from site. The amount of work will vary according to the species.

Litter Clearance - General

Maintenance Objective

Collect and remove from the site, all extraneous litter and rubbish on a regular within landscape basis so that its presence is not detrimental to the appearance of the site. (This means that the landscape should be free from litter after each visit to site).

Maintenance Operations

- a) Collect and remove to the contractor's tip all extraneous rubbish, not arising from maintenance works, which is detrimental to the appearance of the site. This rubbish to include stones (over 50mm dia. which may be buried), bricks, debris, paper, confectionery and other wrappings, bottles, cans and plastic containers.

Allow for this operation to be carried out at regular intervals based in conjunction with other maintenance visits and operations.

Herbicide and Pesticide usage must be carried out in accordance with:

Plant protection products (PPPs) are regulated by Regulation (EU) No. 1107/2009.

Regulation (EC) No. 1107/2009 of the European Parliament and of the Council concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC

The main Irish legislation concerning the control, marketing and use of plant protection products (PPPs) are:

S.I. 155 of 2012 - European Communities (Sustainable Use of Pesticides) Regulations 2012

S.I. 159 of 2012 - European Communities (Plant Protection Products) Regulations 2012

