CUNNANE STRATTON REYNOLDS
LAND PLANNING & DESIGN

BELMOUNT RESIDENTIAL
DEVELOPMENT AT
ACADEMY STREET,
NAVAN,

LANDSCAPE DESIGN REPORT

November 2019

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Contents

The 15.1ha subject lands are located on Academy Street, Navan close to the town centre and to the west of the Boyne River over the Dublin Road. The site exists on lands surrounding the 19th century Belmount House (Protected Structure- MCC) and comprises three distinct landscape types which are;

1. **Agricultural fields** (7 in total). These are small to medium in size and are divided by hedgerow lined ditches. The hedgerows range in condition and contain scattered hedgerow trees which punctuate the skyline.
2. **Belmount Woodland** A mature and characterful woodland containing some distinctive native and non-native trees, remnants of historic paths and two well defined laneways. There is a clearing within the woods and a few attractive views through the trees to Belmount House.
3. **Seminatural grassland / scrub.** This enclosed area lies between Academy Street and the woodland of Belmount House. The lands slope generally gradually towards the woods. The slope inclines more steeply to the SW.

The site is located close to the Boyne River valley which is flanked with trees. The eastern edge of the site slopes very steeply towards the river affording views across the valley. Surrounding green infrastructure includes the public open space containing the Navan Renewal sculpture, woodland vegetation to the south and established garden vegetation.

Existing trees are presented in more detail from page 6. A detailed study of Belmount Woodland is provided in Appendix One.

Belmount House is noted as dating from 1815 – 1835 according to the National Inventory of Architectural Heritage. Historical maps and local history suggest that the existing main house was built in 1895.

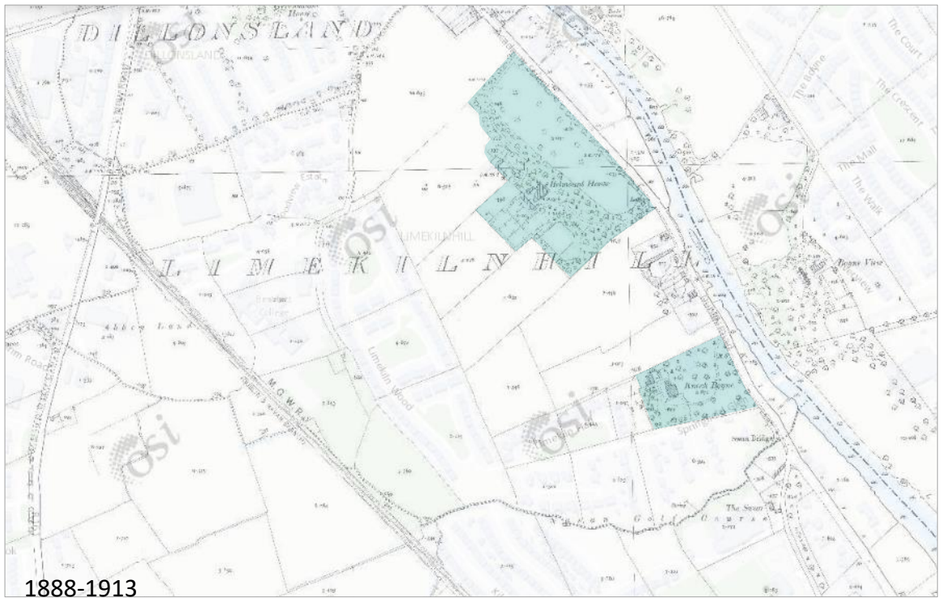
Fair View house (located to the SW of the site)is not noted on the National Inventory of Architectural Heritage.

The Ordnance Survey Field Name Book refers to the Fair View House as being built in 1835-1836 as “A gentleman's house with some ornamental ground and a large garden attached. It is a handsome residence, recently erected near the road to Dublin by Dr. L. Byron”. Navan & District Historical Society.

View through the woodland to Belmount House.

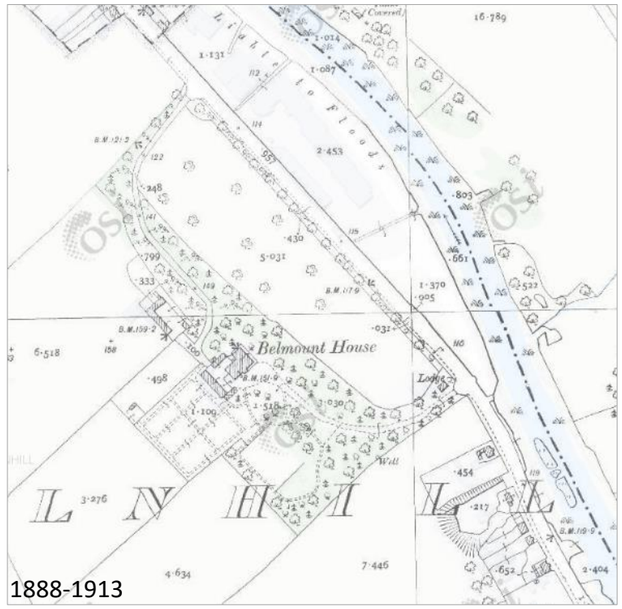
1837-1842

The 1837 map (Geohive) shows the grounds of Belmount House and Fair View House. Three significant hedgerows have been noted.



1888-1913

By the 1888-1913 map (Geohive), the new main house at Belmount has been built and the gardens look to have been laid out.



1888-1913

Paths and access roads highlighted on the 1888-1913 plan (source Geohive)

✓ Glimpsed views to Belmount House are attractive but should be screened to provide privacy

2A. View NNW towards Belmount House along historic access track

✓ Attractive route to Belmount House

2B. View SW along the existing and retained access track towards the Dublin Road.

✓ Open views between trees create open views between the impressive trees

Mapped paths taken from the 1888-1913 plan

Historic edge and access track

Remnants of historic paths could be reinstated if it helps the usability of the proposed woodland park.

3 Remnants of stone in the woodland

4. View towards Belmount House from Academy Street

5. View NEE along historic access track and edge (ditch)

DESIGN STRATEGY FOR THE Belmount HISTORIC LANDSCAPE

Where possible:-

- Keep historic edge / access track intact
- Re-use old paths
- Make crossings over old routes occur as close to 90° as possible

Three principal groups of trees exist on the site as follows;

1. Trees associated with Belmount House and Woodland (see focused study in Appendix One).
2. Hedgerow trees
3. Trees along the SE boundary of the site, part of the garden estates of the large individual properties on Dublin Road and Springfield Glen. Some of these are also protected in Policy as a "Stand of Tree to be Preserved".

Mature trees punctuate the horizon along existing hedgerows.

The trees within Belmount Woodland are high quality trees both as groups and as individual specimens.

Single group of trees on the SW boundary of Belmount Woodland.

Trees along the SE boundary of the site.

The arboricultural survey is summarised here.

Arboricultural tree surveys pick up on trees with a trunk diameter at 1.5m off the ground of 150mm and above (DBH). Any trees with a smaller trunk are considered as part of the group of trees.

Full copies of the arborist's survey drawing have been provided separately.

- The majority of the trees located within the subject lands, are high or moderate quality (refer to the drawing and legend for the rating of the trees).
- There are a number of trees that gain value from being located in a group.

CLASS A INDIVIDUAL TREE
(HIGH QUALITY -
RETENTION HIGHLY DESIRABLE)

CLASS B INDIVIDUAL TREE
(MODERATE QUALITY -
RETENTION DESIRABLE)

CLASS C INDIVIDUAL TREE
(LOW QUALITY -
RETENTION OPTIONAL)

CLASS U INDIVIDUAL TREE
(RECOMMEND REMOVAL)

TREE GROUPS
(COLOUR REPRESENTING
GROUP CLASSIFICATION)

SITE BOUNDARY

NOTE:

RPA FOR TREE GROUPS IS INDICATIVE BASED ON AVERAGE TREE SIZE - ONLY TAGGED TREES RPA INDIVIDUALLY CALCULATED.

THIS DRAWING IS PRODUCED IN COLOUR, MONOCHROME VERSIONS SHALL NOT BE RELIED UPON.

Please refer to T-101, T102 and T103 which are provided as full scale hard and soft copies separately along with the accompanying report.

BELMOUNT HOUSE WOODLAND

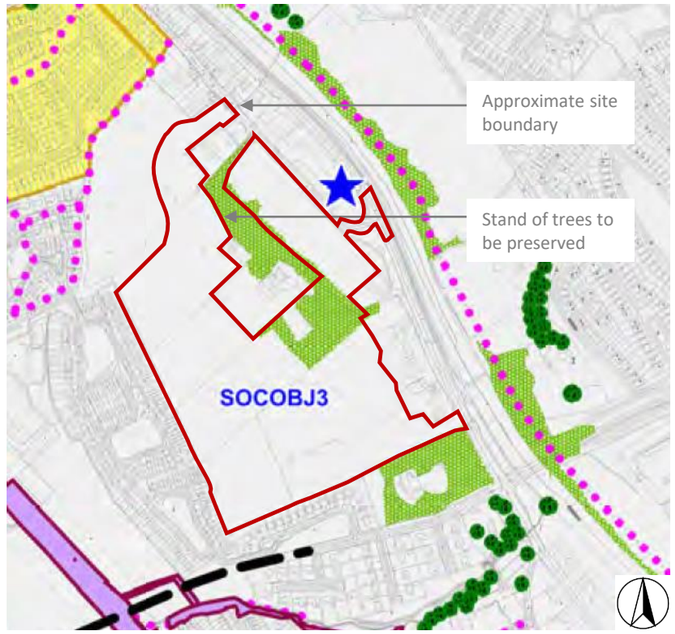
The woodland around Belmount House is attractive, mature, and characterful and a strong asset to the site. It is part of a, "Stand of Trees to be Preserved" (Navan Local plan 2009-2015).

It is the intention of the plan to integrate this historic feature – a remnant Woodland garden and woodland – into the site masterplan as a valued feature.

The woodland contains a range of mature planted trees creating fine specimens, as well as self sown younger trees and over-mature shrub plantations. As part of a positive woodland management move, it has been recently cleared of invasive Rhododendrons. The resultant woodland has a varied age structure including trees that are likely to have preceded Belmount House, trees that are likely to have been planted as part of the development of the gardens associated with Belmount House, and self seeded trees.

Overall, the woodland creates an attractive landscape feature in the wider landscape and is visible from several surrounding places. This overall effect is greater than the contribution of any individual tree.

A full study of the impact of the development on this stand of trees is provided in Appendix One.



Excerpt from the Navan Local Plan 2009-2015

View of the NE woodland edge

A specimen Beech tree from within the subject lands

Self-seeded saplings growing in woodland clearings.

Existing views from within the site were analysed. This diagram illustrates the locations of representative views from and within the site and maps key local landmarks. Photographs are presented on the following two pages of this report. A summary of key outcomes are mapped and listed on page 12.

SYMBOLS LEGEND

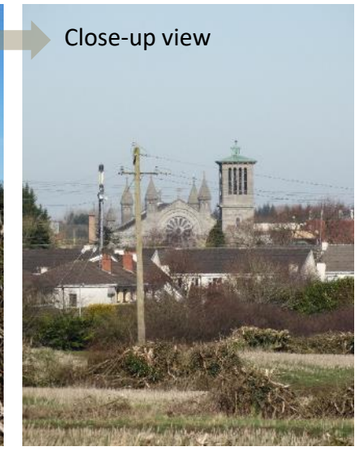
- Visual receptor
- St Mary's Church
- St Mary's Church
- Key views out of the site
- Views towards St Mary's Catholic Church
- Views towards St Mary's Protestant Church

VIEWS LEGEND

1. View to both churches
2. View towards Beaufort College, the road bridge over the River Boyne (E), Belmount House and views over Boyne Valley
3. View to the road bridge (E) and Meath County Council office
4. View to Meath County Council and individual homes.
5. View to Beaufort College
6. View towards the two churches
7. View to Athlumney Castle
8. View to railway viaduct
9. View to Athlumney Castle (NE) and to adjacent properties (S)
10. View to Athlumney Castle
11. View to sculpture with church in the background.
12. View along Academy Street
13. View to through the woodland to Belmount House.

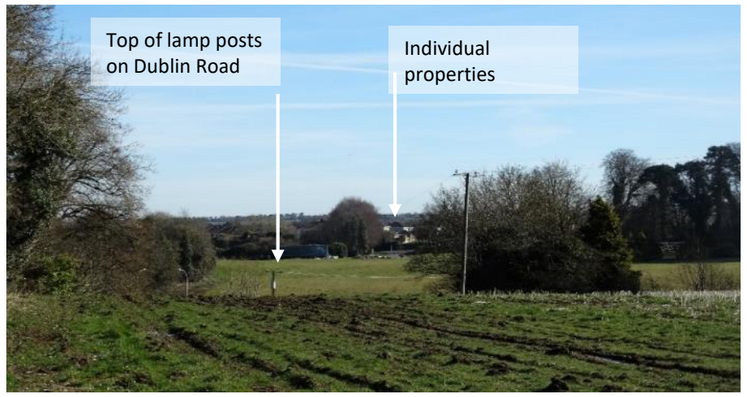
1. Distant view North to the two churches of St Mary's. Existing hedgerow trees and the woodland associated with Belmount House are also key features within the view.

Close-up view



2. View from the highest point of the site includes views towards Beaufort College, the two churches of St. Mary's, Belmount House and East over the Boyne Valley.

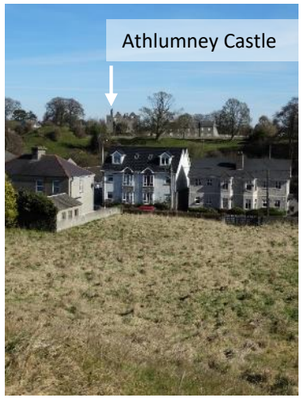
3. View SE towards MCC offices and road bridge



4.View NE over the Boyne Valley includes individual properties and lamp posts along the Dublin Road

5. View to Beaufort College

6. View to the two churches

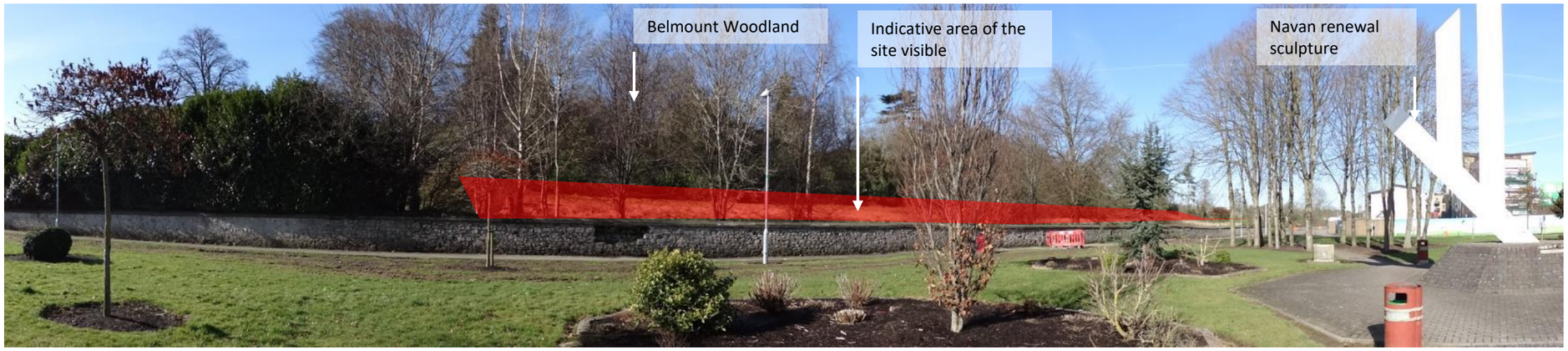


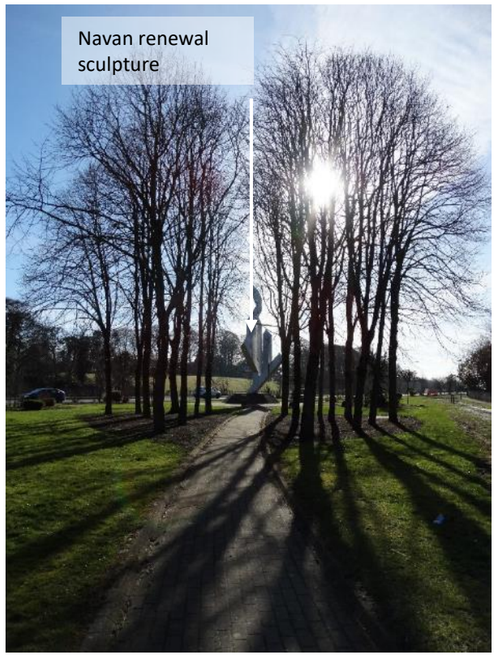
7. View over properties flanking Academy Street towards Athlumney Castle

8. View towards railway bridge

9A. NE over the substation towards Athlumney Castle

9B. View south over the site towards the properties along its western and southern edges taking in the significant trees with Belmount House to the left

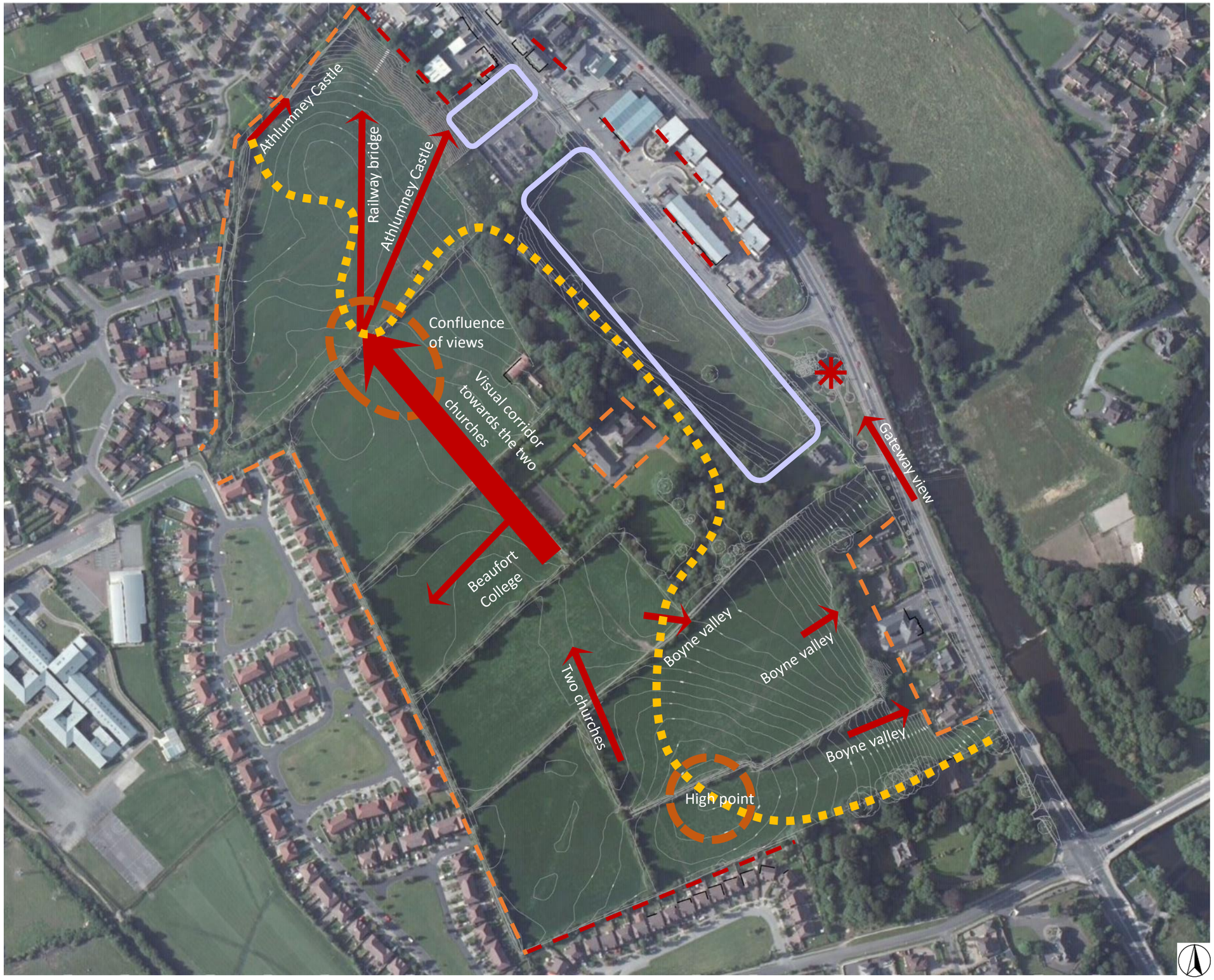




11. Two photos illustrating the relationship of the site with the Navan renewal sculpture

12. View NW along Academy Street

13. View NW towards Belmount House



Key views

Renewal Sculpture

Visual node

Area of the site which is potentially most visible from the east.

Areas with potential to contribute to the Academy Street streetscape and NE/SW wildlife corridors.

Adjacent properties / buildings with open views onto site and residential patterns to respond to.

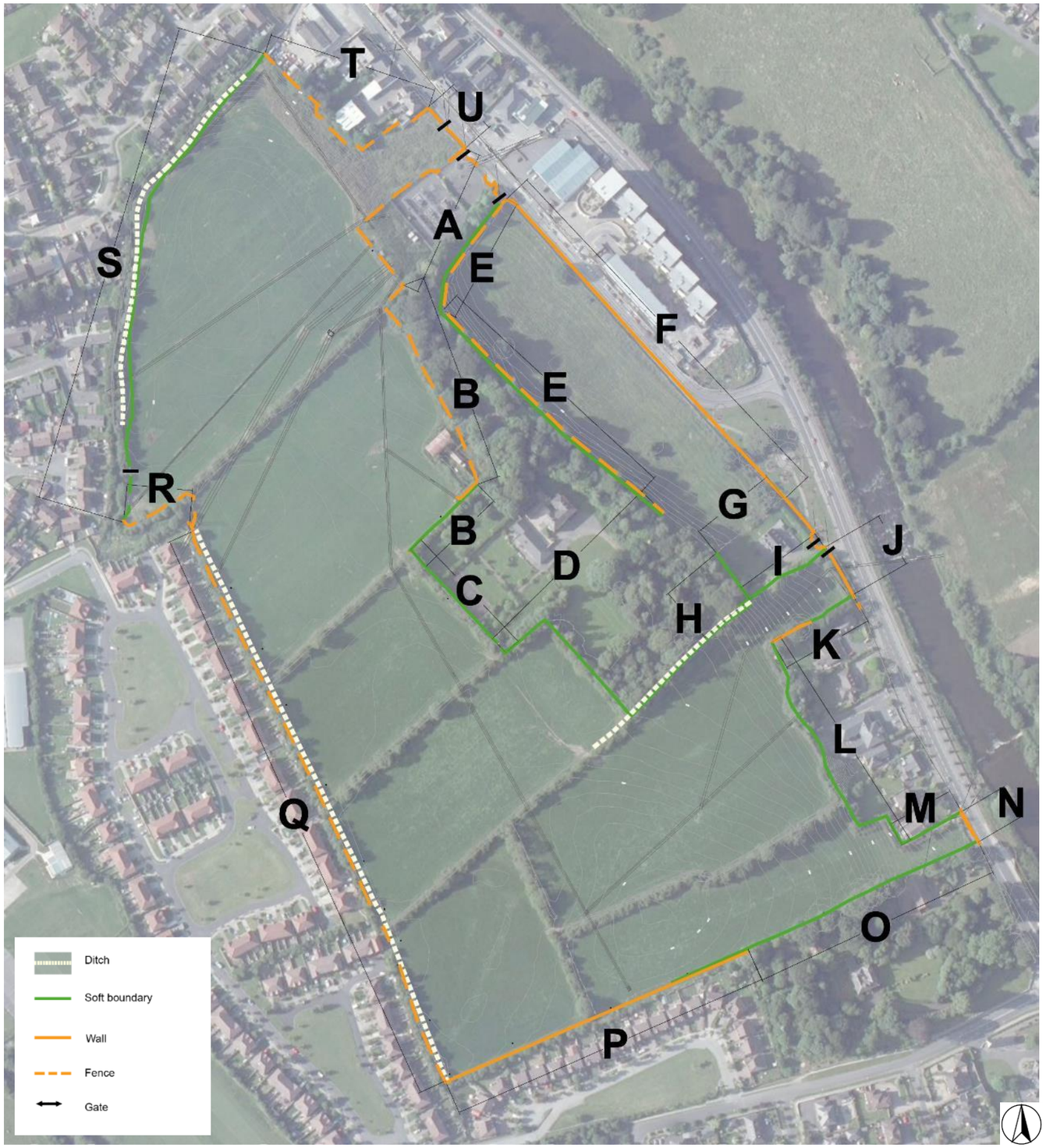
Adjacent properties / buildings with partial views onto site and residential patterns to development to respond to.

KEY OUTCOMES

The visual analysis presents the following sensitivities and opportunities that are subsequently integrated and responded to within the masterplan.

Key sensitivities
Views from residential properties immediately adjacent to the site, views from and access to Belmount House and potential views from across the Boyne Valley looking SW towards the site from local receptors need to be sensitively responded to.

Key opportunities
Views towards the two churches, Athlumney Castle, Belmount House and gardens, significant trees within the site and over the Boyne Valley have great potential to add to the development's sense of place.



A: Detail of palisade fencing around substation

B: Detail of woodland edge ajacent to substation

A/U: Palisade fencing around substation (A). Rendered wall against Academy Street (U).

B: Palisade fencing around existing mature woodland.

F: Stone wall stretching along Academy Street

H: Mature Rhododendrons form property boundary.

I: Mature Rhododendrons form property boundary.

J: Gate and low dry stone wall.

C: Woodland boundary.

D: Open parkland / woodland boundary.

E + F: Fenced off woodland (E) and coursed stone wall against Academy Street (F) .

J-N: Academy Street frontage.

P: Low boundary wall and scattered scrub.

P: Low boundary wall and scattered scrub.

O: Woodland boundary in adjacent property.

L-M: Scrub and vegetation flanking steep drop.

Q: Boundary wall to properties adjacent to a ditch. Hedgerow and trees along gardens and adjacent to ditch. Land ownership boundary is located in the ditch.

T: Boundary walls and fencing.

S: Established hedgerow south of a ditch.

The proposed green infrastructure of this development aims to;

- Create a hierarchy of green spaces
- Provide opportunities for a safe and active green network
- Create wildlife corridors around and through the development.

The main focus of the Belmount development will be the woodland park associated with Belmount house and gardens. This landscape feature creates;

- a visual focus for the crescent shaped street and overlooking houses
- A unique, rich and varied place for active and passive recreation and,
- A unique entrance experience for residents.

The apartments front onto Academy Park which will be an urban park designed to;

- compliment Academy Street
- connect to the Gateway public open space, and
- Provide a transition between pubic and semi-private lands.

Local parks will create a necklace of local spaces throughout the development. These will each have their own character and identity and will be the focal point for each neighbourhood. They are connected by well-treed streets and homezones.






GI LEGEND:

Existing

- Woodland
- Public open space
- Garden and site buffer vegetation

Proposed:

- Urban park
- Woodland park
- Local park

DESTINATION LEGEND:

- Proposed School
- Proposed Creche
- Local Equipped Area
- Local Area for play
- Fitness trail
- Woodland garden

CONNECTIVITY LEGEND:

- Academy Street
- School Road
- Local Road A
- Local Road B
- Local Road C
- Homezone
- Pedestrian route
- Proposed pedestrian link
- Potential future pedestrian link
- Key views

When combined with a well-structured urban layout, green infrastructure becomes and integral part of daily travel and provides an active green network of benefit to people and ecology.

Pathways and streets are well-used when they provide a logical and safe way of getting people to where they want to go – their destinations. This development includes the following types of destinations:-

- 6 local parks and 2 unique neighbourhood parks including Belmount Park & Gardens which will contain a woodland garden.
- 1 Local Equipped Area for Play
- 5 Local Areas for Play and kickabout areas
- An outdoor fitness trail
- One creche facility located so that it is visible and accessible from the main avenue but aligned to one of the local parks
- A second creche facility located within the apartments.
- Pedestrian connections to the Boyne River and Navan town and potential future connections to the proposed railway station and adjacent residential areas.

The diagram to the left presents the proposed hierarchy of streets and routes along with the destinations listed above. **Overall, the diagram represents a well-connected and structured plac**e.

The qualities of individual parks and spaces are described from page 18. Play provision is also detailed on these pages.

This masterplan delivers a new and desirable place for people to live close to Navan town centre that is;

- Set in the heart of a historic and extended urban woodland
- Full of great places to play both on the doorstep and in the two main neighbourhood parks at Belmount Woodland and Academy Park.
- A great place for keeping fit with its safe and well-connected cycle and pedestrian routes and outdoor fitness equipment next to Belmount Woodland.
- A place for picking your own fruit in the community orchards.

The following pages demonstrate how proposed Green Infrastructure informs neighbourhoods and explains open space provision in more detail.

Please refer to 18221-2-100 Rev A for full scale hard and soft copies. This drawing includes indicative planting lists and mixes.

LEGEND:

NOTE: for details of materials & planting see drawing 18221-2-103

GENERAL
- Existing Trees/Group of Trees
- Proposed Building

PROPOSED PLANTING AND HABITATS
- Parkland Trees
- Street Trees
- Small to Medium Garden Trees
- Orchard Trees
- Birch thickets
- Amenity / Private Grass
- Low / Medium height shrub Planting
- Hedge
- Mixed Native Edge Woodland Planting
- Ornamental Grasses + Planting
- Bulb Planting / Long grass
- Landform Swale

PROPOSED HARD ELEMENTS
- 1. Tarmac Road
- Concrete Footpath
- Raised Table
- Tactile paving
- Rolled Dust/Gravel Path
- Shared surface-Colured Tarmac
- PCC Pavers for Pedestrian/Vehicular
- Cycle way
- Parking Bays and Threshold Paving
- PCC setts
- Attenuation area
- 1.2m high vertical bar railing

PROPOSED PLAY AREAS
- Rubber / Woodchip Play surface
- Sand area in Playground
- Boardwalk Play Features
- Balance Beams
- Informal Play; Boulders, Mounds, Logs
- Play Equipment
- Fitness Trail Equipment

PROPOSED FURNITURE & STRUCTURES
- Coursed gabion retaining walls
- Type 1. Indicative location of subs Type 2. Pumping station
- 1. Timber Bench 2. Concrete Wall/Seat
- 1. Bike Stands 2. Bin Shed 3. Bins
- Street Lighting

Drawing to be read with the accompanying Landscape Strategy and Design Report 18221-D-D04 and Landscape Masterplan Areas 18221-2-401 to 407.

Annotation of places relates to neighborhoods defined in the Landscape Strategy and Design Report.

The Landscape Masterplan includes recomandations for the Road Safety Audit. See the Landscape Strategy Design Report for more detail

Response to ABP Opinion – Reference ABP – 304494-19 – 28th June 2019

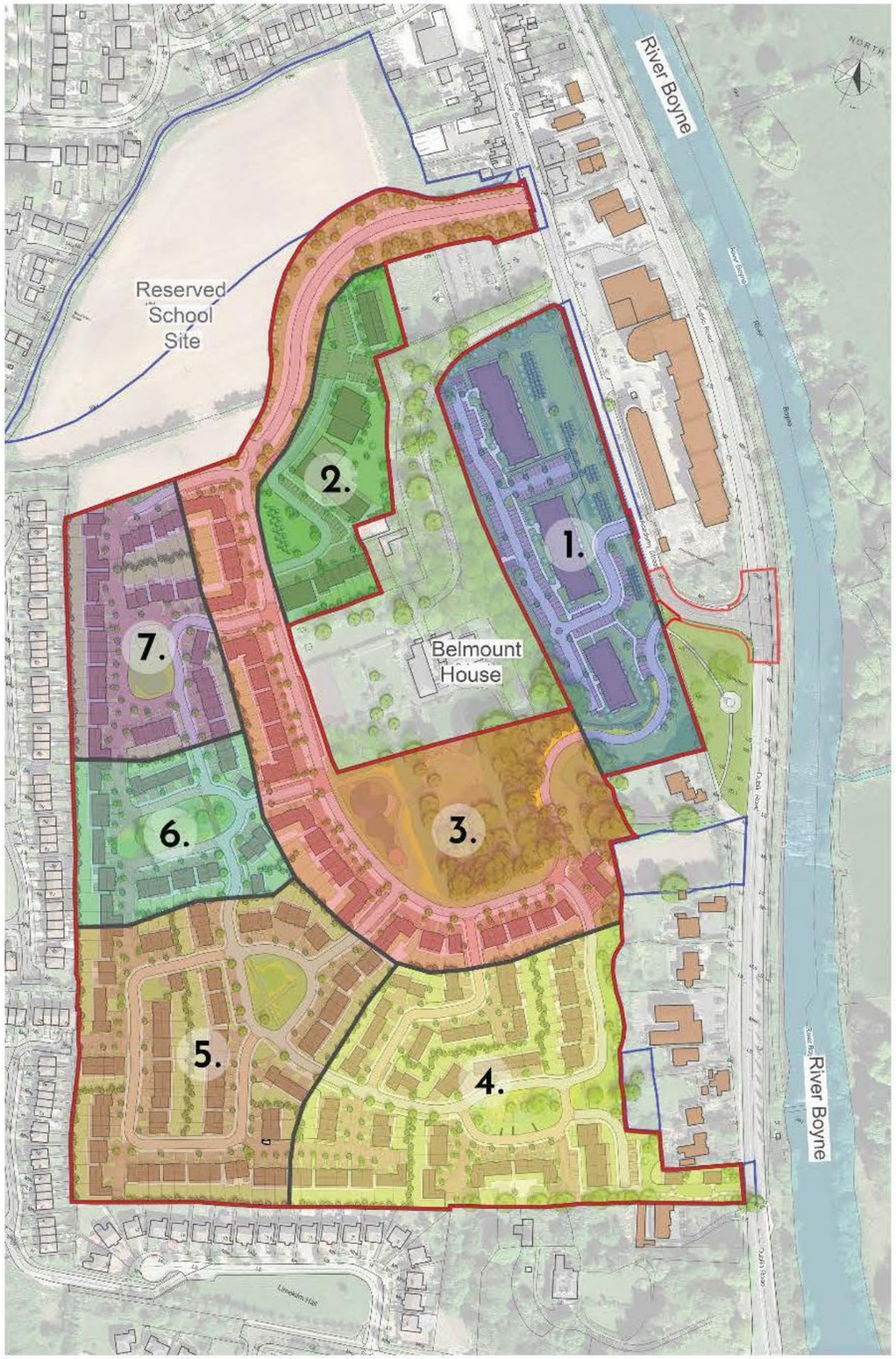
In the opinion of 28th June 2019 the following issues of relevance to landscape was requested:

- Details of all materials proposed for buildings, open spaces, paved areas, boundary and retaining walls
- Details of public lighting
- A plan showing proposed public, semi-private and private spaces.

A full suite of landscape drawing accompany the planning application detailing the proposed layout and mix of materials – hard and soft to be used throughout the development.

A public lighting design has been provided Morley Walsh Consultants. Street lighting columns have been integrated into the landscape scheme to ensure no conflict with proposals for street trees and other features.

Drawing No 18221-2-104 illustrates the location of public, semi-private and private space. The relevant quantities of these are included in the Architects report and drawings.



Neighbourhoods

Green Infrastructure informs Neighbourhood Areas . This can be thought of as how we describe where we live - our sense of place. The following proposed neighbourhoods have been identified;

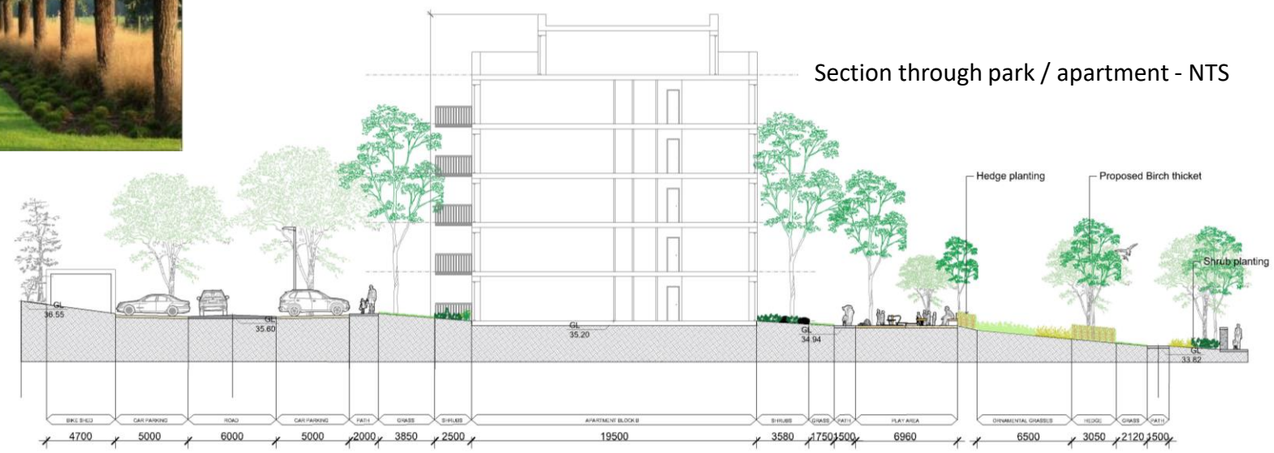
1. Academy Park
2. School Hill
3. Belmount Park & Gardens
4. South Park & Boyne Link
5. High Park & Limekiln Hill Link
6. The Ashes
7. Oval Park

These character areas are described in detail in the Architecture & Urban Design report. Key green space structuring elements / parks are described below.

Academy Park – Plan View- NTS




Indicative Images above



Section through park / apartment - NTS

Academy Park

Academy Park is a linear urban park that runs parallel with Academy Street. The design reflects the linearity of the river valley through its strips of grasslands and meadows punctuated with trees. People walking into Navan can choose to take a direct route through the park away from the main road. Residents can cut through the park on their way to and from home.

Communal spaces are located close to the apartments, each furnished with their own semi-private play space.

Belmount Park & Gardens

Belmount House & Gardens is one of the greatest features of the development. Set within the existing trees, this sensitively designed park;

- Revives the historical woodland garden for use by all.
- Provides good circulation through and around the woodland.
- Opens up the woodland to new and existing communities.
- Integrates ornamental planting for passive recreation and to enhanced views towards Belmount House.
- Includes informal woodland play features within the woodland and a large equipped playground away from root protection areas.
- Creates intrigue and interest in the woodland with mossy oval artforms.

Belmount Park and Gardens – Indicative Images

backdrop to this view

Section through park - NTS

Belmount Park and Gardens – Plan View- NTS

Belmount Hill illustrating universal access through gently graded footpath through wooded area – Plan View- NTS

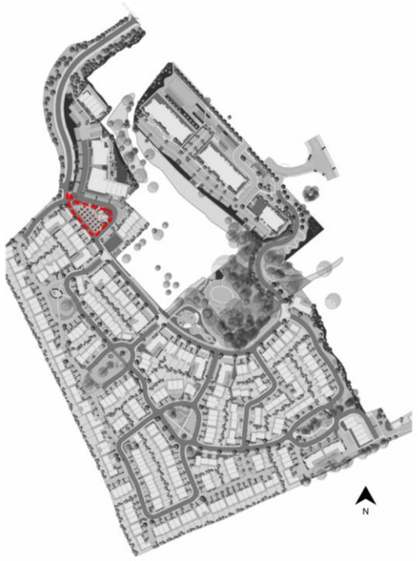
An accessible pedestrian route has been provided as alternative to the proposed access road. The path and steps, which offer a more direct route, will be delivered using 'no-dig' construction methods to achieve gradients of between 1:20 and 1:35 as shown in the adjacent drawing.

Sloped universal access through trees – Indicative Images

School Hill

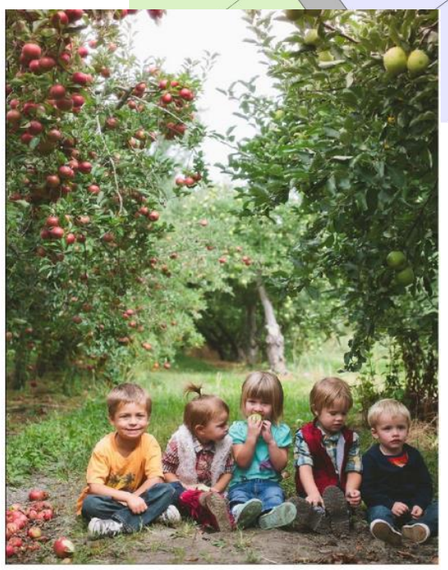
School Hill is located close to one of the main entrances into the development. It will

- Be well-treed to mimic the rich entrance experience provided through Belmount Woodland to the south
- Include two orchard groves for residents, school children and children in the creche to pick their own fruits
- Include an informal play area on the hill top, which can be used by the creche in addition to the allocated play space.
- Be serviced by a 6m wide road with shared pedestrian and cycle route either side of it and with regular places to stop and sit alongside the road amongst the trees



School Hill – Plan View- NTS

School Hill – Indicative Images

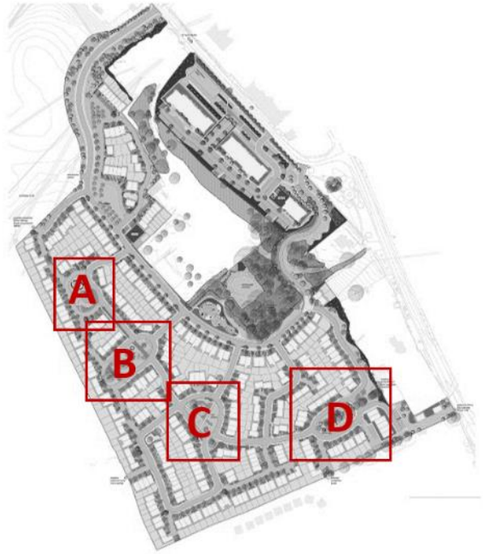


Local Parks

Four local parks integrate existing trees and provide doorstep opportunities for play and relaxation. Each combine the following landscape treatments in different ways to create a strong sense of place and identity;

- Direct pedestrian paths across the space
- Somewhere to play and explore
- Swathes of bulbs
- Focused areas of shrub/ornamental grasses to create a sense of enclosure or entry
- Some new tree planting.

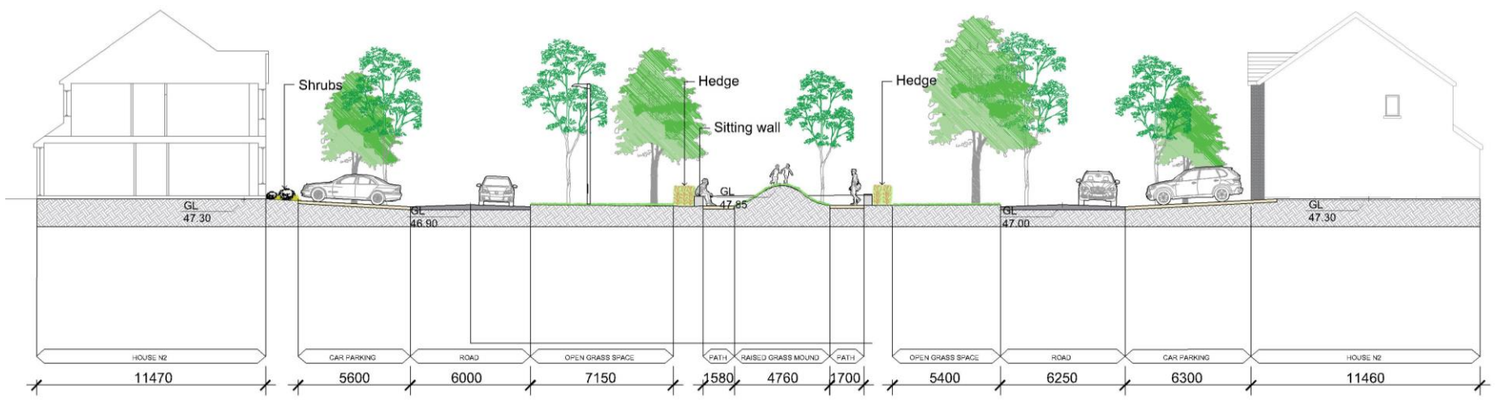
The four parks are illustrated here and on the following page.



A. Oval Park- Plan View - NTS

A. Oval Park- Indicative Images

A. Oval Park- Section - NTS



B. The Ashes- Plan View - NTS

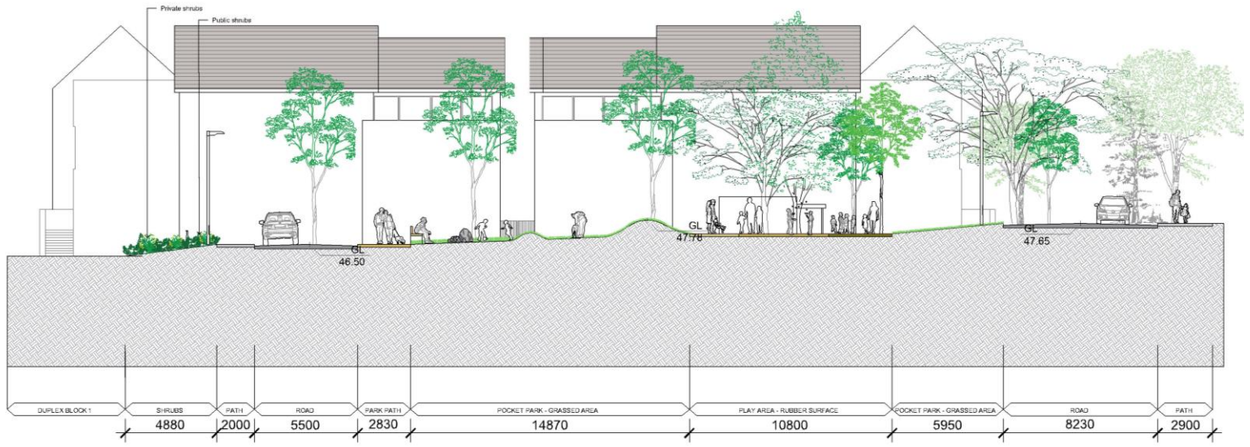
B. The Ashes – Indicative Images

C. High Park – Indicative Images

C. High Park- Plan View - NTS

C. High Park– Section - NTS

D. South Park- Section - NTS



D. South Park - Plan View - NTS

D. South Park – Indicative Images

Tree Impacts

This drawing shows the impact that the proposed development will have on the existing tree and hedgerow cover (appraisal drawing of the existing site provided for reference to the far left).

The three woodland habitats identified on the existing site (see page 6 of this report) are effected as follows:

1. **Trees associated with Belmount House and Woodland**
   The vast majority of the trees will be retained. It is estimated that this stand of trees includes approximately 300 trees over 2.1 ha. Of these, 19 individual trees will be lost to provide access to the development. 1 tree will be removed due to ill health.

   The 3 trees along the SW boundary of Belmount House shown for removal could be retained if ground investigations determine that the direction and extent of root growth has been restricted by the existing ditch.

   The rectilinear shape of the woodland, the strength of its edges and its presence in the landscape will be retained. Therefore the overall Stand of Trees to eb Preserved and its presence in the landscape is retained.

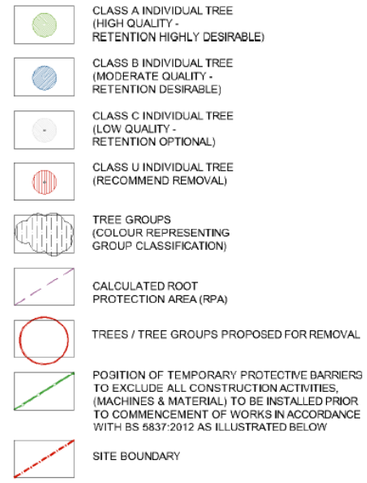
   See Appendix One of this report for a detailed study of Belmount Woodland, impacts on it, alternatives considered and mitigation proposed.

2. **Hedgerow Trees**. Most hedgerow trees will be retained. 4 hedgerow trees will be removed. 1 tree will be lost from within the semi-natural grassland abutting Academy Street. The majority of the hedgerows themselves will be lost except for two small sections as highlighted in **orange.**

3. **Trees along the SE boundary of the site.** These are part of the garden estates of the large individual properties on Dublin Road and Springfield Glen. Some of these are also protected in Policy as a "Stand of Tree to be Preserved". All of these trees will be retained and protected throughout the construction process.

In total, 24 trees will be removed across this site. Hundreds will be re-planted.

Landscape appraisal (see p3)

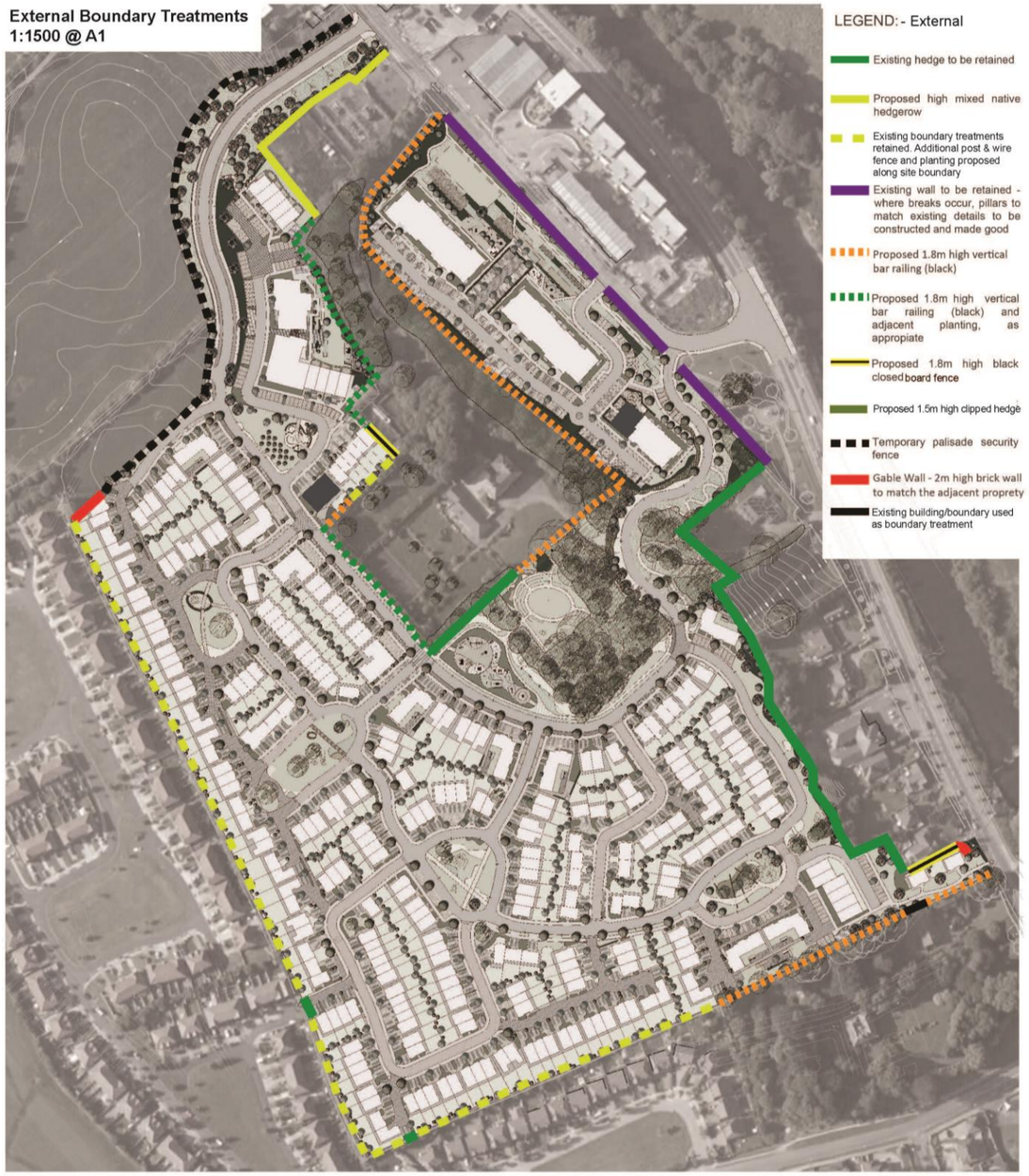


TREE PLANTING MITIGATION

A significant number of trees and woodland areas will be planted as part of this development in and around Belmount Woodland including;

- 14 trees are proposed within the woodland. These will grow to re-create the closed canopy edge of the existing woodland.
  147 parkland trees are proposed across the development
  94 street trees are proposed across the development
  26 orchard teres are proposed across the development
  958 garden trees are proposed across the development
  3335m² native woodland will be planted across 4 woodland blocks

External Boundary Treatments
1:1500 @ A1



Internal Boundary Treatments
1:250 @ A1

LEGEND:- Internal

Rear garden gable and side wals:
2000 mm high brick walls (to match adjacent property)

Internal garden boundaries:
1800mm high concrete post and plinthe fefncing with vertical timber panels

Back garden boundaries:
1800 mm high capped block wall

Gates:
Full height gates will be provided in each treatment at detailed level

Key Plan - NTS

NOTE:
- DRAWING ISSUED FOR PLANNING PURPOSE ONLY. LANDSCAPE IS SUBJECT TO APPROVAL OF THE PLANNING AUTHORITY

REV	DATE	AMENDMENT
C	18/11/2019	PLANNING ISSUE

Existing hedge to be retained

Proposed high mixed native hedgerow

Proposed 1.8m high post and wire fence with adjacent planting

Existing wall to be retained. Where breaks occur, pillars to match existingdetails to be constructed and made good

Proposed 1.8 m high vertical bar railing (black)

Proposed 1.8m high vertical bar railing (black) and adjacent planting as appropriate

Proposed 1.8 m high concrete post and plinthe fenc

1800 mm high capped block wall

Temporary palisade security fence

CUNNANE STRATTON REYNOLDS
LAND PLANNING & DESIGN

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3 MOLESWORTH PLACE DUBLIN 2
TEL 01 661 0419 FAX 01 661 0431
EMAIL info@csrlandplan.ie

PROJECT: BELMOUNT RESIDENTIAL DEVELOPMENT, ACADEMY STREET, NAVAN, CO. MEATH	DATE: October 2019
	SCALE: VARIOUS @A1
DRAWING: Boundary Treatment Drawing	DRAWN: TC/DC/AM CHECKED: EO
	DRAWING NO: 18221-2-105

ROAD SAFETY AUDIT RESPONSE

A road safety audit was prepared by Pinacle Consulting Engineers. Relevant recommendations to the landscape were reviewed and actioned as shown below.

3.2.1 Clear stemmed trees will be specified on corners.

3.2.2 Pedestrian crossings, dropped curves and tactile paving will be provided across all junctions, to reflect desire lines, in accordance with the engineer's drawings.

3.2.3 'Stop' controls will be provided in accordance with the engineer's drawings.

3.2.5 Additional lighting has been provided as specified by the M&E consultants.

3.2.6 Clear stemmed trees will be specified close to junctions.

3.2.7 Gradients on footpaths are in accordance with national disability authority guidelines and provide measures that protect pedestrians and cyclists from height hazards.

3.2.9 Additional lighting has been provided as specified by the M&E consultants.

3.2.10 Chamber covers should be sited in hard landscaped areas with complementary / anti-slip surfacing.

3.2.14 The paths noted here are for pedestrian use only. Bollards have now been provided to emphasise this.

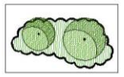
3.2.15. Pathways have all been moved to ensure pedestrians are directed to safe and direct crossing points (supported by dropped kerbs and tactile paving).

3.2.16 Pathway surfaces have been updated.

3.2.20 Tactile paving is now incorporated into the drawing.

3.3.2 Swales are interrupted by footpaths.

LEGEND:



Existing Trees/Group of Trees retained and managed (326 No.)
(See arborist's report)

Proposed Street Trees (94 No.)
Planted in same species group or lines on individual streets

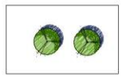
Acer campestre 'Streetwise' 16-18 cm gth, 4-6m ht
Acer campestre 'Elsrijk' 16-18cm gth, 4-6m ht
Betula pubescens 14-16cm, 3-4m ht
Corylus colurna 14-16cm gth, 5-6m ht
Pyrus 'Chanticleer' 14-16cm, 3-4m ht*
Quercus robur 'Fastigiata' 16-18cm gth, 4-6m ht
Tilia cordata 'Greenspire' 16-18cm, 5-6m ht*
Ulmus 'Lobel' 16-18cm, 5-6m ht

Proposed Parkland, Open Spaces and Feature Trees (147 No.)
To include species from the above list and selected species from the following:

Aesculus hippocastanum 14-16cm, 4.25-6m ht*	Specimens:
Alnus glutinosa 14-16cm, 3-4m ht	*Carpinus betulus 20-25cm, 6m ht*
Castanea sativa 14-16cm, 4.25-6m ht*	*Cedrus atlantica 'Glauca' 20-25cm,6m ht*
Fagus sylvatica 14-16cm, 4.25-6m ht	*Pinus radiata 1.9m-2m ht, RB*
Pinus sylvestris 120-150cm, RB	*Quercus pallustis 20-25cm, 6m ht*
Populus tremula 14-16cm, 4.25-6m ht	
Quercus petrea 14-16cm, 4.25-6m ht	

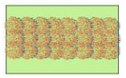
Small to Medium Trees (822 No.)

To open spaces and public realm	To private gardens
Betula pubescens 14-16cm, 3-4m ht	*Arbutus unedo* 12-14cm, 2.5-3.5m ht*
Prunus padus 14-16cm, 3-4m ht*	*Betula pendula 14-16cm, 3-4m ht*
Pyrus 'Chanticleer' 14-16cm, 3-4m ht*	*Malus floribunda 12-14cm, 2.5-3.5m ht*
Sorbus aria 'Lutescens' 14-16cm, 3-4m ht*	*Malus sylvestris* 14-16cm, 3-4m ht*
Sorbus aucuparia 12-14cm, 2.5-3.5m ht*	*Prunus 'Kanzan 12-14cm, 2.5-3.5m ht*
Tall shrubs	*Prunus padus 'Fastigiata'* 2-14cm, 2.5-3.5m ht*
Acer palmatum 150-175cm ht	*Pyrus 'Chanticleer'* 14-16cm, 3-4m ht*
Amelanchier Canadensis 150-175cm ht*	*Sorbus aria 'Lutescens' 14-16cm, 3-4m ht*
Lavatera olbia 50-175cm ht*	*Sorbus aucuparia* 12-14cm, 2.5-3.5m ht*
Ptelea trifoliata 50-175cm ht*	
Syringa vulgaris 150-175cm ht*	



Orchard Trees (26 No.)

Malus 'Irish Peach' (33%)*
Prunus domestica 'Victoria' (33%)*
Pyrus communis 'Conference' (33%)*



Birch Thicket (136 No.)
Whips planted at 3/m2

Betula pubescens

Proposed Mixed Native Woodland Planting (3335 sqm.)

Trees - fthd trees 2.1 - 2.5m ht. - min 3m. ctrs	Shrubs - 60-90cm ht., in random groups of 5-15 no at 2-4m/sq.m
Alnus glutinosa - 20%	*Cornus sanguinea* - 5%*
Betula pendula - 20%	*Corylys avellana - 15%*
Fraxinus excelsior (if permitted) - 20%	*Crataegus monogyna* - 15%*
Quercus petrea - 20%	*Ilex aquifolium - 10%*
Sorbus aria - 10%*	*Ligustrum vulgare* - 10%*
	Prunis avium - 10%*
	Prunus spinosa 10%*
	Rosa canina - 10%*
	Salix cinerea - 10%
	Viburnum opulus - 5%*

Underplanted with selected wildflower mix: *Hyacinthoides non-scripta, Arctium minus, Viola riviniana, Primula vulgaris, Succisa pratensis, Digitalis purpurea, Alliaria petiolata, Centaurea nigra, Filipendula ulmaria, Allium ursinum, Silene dioica, Plantago lanceolata, Rumex acetosa, Torilis japonica, Angelica sylvestris, Geum urbanum, Eupatorium cannabium, Plantago media, Viola odorata, Teucrium scorodonia.*

* Species selected for their pollinating qualities.

Shrub planting (9894m²) Indicative species list

Low height ornamental shrubs/plants -max. ht. 40-150cm, 2L min. pot size and planted at 5/m2	Medium height ornamental shrub / plants - max ht. 1m, 45-60cm, 3L pot at 3/m2 unless specified	
*Ajuga reptans va *	*Calamagrostis x acutiflora 'Karl*	*Sarcococca spp.*
Carex sp.	*Foerster',*	*Spirea japonica 'Firelight*
Centaurea montana	*Choisya ternata*	*Stipa spp*
*Erica spp.**	*Cornus sanguinea*	*Viburnum davidii*
*Geranium m. 'Czakor'**	*Corylus avellana*	
Hedera helix 'Hibernica'	*Cytissus 'All Gold'*	*Specimen:*
*Helleborus niger**	*Hypericum 'Hidcote'*	*Amelancier Canadendis*
*Iberis sempervirens**	*Lavandula angustifolia 'Blue*	*90-120cm*
Pachysandra terminalis	*Cushion'*	*Cotinus coggygria (90-120cm)*
*Rosa 'Tananaistrua'**	*Lonicera pileata*	*Rhus thypina (90-120cm)*
*Rosa 'Noaschnee'**	*Miscanthus spp.*	
*Santolina cham. 'Nana'**	*Philadelphus coronarius**	
*Teucrium chamaedrys**	*Rudbeckia 'Goldstrum'*	

Hedge planting (513 Lm.)
Planted in single species in different lengths across the site. 60-90Ccm at 3/lm

Fagus sylvatica, Prunus lusitanica, Taxus baccata, Lonicera nitida, Griselinia littoralis*

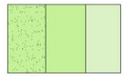
Ornamental Planting and Grasses (1775m²)
Low height ornamental shrubs/plants. Max height 40 - 150mm. 2 L min. pot size and planted at 5/m²

*Achillea sp. (deep reds/whites)**	*Agastache 'Black Adder'*
*Aquilegia sp. (purples, whites)**	*Sedum 'Brilliant'**
Anemone x hybrid, 3L pot planted at 4/m²*	*Verbena bonariensis**
Carex sp. (greens, golds, whites)	*Stipa tenuissima*
Calamagrostis x acutiflora 'Karl Foerster'	*Molinia caerulea*
Lavandula angustifolia 'Blue Cushion'	*Pennisetum alopecuroides*
*Echinacea purpurea**	
*Knautia macedonica**	

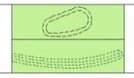
All to be planted with *Allium* 'Purple Sensation' bulbs in key areas at 5/m²

Bulb planting (650m²)
Bulbs to be planted in small groups of similar species with between 15 and 35 bulbs in each group. Bulbs planted at 16/m²

Allium hollandicum 'Purple Sensation' 20%	*Narcissus pseudonarcissus* 20%*
Hyacinthoides non-scripta 20%*	*Tulipa 'Paul Scherer' 20%*
Muscari latifolium 20%	



Long Grass (5825m²) /Amenity/Private Grass



Landform

Swale

The excerpts from drawing 18221-2-103 adjacent illustrate the proposed planting materials illustrated on the landscape masterplan 18221-2-100

Woodland / Parkland Trees (native / naturalised) – typically 16-18cm girth 4-6m ht:

Pinus radiata

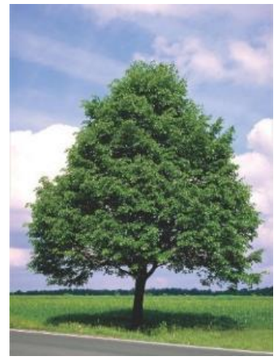
Quercus petraea

Prunus avium 'Plena'

Aesculus hippocastanum

Fagus sylvatica

Street Trees – typically 16-18cm girth 4-6m ht:



Tilia cordata

Acer campestre

Betula pedula

Small to Medium Trees – typically 14-16cm girth 3-4m ht:

Prunus var.

Pyrus 'Chanticleer'

Sorbus aucuparia

Sorbus 'Autumn Spire'

Quercus robur 'Fastigiata'

Woodland Low Perennials typically 2L pot size at 2/sq.m

*Actaea racemose**

Matteuccia struthiopteris

Hyacanthoides non-scripta

Asplenium scolopendrium

Ajuga reptans

Primula vulgaris

Galium odoratum

Silene dioica

Typical Low Shrub planting – typically 2L pot size at 4/sq.m:

Aster novi-beigii

Berbaris 'Amstelveen'

Carex spp.

Lavendula augustifolia

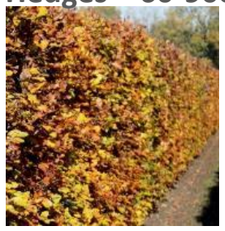
Hypericum "Hidcote"

Calamagrostis Karl Foerster

*Knautia macedonica**

Pennisetum alopecuroides

Hedges – 60-90cm bushy at 3/lin.m



Fagus slyvatica

Typical Medium Shrub planting typically 3L pot size at 3/sq.m or individual specimens :

Choisya ternata

Cornus sanguinea

Frangula alnus

Rosa Noaschee

*Hebe 'Mrs Winder'**

Lonicera pileata

Hedgerow Mix – 60-90cm at 5/lin.m:

Ilex aquifolium

Crataegus monogyna

Prunus spinosa

The excerpts from drawing 18221-2-103below illustrate the proposed hard landscape materials illustrated on the landscape masterplan 18221-2-100

All materials will be designed to a high standard, be robust and withstand a long life, as well as meet the CE standard.

Road Surface
- Black tarmacadam
- Rolled top tarmac

Shared Surface
- Cloured tarmac

Footpath
- Brushed concrete

PCC Pavers
1. Pedestrian
2. Vehicular

Type 1 | Type 2

Raised Table
- To Eng. specification

Rolled Dust/Self - Binding Gravel Path
- Ballylusk 10mm or similar

Tactile Paving
- To Eng. specification

Parking Bays and Private Treshold Areas
- PCC pavers 120x160x80mm
- Natural, silver or charcoal finish to complement street facades and reinforce character areas.
- Alternate colours for details and highlights.
- N.B Permeable paving to private areas only

PCC Setts
- Setts 100x200x80mm
- Natural finish to complement street facades and reinforce character areas.

Type 1 | Type 2

Seating
Type 1 - Various lenghts timber benches
Type 2 - Concrete wall/seat

Boardwalk play features
- Recycled black plastic boards

Type 1 | Type 2 | Type 3

1. Bike stands
2. Bike shed
3. Bins

Light columns
-To Eng. Specification

Play Surface/Safety Surface
- Coloured rubber wetpour play surface to ISEN 116/177 and woodchip

Play Surface
- sand

Free Standing Balance Beams

Informal Natural Play
- Logs, sensory planting, boulders, play steps

Formal Play Equipment
- Supplier: KOMPAN or similar

Fitness Trail Equipment
- Supplier: KOMPAN or similar

Retaining Walls / Elements
- coursed gabion retaining walls

Stations
Type 1.Indicative substation location
- To eng. specification
Type 2.Pumping Station
- Location indicative
-To eng. specification

Type 1 | Type 2

Type 1.Attenuation Area
Type 2. Railing
- 1.2m high vertical bar railing

Type 1 | Type 2

Circulation Surfaces and public realm

Brushed concrete.

Rectangular concrete PC paviors –lightly textured, light grey colour

Self binding gravel in warm, pale tone.

Concrete setts – granite effect

Concrete flags – granite effect

Brushed concrete footpath

Details

Polished concrete in rolled dust gravel

Self binding gravel in warm, pale tone edged with poured concrete strips – 120mm wide and polished

Furniture

Bins & Bollards

Steel bike stands

Seating - timber & steel

Concrete seat wall

Concrete and timber bench

Belmount WOODLAND TREES

The woodland around Belmount House is attractive, mixed age and characterful and is a strong asset to the site. It is noted in the Local Plan as a "Stand of Trees to be Preserved" (Navan LP 2009-15)

It is the intention of the proposals for the development site to integrate the woodland into the site masterplan as a valued feature.

The woodland contains a range of mature planted trees creating fine specimens, as well as self sown younger trees and over-mature shrub plantations. The woodland is clearly visible on 19th century historical maps. As part of a positive woodland management move, it has been recently cleared of invasive Rhododendrons. The resultant woodland has a varied age structure including trees that are likely to have preceded Belmount House, trees that are likely to have been planted as part of the development of the gardens associated with Belmount House and young self seeded trees.

Overall, the woodland creates an attractive landscape feature in the wider landscape – an effect greater than the contribution of any individual tree.

This section includes a;

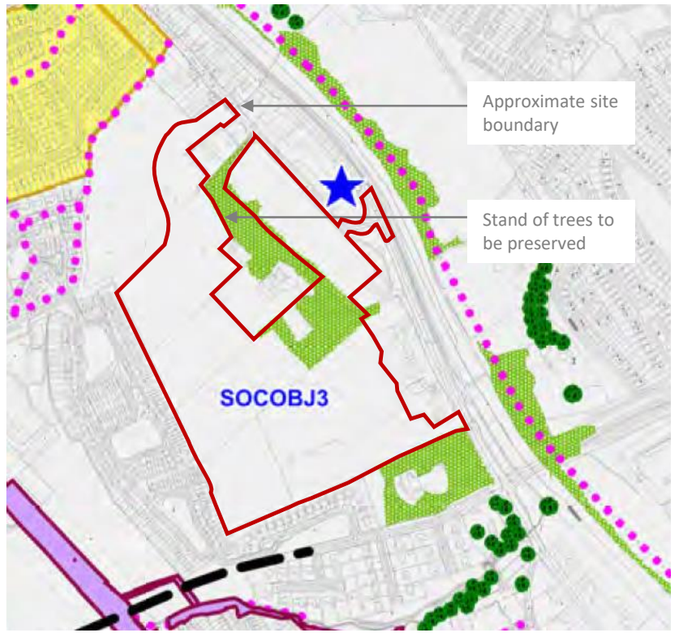
- Summary of key relevant planning policies
- Summary of the woodland's existing attributes and tree cover
- Explanation of the proposals effecting the woodland
- Review of alternative layouts considered
- Review of the impact of the proposals. Plans and photographs are provided
- Presentation of mitigation and enhancement methods proposed and associated visuals.

A1.1 PLANNING CONTEXT

Meath County Development Plan States:
NH POL 16: To seek to maintain the natural heritage and amenity of the county by promoting the preservation and enhancement of native and semi-natural woodlands, groups of trees and individual trees.

NH POL 18: To encourage the retention of mature trees and the use of tree surgery rather than felling where possible when undertaking, approving or authorising development.

The Navan Development Plan 2009-2015 which is still the relevant plan for Navan states:



Excerpt from the Navan Local Plan 2009-2015

HER POL 30: To retain trees and hedgerows of value as illustrated on the relevant map forming part of this development plan.

HER POL 31 To have a presumption in favour of the retention of existing trees and their incorporation into any new development unless this can be shown to be impractical, and to protect, preserve and ensure effective management of trees and groups of trees considered to be of special amenity value and to prepare Tree Preservation Orders where considered appropriate.

Although not specifically listed as individual trees to be preserved, the trees around the Belmount House are mapped as a "Stand of Trees to be Preserved" – see extract from Navan Development Plan 2009-2015 Variation No 1 adjacent.

The key issue therefore from a policy perspective is not the retention of any specific individual tree but the continued presence of a mature woodland at this location providing visual amenity and interest in the wider landscape.

View of the NE woodland edge

A specimen Beech tree from within the subject lands

The woodland is mixed-age

A1.2 EXISTINGWOODLAND AND TREE COVER

The existing stand of woodland around Belmount House has rectilinear edges that follow field boundaries. There are clearings of varying sizes within the woodland. Some have been created naturally and some are manmade to allow for access to houses and to make gardens.

The woodland has a mixed-age structure with a high proportion of mature (and over-mature) specimen trees. This suggests, along with the mix of species, that a good proportion of the trees would have been planted around the time when Belmount House itself was built. The presence of non-native conifers within the woodland is in keeping with 19th century planting styles. However, it is possible that a few of the oldest specimen trees could precede this time and since then, there have been many self-seeders.

The majority of the woodland group is expected to have a 40+ year lifespan ahead of it except for some selected mainly coniferous trees which are expected to have 20+ year remaining lifespan.

At the time of purchase, the woodland had not been managed intensively and there was a dense understorey of rhododendron. This rampant species creates shade and would force new saplings to grow tall quickly to try to out-compete it for light. Rhododendron is an invasive species that is not conducive to healthy woodland management. The rhododendron's were cleared upon the purchase of the lands and the resultant effect is a lighter and more accessible woodland with a rather spindly looking understorey amongst a mature woodland.

Graphic representation of the existing woodland cover based on aerial photography and the tree survey

Existing woodland clearings

Existing specimen trees

Self-seeded understorey

A1.3 THE IMPACT OF THE PROPOSALS ON Belmount WOODLAND

The impact of the development on all existing trees across the site is presented on page 22 of the Landscape Report.

The main impact on the existing Stand of Trees to be Preserved is the proposed access road. Overall, the development preserves the stand. It includes minor tree removal and replacement works to individual trees within the woodland block. Detail is provided below and on forthcoming pages.

Impact of the Proposed Access Road

The residential development strategy requires a road access through this woodland area. Whilst there are gaps between trees and potential routes to accommodate an alignment, the impact of this access is exacerbated by the steep topography to be bridged from Academy Street to the more elevated residential lands, the need to tie in with the existing levels of the access easement between Belmount House and Belmount Lodge and the Root Protection Areas of the trees in the woodland.

This requires careful assessment and planning of the road alignment and footprint to:

- Minimise impacts on the trees that form the woodland
- Maximise the number of retained trees
- Focus on retaining the best quality trees and those to the perimeter of the woodland so as to retain its visual presence in the wider landscape
- Maintain the overall integrity of the stand of trees.

The design team has spent some months resolving what is believed to be the best case scenario, which is presented on this and the following pages. Alternative options considered are provided for reference.

EXTENT OF IMPACT ON THE STAND

- Approximate area of protected stand of trees = 2.1 ha
- Approximately 44.5% of the protected stand of trees are located in the subject lands (0.93ha). Within this area there are approximately 133 individual trees. Based on these figures, there is an estimated 300 trees in total within the protected stand of trees.
- Approximately 6.3% of the protected stand of trees is located where cut is required to facilitate site access (0.13ha). This will result in the loss of 19 trees in total.

(percentage figures are approximate due to scaling when enlarged).

Representation of the extent of the Stand of Trees to be Preserved (striped hatch) and the extent of lands required to provide access into the development (dark grey shading).

Graphic representation of woodland cover after trees have been removed to construct the proposed access road.

The development retains the overall stand of trees. 19 trees from within it will need to be removed. These are scheduled overleaf and include:

- 3 Class A1 trees – Beech and Common Ash
- 11 Class B1 trees – these include Leylandii and Firs, as well as Common Ash and Elm
- 5 Class C1 trees – Leylandii, Cherry, Laurel and Sycamore.

10 trees in the Class B1 category 5 are non-native conifers.
1 additional Class U tree (Common Ash) will be removed due to its poor condition / ill health.

TREE PLANTING PROPOSALS

A significant number of trees and woodland areas will be planted as part of this development in and around Belmount Woodland including;

- 14 trees within the woodland
- 4 woodland blocks in close proximity to the woodland (also see the Landscape Masterplan presented on page 16 of the Landscape Design Report).
- 251 parkland trees across the development
- 113 street trees across the development
- 30 orchard trees across the development
- 304 garden trees across the development.

133 individual trees with the protected stand are located within the subject lands.

Of these, 19 trees will be removed to provide access to the development site. These comprise two over-mature trees and one tree in poor structural condition and 10 non-native conifers.

In total, 3 A grade trees, 11 B grade trees and 6 C grade trees will be removed to provide access to the development site.

Schedule of the 19 trees which will be removed to provide access to the development

No.	Species	Cat	Notes
393	Fagus sylvatica	A1	Middle Aged tree with approximately 8m canopy
395	Abies sp.	B1	Over-mature tree
399	Abies sp.	B1	Over-mature tree
400	Cupressus sp	B1	Mature tree in fair structural condition
590	Cupressus x cupressocyparis leylandii	C1	Middle-aged tree in fair physiological condition
591	Cupressus x cupressocyparis leylandii	B1	Middle-aged tree in fair physiological condition
592	Prunus sp.	C1	Middle-aged tree in poor structural condition
593	Ulmus sp.	B1	Young tree in fair structural condition
594	Fraxinus exclesior	B1	Young tree in fair structural condition
600	Fraxinus exclesior	B1	Young tree in fair physiological condition
605	Fraxinus exclesior	B1	Middle-aged tree in fair structural condition
606	Fraxinus exclesior	B1	Middle Aged tree
607	Fraxinus exclesior	B1	Middle Aged tree
608	Acer pseudoplatanus	C1	Middle-aged tree in fair structural condition
609	Fagus sylvatica	A1	Middle-aged tree in fair structural condition - lop-sided canopy
610	Fagus sylvatica	A1	Middle-aged tree in fair structural condition
611	Prunus laurocerasus	C1	Middle-aged tree in fair structural condition - 4m canopy
615	Fraxinus exclesior	B1	Middle-aged tree in fair structural condition
616	Acer pseudoplatanus	C1	Middle-aged tree in fair structural condition

Several different alternative options for the access road placement were considered as part of the design process for this development. Each was reviewed for its impact on Belmount Woodland. Three options are presented below along with the analysis of the number of trees impacted. The alternative options result in the loss of far more significant trees within the development and therefore were discarded.

Alternative Road Layout A

Estimated total number of trees lost = 69. This comprises;

24 significant trees (those with a trunk diameter of over 150mm at 1.5m off the ground) including T492 and T398 which are specimen trees and 1 tree which would be removed due to ill-health.

45 small trees (those with a trunk diameter of under 150mm at 1.5m off the ground).

Alternative Road Layout B

Estimated total number of trees lost = 63. This comprises;

24 significant trees (those with a trunk diameter of over 150mm at 1.5m off the ground) including T390, T391 and T392 all specimen Beeches on the SE woodland edge. Plus 1 tree which would be removed due to ill-health.

39 small trees (those with a trunk diameter of under 150mm at 1.5m off the ground).

Alternative Road Layout C

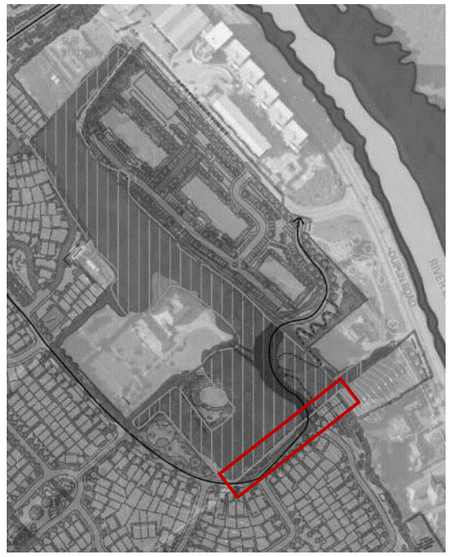
Estimated total number of trees lost = 55. This comprises;

41 significant trees (those with a trunk diameter of over 150mm at 1.5m off the ground) including T390, T391 and T392 all specimen Beeches on the SE woodland edge. Plus 1 tree which would be removed due to ill-health.

14 small trees (those with a trunk diameter of under 150mm at 1.5m off the ground).

The Images illustrate how the woodland will substantially remain and provide an ongoing presence in the landscape when viewed from the south west and key trees of quality within the wood will be retained.

Where possible, trees have been labelled in accordance with the tree survey. The colour of the text used relates to the tree survey whereby;
Green = A class tree – High quality – retention highly desirable
Blue = B class tree – Moderate quality – retention desirable
Grey = C class tree – Low quality – retention optional
Red = U class tree – Class U tree – recommend removal
Black = tree to removed. Quality indicator shown in brackets



Indicative extent of woodland edge effected by proposed access road

Tree Group 1 SE edge. The majority of trees are retained along this edge

Indicative extent of woodland edge effected by proposed access road

Tree Group 3 NE edge. The majority of trees are retained along this edge

Tree Group 1 SW edge. All trees to be retained along this edge

This graphic demonstrates how the woodland block will be replanted and extended.

TREE RETENTION
- 133 existing trees will be retained within the site area of Belmount Woodland including all the largest specimen trees.
- Retains the protected stand of trees as a landscape feature.
- Retains the rectilinear shape and edges of the woodland.

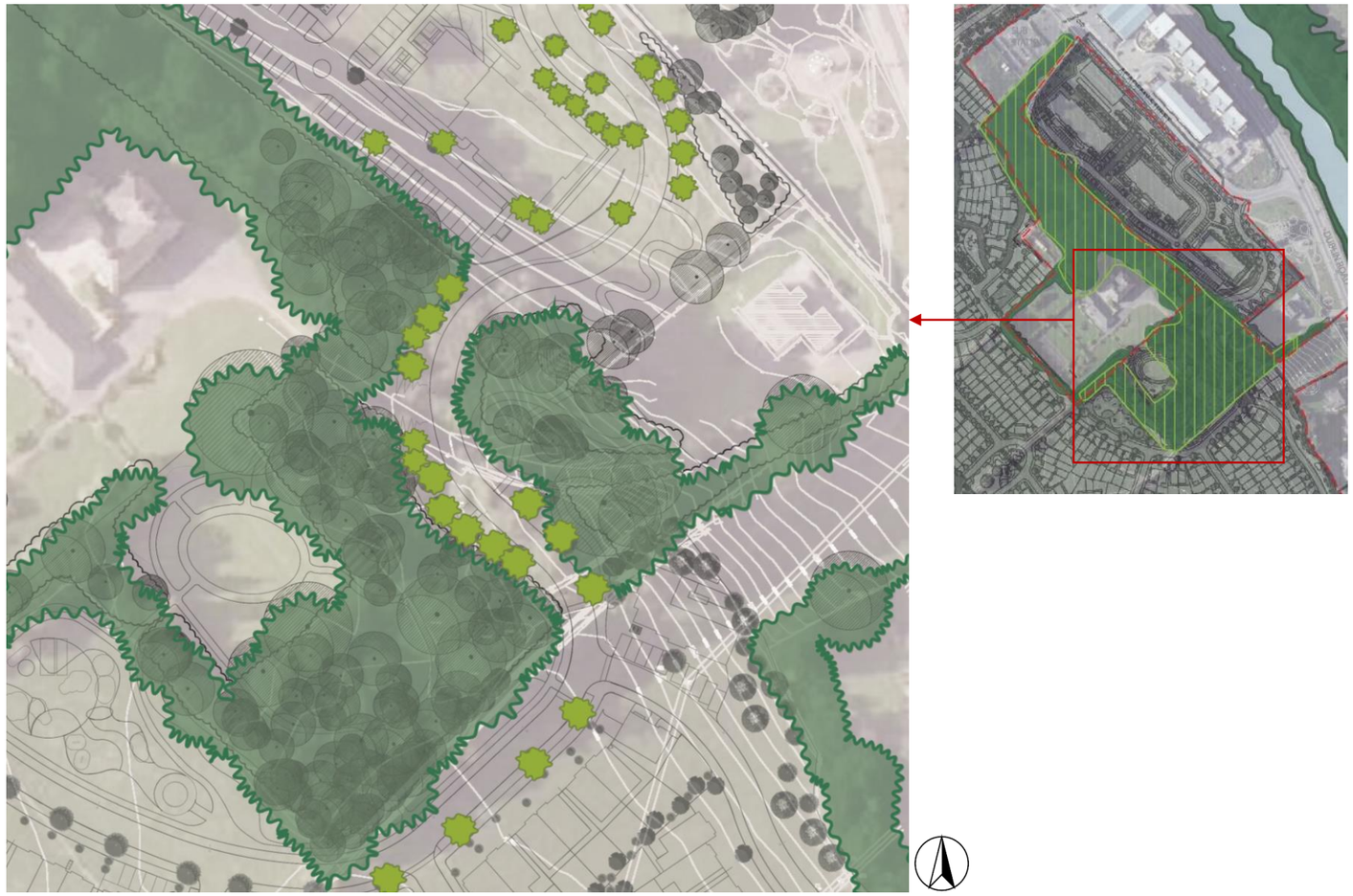
TREE LOSS
19 trees will be lost in the existing woodland to provide access to the Belmount Development.
2 trees will be removed overall in the woodland due to ill-health.

TREE PLANTING & MITIGATIION
- 14 trees are proposed within the woodland. These will grow to re-create the closed canopy edge of the existing woodland.
- 147 parkland trees are proposed across the development
- 94 street trees are proposed across the development
- 26 orchard teres are proposed across the development
- 958 garden trees are proposed across the development
- 3335m² native woodland will be planted across 4 woodland blocks

RESULTANT TREE COVER
There will be some minor tree loss required in order to develop this site. However, the overall result;

- **Retains the vast majority of the individual trees within the protected stand.**
- **Retains the overall woodland shape of the protected stand of trees.**
- **Retains the rectilinear woodland edges**
- **Extends connecting woodland blocks**
- **Includes a significant network of street, parkland and gardens trees throughout.**

Visual representations are shown over the final pages of this section.



Existing woodland cover

Woodland cover after trees have been removed

Proposed woodland and tree cover

RESULTANT TREE COVER

There will be some minor tree loss required in order to develop this site. However, the overall result;

- Retains the vast majority of individual trees within the Protected Stand of woodland
- Retains the protected woodland as a stand of trees
- Retains the rectilinear woodland edges
- Extends connecting woodland blocks
- Includes a significant network of street, parkland and gardens trees throughout.

CONCLUSION

The loss of the 19 trees in this woodland is the best case scenario achievable in order to develop this significant site close to Navan town centre. The minor tree loss is well-mitigated and the overall stand of trees and its role in the wider landscape is preserved.

A. Artist's impression of the route through the existing woodland.

B. Artist's impression of the pedestrian path in the existing woodland.

C. Artist's impression of the south-east edge of the woodland

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 consecutive 12 months periods.

1.0 SOFT LANDSCAPE WORKS SPECIFICATIONS

1.1 Site Clearance Generally

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with any dimension exceeding 25mm.
- 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: remove all weed growth.
- 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 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.

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: 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.

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, grass seeding and turf laying, the soil over the whole of the planted, seeded or turfed 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.

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

The planting details drawing shows 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.

1.25 Green Roofs
Due care is to be taken when planting in gardens to ensure no damage occurs to the waterproof membranes. All planting is to be laid over a green-roof system that complies with EEuropean Federation of Green Roof Associations, (EFB), or equivalent, and in accordance with the drawings provided.

1.26 Grass Seeding

1.26.1 Herbicide Application
- Type: Suitable for suppressing perennial weeds and existing grass.
- Timing: Allow fallow period before cultivation.
- Duration: As manufacturer's recommendation

1.26.2 Seedbed cleaning before sowing
Operations: Kill pernicious weeds with selective contact herbicide.

1.26.3 Cultivation
- Compacted topsoil: Break up to full depth.
- Soil ameliorant/ Conditioner/ Fertilizer are to be used to boost late seeding only. Type to be used is to be agreed with the administrating body depending on the time of year and the condition of the soil.
- Tilth: Reduce topsoil to a tilth suitable for blade grading.
    - Depth: 75 mm.
    - Particle size (maximum): 20 mm.
- Material brought to the surface: Remove stones and clay balls larger than 50 mm in any dimension, roots, tufts of grass, rubbish and debris.

1.26.4 Topsoiling
- Areas to be reinstated shall be top-soiled to a min. depth of 150mm.
- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- General: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
    - Corrosive, explosive or flammable;
    - Hazardous to human or animal life;
    - Detrimental to healthy plant growth.

1.26.5 Grading
- General appearance to be achieved: A fine graded finish to bring the ground to a uniform and even grade at the correct finished levels with smooth, flowing contours.
- Topsoil condition: Reasonably dry and workable.
- Contours: Smooth and flowing, with falls for adequate drainage.
- Hollows and ridges: Not permitted.
- Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
- Blade grading: May be used to adjust topsoil levels provided depth of topsoil is nowhere less than 150mm.
- Give notice: If required levels cannot be achieved by movement of existing soil.

1.26.6 Fertilizer for Seeded Areas
- Types: Apply both:
    - Superphosphate with a minimum of 18% water-soluble phosphoric acid.
    - A sulphate of ammonia with a minimum of 20% nitrogen.
- Application: Before final cultivation and three to five days before seeding/turfing.
- Coverage: Spread evenly, each type at 70 g/m², in transverse directions.

1.26.7 Final Cultivation
- Timing: After grading and fertilizing.
- Seed bed: Reduce to fine, firm tilth with good crumb structure.
- Depth: 50-100mm.
- Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.
- Remove surface stones/earth clods exceeding:
    - Pastoral areas: 50mm.
    - Fine lawn areas: 10mm.
- Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

1.26.8 Grass Seed
- All seeds shall carry appropriate certificates.
- Seed shall be purchased fresh for each growing season and seed purchased impervious sowing seasons is not to be used.
- Seed shall be stored under non-transparent wrapping, off the ground, in a dry, shaded place, in well ventilated conditions under cover and shall be protected from vermin and contamination until required for use.
- No seeding shall take place until the seedbed is completed. All seeding shall be carried out within the sowing season.

1.26.9 Sowing
- General: Establish good seed contact with the root zone.
- Method: To suit soil type, proposed usage, location and weather conditions during and after sowing.
- Distribution: 2 equal sowings at right angles to each other.
- Protection: fence off areas with suitable fencing to stop people or animals from trampling new growth.

1.26.10 Grass sowing season
Grass seed generally: April to June or August to November.

1.27 Cleanliness
After completion of all works remove all debris and waste material from site.
- Soil and arisings: Remove from hard surfaces and grassed areas.
- General: Leave the works in a clean tidy condition at completion and after any maintenance operations.

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

2.1 Grassed Areas

2.1.1 Fine-Cut Grass Areas

Fine cut grass areas shall achieve an even cover of vegetation of uniform height and colour comprising predominantly of grass species. No more than 5% of the grass areas shall contain dicotyledonous (dicots) weeds, except clover. Grass cutting shall not be carried out during excessively wet or waterlogged conditions. Contractor to inform administrative authority if conditions are unsuitable.

Fine-Cut Mowing

Where practical fine grass areas shall be cut using a cylinder mower, otherwise a rotary mower shall be used. All grass clippings shall be collected and removed off-site after each cut.

Lawn grass cutting shall be carried out every 10-14 days during the growing season, (throughout the period of March to October), but will need to be adjusted according to season's weather conditions. Grass shall be kept at a maximum height of 50mm and minimum height of 35mm. A minimum of 24 cuts shall be carried out annually.

Weed Control

Lawn grass areas shall be treated using an approved selective herbicide according to manufacturer's instructions. Areas of invasive and noxious species in the lawn or areas, shall be spot sprayed.

Fertilizer

Approved fertilizer shall be applied 2no. times per year to lawn areas if required due to poor grass growth / establishment or yellowing. Spring fertilizer application of NPK ratio 9:7:7 shall be applied in May of each year and Autumn/Winter fertiliser of NPK ratio 3:12:12 shall be applied in October of each year to all fine cut grass areas.

2.1.2 Amenity Grass Areas

Amenity grass areas shall achieve an even cover of vegetation of uniform height and colour comprising predominantly of grass species. Unless otherwise agreed with the landscape architect no more than 15% of the grass areas shall contain dicotyledonous (dicots) weeds, except clover. Grass cutting shall not be carried out during excessively wet or waterlogged conditions. Contractor to inform administrative authority if conditions are unsuitable.

Amenity Grass Mowing

Where practical grass areas shall be cut using a cylinder mower, otherwise a rotary mower shall be used. Unless excessive or unsightly, or likely to cause a nuisance or damage to the sward, arisings shall be spread evenly over sward areas collected.

Lawn grass cutting shall be carried out every 10-14 days during the growing season, (throughout the period of March to October), but will need to be adjusted according to season's weather conditions. Grass shall be kept at a maximum height of 75mm and minimum height of 35mm. A minimum of 24 cuts shall be carried out annually.

Weed Control

Areas of invasive and noxious species in lawns, shall be spot sprayed.

Weed infestations shall be reviewed in the context of the aesthetic and amenity functioning of the grass and if necessary controlled or eradicated.

Fertilizer

Approved fertilizer shall be applied 2no. times per year to lawn areas if required due to poor grass growth / establishment or yellowing. Spring fertilizer application of NPK ratio 9:7:7 shall be applied in May of each year and Autumn/Winter fertiliser of NPK ratio 3:12:12 shall be applied in October of each year to all fine cut grass areas.

2.1.4 Edging and Strimming

Grass edges along pathways, planting borders, roadways, trees, lampposts, signs and any other obstacle shall be kept neat and tidy at all times.

Between the months of March and October inclusive edging shall be carried out to all areas of grass abutting isolated/ specimen trees or shrub borders or mulch circles. These areas shall be maintained using a half moon tool or similar to maintain straight or curved defined line and shall be carried out a minimum of 2 - 3 times per year.

Mowing strips against permanent obstacles shall be a max. width of 150mm and shall be maintained using a hand strimmer. Large areas of desiccated/ burnt off grass are not permitted. Strimming shall be carried out a min. of 12 times per year.

Grass clipping and all arisings shall be swept up and removed off site.

2.1.5 Spring Bulbs in Grassed Areas

Only cut grassed areas populated by spring bulbs after the leaves of the bulbs have died down and/or yellowed completely. Initially reduce height by one third, followed by a 2-3 stage further reduction over two weeks to achieve desired grass height.

2.1.6 Failed areas

Areas of grass which fail or are damaged or worn shall be reinstated by re-turfing or re-seeding in accordance with the original specification.

2.2 Shrub Planting

Shrub 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. Climbers are to be pruned and tied into trellises as required, with two main inspections annually to check trellis system is intact and anchor points are secure.

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.

Groundcover plants shall be pruned as required to restrain perimeter growth to within planting bed areas where adjacent to walks and curbs. Tip prune selected branches of low growing shrub or groundcover masses to maintain even overall heights and promote fullness.

Certain plants, such as Cornus spp. will require heavy annual pruning in order to maintain healthy colourful stems and healthy leaves. All arising's from pruning shall be removed of site.

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 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.

Woodland areas shall be sprayed 3 times per year with a suitable contact herbicide. Contractor to ensure that no damage is caused to trees by herbicide application.

Areas of natural scrub as indicated on the maintenance plans shall be contained by trimming back once per year. The contractor shall spray the perimeter of the scrub areas with a contact herbicide to control noxious weeds. This shall be carried out 2no. times per annum.

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.

2.9 Green Roof System and Irrigation

Care is to be taken not to damage any fleeces or waterproof membranes during maintenance. Irrigations systems are to be blown-out and a full pressure test carried out annually and monitored for leaks. Remove soil and dead foliage from irrigation pipes to ensure they do not get blocked. Cut back root systems if they become entangled in the irrigation system. Regular monitoring (bi-monthly) should occur to ensure the timer system and moisture monitoring system, are working efficiently and make adjustments to suit the weather conditions, if required.

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.

ONGOING REQUIREMENTS:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Lawn grass cutting (Min 24 cuts)		*	**	**	***	***	***	***	***	**	**	
Edging to lawn grass areas				*			*			*		
Rough Grass							*					
Fertiliser application to lawn grass areas.					*		*			*		
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												*
Weed control of scrub areas				*					*			
Application of residual weed killer to footpaths, cycle paths.				*								
Litter Clearance/pick up	***	***	***	***	***	***	***	***	***	***	***	***