LAND PLANNING & DESIGN

CUNNANE STRATTON REYNOLDS
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Dublin Mountains Visitor Centre
**Montpelier Hill**
**and**
**Massy's Wood**

# LANDSCAPE DESIGN REPORT

July 2017

PREPARED ON BEHALF OF

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Appendix One Landscape Drawings @ A3

# Background

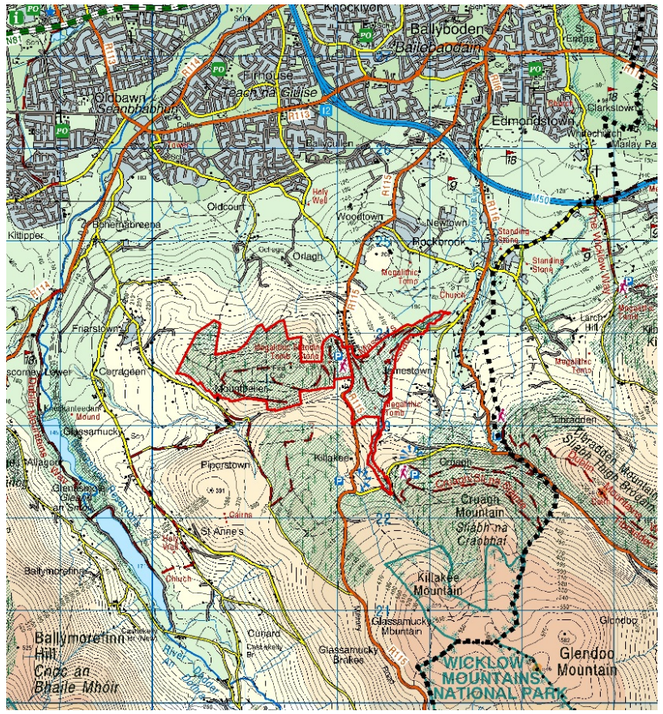


The Dublin Mountains Visitor Centre project originated in the 2015 South Dublin Tourism Strategy. The concept for the project involved capitalising on the existing popularity and amenity value of the Dublin and wider Wicklow mountains through the creation of a gateway facility in South Dublin. Following a feasibility study completed in 2016 and the assessment of a number of sites and locations, as well as development concepts, the twinned sites of Montpelier Hill/Hell Fire Wood and the adjacent Massy's Wood were selected providing the optimum mix of accessibility, amenity, natural and cultural heritage including the unique combination of the Hell Fire Club and the adjacent archaeology, and iconic views over Dublin City and Bay.

This report describes the existing landscape of the site and sets out strategic landscape objectives for both Montpelier Hill and Massy's Wood and how the new development will be integrated into the site and the landscape enhanced to enrich the overall visitor experience as well as its amenity, ecological and cultural values.

Hell Fire Wood and Massy's Wood offer one contiguous area of land forming a popular walking area, a gateway to the Dublin mountains and, in the case of the Hell Fire Wood site, panoramic views over Dublin city. The sites also contains a range of unique heritage features which add meaning, character and, in particular, mystery to the visitor experience. The provision of the visitor centre within one connected land holding means that there is effectively one site with a unique combination of visitor attractions and points of interest requiring an appropriate landscape design and landscape management response beyond the specific architectural interventions and facilities proposed.

The purpose of this section is to summarise these resources and characteristics, set out the landscape design and management responses and proposals to support the new visitor centre and associated architectural interventions and add value and complementary activity to the environs of the centre.




Proposed twin site at Hell Fire Wood and Massy's Wood – Coillte lands

Panoramic view from location of proposed Visitor Centre midway up Montpelier Hill

The Hell Fire Wood is located on Montpelier Hill which rises to 388m and, as the most north westerly outlying hill of the Dublin Mountains, offers spectacular panoramic views from various locations across the city and Dublin Bay. The slopes around Montpelier Hill to the north and west comprise rural fields in pasture eventually giving way to the city suburbs at Kiltipper / Oldbawn, Ballycullen and Emondstown. Approximately 3km from Montpelier Hill lies the M50 corridor. South of Montpelier Hill lies Killakee Mountain giving way further south, south east and south west to the extensive upland landscape of the Dublin and Wicklow mountains. Between Montpelier Hill and Killakee Mountain lies Piperstown Glen a steeply sloped valley separating the two mountains.

Massy's Wood is separated from Hell Fire Wood by the R115, a single lane carriageway from the city to the north leading south to Killake, Glencree and Sally Gap. Massy's Wood lies in a low lying area or valley falling away from the R115 and Montpelier Hill to the west and partly enclosed or formed by the slopes of Cruagh Mountain to the east.

A cluster of buildings can be found just north of the entrances to both sites. These include some significant heritage buildings as well as potentially complementary services - Stewards House, Timbertrove and Montpelier Farm. Further north at Rockbrook can be found the demesne of Mount Venus, the DSPCA grounds and Mount Venus cemetery. Other residential clusters can be found to the west and east ends of Piperstown Glen and east of Masseys Wood. Heritage sites of note include the prominent Hell Fire Club itself and adjacent Passage Graves on the summit of Montpelier Hill and Carthys Castle/ Dollymount House just north of the forest on Montpelier near Orlagh.

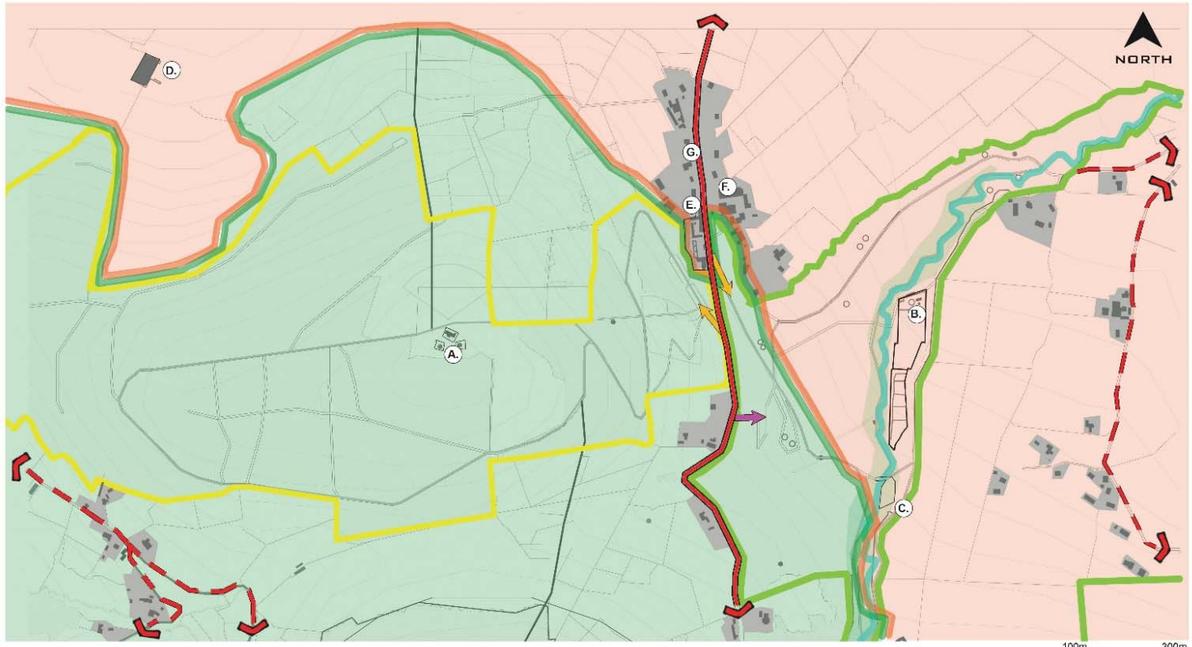
Massy's Wood contains a number of significant upstanding artefacts that contribute to its character, most notably the walled garden complex to the eastern boundary and its remnant Turner glasshouse foundations; the ruined cottage, watermill and bridge; the icehouse and various other historic features including the Military Road.

The Hell Fire Wood is accessed direct from the R115 which leads to a car- park. Massy's Wood has no parking facilities and is accessed from Montpelier by crossing the road or parking on the R115.

All of the Hell Fire Wood/Montpelier Hill is located in the Zone Objective HA DM – to protect and enhance the outstanding natural character of the Dublin Mountains Area. Approximately half of Massy's Wood is located in Zone Object HA DM, the rest is located in Objective RU - to protect and improve rural amenity and to provide for the development of agriculture.

These features are illustrated in Figure 1.

Figure 1 - Land Use/ Zoning & Access




Existing Entrance Hell Fire

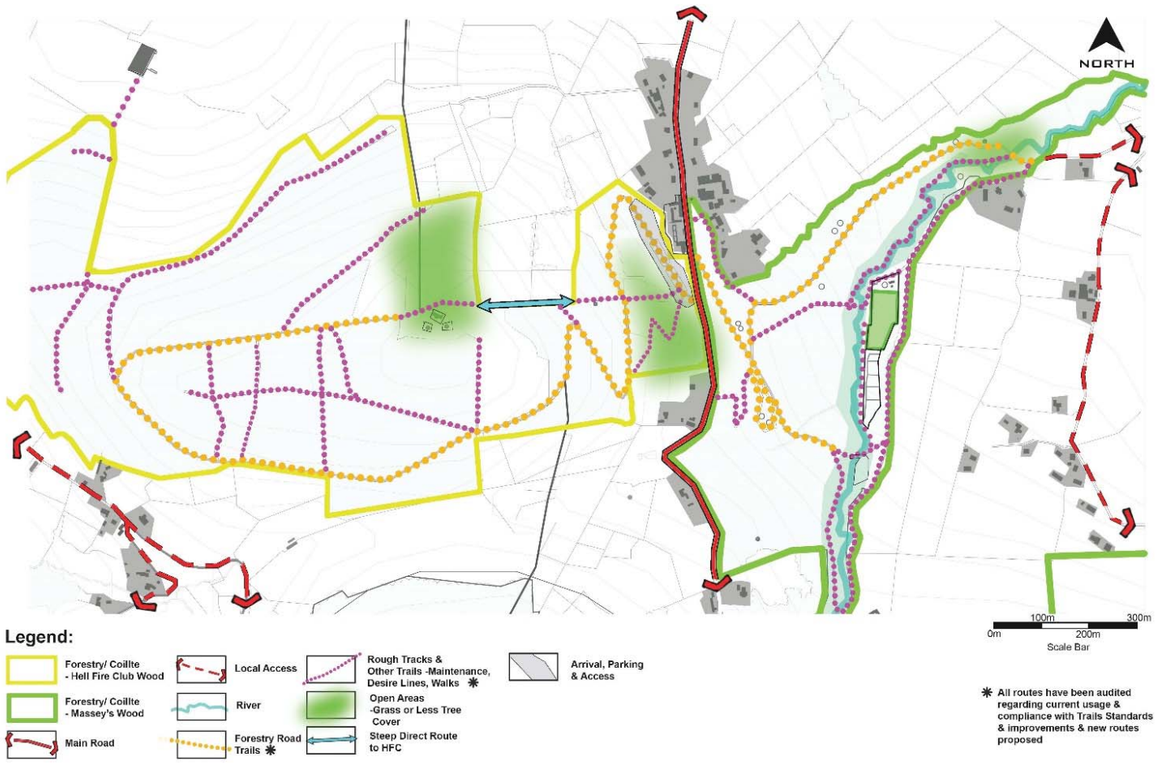
Approaches on R115, Timbertrove and Main Ride into Massy's


Figure 2 illustrates many of the roads, trails and walks through Hell Fire Wood and Massy's Wood. These have been surveyed in terms of condition by the design team and proposals are set out in the Trails Report accompanying this application. In terms of amenity and character the routes provide an established framework for access along easy gradient roads potentially suitable for vehicles – forest roads in HFC and wide drives / rides in Massy's Wood and steeper walks and narrower trails which may need enhancement physically and in terms of gradient to optimise access (where feasible) around the two woods for all.

As well as trails and roads through the woods there are a small number of open spaces which are areas of importance to the project in formulating a design strategy. They include the environs of the Hell Fire Club on the summit of Montpelier Hill, part of the north eastern slopes of Montpelier Hill – currently regenerating forest and scrub but low enough to allow open views - and the partly overgrown walled garden in Masseys Wood. These are key spaces along the necklace of trails for locating amenities and experiences.

Tracks and Trails through the upland landscape of Montpelier Hill

**Figure 2 - Trails, Forest Roads & Open Areas**




Military Road and equestrian activity

Glendoo Brook Trail

Woodland Walks

Informal Play

Icehouse

The wooded valley landscape and tracks and trails of Massy's Wood

Ruined Cottage and mysterious Entrance to Walled Garden

Figure 3 illustrates the mix of forestry throughout the two land holdings.

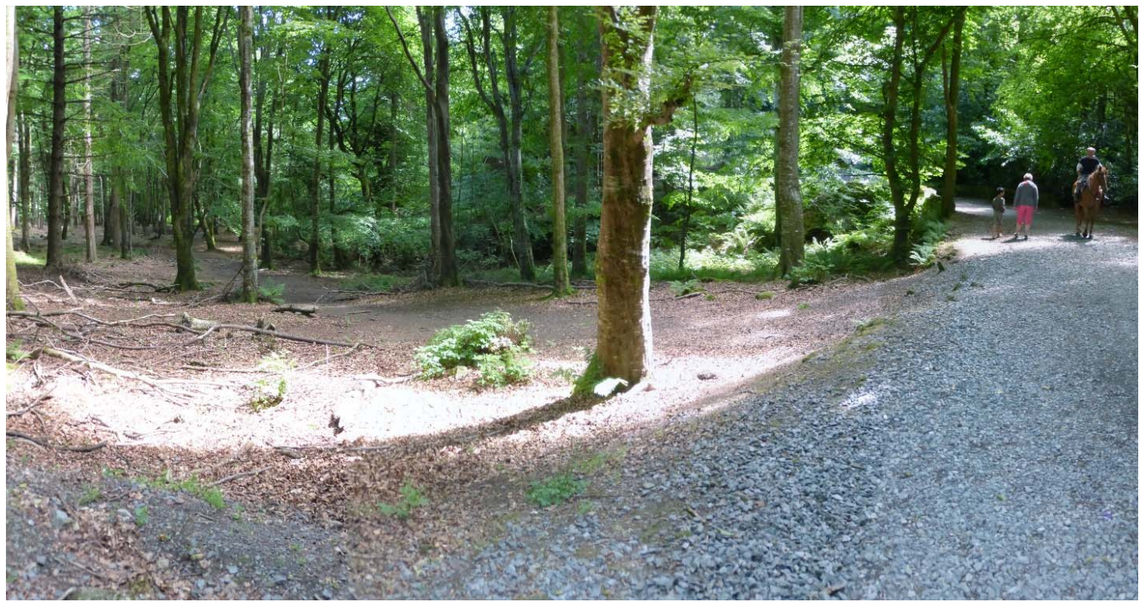
Hell Fire Wood is almost entirely coniferous with a range of ages present including areas recently clear-felled and replanted, areas of mature forest due for harvesting/clear-felling in the near future and middle aged forest in management. Adjacent the car-park some mature trees have been retained for aesthetic reasons and screening of the car-park, however their retention may not be feasible into the future due to the potential of the conifers to become over – tall and prone to wind throw. A number of middle aged broad leafed trees are found at Hell Fire as well as some mature Beech trees which pre-date the forest and clearly grew in open ground in the past. Hell Fire Wood is a working, commercial forest and much of the area will remain so into the future. Forest works, planting, managing and harvesting are part of its story and character. With a new visitor facility and enhanced amenity function there would be a need for some changes in land use and management to enhance the amenity and value of the landscape and to ensure the commercial forest and the planned amenity can co-exist.

Massy's Wood, by contrast, is predominantly broad leaved woodland of beech and oak. There are some areas of coniferous plantations and specimen trees from the original Killakee demesne. In places exotic invasive species are being cleared and reduced. Whilst predominantly a recreational forest with a high biodiversity function, woodland management works are ongoing with areas of Beechwood thinned in 2016. The management of the woodland can be enhanced to emphasise the biodiversity and amenity role.

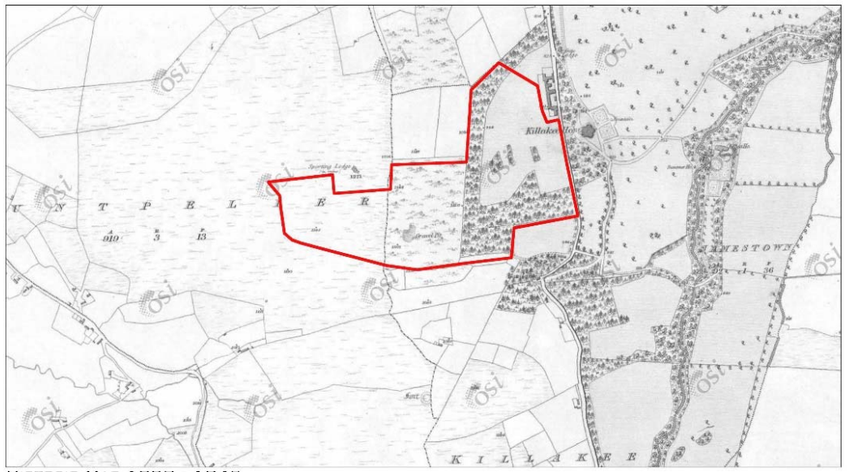
The coniferous forests create significant landscape features, however these are not permanent and are subject to potentially significant change as harvesting and replanting progress.

Figure 3 - Vegetation & Forestry

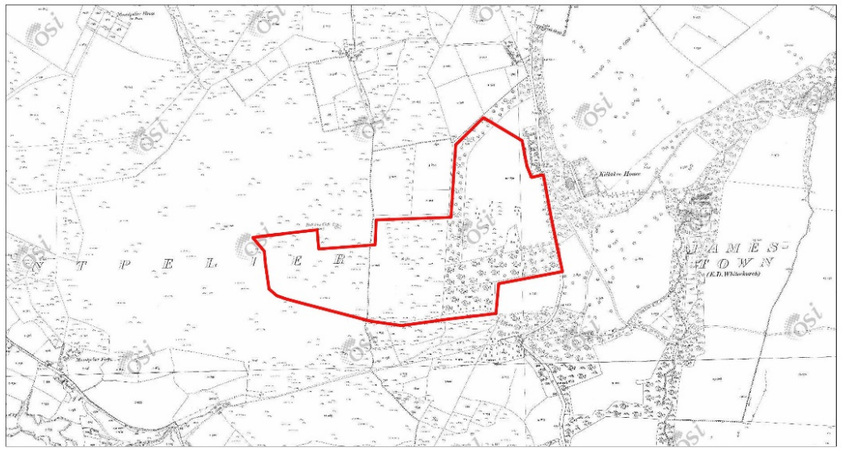

Glendoo Brook and its natural corridor



Beech Woodlands




HISTORIC MAP 1837 - 1842



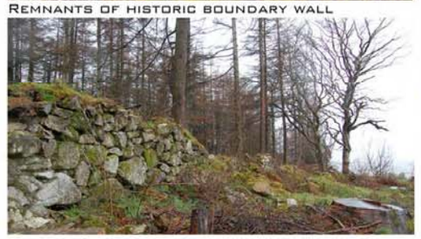

HISTORIC MAP 1888 - 1913


HISTORIC TREE PLANTATION WITH REMNANTS OF BOUNDARY WALLS

TREELINED BOUNDARY WITH REMNANTS OF BOUNDARY WALL ON SOUTHERN PERIMETER

REMNANTS OF HISTORIC BOUNDARY WALL

REMNANTS OF HISTORIC BOUNDARY WALL



REMNANTS OF HISTORIC BOUNDARY WALL

REMNANTS OF HISTORIC BOUNDARY WALL ON COUTHERN PERIMETER

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MONTPELIER HILL - LANDSCAPE DESIGN DEVELOPMENT – PHOTOGRAPHS OF REMNANT HISTORIC FEATURES

Regenerating Ground Flora in clear felled forest

Ponds and puddles full of frog spawn

Figure 4 illustrates the key visual characteristics of the two areas. These consist of:

• Enclosing nature of the woodlands – walks and trails within Hell Fire Wood and Massy's Wood have a limited field of view. The coniferous forest of HFC are particularly enclosing and often dark, with little to invite a walker into the tree area. The broadleaved woods of Massy's whilst also enclosing in terms of views out, are by contrast, inviting to the walker to explore the woods off trail – the Beechwoods in particular having little undergrowth.

• As a hill Montpelier offers perimeter views over the surrounding landscape where trails abut the perimeter or internal spaces/clearfelled areas opening to the outside are found. The perimeter trails to Piperstown Glen offer views to Killakee, the direct steep trail to the HFC from the car park offers increasingly enticing panoramas over Dublin city until one reaches the open expanse around the HFC itself. There are also views south to the Dublin and Wicklow mountains from the southern perimeter. The forest roads on the north east slopes also offer spectacular views over the city in places.

• As a valley Massy's Wood offers no real external views – its visual delight being internal to the woods and characterful trees, natural features (Glendoo Brook) and atmospheric ruins and structures.

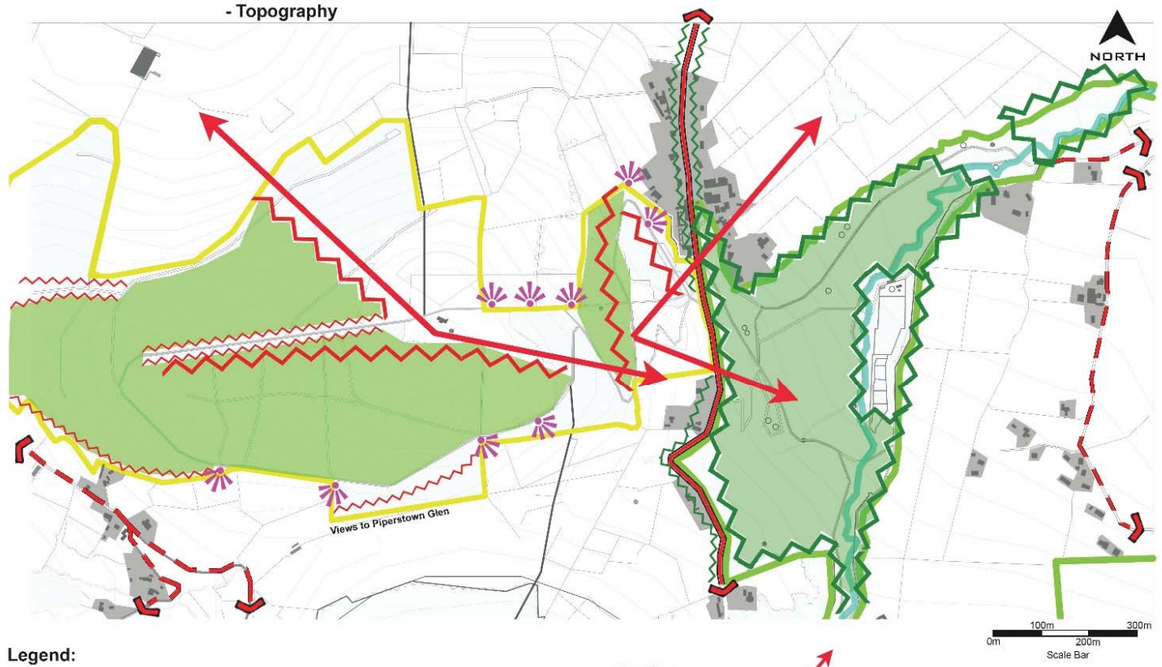
• Views in and out of the forests are generally blocked and screened by boundary vegetation.

• The site of the proposed visitor centre building on the north east slopes of Montpelier are currently screened from the local and wider environs by trees lower down the hill adjacent the car- park. These may be removed as part of forest management and to accommodate the extended carparking area. Whilst this will also enhance the panoramic views from the visitor centre it will also increase the visibility of any built development and this will require consideration in landscape proposals. It should be noted that the potential site of the visitor centre is clearly visible from the east/south east e.g the car-park at Cruagh.

• The R115 approaching from the north or south has limited views into either woods due to the dense roadside vegetation and trees.

Dense enclosing conifer woods on Montpelier Hill

Figure 4 - Visual Analysis: Views, Visual Barriers, Enclosure - Topography




Montpelier Hill and Massy's Woods from Kilmashogue

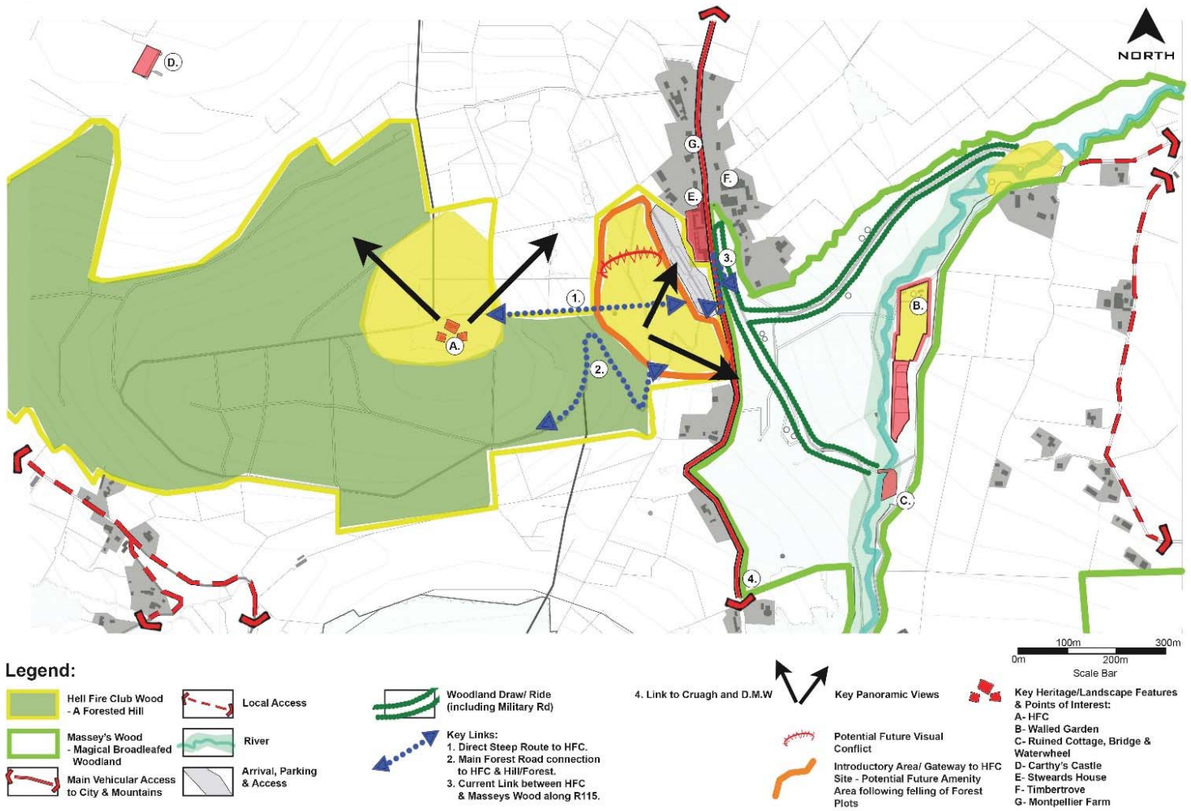
Figure 5 brings together the above analysis and from this is derived the site and landscape masterplan and design framework. And to ensure the sites provide an integrated experience and amenity.

Montpelier Hill has existing parking which will be expanded to accommodate existing and proposed visitors and offers an ideal location for the visitor centre on the north east slope enjoying the views of the city but low enough not to intrude on the hill itself. There are potential visual conflicts and design challenges as forest harvesting and view-management opens up the slopes to views from the city. Montpelier offers the visitor a mini-mountain experience with a summit destination in the Hell Fire Club and associated archaeology, forests, taster views to the mountains further south, panoramic city views and capacity to accommodate parking and other amenities in a relatively robust landscape setting. It is an uplifting and exciting place with a strong gateway / threshold role between the city and the mountains.

Massy's Wood offers a unique broadleaved woodland experience with its distinctive trees and character, sense of nature, its child friendly experience and its sense of romance, magic, fun and idyllic woodland. Whilst not universally accessible it does offer relative ease in walking. Masseys Wood is very beautiful and timeless – this characteristic enhanced by its romantic ruins and the story behind them, and the Glendoo Brook corridor and its habitats.

Whilst Montpelier has its distant panoramic views, Massy's Wood is more inward looking focusing on the wonderful if somewhat overgrown corridor of the Glendoo Brook. They offer a complementary experience in combination – Montpelier and HFC values are predominantly outward looking and relating directly to both the city and wider mountain area, whilst Masseys value is internal, its own unique world populated by a range of tree characters and one's imagination.

Figure 5 - Synthesis: Spaces, Places & Features




Piperstown Glen and Kilakee from Montpelier

Views to and From Hell Fire Club and the city suburbs

Aim

The Landscape Design is informed by a number of Strategic Aims and Specific Objectives. The overall aims are

- To enhance the **Landscape and Visitor Experience** and provide for increased numbers and expectations.
- **To integrate the new site infrastructure -** Visitor facilities, New and better parking arrangements.
- To implement a long term and **Sustainable Landscape** management regime with a focus on Amenity, Biodiversity and Heritage complementary to the retained commercial plantations.

These aims are reflected in the following objectives and themes

**Trails and Countryside Recreation**
- New and better trails with maps.
- Designated Equestrian trails
- Viewing Points

(For details of the Trails network see Drawing Nos …)

**Character**
- Impart a sense of meaning to the place – history and continuity - People have been coming here for 5000 years – and making their marks.
- Archaeology, historic ruins and walls and forestry.
- Embrace and learn about  the forest – conifers and broadleaves

**Themes**
- Visitor, Access, Parking and Entrance facilities
- Landscape / Historic Woodland Restoration Project
- Transitional Landscapes
- New Uses – educational, habitat,
- Ecological design – habitat enhancement and Experience
- Screening and opening up of views
- Composition of the HFC hill landscape
- Consideration of / Mitigation of impacts on views and local residential amenity.

(For details of Visitor, Access, Parking and Entrance facilities see Architects Drawings)

Landscape Proposals are set out on the following Drawings:

16508-2-100 – Landscape Strategy
16508-2-101 – Visitor Centre and Environs Masterplan
16508-2-102 – Hell Fire Club Environs
16508-2-103 – Glendoo Brook Corridor Massy's Wood

Landscape Proposals are both design intentions to be implemented as apart of the project works and long term management objectives to be implemented over time including directing the landscape to achieve particular changes and to change.

The overall intention is to create a new permanent mixed woodland of predominatly native and some naturalised species on the north eastern slopes of Montpelier Hill associated with the new visitor facilities. This new landscape and the remainder of Hell Fire Wood and Massy's Wood will be managed to achieve the aims and objectives set out above.

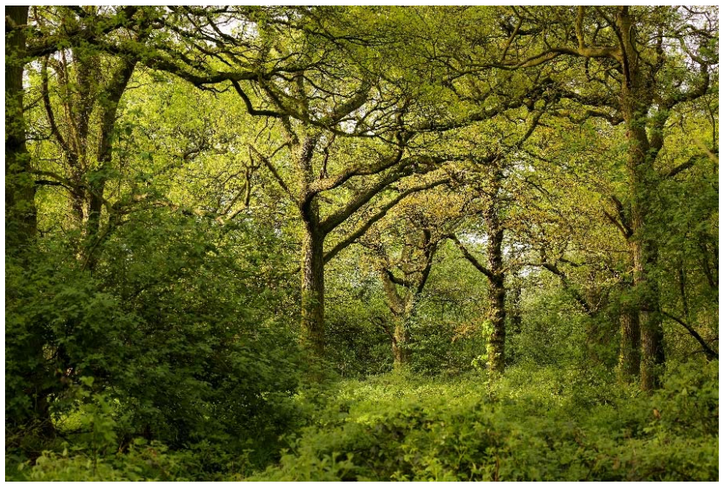
Proposals are indicative and a guide, and will need interpretation and application to localised conditions and change over time.

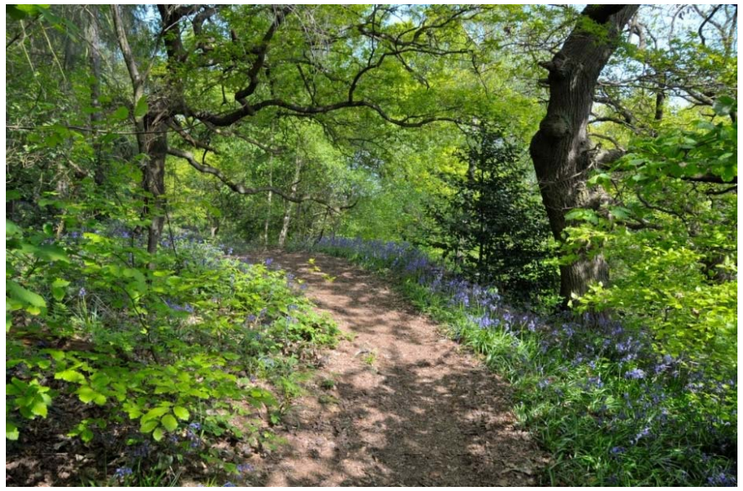
Landscape elements will consist of:
- Planting Type Areas / Treatments
- Management of Views
- Heritage Features
- Biodiversity SUDs and drainage
- Furniture and Activities
- Surfaces
- Boundaries and interfaces

The following pages set out these concepts. For further details refer to landscape plans

Native hillside woodland in Spring

Restoring the Historic Mixed Beech Woods





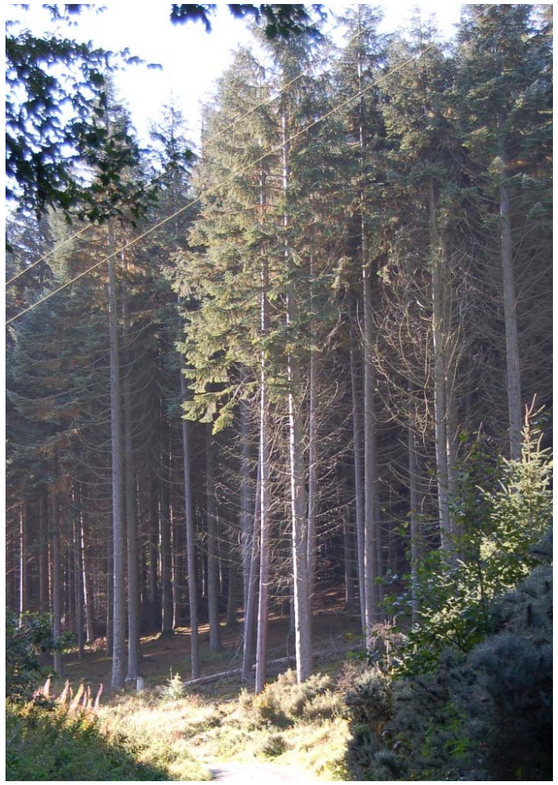
Recreating permanent Broadleaved Oak Woodland

Managing new planting and diverse areas of scrub

Clear-felled forest areas, brash and litter to be cleared to make safe, replant to create new sustainable native woodland. Manage natural regeneration to enhance habitat.

Continuous cover forestry with mix of species and ages

Retain selected specimen conifer groups



Open Mountain Meadow around Hell Fire Club – restoring legibility and prominence, and views

Coppicing to manage tree growth / height – retaining and opening up views

Woodland Glades as a welcome feature of the new woodland

Enclosed spaces – generally without views out – sunlit patches in the woods.

Native shrub and tree planting to screen and break-up parking areas

Woodland edge – ecologically rich

Planting design reflects the landscape strategy intentions of transforming the north and east slopes of Montpelier Hill into predominantly broadleaved native woodland.The landscape plans set out specific approaches to different areas – complete replanting of clear felled areas, dense planting where screening required or selective clearance of small areas of existing conifers and interplanting with young native trees and shrubs. The objective is to crate a diverse new woodland context to the hill its attractions and new facilities.

Planting will be at a range of densities depending on species type and size and design intent. However the indicative species mix set out is the same mix varied as appropriate to achieve these intents.

Typical species mix include:

| Edge Mix – Scrub/ Bushes/ Low Trees | | 1-2m centres |
|---|---|---|
| Corylus avellana | Hazel | 60-90cm, br |
| Crataegus monogyna | Hawthorn | 60-90cm, br |
| Ilex aquifolium | Holly | 30-45, c.g |
| Prunus spinosa | Blackthorn | 60-90cm, br |
| Salix caprea | Goat Willow | 60-90cm, br |
| Sambucus nigra | Elder | 60-90cm, br |
| Viburnum opulus | Guelder Rose | 60-90cm, br |

| Trees | | 3-5m centres |
|---|---|---|
| | | |
| Nurse Species | | |
| Alnus glutinosa | Alder | 90-120cm |
| Betula pendula/pubescens | Birch | 90-120cm |
| Pinus sylvestris | Scots Pine | 30-45cm, br. |
| Sorbus aucuparia | Mt Ash | 90-120cm |
| | | |
| Climax Species | | 3-5m centres |
| Fagus sylvatica | Beech | 60-90cm |
| Quercus petrea | Oak | 60-90cm |
| Prunus avium | Bird Cherry | 60-90cm |
| Ulmus glabra | Wych Elm | 60-90cm |
| | | |
| Open space / Glades | | To bespoke design |

A range of larger sized stock of some species as well as selected naturalised species are also proposed as specimen trees as appropriate. In general larger stock will only be used where necessary around new infrastructure and early mitigation. The smaller stock being more easily established in the exposed conditions.

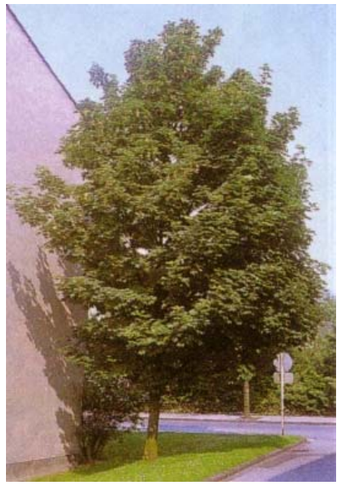
| Specimen Trees | | Indicative locations shown |
|---|---|---|
| Acer pseudoplatanus | Sycamore | 16-18cm girth, 4-6m, std, BR |
| Aesculus hippocastanum | Horse Chesnut | 16-18cm girth, 4-6m, std, BR |
| Fagus sylvatica | Beech | 16-18cm girth, 4-6m, std, BR |
| Quercus petrea | Oak | 16-18cm girth, 4-6m, std, BR |
| Pinus sylvestris | Scots Pine | 90-120cm ht, RB. |
| | | |

Planting design and specifications will require day to day monitoring and adjustment to ensure success. It is recommended that new planting is protected from deer
by tree tubes at 1.8m high or where this is not feasible due to plant numbers / densities, 1.8m high deer fencing is used to exclude deer.
Fencing should be removed once planting is established and has grown beyond the browsing line. Tubes should be biodegradable or removed in due once no longer needed.

Trees and shrubs will be pit planted in prepared pits in accordance with an approved specification and maintained weedfree for 3 years through herbicide use or mulch mats.

Protective Deer Fence

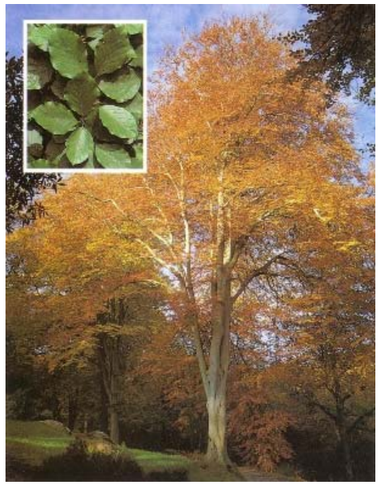
Various radius and height tree tubes to protect different tree sizes, shrubs and conifers from browsing deer.



*Acer pseudoplatanus*

*Pinus sylvestris*

*Quercus petraea*



*Fagus sylvatica*

*Ilex aquifolium*

*Aesculus hippocastanum*

*Prunus avium*

*Ulmus glabra*

*Sorbus aucuparia*

*Betula pendula*

*Alnus glutinosa*

*Crataegus monogyna*

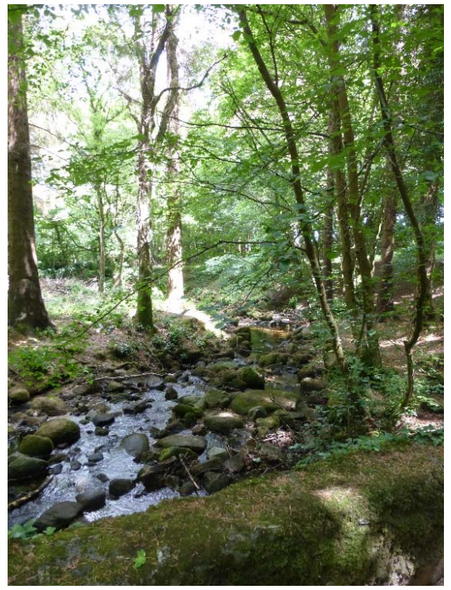
*Corylus avellana*

Note: If current restrictions on Fraxinus excelsior (Common Ash) are lifted, it should be used extensively in the planting mix as a climax native species.

The new woodland and its management will promote a wider range of habitats than currently on Montpelier Hill. Opportunities to enhance habitat and facilitate diversity will arise whilst dealing with aspects of site infrastructure in particular in managing water and drainage on the hill. As well as providing habitat, sustainable surface drainage systems will make legible the natural workings of rainfall on the mountain as the experience and sound of water in small streams and ditches and holding ponds adds richness to the experience and ecology of the hill.

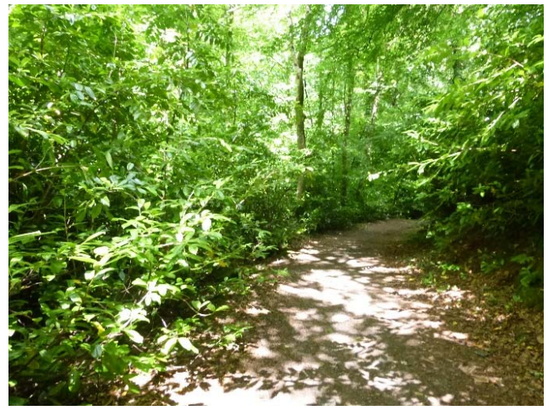
Capturing water and enhancing Habitat

Ecology and habitat development will reflect best practice and the recommendations of the project ecologist and will involve proactive interventions to support native Irish wildlife.



Glendoo Brook - ecological focal point of Massy's Wood

Invasive laurel covering extensive areas of Glendoo corridor to be removed to facilitate habitat restoration



As part of the woodland development it is envisaged that there will be opportunities for walking, seating, taking views, picnicing and childrens play and education. This will require a selection of materials and furniture to be integrated into the park as it develops. Given the dynamic nature of the evolving landscape such features may be transient and moved around over time to reflect interests, need, as well as wear and tear on the environment.

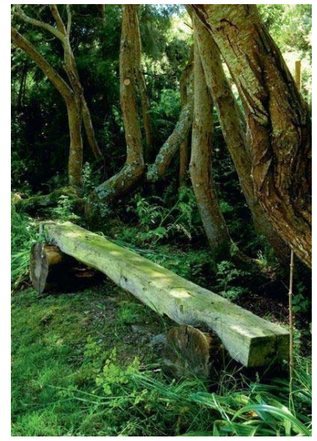
These elements will be located in a small number of clusters and individually but throughout the landscape on Montpelier Hill and to a lesser extent in Massy's Wood. Materiality and design will reflect the woodland and mountain setting in the wider site – simplicity and robustness – as well as the scheme architecture, close to the central facilities.

Children will be encouraged to play and use their imaginations throughout the park except in areas of high ecological sensitivity. Play equipment will reflect the principles of natural play and found materials, as well as existing uses.

Childrens Natural Play and Outdoor Classrooms





Simple crafted seating – benches and back supported

Picnic facilities integrated in the woodland

Where asphalt roads required in access areas / drives – finish to be select applied aggregate to ensure a rural character retained

Permeable green reinforced grass areas for parking

Green retaining walls where required – gabions over grown with local herbaceous/grassy vegetation

Powder Coated Green Paladin type fencing to secure with neighbouring residences where necessary. To be planted in association with dense shrubs/ hedgerows

Estate type railings where required along steep banks of Glendoo river or to discourage access to habitat zones

**INTRODUCTION**

This document sets out the proposed maintenance and management plans for the establishment and ongoing maintenance of the landscape element of the proposed development. There will be a minimum 18 months defects period on all soft landscape works implemented. Thereafter the landscaping will be maintained in perpetuity by Coillte and SDCC.

## 1.0 SOFT LANDSCAPE WORKS SPECIFICATIONS

### 1.1 Site Clearance Generally

- General: Remove rubbish, brash, timbers and potential hazardous surface materials, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life. In accordance with current Health and safety legislation.
- Vegetation: existing vegetation to managed strimmed or locally sprayed to facilitate planting and future management.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.

### 1.2 Weed Control

Remove all noxious and undesirable weeds from the site. Weeds shall include: Ragwort, Himalayan Balsam, Giant hogweed & Japanese knotweed, Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by the Department of Environment. For the removal of certain species such as Japanese Knotweed a method statement is to be prepared and submitted to the Department of Environment.

### 1.3 Standards

In preparing the landscaping, supplying plants and maintaining the landscaping the following standards are to be adhere to:

- BS 3882 Specification for topsoil and requirements for use
- BS 3936-1 to 10 Specification for the supply of nursery stock
- NPS National Plant Specification
- BS 3998 Tree Works: Recommendations
- BS 4428 Code of Practice for general Landscape Operations
- BS 5837 Tree in relation to Construction
- BS 7370-1 to 5 Grounds Maintenance
- BS 8545 Trees: from nursery to independence in the landscape- recommendations
- BS 8601 Specification for subsoil and required use
- BS EN 1722-9 round or Fences Specification for mild steel - low carbon steel - fences with square verticals and flat horizontals
- RoSPA Standards for safety for play and exercise equipment.

The latest publications for each document are to be used.

### 1.4 Soil Conditions

- Soil for cultivating and planting: Moist, friable and do not plant if waterlogged.
- Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.

### 1.5 Climatic Conditions

- General: Carry out the work while soil and weather conditions are suitable.
- Strong winds: Do not plant.

### 1.6 Times of year for planting

- Deciduous trees and shrubs: Late October to early March.
- Evergreens/Conifers: October/November or Feb/ March.
- Container Grown plants: Any time of years.

### 1.7 Mechanical Tools

Restrictions: Do not use within 100mm of tree and plant stems.

### 1.8 Watering

- Quantity: If necessary, wet full depth of topsoil.
- Application: Even and without damaging or displacing plants or soil.
- Frequency: As necessary to ensure establishment and continued thriving of planting.

### 1.9 Preparation, Planting and Mulching Materials

General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

### 1.10 Plants/ Trees - General

- Condition: Materially undamaged, sturdy, healthy and vigorous.
- Appearance: Of good shape and without elongated shoots.
- Hardiness: Grown in a suitable environment and hardened off.
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
- Budded or grafted plants: Bottom worked.
- Root system and condition: Balanced with branch system.
- Species: True to name. and for native species of local provenance.

### 1.11 Container Grown Plants/ Trees

- Growing medium: With adequate nutrients for plants to thrive until permanently planted.
- Plants: Centred in containers, firmed and well watered.
- Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
- Hardiness: Grown in the open for at least two months before being supplied.
- Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

**1.12 Labelling And Information**

General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:

- Full botanical name.
- Total number.
- Number of bundles.
- Part bundles.
- Supplier's name.
- Employer's name and project reference.
- Plant specification, in accordance with scheduled National Plant Specification categories and BS 3936.

**1.13 Plant/ Tree Substitution**

Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering. Submit alternatives, stating the price and difference from specified plants/ trees. Obtain approval before making any substitution.

**1.14 Plant Handling, Storage Transport and Planting**

- Standard: To HTA 'Handling and Establishing Landscape Plants'.
- Frost: Protect plants from frost.
- Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- Planting: Upright or well balanced with best side to front.

**1.15 Treatment of Tree Wounds**

Cutting: Keep wounds as small as possible.

- Cut cleanly back to sound wood using sharp, clean tools.
- Leave branch collars. Do not cut flush with stem or trunk.
- Set cuts so that water will not collect on cut area.
- Fungicide/ Sealant: Do not apply unless instructed.

**1.16 Protection of Existing Grass**

- General: Protect areas affected by planting operations using boards/ tarpaulins.
- Excavated or imported material: Do not place directly on grass.

Duration: Minimum period.

**1.17 Surplus Material**

Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, pruning's and other arising's: Remove.

**1.18 General Planting/Seeding**

- Planting shall be carried out within the contract period but not during periods of frost, drought, cold drying winds or when the soil is waterlogged, or when the moisture of the soil exceeds field capacity.
- All containers and protective coverings including biodegradable coverings to root systems shall be removed prior to planting. Roots, except for emergent vegetation, shall be teased out from the root-ball, spread evenly and not twisted.
- All plant material shall be planted upright or placed so as to be well-balanced. Extreme care is to be taken to avoid damage to the root system, stem and branches when planting. The plant shall be positioned such that after planting the original soil mark on the stem is at finished ground level.
- Following completion of planting, and seeding and turf laying, the soil over the whole of the planted, area shall be sufficiently watered to achieve its field capacity.
- On completion of planting, watering and mulching, all areas shall be left tidy and weed-free and shall be maintained in a tidy and weed-free state until completion of the works.
- For shrub and transplant pit planting, notch planting and ordinary planting, the plant positions shall be set at equal centres in order to obtain a natural dense cover when mature. For notch and pit planting plants shall be planted in parallel lines. Planting positions in each row shall be staggered with the previous row.
- Finely-broken backfill material shall be carefully spread around roots and root trainers of all plants and the plants given slight shake to ensure that all interstices/ gaps are filled with soil, which shall then be consolidated by heeling. Careful filling and heeling shall continue as necessary at 150mm layers.

**1.18.1 Mulching**

Newly planted shrub areas shall be mulched immediately after planting to a depth of 50mm or in accordance with the details indicated on the drawing. Mulch shall be coarse chipped tree bark, composted for 2-4 months. Particle size 25-75mm diameter. No Fines. For widely spaced plants a 1m diameter area shall be mulched. Alternatively mulch mats shall be used.

**1.18.2 After Planting & Mulching**

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.
- All areas shall be left tidy and weed-free and shall be maintained in a tidy and weed-free state until completion of the works.

**1.19 Tree Planting**

See typical tree planting details for this site.

**1.19.1 Tree Pits**

- Sizes: at least 300mm greater than rootball in all directions.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: With slightly raised centre. Break up to a depth of 100mm.
- Pit sides: Scarify.

**1.19.2 Semi-Mature Trees**

- Standard: Prepare roots and transplant to BS 8545.
- Planting shall be carried out by positioning the tree in the centre of the pit closely against the tree stake and spreading the tree roots to their fullest extent.
- Backfilling material: Previously prepared mixture of topsoil excavated from pit and additional compost as required.
- Immediately following planting, trees with stakes shall be secured with tree ties. Tree ties shall be fixed so that movement of the tree shall not cause damage or abrasion to the bark, top tie to be 50mm below top stake.

**1.19.3 Staking Generally**
Softwood, peeled chestnut, larch or pine, straight, free from projections and large or edge knots and with pointed lower end. Adjustable rubber ties to be fixed to all trees and at the correct size for the tree.

**1.19.4 Mulch Circles/Squares**
All existing trees/newly planted trees within open grass areas or grass verges shall have 50mm depth mulch circle/square of a maximum 1m diameter or as allowed by verge width.

**1.20 Shrub Planting**
- All shrubs are to be pit planted. General pit dimensions are to be wide enough to accommodate roots when fully spread and 75mm deeper than root system.
- Break up base of pit to a depth of 150 mm, incorporating soil ameliorant/ conditioner at 50 g/m².
- Pits to be backfilled with previously excavated material. Backfilling to be done in layers of 150mm depth; at each stage the filling to be firmly consolidated.
- Soil ameliorants can be premixed with the soil applied or mixed in during planting.
- Soil ameliorants to consist of an approved compost at 10L per m2; and 150g/m2 of 10:10:10 NPK slow release fertilizer, or as approved.
- All shrub areas to be finished, with 75mm of medium grade bark mulch.

**1.21 Hedgerow Planting**
- Preparation: Dig trench to 500mm width for single staggered row, ensuing pit base is broken up 100mm deeper than plant rootball.
- Ameliorants: Compost at 10lt/m2 and 10:10:10 NPK slow release fertiliser at 150g/m2.
- Planting: Mix in soil ameliorants with excavated topsoil, or if there is poor topsoil then mix in with imported new topsoil. Firm down topsoil lightly in layers of 150mm by treading.
- Additional Requirements: If there is no existing fencing or barrier, install a protective fence to stop people walking through it until hedge is established. If there is livestock adjoining hedge install a stockproof fence or electrical fence 1m from hedge line until hedge is established.
- Prior to new growth cut the hedge back by 300mm to encourage new growth from base.

**1.23 Removing Trees and Shrubs**
- Identification: Clearly mark trees and hedges to be removed.
- Work near retained trees: Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.

**1.24 Failures of Planting**
- Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.
    - Exclusions: Theft or malicious damage after completion.
    - Rectification: Replace with equivalent plants/ trees/ shrubs.
- Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- Defects Period: 5 years.

## 2.0 MAINTENANCE

The maintenance programme will be organised on the basis of specific **performance standards** which must be met by the contractor at all times and will be the basis on which this contract will be assessed. Along with these performance standards a monthly report sheet shall be filled out and returned each month. Details of the performance standards are outlined below.

Remove all noxious and undesirable weeds from the sit. Weeds shall include: Ragwort, Himalayan Balsam, Giant hogweed & Japanese knotweed, Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by the Department of Environment. For the removal of certain species such as Japanese Knotweed a method statement is to be prepared and submitted to the Department of Environment.

**Performance Standards and Maintenance Operations**

### 2.2 Planting Generally

Planted areas shall be kept litter and weed free, particularly of perennial weeds. Healthy growth shall be maintained to cover as much as possible of the planting area and allowing the individual plants to achieve as near as possible their natural form. With the exception of hedges, boxing or pruning to shapes is prohibited. Plants shall be contained with designed planting areas and pruned to avoid obstructing pathways or sightlines.

### 2.3 Pruning

In general pruning shall be done only to enhance natural growth. Dead, damaged and diseased portions of the plant will be removed. All cuts shall be flush and clean, leaving no stubs or tearing of bark. All major pruning shall be done following flowering or during plant's dormant season. Emergency or minor pruning shall be done when needed.

Pruning shall be carried out to maintain proper size in relationship to adjacent plantings and intended function. Remedial attention and repair to shrubs shall be provided as appropriate by season or in response to incidental damage.

### 2.4 Weed Control

Planting beds shall be maintained relatively weed free (no more than 10% of weed cover at maximum) by hand weeding or spot spraying any emergent weeds during the growing season with Glyphosate or approved equivalent. Saplings shall be removed from all planting areas on emergence or immediately after to prevent establishment.

Specific weed control operations shall be carried out a min of 9no. times per year, however it will be the contractor's duty to control weeds by hand weeding or other if weed cover exceeds 10% of the planting area.

### 2.5 Mulching

Shrub beds shall contain a min. depth of 50mm bark mulch throughout the year. Contractor to top-up as 2 times per year or as appropriate to maintain depth. Mulch is not required in areas where plant foliage completely covers the soil surface, such that the soil is not visible through the foliage. The contractor shall spot treat to remove emergent weeds as specified above but do not cultivate or incorporate the mulch into the soil. Any mulch outside of designated planting areas shall be returned to the planter on a weekly basis.

Mulch shall be uniform in colour and appearance, and free of leaves, sticks, or trash. Mulch may be chipped or shredded wood, bark. When replacing existing mulch, use a mulch product that is similar in appearance to that already at the site.

### 2.6 Tree Planting Care

Trees shall be maintained in a healthy, vigorous growing condition with a well-shaped framework for future growth.

### 2.7 New Tree Planting

Spring and autumn of each year during the maintenance period the trees, double-stakes, rabbit guards and ties, tree tubes and protective fencing shall be checked and adjusted, the soil firmed, any dead wood removed back to healthy tissue and mulch adjusted to original levels. Any broken stakes or ties evident throughout the maintenance period shall be replaced.

A 1m-diameter mulch circle/square shall be maintained at the base of each tree located in open grass areas or grass verges. Top up bark mulch to 75mm where required and make good any mulch mats.

During the first growing season all standard trees / semi-mature trees shall be watered at least five times during the growing season - in April, May, June, July and August unless otherwise directed by the Landscape Architect. During the second growing season trees will be kept well watered, particularly during June, July and August.

The edge of the mulch circle shall be maintained in a neat and tidy condition as above.

The surface of all planting pits is to be kept free of weeds during the maintenance period by hand weeding of annual weeds, and spot application of translocated herbicide, (as per manufacturer's instructions), for perennial weeds to be carried out on three visits during the growing season.

### 2.9. Tree Stakes and Ties

Check tree stakes and ties on each maintenance visit. Repair, strengthen and adjust (loosen / tighten) to ensure optimum functioning and trees not being damaged by poor fixings. If trees no longer require stake / tie remove. Prior to handover, check all tree stakes and ties and remove those no longer required.

**2.8 Woodland/Scrub Area Management**

Woodland areas specified shall be maintained in a healthy, vigorous condition and free from litter and noxious weeds throughout the year.

Certain areas of woodland may require thinning over the 5-year period. These areas shall be thinned by no more than 10%, removing only the weaker tree specimens. Thinning shall be carried out as directed onsite by administrative authority.

Areas of natural scrub as indicated on the maintenance plans shall be contained by pruning back on a rotational basis.

All clearance operations within woodland and scrub areas shall be carried out outside of the bird-nesting season to preserve the bird life in the area. This season extends from the 1st March to 31st August.

**2.10 Litter Clearance/Pick-up**

The contractor shall maintain all areas free from litter. This shall mean the removal of all extraneous litter, rubbish and any other debris from all areas, which will include grass areas, planted areas, carparks, footpaths as well as woodlands and tree canopies.

Notwithstanding the above it is expected that the contractor and his staff shall take sufficient pride in the appearance of the site and that they would pick up all visible litter during every site visit.

In addition to removal of litter from footpaths, planted areas, etc., the contractor shall make provision for the immediate (within 1 days of notification) arrangement for collection and removal of all extraneous matter which has been deliberately been deposited on site by persons known or unknown (fly-tipping).

**2.11 Replacements**

Any tree, hedge or shrub that is removed, uprooted, destroyed or becomes seriously damaged, defective, diseased, or dead shall be replaced in the same location with another plant of the same species and size as that originally planted within 5 years after planting. All such replacements shall be carried out in the first available planting season after the requirement to do so is recognised.

### 3.0 Maintenance Programme

This programme is a guideline only and times of operations may vary on approval by landscape architect/ landscape manager.

| ONGOING REQUIREMENTS: | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rough Grass | | | | | | | * | | | | | |
| Hedge pruning/cutting | | | | | * | | | * | | | * | |
| Shrubs pruning and feeding | | | | * | | * | | | * | | | |
| Weed control of hedge and shrub planting areas | | * | * | * | * | * | * | * | * | * | * | |
| Tree pruning | | | | | | | | | | | * | * |
| Removal of tree stakes (3-5yr) | | | | * | | | | | | | | |
| Mulch top-up to tree circles/ squares | | | | | | * | | | | * | | |
| Herbicide app. to tree mulch circles | | | | * | | | * | | | * | | |
| Herbicide app./weeding to shrubs & hedgerow | | | | * | | | * | | | * | | |
| Watering of new trees (or after 3 weeks of no rain) | | | | * | * | * | * | * | | | | |
| Trimming of scrub areas | | | | | | | | | | | | * |
| Litter Clearance/pick up | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** |

16508-2-100 – Landscape Strategy

16508-2-101 – Visitor Centre and Environs Masterplan

16508-2-102 – Hell Fire Club Environs

16508-2-103 – Glendoo Brook Corridor Massy's Wood


KEY:

LANDSCAPE OBJECTIVES

Retained Commercial Forest managed to compliment enhanced amenity role.
E.g:
- Diversification of species
- Continuous cover forestry
- Enhanced ecological functions
- Exemplar forest practices

Phased removal of coniferous woodland and conversion to predominately broad-leaved woodland.

Broad-leaved woodland restoration project. Recreating historic landscape pattern. Restoring old walls, maintaining open views north and east, and integrating new site infrastructure (robust screening and fencing to adjacent residential property)

Protect Residential amenity, retained and enhanced planting to screen development, secure boundary treatment to be provided.

Integrate/screen extended car parking.
- Retain existing mature trees whilst progressing broad-leaved woodland restoration program.
- Introduce new woodland tree and shrub planting between car-park terraces.

Restore / Enhance Remnant Historic Beechwoods

Masseys Wood
- Ongoing and enhanced management of Masseys Wood for amenity and natural conservation purposes.

Walled Garden
- Repair structures and clear overgrowth as required to enhance legibility of garden form in accordance with Conservation Architects Report.

CIRCULATION
(for further details see Trails Strategy)

Pedestrian Trails, where designated Equestrian use

Shared Use Trails - Pedestrian, accommodating vehicles (Coillte and/or Shuttle Bus), where designated Equestrian use

Grassed or Earthern Equestrian Trails

MANAGEMENT OF VIEWS

Panoramas to be maintained/enhanced through the long term management of tree height & spread

Intermittent/framed vistas to be opened up or managed

Localised views to surrounding landscape to be opened up through selective thinning of trees

Developed viewpoint with seating/picnic facilities

NOTE: Restore prominence of Hell Fire Club as landmark feature/silhouette on summit of Montpellier Hill when viewed from city/suburbs and environs.
- Cut back surrounding plantations from intruding on summit profile around Hell Fire Club.

**NOTES:**
**DRAWINGS ISSUED FOR PLANNING PURPOSES ONLY.**
**LANDSCAPE IS SUBJECT TO APPROVAL OF THE PLANNING AUTHORITY.**

| REV | DATE | AMENDMENT |
|---|---|---|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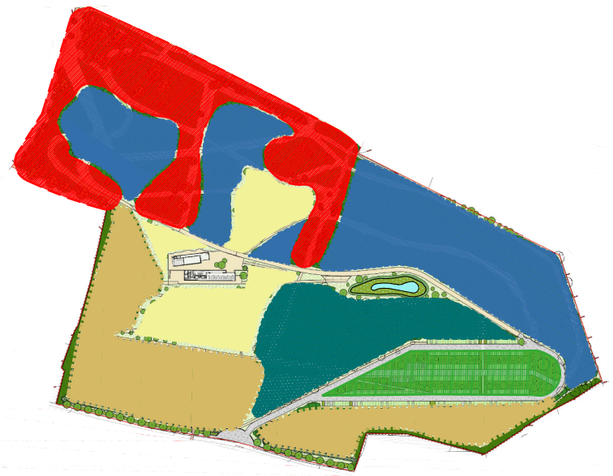
|---|---|
| PROJECT: **DUBLIN MOUNTAINS VISITOR CENTRE** | DATE: JUNE 2017 |
| | SCALE: 1:5000 @ A1 |
| DRAWING: **LANDSCAPE STRATEGY** | DRAWN: DM<br>CHECKED: DOL |
| | DRAWING NO: **16508-2-100** |


KEY

- Historic Remnant Beechwood
- Indicative Locations of Existing Trees to be Retained
- Specimen Trees
- New Broadleaved Woodland
- Car Park Screening Mix
- Wetland Area for Attenuation
- Car Park Spaces In Grass-crete or Equivalent
- Historic Stone Walls to be Retained & Restored
- Woodland Meadow with Scrub
- Boundary Screening Mix
- Tarmac to Selected Finish
- Trails in Rolled Dust
- Grass/Equestrian Bridleway
- 1.8m High Paladin Security Fence to Adjacent Premises - Powder coated green



SPECIFIC PLANTING TYPE AREAS & LANDSCAPE TREATMENT DIAGRAM

**HISTORIC REMNANT BEECHWOOD**

DESCRIPTION: GROUPS, CLUSTERS, ROWS AND INDIVIDUAL BEECH TREES 50-80 YEARS OLD, REFLECTING FOOTPRINT OF HISTORIC WOODS IN THE AREA. CHARACTERFUL TREES, NOW RECOVERING FROM SUPPRESSION BY CONIFERS.

OBJECTIVE: TO STRENGTHEN AND ENHANCE THE REMAINING STANDS OF AND INDIVIDUAL BEECH (FAGUS SYLVATICA) AS REMNANTS OF EARLIER BEECHWOODS THAT PREDATED THE AFFORESTATION OF THE HILL AND PROVIDE INTEREST AND VARIATION TO THE NEW PERMANENT BROADLEAVED WOODLAND LANDSCAPE.

ACTION: CLEAR BRASH AND WOODLAND LITTER THAT CREATES UNSAFE WALKING SPACE. PRUNE AND CLEAN EXISTING MATURE TREES AS NECESSARY TO REBALANCE FORM AND SHAPE. RETAIN DEAD TREE TRUNKS UPRIGHT OR FALLEN AS FEATURES AND HABITAT OPPORTUNITIES AS APPROPRIATE. GRIND FLUSH WITH SURFACE CONIFEROUS TREE TRUNKS RETAINING SOME EXAMPLES AS FEATURES.

SUPPLY AND PLANT TYPE A MIX AND LAYOUT TO REFLECT NATURALISTIC INFORMAL PLANTING ARRANGEMENTS OF EDGE SPECIES, NURSE SPECIES AND CLIMAX SPECIES, WITH OPEN GLADES IN PLACES. MANAGE TO ESTABLISHMENT / MATURITY.

**NEW BROADLEAVED WOODLAND TO CLEAR FELLED AREAS**

DESCRIPTION: AREA CLEAR-FELLED IN 2016. SITE CONTAINS LOTS OF BRASH, TREE STUMPS AND REMNANTS OF CLEAR FELLING OPERATIONS. SOME ADDITIONAL REMNANT BEECH TREES PRESENT.

OBJECTIVE: TO CREATE / RESTORE NATIVE IRISH OAK WOOD AS A PERMANENT AMENITY WOODLAND.

ACTION: CLEAR BRASH AND WOODLAND LITTER FROM CLEAR-FELLING THAT CREATES UNSAFE WALKING SPACE. RETAIN DEAD TREE TRUNKS UPRIGHT OR FALLEN AS FEATURES AND HABITAT OPPORTUNITIES AS APPROPRIATE. GRIND FLUSH WITH SURFACE CONIFEROUS TREE TRUNKS RETAINING SOME EXAMPLES AS FEATURES.

SUPPLY AND PLANT TYPE B MIX AND LAYOUT TO REFLECT NATURALISTIC INFORMAL PLANTING ARRANGEMENTS OF EDGE SPECIES, NURSE SPECIES AND CLIMAX SPECIES, WITH OPEN GLADES IN PLACES. MANAGE TO ESTABLISHMENT / MATURITY.

**INTRODUCTIONS TO AREAS OF REGENERATING / YOUNG TREES**

DESCRIPTION: REPLANTED AROUND 10 YEARS AGO WITH SITKA SPRUCE, LARCH, BIRCH AND DOUGLAS FIR. CONTAINS EXISTING INFORMAL PATH. TREES UP TO 5M HIGH WITH DENSE UNDERGROWTH OF GORSE AND SCRUB. DYNAMIC LUSH CHARACTER.

OBJECTIVE: TO GUIDE AND DIRECT THE REGENERATING AND / OR YOUNG TREES TO A PREDOMINANTLY NATIVE IRISH OAK WOOD WITH SOME CONIFERS AS A PERMANENT AMENITY WOODLAND.

ACTION: CLEAR GORSE AND SCRUB VEGETATION TO CREATE OPEN SPACE GLADES TO ACCOMMODATE NEW PLANTING AND ALLOW SELECTIVE ACCESS THROUGH AND AROUND TREES, WHILST MAINTAINING A DIVERSE HABITAT. SELECTIVELY REMOVE CONIFERS AND/OR OTHER UNDESIRED SPECIES AND REPLANT. SEEK TO REMOVE AND REPLANT 10-15% OF THE AREA / ANNUM OVER A 10 YEAR PERIOD, RETAINING CONTINUOUS TREE COVER, AND REVIEW.

NEW PLANTING TO BE TYPE C MIX AND LAYOUT TO REFLECT NATURALISTIC INFORMAL PLANTING ARRANGEMENTS OF EDGE SPECIES, NURSE SPECIES AND CLIMAX SPECIES, WITH OPEN GLADES IN PLACES. MANAGE TO ESTABLISHMENT / MATURITY. MANAGE HIGHER AREAS TO MAINTAIN PANORAMA VIEWS FROM NEW VISITOR CENTRE.

**CONIFEROUS AREAS TO BE CONVERTED TO MIXED BROADLEAVED WOODLAND OVER TIME**

DESCRIPTION: AREA ABOVE EXISTING CAR-PARK - WILL ALSO ACCOMMODATE EXTENDED CAR-PARK. PREDOMINANTLY DOUGLAS FIR WITH SCATTERED BEECH AND OAK TREES. FIR AT CRITICAL HEIGHT AND SUFFERING SNAPPING AND WIND THROW. VERY IMPORTANT MATURE PLANTING FOR INTEGRATING THE EXTENDED CAR-PARK AND VISITOR CENTRE.

OBJECTIVE: TO GUIDE AND DIRECT THE CONVERSION OF THE EXISTING FOREST TREES TO A PREDOMINANTLY NATIVE IRISH OAK WOOD WITH SOME CONIFERS AS A PERMANENT AMENITY WOODLAND.

ACTION: SELECTIVELY REMOVE CONIFERS AND/OR OTHER UNDESIRED SPECIES AND REPLANT. SEEK TO REMOVE AND REPLANT 10-15% OF THE AREA / ANNUM OVER A 10 YEAR PERIOD, RETAINING CONTINUOUS TREE COVER, AND REVIEW.

NEW PLANTING TO BE TYPE D MIX AND LAYOUT TO REFLECT NATURALISTIC INFORMAL PLANTING ARRANGEMENTS OF EDGE SPECIES, NURSE SPECIES AND CLIMAX SPECIES, WITH OPEN GLADES IN PLACES. MANAGE TO ESTABLISHMENT / MATURITY.

**CAR-PARK LANDSCAPE**

DESCRIPTION: NEW LANDSCAPE AREA AROUND AND BETWEEN CAR-PARK TERRACES.

OBJECTIVES: TO INTEGRATE CAR-PARK INTO WOODLAND LANDSCAPE CONTEXT AND SCREEN CAR-PARKING AREAS FROM EACH OTHER, FROM THE WIDER SITE AND CONTRIBUTE TO SCREENING FROM THE WIDER LANDSCAPE

ACTION: WHERE FEASIBLE EXISTING MATURE TREES WHICH ARE LOCATED BETWEEN PARKING TERRACES AND IN PROPOSED PLANTING AREAS WILL BE RETAINED. CHARACTER AND MATERIALS - NEW PLANTING - TO REFLECT SURROUNDING WOODLAND SPECIES MIXES BUT USED IN A MORE DEFINITIVE AND CONTROLLED WAY AND WHERE APPROPRIATE AT HIGHER DENSITIES. PLANTING CONSISTS OF A MATRIX OF NATIVE SHRUB SPECIES TO ACHIEVE GROUND LEVEL SCREENING WITH TREES PLANTED THROUGHOUT TO CREATE WOODLAND CHARACTER.

SEE CAR-PARK MIX IN SCHEDULE TO BE PLANTED IN NATURALISTIC PATTERNS WHILST CONSIDERING OPTIMUM SCREENING AND ENCLOSURE.

**WOODLAND MEADOW AND SCRUB**

DESCRIPTION: PARTS OF THE EXISTING CLEAR-FELLED AREAS AND/OR YOUNG PLANTED OR REGENERATING AREAS, CHARACTERISED BY EXTENSIVE DIVERSE AND COLOURFUL GROUND FLORA, YOUNG/SMALL TREES AND SHRUBS AND AN OPEN BRIGHT CHARACTER IN PLACES AND ENCLOSED AREAS ELSEWHERE. FROM HIGHER GROUND THIS LANDSCAPE TYPE ALLOWS PANORAMIC VIEWS TO THE WIDER LANDSCAPE.

OBJECTIVE: TO MANAGE AND MAINTAIN THESE AREAS AS DIVERSE SCRUB AND WOODLAND MEADOW LANDSCAPES WITH A MOSAIC OF OPEN AREAS, SHRUBBY AREAS AND YOUNG TREES OFFERING VIEWS AND OPEN SPACE TO SIT, PICNIC AND ENJOY AS CONTRAST TO THE WOODLAND LANDSCAPES. AS WELL AS PROVIDING FUN PLACES FOR CHILDREN TO PLAY THIS LANDSCAPE ALSO PROVIDES A SIGNIFICANT EDUCATIONAL OPPORTUNITY AS TREES AND SHRUBS ARE AT A SCALE THAT IS ACCESSIBLE TO CHILDREN AND OTHERS.

ACTION: THROUGH SELECTIVE COPPICING, CUTTING BACK AND STRIMMING (MEADOW AREAS) MAINTAIN THE DIVERSE AND DYNAMIC CHARACTER OF THESE AREAS AND THEIR DISTINCTIVE HABITATS AND AMENITY FUNCTIONS - INFORMAL PLAY SPACE, SUNNY GLADES, SITTING, AND FRAMING VIEWS TO AND FROM THE WIDER LANDSCAPE. THIS MEANS ARRESTING THE DEVELOPMENT AND MATURING OF THESE AREAS TO CLIMAX WOODLAND AND PROVIDING VARIETY TO THE LANDSCAPES OF THE HELL FIRE WOODS.

IN GENERAL THESE AREAS SHOULD BE ENCOURAGED TO NATURALLY REGENERATE. THERE IS A SEED BANK IN THE SOILS THAT WITH THE REMOVAL OF CONIFERS AND LIGHT REACHING THE SOIL EXPLODES INTO LIFE WITH COLOURFUL HERBACEOUS WOODLAND VEGETATION AND YOUNG NATIVE TREES AND SHRUBS. THIS PROCESS NEEDS TO BE MANAGED AND DIRECTED TO OPTIMUM EFFECT. NEW PLANTING, IF REQUIRED, TO BE NATIVE SPECIES AND USED SPARINGLY AS INDIGENOUS SEEDS AND SPECIES WILL EMERGE BY THEMSELVES. GORSE WHERE PRESENT TO BE REMOVED WHERE IT POSES A FIRE HAZARD TO THE WIDER WOODLAND.

POTENTIAL ARCHAEOLOGICAL SUB-SURFACE FEATURES TO BE PLOTTED AND REFERENCED THROUGH SPATIAL ARRANGEMENTS TO EXPRESS THE UNDERLYING HISTORY AND ARCHAEOLOGY OF THE AREA IN SENSITIVE MANNER.

**SCREEN MIX**

DESCRIPTION: BOUNDARIES WITH ADJACENT RESIDENTIAL AREAS.

OBJECTIVES: TO PROVIDE DENSE BOUNDARY PLANTING TO SCREEN VIEWS INTO THE SITE FROM RESIDENCES ABUTTING SITE AND TO ENHANCE PRIVACY OF THESE HOUSES WHERE OVERLOOKING MIGHT OCCUR.

ACTION: IN ASSOCIATION WITH THE LARGE SCALE WOODLAND PLANTING PROPOSED A BAND OF DENSE NATIVE SHRUBS, UP TO 5M WIDE, WITH A HIGH EVERGREEN CONTENT WILL BE PLANTED ALONG THESE BOUNDARIES AND WHERE APPROPRIATE A SECURE FENCE TO 1.8M HIGH WILL BE INCORPORATED. SEE SCREEN MIX IN SCHEDULE TO BE PLANTED IN NATURALISTIC PATTERNS WHILST CONSIDERING OPTIMUM SCREENING AND ENCLOSURE.

**SPECIMEN TREES**

DESCRIPTION: INDIVIDUAL, GROUPS OR ROWS OF TREES AS FEATURES IN MEADOW/GRASSED AREAS OR WITHIN SHRUB MIXES.

OBJECTIVES: TO ADD TREE FORM AND AMENITY, AND FOCAL POINTS TO SPACES OUTSIDE OF WOODLAND AREAS.

ACTION: STANDARD / HEAVY STANDARD TREES PLANTED WHERE INDICATIVELY SHOWN ON PLAN. SPECIES MIX TO INCLUDE TREES FROM WOODLAND PLANTING MIXES AS WELL AS NATURALISED FAMILIAR SPECIMENS SUCH AS SYCAMORE, HORSE CHESTNUT AND BEECH.

**Plant Schedules**

| Proposed Woodland Planting Species | | Planting Distance / Size | % of area | Type A - Beechwood Mix | Type B - New Broadleaved Woodland to clear felled areas | Type C - Introductions to existing areas of regenerating / young trees | Type D - Coniferous areas to be converted to mixed broadleaved woodland over time |
|---|---|---|---|---|---|---|---|
| **Edge Mix – Scrub/ Bushes/ Low Trees** | | **1-2m centres** | **15%** | | | | |
| Corylus avellana | Hazel | 60-90cm, br | | 20% | 20% | 20% | 20% |
| Crataegus monogyna | Hawthorn | 60-90cm, br | | 40% | 40% | 40% | 40% |
| Ilex aquifolium | Holly | 30-45, c.g | | 25% | 25% | 25% | 25% |
| Prunus spinosa | Blackthorn | 60-90cm, br | | 7% | 7% | 7% | 7% |
| Salix caprea | Goat Willow | 60-90cm, br | | 4% | 4% | 4% | 4% |
| Sambucus nigra | Elder | 60-90cm, br | | 2% | 2% | 2% | 2% |
| Viburnum opulus | Guelder Rose | 60-90cm, br | | 2% | 2% | 2% | 2% |
| **Trees** | | **3-5m centres** | **70%** | | | | |
| **Nurse Species** | | | | | | | |
| Alnus glutinosa | Alder | 90-120cm | | 10% | 7% | 10% | 10% |
| Betula pendula/pubescens | Birch | 90-120cm | | 10% | 10% | 10% | 10% |
| Pinus sylvestris | Scots Pine | 30-45cm, br. | | | 10% | 10% | 10% |
| Sorbus aucuparia | Mt Ash | 90-120cm | | 10% | 10% | 10% | 10% |
| **Climax Species** | | **3-5m centres** | | | | | |
| Fagus sylvatica | Beech | 60-90cm | | 50% | 5% | | |
| Quercus petrea | Oak | 60-90cm | | 10% | 50% | 60% | 60% |
| Prunus avium | Bird Cherry | 60-90cm | | 5% | 5% | | |
| Ulmus glabra | Wych Elm | 60-90cm | | 5% | 3% | | |
| **Open space / Glades** | | **To bespoke design** | 15% | | | | |

| **Car-park Mix** | | | | |
|---|---|---|---|---|
| **Shrub / hedgerow mix** | | **2/sq.m** | | |
| Corylus avellana | Hazel | 60-90cm, br | | 20% |
| Crataegus monogyna | Hawthorn | 60-90cm, br | | 40% |
| Ilex aquifolium | Holly | 30-45, c.g | | 25% |
| Prunus spinosa | Blackthorn | 60-90cm, br | | 7% |
| Salix caprea | Goat Willow | 60-90cm, br | | 4% |
| Sambucus nigra | Elder | 60-90cm, br | | 2% |
| Viburnum opulus | Guelder Rose | 60-90cm, br | | 2% |
| **Trees** | | **3-5m centres within shrub matrix** | | |
| **Nurse Species** | | | | |
| Alnus glutinosa | Alder | 1.8-2.1m ht. | | 20% |
| Betula pendula/pubescens | Birch | 1.8-2.1m ht. | | 25% |
| Pinus sylvestris | Scots Pine | 60-90cm, rb. | | |
| Sorbus aucuparia | Mt Ash | 1.8-2.1m ht. | | 20% |
| **Climax Species** | | **3-5m centres** | | |
| Fagus sylvatica | Beech | 2.1-2.5m. Ht. | | 10% |
| Quercus petrea | Oak | 2.1-2.5m. Ht. | | 10% |
| Prunus avium | Bird Cherry | 2.1-2.5m. Ht. | | 10% |
| Ulmus glabra | Wych Elm | 2.1-2.5m. Ht. | | 5% |

| **Specimen Trees** | | **Indicative locations shown** | |
|---|---|---|---|
| Acer pseudoplatanus | Sycamore | 16-18cm girth, 4-6m, std, BR | |
| Aesculus hippocastanum | Horse Chesnut | 16-18cm girth, 4-6m, std, BR | |
| Fagus sylvatica | Beech | 16-18cm girth, 4-6m, std, BR | |
| Quercus petrea | Oak | 16-18cm girth, 4-6m, std, BR | |
| Pinus sylvestris | Scots Pine | 90-120cm ht, RB. | |
| **Screen Mix** | | **2/sq.m** | |
| Corylus avellana | Hazel | 90-120cm, br. | 10% |
| Crataegus monogyna | Hawthorn | 90-120cm, br. | 10% |
| Ilex aquifolium | Holly | 60-90cm, c.g. | 50% |
| Ligustrum vulgare | Native Privet | 90-120cm, br. | 20% |
| Viburnum opulus | Guelder Rose | 90-120cm, br. | 10% |

**NOTES:**
**DRAWINGS ISSUED FOR PLANNING PURPOSES ONLY. LANDSCAPE IS SUBJECT TO APPROVAL OF THE PLANNING AUTHORITY.**

**TO BE READ IN CONJUNCTION WITH DRAWING - '16508-2-100 LANDSCAPE STRATEGY'**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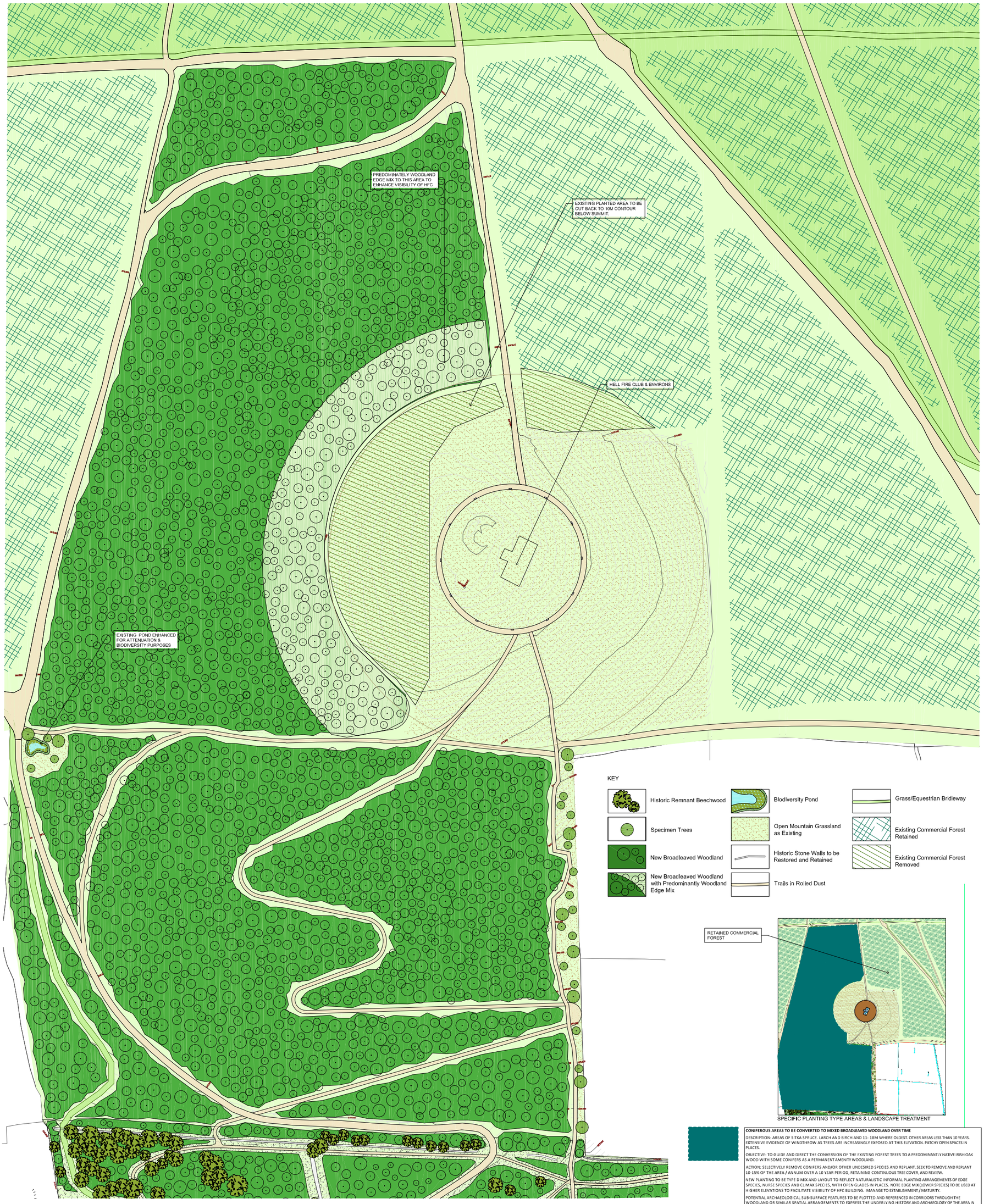
| | |
|---|---|
| PROJECT: **DUBLIN MOUNTAINS VISITOR CENTRE** | DATE: JUNE 2017 |
| | SCALE: 1:750 @ A0 |
| DRAWING: **VISITOR CENTRE AND ENVIRONS LANDSCAPE** | DRAWN: DM CHECKED: DOL |
| | DRAWING NO: **16508-2-101** |




KEY

- Historic Remnant Beechwood
- Specimen Trees
- New Broadleaved Woodland
- New Broadleaved Woodland with Predominantly Woodland Edge Mix
- Biodiversity Pond
- Open Mountain Grassland as Existing
- Historic Stone Walls to be Restored and Retained
- Trails in Rolled Dust
- Grass/Equestrian Bridleway
- Existing Commercial Forest Retained
- Existing Commercial Forest Removed




SPECIFIC PLANTING TYPE AREAS & LANDSCAPE TREATMENT

**CONIFEROUS AREAS TO BE CONVERTED TO MIXED BROADLEAVED WOODLAND OVER TIME**

DESCRIPTION: AREAS OF SITKA SPRUCE. LARCH AND BIRCH AND 11- 18M WHERE OLDEST. OTHER AREAS LESS THAN 10 YEARS. EXTENSIVE EVIDENCE OF WINDTHROW AS TREES ARE INCREASINGLY EXPOSED AT THIS ELEVATION. PATCHY OPEN SPACES IN PLACES.

OBJECTIVE: TO GUIDE AND DIRECT THE CONVERSION OF THE EXISTING FOREST TREES TO A PREDOMINANTLY NATIVE IRISH OAK WOOD WITH SOME CONIFERS AS A PERMANENT AMENITY WOODLAND.

ACTION: SELECTIVELY REMOVE CONIFERS AND/OR OTHER UNDESIRED SPECIES AND REPLANT. SEEK TO REMOVE AND REPLANT 10-15% OF THE AREA / ANNUM OVER A 10 YEAR PERIOD, RETAINING CONTINUOUS TREE COVER, AND REVIEW.

NEW PLANTING TO BE TYPE D MIX AND LAYOUT TO REFLECT NATURALISTIC INFORMAL PLANTING ARRANGEMENTS OF EDGE SPECIES, NURSE SPECIES AND CLIMAX SPECIES, WITH OPEN GLADES IN PLACES. NOTE EDGE MIX (LOWER SPECIES) TO BE USED AT HIGHER ELEVATIONS TO FACILITATE VISIBILITY OF HFC BUILDING. MANAGE TO ESTABLISHMENT / MATURITY.

POTENTIAL ARCHAEOLOGICAL SUB-SURFACE FEATURES TO BE PLOTTED AND REFERENCED IN CORRIDORS THROUGH THE WOODLAND OR SIMILAR SPATIAL ARRANGEMENTS TO EXPRESS THE UNDERLYING HISTORY AND ARCHAEOLOGY OF THE AREA IN SENSITIVE MANNER. SENSITIVE TREATMENT OF SMALL POND TO SOUTH-EAST CORNER.

**SPECIMEN TREES**

DESCRIPTION: INDIVIDUAL, GROUPS OR ROWS OF TREES AS FEATURES IN MEADOW/GRASSED AREAS OR WITHIN SHRUB MIXES.

OBJECTIVES: TO ADD TREE FORM AND AMENITY, AND FOCAL POINTS TO SPACES OUTSIDE OF WOODLAND AREAS.

ACTION: STANDARD / HEAVY STANDARD TREES PLANTED WHERE INDICATIVELY SHOWN ON PLAN. SPECIES MIX TO INCLUDE TREES FROM WOODLAND PLANTING MIXES AS WELL AS NATURALISED FAMILIAR SPECIMENS SUCH AS SYCAMORE, HORSE CHESTNUT AND BEECH.

**Plant Schedules**

| Proposed Woodland Planting Species | | Planting Distance / Size | % of area | Type D - Coniferous areas to be converted to mixed broadleaved woodland over time |
|---|---|---|---|---|
| **Edge Mix – Scrub/ Bushes/ Low Trees** | | **1-2m centres** | **15%** | |
| Corylus avellana | Hazel | 60-90cm, br | | 20% |
| Crataegus monogyna | Hawthorn | 60-90cm, br | | 40% |
| Ilex aquifolium | Holly | 30-45, c.g | | 25% |
| Prunus spinosa | Blackthorn | 60-90cm, br | | 7% |
| Salix caprea | Goat Willow | 60-90cm, br | | 4% |
| Sambucus nigra | Elder | 60-90cm, br | | 2% |
| Viburnum opulus | Guelder Rose | 60-90cm, br | | 2% |
| **Trees Nurse Species** | | **3-5m centres** | **70%** | |
| Alnus glutinosa | Alder | 90-120cm | | 10% |
| Betula pendula/pubescens | Birch | 90-120cm | | 10% |
| Pinus sylvestris | Scots Pine | 30-45cm, br. | | 10% |
| Sorbus aucuparia | Mt Ash | 90-120cm | | 10% |
| **Climax Species** | | **3-5m centres** | | |
| Fagus sylvatica | Beech | 60-90cm | | |
| Quercus petrea | Oak | 60-90cm | | 60% |
| Prunus avium | Bird Cherry | 60-90cm | | |
| Ulmus glabra | Wych Elm | 60-90cm | | |
| **Open space / Glades** | | **To bespoke design** | 15% | |

| Specimen Trees | | Indicative locations shown |
|---|---|---|
| Acer pseuodplatanus | Sycamore | 16-18cm girth, 4-6m, std, BR |
| Aesculus hippocastanum | Horse Chesnut | 16-18cm girth, 4-6m, std, BR |
| Fagus sylvatica | Beech | 16-18cm girth, 4-6m, std, BR |
| Quercus petrea | Oak | 16-18cm girth, 4-6m, std, BR |
| Pinus sylvestris | Scots Pine | 90-120cm ht, RB. |

**NOTES:**
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**TO BE READ IN CONJUNCTION WITH DRAWING - '16508-2-100 LANDSCAPE STRATEGY'**

| REV | DATE | AMENDMENT |
|---|---|---|

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|---|---|---|
| PROJECT: **DUBLIN MOUNTAINS VISITOR CENTRE** | DATE: | JUNE 2017 |
| | SCALE: | 1:750 @ A0 |
| DRAWING: **HELL FIRE CLUB ENVIRONS** | DRAWN: | DM |
| | CHECKED: | DOL |
| | DRAWING NO: | **16508-2-102** |

EXISTING STONE BRIDGE

ICEHOUSE RUINS

EXISTING EARTHERN PATH UPGRADED TO ROLLED DUST PATH

WALLED GARDEN STRUCTURE REPAIRED - OVERGROWTH CLEARED AND SELECTIVE TREES REMOVED AS REQUIRED TO ENHANCE LEGIBILITY AND INTEGRITY OF GARDEN IN ACCORDANCE WITH CONSERVATION ARCHITECTS REPORT

EXISTING MILITARY ROAD TRAIL

NEW SEATING AREA WITH EASY ACCESS TO WATER COURSE

REALIGNED FOOTPATH AWAY FROM BROOK

RUINED COTTAGE

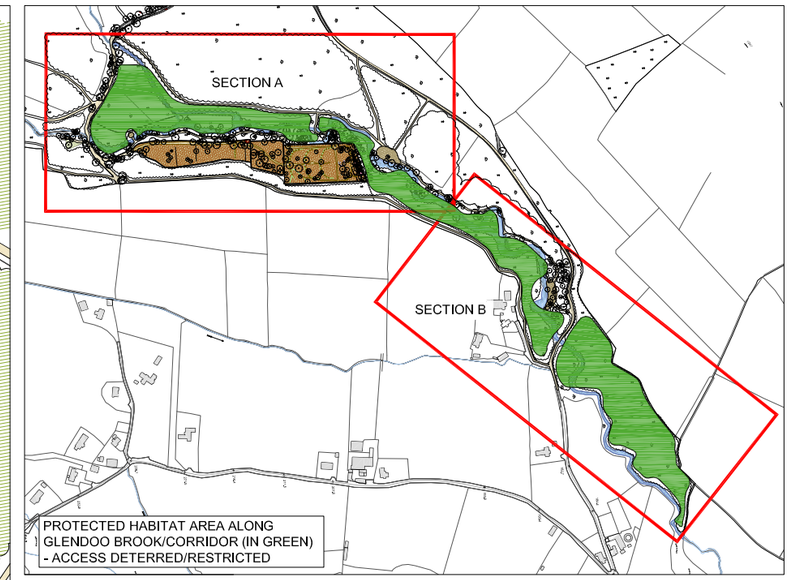
OLD BRIDGE LEADING TO NEW SEATING AREA

ACCESS TO RIVER CORRIDOR AND ASSOCIATED VEGETATION RESTRICTED/ DETERRED TO ENHANCE HABITAT. (EXISTING ROUGH TRACKS TO BE CLOSED)

EQUESTRIAN TRAIL (WALKING PERMITTED)

RUINS OF TURNER CONSERVATORY (SELECTIVE TREE REMOVAL)

SECTION A PLAN




EXISTING MILITARY ROAD TRAIL

EQUESTRIAN TRAIL (WALKING PERMITTED)

NEW SEATING AREA WITH EASY ACCESS TO WATER COURSE

LOCAL ENTRANCE

SECTION B PLAN

KEY

- New 1.2m High Estate Fencing to steep banks along Glendoo Brook and where appropriate to limit direct access to Brook
- Existing Broad-leaved Woodland
- Trails in Rolled Dust
- Glendoo Brook
- Woodland Meadow Grass
- Seating Areas - Expanded gravel area furnished with logs for seating informally

**NOTES:**
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| REV | DATE | AMENDMENT |
|---|---|---|


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|---|---|---|
| PROJECT: **DUBLIN MOUNTAINS VISITOR CENTRE** | DATE: | JUNE 2017 |
| | SCALE: | 1:1000 @ A1 |
| DRAWING: **GLENDOO BROOK CORRIDOR, MASSEYS WOODS** | DRAWN: | DM |
| | CHECKED: | DOL |
| | DRAWING NO: | **16508-2-103** |