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## Strategic Development Zone Reference Documentation

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# GRANGEGORMAN SDZ

## TREE SURVEY SUMMARY

FOR  
GRANGEGORMAN DEVELOPMENT AGENCY

MITCHELL + ASSOCIATES

Revision	Report Status	Issue Date	Description	Prepared	Reviewed	Approved
A	Final	28-04-11	Tree Survey Summary	Ciaran Keating Mitchell + Associates	Colin Carroll Mitchell + Associates	Dave Kirkwood Mitchell + Associates

## 1.0 INTRODUCTION

A tree survey was carried out by Mitchell + Associated during June 2008 at the request of the Grangegorman Development Agency. The objective of the survey was to record the condition of the trees within the site with a view to commenting on their suitability for retention and where appropriate to make recommendations for their short-term management.

The survey methodology followed the recommendations within British Standard 5837<sup>1</sup> and the analysis of tree condition followed the VTA methodology developed by Mattheck and Breloer<sup>2</sup>. In addition all mature shrubs and palms (*Cordyline sp.*) were recorded (Appendix 1 Tree Survey).

### 1.1 GENERAL DESCRIPTION OF TREES

The site is comprised of two areas of St Brendan's hospital located on the eastern and western sides of Grangegorman road. The hospital was built in 1861 and landscape development and improvement have been ongoing albeit at a moderate rate to date. Trees form a significant element of the landscape character of the site and are located both on the boundaries and the interior areas of the site. The majority of the trees are located on the western side of the site with a significantly smaller number on the eastern side (refer to Appendix 2 Tree Survey drawing TGRA101 rev G).

Though not the most numerous the visually dominant tree species is holm oak (*Quercus ilex*) which were generally planted in small groves. There are also good examples of individual holm oak, sycamore (*Acer pseudoplatanus*) and small leaved lime (*Tilia cordata*). Horse chestnut (*Aesculus hippocastanum*) has been planted extensively on the southern boundary in particular. The condition of the holm oak is generally good with the trees forming self-supporting groups in a number of instances. These groups typically contain suppressed individuals and light suppressed deadwood. Of the horse chestnuts a high percentage are significantly reduced in vigour but there are sections where the trees are in good condition and have long-term potential as screens to and from the site. The main cause of the poor performance of the horse chestnut is bleeding canker (*Pseudomonas syringae pv. Aesculi*). The presence of this pathogen and its ability to spread to other trees suggests that this species has a limited future on this site. Lombardy poplar (*Populus nigra var Italica*) have been used to form an ornamental edge along Upper Grangegorman Road. A number have been removed over the years presumably for reasons of safety thereby reducing the visual impact of the planting somewhat. This species has also been used to form an avenue between two sports areas within the western side of the site. The quality of these trees is mixed with a number showing symptoms of decline.

Mature tree management to date has been reactive rather than proactive and limited to dealing with storm damage etc. A relatively small degree of planting has occurred in recent times with a large element of this comprised of cordyline (*Cordyline australis*) and cotoneaster (*Cotoneaster sp.*).

## 2.0 DESCRIPTION AND DATA COLLECTED

- 2.1 Tree Numbers on Plan and within Tree Survey Report:** All trees surveyed were tagged using numbered aluminium tags. Tag numbers correspond with tree numbers within the tree survey report.
- 2.2 Tree Species:** All trees were identified and recorded within the tree survey report with their botanical and common names. Identification was aided where necessary by reference to Mitchell A.<sup>3</sup> & Thomas G.S.<sup>4</sup>.
- 2.3 Height: Refers to the height of the tree in metres:** Heights were recorded using a clinometer.

- 2.4 Stem Diameter:** Refers to stem diameter measured in millimetres at 1.5m above adjacent ground level (on sloping ground to be taken on the upslope of the tree base) or immediately above the root flare for multi-stemmed trees. Dimensions were recorded using a dbh tape.
- 2.5 Branch spread:** Refers to the crown spread for the four cardinal points. Dimensions were recorded using a metre tape.
- 2.6 Height of Clear Stem:** Refers to the height in metres of the lowest branch from adjacent ground level.
- 2.7 Age Class:** Reference as follows
- 2.7.1 Young:** Trees less than 1/3rd of that species expected height at maturity.
- 2.7.2 Early-Mature:** A tree that is between 1/3rd and 2/3rd of that species expected height at maturity
- 2.7.3 Mature:** A tree that has reached that species expected height at maturity but is still increasing in size.
- 2.7.4 Over Mature:** A tree that has reached the end of its natural life cycle where the crown is beginning to break up and decrease in size.
- 2.7.5 Veteran:** A tree that is very old compared to others of the same species and which may be of biological, aesthetic or cultural value due to its age.
- 2.8 Vigour**
- 2.8.1 Good:** A full healthy crown
- 2.8.2 Fair:** A crown slightly sparse when in leaf
- 2.8.3 Poor:** A tree with seriously sparse leaf cover or extensive deadwood
- 2.8.4 Dead:** A tree no longer living
- 2.9 Comments:** Description of the tree and its physiological condition i.e. presence of defects such as storm damage, structural weaknesses etc.
- 2.10 Recommendations:** Refers to remedial works which may be required to deal with defects
- 2.11 Long-term potential:** Estimated long-term potential for trees within current environment.
- 2.12 Tree categorisation**
- 2.13.1 A. Trees of high quality and value due to their size, age, condition, historical / visual merit and/or conservation potential. (a minimum of 40 years)**
- A1.** Mainly arboricultural values. Particularly good examples of species, essential components of groups or of formal or semi-formal arboricultural features.
- A2.** Mainly landscape values. Trees, groups or woodlands which provide a definite screening or softening effects to the locality in relation to views into or out of site, or those of particular visual importance.

**A3.** Mainly cultural values, including conservation. Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).

**2.13.2 B. Trees of moderate quality and value (a minimum of 20 years)**

**B1.** Mainly arboricultural values. Trees that might be included in high categories but are downgraded because of impaired condition (e.g. presence of remedial defects including unsympathetic past management and minor storm damage)

**B2.** Mainly landscape values. Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal features (e.g. trees of moderate quality within an avenue that includes better A category specimens) or trees situated internally to the site, therefore individually having little visual impact on the wider locality.

**B3.** Mainly cultural values including conservation. Trees with clearly identifiable conservation or other cultural benefits.

**2.13.3 C. Trees of low quality and value (a minimum of 10 years).**

**C1.** Not qualifying in higher categories

**C2.** Trees present in groups or woodlands but without conferring on them greater landscape value and/or trees offering low or only temporary screening benefit.

**C3.** Trees with very limited conservation or other cultural benefits.

**2.13.4 R.** Trees in such condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management. Trees that are dead, dying or showing immediate and irreversible decline.

**2.13.5 S2. Mature shrubs and palms (Cordyline)**

**3. Summary of findings**

A total of 421 trees were recorded within the tree survey. Table 1 outlines the principle species present. The most numerous species is horse chestnut the majority of which are located on the southern boundary and within the avenue between sports pitches. Sycamore are scattered throughout the site both as planted specimens and self-seeded trees and scrub. The holm oak are mainly concentrated in groups and represent part of the original plantings of the late 1800<sup>s</sup> and early 1900<sup>s</sup>. Lombardy poplar are located on the boundary with Upper Grangegorman road and within the avenue between two sports pitches. There are a large number of additional tree species present the majority of which occur in small numbers and are the subject of recent plantings and older plantings from the early 1900<sup>s</sup>.

Species	Percentage of total recorded
Horse Chestnut ( <i>Aesculus hippocastanum</i> )	17
Sycamore ( <i>Acer pseudoplatanus</i> )	14
Holm Oak ( <i>Quercus ilex</i> )	11
Lombardy Poplar ( <i>Populus nigra</i> 'Italica')	10

**Table 1.** Principle species recorded

The categorisation of surveyed trees is contained in table 2. The highest proportion of trees are contained within category B2 which indicates that the trees are good specimens though somewhat flawed due to structural defects / decay etc. These trees are regarded as being of moderate landscape value. Category A trees are regarded as being of high arboricultural value as individuals A1 or of high landscape value A2. Trees in category C2 are poor specimens overall but contribute to the tree cover of the site. Their long-term potential is limited. Category R trees are specimens which are recommended for removal due to their condition.

The overall tree categorisation profile could be considered to be representative of large sites of this nature. However the relatively high percentage of category R trees is indicative of a limited proactive tree management programme being undertaken on the site.

Category	Percentage of total recorded
A1	1
A2	17
B1	0.4
B2	55
C2	13
R	14

**Table 2.** Tree categorisation (Based on BS5837 (2005) Trees in Relation to Construction)

The age-class profile (table 2) is heavily weighted towards mature trees and is indicative of the limited tree planting which has been undertaken since the original planting scheme was put in place. The mature age-class does however contain poplar which have been planted in more recent times but which reach maturity earlier than most other tree species. No late-mature or veteran trees were recorded.

Age class	Percentage of total recorded
Juvenile	10
Early-mature	8
Mature	82

**Table 3.** Age class profile

**References**

1. BS 5837 (2005), Trees in Relation to Construction
2. Mattheck and Breloer (1995) The Body Language of Trees
3. Mitchell A (1988), Trees of Britain & Northern Europe
4. Thomas G.S. (1992), Ornamental, Shrubs, Climbers & Bamboos

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# APPENDIX 1

## TREE SURVEY REPORT

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<p><b>St. Brendans Hospital Grangegorman, Dublin 7</b></p>
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Project No.	Project name	Report Prepared by	Date	Revision
TGRA001	Grangegorman SDZ	Ciaran Keating	01/12/2010	B

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Tree Survey Grangegorman

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Survey carried out by: Ciaran Keating

BSc. Pl.Sc./Pl.Ecol., H.N.D. Hort.,  
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## **Brief**

This survey was carried out during June 2008 at the request of the Grangegorman Development Agency within the lands of the Grangegorman hospital site. The objective of the survey was to record the condition of the trees within the site with a view to commenting on their suitability for retention and where appropriate to make recommendations for their short-term management. This survey should be regarded as an update of that commissioned by ARUPs during 2007.

## **General description of trees**

The site is comprised of two areas of St Brendan's hospital on the eastern and western sides of Grangegorman road and a section of north circular road between Hanlons corner and Grangegorman road and a linear strip of trees located in a cul de sac to Marne villas. The hospital was built in 1861 and landscape development and improvement have been ongoing albeit at a moderate rate to date. Trees form a significant element of the landscape character of the site and are located on the boundaries and the interior of the site. The majority of the hospital's trees are located on the western side of the site with a small number of significant trees on the eastern side of Grangegorman road.

The predominant tree species is holm oak which were generally planted in small groves but there are also good examples of individual holm oak, sycamore and horse chestnut. The condition of the holm oak is generally good with the trees forming self-supporting groups where planted as such. These groups typically contain suppressed individuals and light suppressed deadwood and could benefit from a general overhaul. Horse chestnuts have been planted extensively on the southern

boundary in particular. A high percentage of these trees are significantly reduced in vigour but there are sections where the trees are in good condition and have long-term potential as screens to and from the site. The main cause of the poor performance of the horse chestnut is bleeding canker and the presence of this pathogen and it's ability to spread to other trees suggests that this species should not be considered for re-planting in the medium to long-term. Fastigate poplar have been used to form an ornamental edge along Grangegorman road and as part of an avenue dividing two sports areas. The quality of the trees is mixed with those on Grangegorman road in good condition generally and those within the site in decline and with very little long-term potential.

Mature tree management to date has been reactionary and limited to dealing with storm damage etc. A relatively small degree of planting has occurred in recent times with a large element of this comprised of cordyline and cotoneaster.

The trees located in Marne villas are generally of good quality. They are located within the footpath to the right of the villas with the exception of one lime located on the corner of Grangegorman road upper. Some of the trees are cracking and lifting the footpath.

The trees on the North Circular road are mainly London plane. They are located within the footpath on both sides of the road and are lifting the paving and overlapping the kerb. They are significant trees and have been managed on a regular basis to contain their crown spreads and reduce their potential for damage to high-sided vehicles.

Older trees in particular may contain bats with all bat species protected under national and E.U. laws. It is recommended that a bat specialist is employed to assess trees for bats prior to any work being undertaken. Best practice guidelines for working with trees where bats are present can then be adhered to in order to undertake the recommendations made within this report.

## **Limitations of survey**

This survey should be regarded as a preliminary assessment of the trees and deals with the current condition as identified during this survey only.

Every attempt was made to identify hazardous trees in this report however this survey was carried out from the ground and therefore cannot be held to have identified elements of decay which may be hidden out of site within the crown or beneath ivy or other obstructions. To counter this limitation in the survey process it is vital that during tree works any additional defects found by the climbing arborist are communicated to the consulting arborist to allow appropriate action to be taken.

The details within this survey are based on the condition of the trees during the survey period only. The findings in this survey cannot be held to be valid after any site disturbance, man-made or natural, which may have an adverse effect on any trees present.

## Terms used:

**Age Classes:** Y. - Young  
M.A. - Middle Aged  
M. - Mature  
O.M.- Over-Mature  
V. - Veteran

## Categories

- A.** Trees of high quality and value due to their size, age, condition, historical / visual merit and/or conservation potential. (a minimum of 40 years)
- A1.** Mainly arboricultural values. Particularly good examples of species, essential components of groups or of formal or semi-formal arboricultural features.
- A2.** Mainly landscape values. Trees, groups or woodlands which provide a definite screening or softening effects to the locality in relation to views into or out of site, or those of particular visual importance.
- A3.** Mainly cultural values, including conservation. Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).
- B.** Trees of moderate quality and value (a minimum of 20 years)
- B1.** Mainly arboricultural values. Trees that might be included in high categories but are downgraded because of impaired condition (e.g. presence of remedial defects including unsympathetic past management and minor storm damage)
- B2.** Mainly landscape values. Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal features (e.g. trees of moderate quality within an avenue that includes better A category specimens) or trees situated internally to the site, therefore individually having little visual impact on the wider locality.
- B3.** Mainly cultural values including conservation. Trees with clearly identifiable conservation or other cultural benefits.
- C.** Trees of low quality and value (a minimum of 10 years).
- C1.** Not qualifying in higher categories
- C2.** Trees present in groups or woodlands but without conferring on them greater landscape value and/or trees offering low or only temporary screening benefit.
- C3.** Trees with very limited conservation or other cultural benefits.
- R.** Trees in such condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management. Trees that are dead, dying or showing immediate and irreversible decline.

**Terms used cont:**

**Comments:** Refers to the tree's condition and suitability for the site.

**Common name:** Most widely used non botanical name.

**Co-dominant:** Two branches assuming the role of leading shoots. When growing close together may form a weak attachment (included bark) at their point of contact. Trees with this defect may be in danger of splitting at this weak attachment.

**Crown Spread:** Measured in meters north, south, east and west.

**Decay fungi:** Refers to those species of fungi which degrade living wood and which may, depending on the degree of degradation, render the tree structurally unsound.

**Defects:** Refers to cracks, storm damage and any other damage mechanical or biological.

**Diameter:** Diameter of the trunk (millimeters) at 1.5m. M.S. after the measurement refers to the tree being multi-stemmed.

**Genus & Species:** Refers to the botanical names for the tree.

**Height:** Measured in meters.

**Monitor:** Refers to trees which need to be re-surveyed on a yearly basis to assess their condition. This timescale may be sooner where works or adverse weather conditions have impacted negatively on the trees.

**Overhaul:** A reference to standard tree surgery work which consists of the removal of deadwood, crossing branches and balancing where appropriate.

**Recommendations:** Indicates surgery work necessary for the retention or, where necessary, removal of the tree.

**Tree No.** Refers to tag fixed to tree during survey.

## **Terms used cont:**

**Vigour:** Refers to the general growth of the tree measured by the current or last years extension growth, relative to the species and its age class.

**Good** - As much as might be expected.

Fair - Less than might be expected

Poor - Limited vigour and poor potential as a result

## **Deadwood**

The complete removal of deadwood is no longer considered a necessary or appropriate action as there are positive ecological aspects to its retention. However where there is a danger of deadwood falling on the public then it is imperative that this is removed.

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
1	Sycamore Acer psedoplatanus Elm Ulmus procera	Juv	Good	A four metre wide linear screen planting of trees and shrubs adjacent to the eastern boundary wall of the hospital site. The trees are developing well with occasional specimens succumbing to competition from neighbouring trees.	Remove poor specimens	B2	40
2	Monterey Cypress Cupressus macrocarpa	Mat	Good	Located approximately 8m from eastern boundary wall and forming a strong evergreen element on this area of site. The tree is co-dominant from 3m with a tight union typical of species and does not appear significant. Minor light suppressed deadwood scattered throughout crown.	Overhaul	A2	>40
3	Holm oak Quercus ilex	Mat	Fair	Located approximately 6m from eastern boundary wall and sub dominant to tree number 4. Three-stemmed from base with stems forced toward west as a result. Minor light suppressed deadwood scattered throughout crown. Suitable for retention within current environment only as exposure from loss of neighboring shelter could negatively impact on tree and render liable for failure.	Overhaul	B2	30
4	Holm oak Quercus ilex	Mat	Good	Located approximately 4m from eastern boundary wall. Three-stemmed from base. Extensive bark stripping has resulted in one stem to south dying. Bark damage has also occurred on the remaining two stems but has not resulted in reduced vigour or structural integrity at present. This is a relatively important tree at this point on the site as it forms a strong evergreen element and provides shelter to 003. Heavy ivy growth obscuring view for assessment on stems.	Cut ivy, deadwood and southern limb with die-back.	B2	30
5	Holm oak Quercus ilex	Mat	Fair	This is a slender specimen approximately 8m from eastern boundary wall. The tree is sub dominant to neighboring holm oaks and forming an element of under canopy. Very heavy ivy growth obscuring view for assessment and with potential to swamp tree. Suitable for retention within current environment only.	Cut ivy, deadwood and southern limb with die-back.	B2	30
6	Holm oak Quercus ilex	Mat	Good	Located approximately 5m from eastern boundary wall. This is a large dominant specimen with a wide spreading crown. Trunk divided into three large scaffold limbs at 3m. Minor storm damage is present in crown on east side and minor deadwood is scattered throughout crown. The area around the base of the tree has been used as a minor dumping spot in the past and there appears to have been some soil disturbance beneath canopy. There is no evidence of exposed roots. A fruiting body of the decay fungus. Ganoderma is present at base of trunk on western side indicating some internal decay. This is unlikely to be significant at present.	Overhaul	A2	>40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
7	Sycamore Acer psedoplatanus	Mat	Good	Located on boundary with private house. Multi-stemmed from 1m with tight unions between stems. Upper crown reduced in development to north due to presence of tree number 6. This tree forms a strong presence on boundary and provides screening to site.	No action necessary	A2	>40
8	Sycamore Acer psedoplatanus	Mat	Good	Located on boundary with private house. This is a relatively well developed tree with a slender crown. Minor bark damage with localised decay present in lower trunk. Upper crown appears free of defects. Provides screening to site at this location.	No action necessary	A2	>40
9	Monterey Cypress Cupressus macrocarpa	Mat	Good	A well developed tree to the rear of houses and adjacent to track. Trunk divides into 4 vertical stems at 1.5m. An area of included bark is present between two stems on western side of tree but is typical of species and should not be significant. A large section of the southern stem has been lost in the past this is unlikely to have a negative impact on the remaining stem at present. Minor light suppressed deadwood scattered throughout crown.	Overhaul	B2	>40
10	Monterey Cypress Cupressus macrocarpa	Mat	Good	A well developed tree located to rear of houses and adjacent to track. This tree has a strong well developed trunk. Light suppressed deadwood scattered throughout crown.	Overhaul	B2	>40
11	Monterey Cypress Cupressus macrocarpa	Mat	Poor	A tree in decline through storm damage and basal bark damage. No long term potential.	Fell	R	<5
12	Monterey Cypress Cupressus macrocarpa		Dead		Fell	R	0
13	Sycamore Acer psedoplatanus	E-mat	Fair	A multi-stemmed specimen at base of wall on southern boundary. Of very limited value due to location and form.	No action necessary	C2	10
14	Holm oak Quercus ilex	Mat	Good	One of a group at western side of church. Trunk divides into 4 stems from 1m. with a narrow union between two stems to north. The crown of this tree is limited toward north due presence of tree number 15 but overall the canopy appears well developed. Some pruning work has occurred on the western side resulting in stubs being left. Minor light suppressed deadwood is scattered throughout crown.	Overhaul	A2	>40
15	Holm oak Quercus ilex	Mat	Good	One of a group of trees located to west of church. Trunk divides into four main stems at 1.25m with one dominant central stem. A number of branches very close to church which could be reduced. Light suppressed deadwood is scattered throughout crown.	Overhaul with a reduction of branches close to church.	A2	>40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
16	Holm oak <i>Quercus ilex</i>	Mat	Good	Co-dominant from 1.5m with a large split between stems. The failure of this tree would have a significantly negative impact on surrounding trees. The reduction of the tree to attempt to counteract this would leave a hugely disfigured specimen.	Fell	R	10
17	Holm oak <i>Quercus ilex</i>	Mat	Good	A large tree at northern edge of group to rear of church. Co-dominant from 400mm with a tight union between stems but no visible defects. Minor light suppressed deadwood is scattered throughout crown and ivy becoming established up trunk.	Cut ivy and overhaul	A2	>40
18	Cotoneaster <i>Cotoneaster salicifolia</i>	Mat	Fair	A linear planting of shrubs adjacent to road. Relatively good condition for age. Pocket of decay present at points of branch loss and past pruning.	Overhaul	C2	<20
19	Cotoneaster <i>Cotoneaster salicifolia</i>	Mat	Fair	A linear planting of shrubs adjacent to road. Relatively good condition for age. Pockets of decay present at points of branch loss and past pruning.	Overhaul	C2	<20
20	Sycamore <i>Acer pseudoplatanus</i>	Mat	Good	A field specimen growing free of competition and forming a well developed balanced crown as a result. The trunk divides into 3 main stems each supporting a large framework of branches. A branch lost at 2.5m on eastern side has resulted in the development of an area of decay. Although cavity extending into stem it does not appear to be significant at present.	No action necessary	A2	>40
21	Small leaved lime <i>Tilia cordata</i>	Mat	Good	A field specimen growing free of competition which has developed a broad crown as a result. Trunk becoming co-dominant from 1m with a degree of compression between stems. Minor light suppressed deadwood scattered throughout crown. A tree of high landscape value with long term potential with appropriate management.	No action necessary	A2	>40
22	Horse chestnut <i>Aesculus hippocastum</i>	Mat	Good	A field specimen growing free of competition. The tree has developed a wide spreading crown as a result. The crown is developed from multiple stems from 2m. Areas of included bark is evident between a number of stems but do not appear to be significant at present. Bark staining on trunk is indicative of the presence of Bleeding canker ( <i>Pseudomonas syringae</i> ) though no visible impacts on vigour present. This tree has very high landscape value and good long term potential with appropriate management.	No action necessary	A2	>40
23	Scots pine <i>Pinus sylvestris</i>	Mat	Good	One of a group of 4 pines forming self-supporting group. The crown of this tree is reduced in development on north side due to presence of neighboring trees but is not a significant factor. Minor suppressed deadwood scattered throughout crown.	Deadwood	A2	>40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
24	Scots pine Pinus sylvestris	Mat	Good	One of a group of 4 trees forming a self supporting group. This tree is co-dominant from 1m with a wide union between stems. Minor light suppressed deadwood scattered throughout crown and a large branch stub present on east side.	Deadwood	A2	>40
25	Scots pine Pinus sylvestris	Mat	Good	A large dominant specimen in group. Very heavy ivy growth obscuring view for assessment. Storm damage is present in crown on northern side and minor light suppressed deadwood is scattered throughout crown.	Overhaul	A2	>40
26	Austrian pine Pinus nigra	Mat	Good	Located within group and adjacent to internal road. A branch has been lost on road side presumably from a high-sided vehicle. Not a significant factor at present. Minor light suppressed deadwood scattered throughout crown.	Overhaul	B2	40
27	Holm oak Quercus ilex	Mat	Good	A specimen growing in an open situation free of competition and with a wide spreading crown as a result. Trunk co-dominant from 1m further sub-dividing with large laterals. Light suppressed deadwood is scattered throughout crown. A tree of high landscape value.	Overhaul	A2	>40
28	Sycamore Acer pseudoplatanus	Mat	Good	A large tree growing in an open situation adjacent to internal road. Trunk co-dominant from 2m with a narrow union between stems. There is potential for a split at this point the narrow crown and limited lateral branch development should limit the potential for a split between stems. Path being lifted at base of trunk.	No action necessary	A2	>40
29	Cotoneaster Cotoneaster salicifolia		Mat	A linear planting of shrubs adjacent to road. Relatively good condition for age. Pocket of decay present at points of branch loss and pruning.	Overhaul	C2	<20
30	Apple cultivar Malus cv	Mat	Fair	An ornamental planting of 10 trees which probably contained more individuals in the past. The trees have had limited management over the years with the result that form is generally poor and many have extensive deadwood. Are limited in value but appropriate management could ensure the retention of some of the tree in the medium-term.	Overhaul	C2	<20
Tag 31 not in use							
32	Horse chestnut Aesculus hippocastum	Mat	Good	Located at northern end of avenue. Three stemmed from 1m with included bark and a tight union between stems. Crown relatively narrow and free of heavy laterals reducing potential for a split. A branch lost from stem at 2.5m on north side resulting in a relatively large cavity. Not significant within current environment. Some crude branch pruning has occurred over the road with stubs remaining.	Overhaul	B2	40



Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
33	Horse chestnut Aesculus hippocastum	Mat	Good	Trunk splitting into 4 strongly vertical stems. Good wide unions between stems and limited lateral branch development.	No action necessary	A2	>40
34	Horse chestnut Aesculus hippocastum	Mat	Good	Very extensive decay in lower trunk rendering tree unsuitable for retention.	Fell	R	<10
35	Horse chestnut Aesculus hippocastum	Mat	Fair	A major element of crown lost rendering remaining tree of very limited value and unsuitable for retention.	Fell	R	<10
36	Horse chestnut Aesculus hippocastum	Mat	Fair	A major element of crown lost rendering remaining tree of very limited value and unsuitable for retention.	Fell	R	<10
37	Horse chestnut Aesculus hippocastum	Mat	Good	Co dominant from 2m with a narrow union between stems. Crown development slender and strongly vertical due to presence of neighboring trees. The canopy has been raised in the past and has resulted in large pruning cuts to stems. Not significant at present but have potential to reduce long term potential through decay establishment over time.	No action necessary	B2	30
38	Horse chestnut Aesculus hippocastum	Mat	Good	A tall dominant tree on boundary. Trunk multi-stemmed from 2m but area obscured by ivy. Crown formed by strongly vertical stems. Crown raising has occurred in the past but has not resulted in many large pruning cuts. A section of deadwood present in crown but does not appear to be related to any overall decline.	Overhaul	A2	>40
39	Horse chestnut Aesculus hippocastum	Mat	Good	Tall dominant tree on boundary. Very heavy ivy growth swamping tree and making inspection impossible.	Cut ivy and re-assess	B2	40
40	Horse chestnut Aesculus hippocastum	Mat	Dead		Fell	R	0
41	Horse chestnut Aesculus hippocastum	Mat	Good	A tall dominant tree on boundary. Very heavy ivy growth obscuring view for assessment. No visible defects.	Cut ivy and re-assess	B2	40
42	Horse chestnut Aesculus hippocastum	Mat	Good	Sub dominant to tree 41 and forming an element of under canopy on boundary. The tree may have lost a section of its crown but it is not possible to assess due to very heavy ivy and dense foliage cover.	Cut ivy and re-assess	B2	40
43	Horse chestnut Aesculus hippocastum	Mat	Poor	In an advanced state of decline with extensive bark loss throughout lower crown.	Fell	R	<5
44	Horse chestnut Aesculus hippocastum	Mat	Good	Relatively well developed dominant tree on boundary. Trunk co-dominant from 4m with a good union. Crown development slender and with limited lateral branch development. Branch loss in lower crown on north side has resulted in the development of an area of decay but not significant at present.	No action necessary	B2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
45	Horse chestnut Aesculus hippocastum	Mat	Good	A large dominant specimen on boundary. The loss of a neighboring tree has exposed an unfoliated area of the crown. Large basal stems present which should be removed.	Remove basal stems and cut ivy.	B2	40
46	Horse chestnut Aesculus hippocastum	Mat	Poor	Crown completely lost from 3m.	Fell	R	<5
47	Holm oak Quercus ilex	Mat	Good	Possibly part of a larger group but now sharing canopy area with 48. Co-dominant from 500mm. A basal stem to south with extensive decay near point of attachment to trunk with potential for failure. Upper crown with minor deadwood scattered throughout.	Deadwood	A2	>40
48	Holm oak Quercus ilex	Mat	Good	A large tree co-dominant from base with an area of compression between stems. Two pockets of decay are present in northern stem but appear localised and not significant. Both stems have developed with strong leans off vertical. This was possibly due to the presence of large dominant trees in the past. The upper crown of the tree is vertical. It is unlikely that the lean is detrimental to the trees stability at present. Minor deadwood scattered throughout crown	Deadwood	A2	>40
49	Holm oak Quercus ilex	Mat	Good	Co-dominant from 1m with a wide union between stems. Two basal stems have been lost in the past with decay present on south side. This should be insignificant. A branch lost on north side at 2m resulting in localised decay. The eastern stem has a lean in this direction but upper canopy is vertical. Scattered deadwood throughout crown.	Deadwood	A2	>40
50	Holm oak Quercus ilex	Mat	Good	Located in vicinity of club house. This is a well developed tree growing free of competition. Crown well formed and full as a result. A large basal stem present to north with main trunk dividing at 0.5m. An area of compression present between stems but unlikely to be significant at present. Light suppressed deadwood scattered throughout crown.	Overhaul	A2	>40
51	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located on playing fields. Forming part of a linear planting strip. Large central cavity to the east at base of tree. Balanced crown with minor decay at points where branches have been lost. Not significant.	Overhaul	C2	25
52	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located on playing fields. Part of linear strip. Storm damage has occurred where a limb to the east at 2m has torn away from adjoining branch. Decay present at this point leading to potential failure in the future. Minor deadwood throughout crown.	Overhaul with pruning carried out on damaged branch.	B2	30
53	Dead						

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
54	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located on playing fields as part of linear strip. Co dominant at 2m with poor union between stems. Staining is evident at this point. This area is a point for future failure. Minor crown congestion. Past pruning has occurred .	Overhaul	B2	30
55	Horse chestnut Aesculus hippocastum	Mat	Fair	pruning has occurred mainly to the north. Stubs present as a result. Co dominant from 3m. Minor crown congestion throughout crown.	Overhaul	B2	30
56	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located on playing fields as part of linear strip. Past pruning has occurred. Minor congestion throughout crown. Minor scale insect infestation but not significant at present.	Overhaul	B2	>40
57	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located on playing fields as part of linear strip. Well balanced crown. Cavity present to the south at 1.5m with decay present. Not significant. Minor congestion throughout crown. Minor scale insect infestation but not significant.	Overhaul	B2	>40
58	Horse chestnut Aesculus hippocastum	E-Mat	Fair	Located on playing fields as part of linear strip. Balanced crown with minor congestion. Damage has occurred to base of tree from mowers. Minor scale insect infestation but not significant at present.	Overhaul	B2	30
59	Horse chestnut Aesculus hippocastum	E-Mat	Good	Mature tree located on playing fields as part of linear strip. Damage has occurred to the base of the tree due to mowers. Co dominant from 1m with large crack visible between stems. One stem to the north has become unstable. Crown congested.	Fell	R	<10
60	Horse chestnut Aesculus hippocastum	E-Mat	Poor	Dead stump with suckers from base.	Fell	R	<10
61	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located on playing fields as part of linear strip. Damage has occurred around the base of tree where bark has become stripped. Not significant. Minor congestion throughout crown.	Overhaul	B2	30
62	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located on playing fields as part of linear strip. Large area of bark damage has occurred to the south at 0.5m. Decay present at this point. Bark damage continues into the canopy of the tree where cracking to the bark is visible. Deadwood in crown most likely associated with decay.	Fell	R	<10
63	Common lime Tilia x europaea	Mat	Good	Mature tree located on playing fields as part of linear strip dividing two sports pitches. Good condition with well balanced crown. Suckers from base. Minor conjection throughout crown.	Overhaul	B2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
64	Common lime Tilia x europaea	Mat	Good	Mature tree located on playing fields as part of linear strip dividing two sports pitches. Good condition with well balanced crown. Minor pockets of decay present at points of past pruning. Not significant. Slight crown conjection.	Overhaul	B2	40
65	Common lime Tilia x europaea	Mat	Good	Located on playing fields as part of linear strip dividing two sports pitches. Multi stemmed from base. Good condition with well balanced crown. Slight damage has occurred to bark from machinery. Not significant. Minor conjection throughout crown.	Overhaul	B2	40
66	Common lime Tilia x europaea	Mat	Good	Located on playing fields as part of linear strip dividing two sports pitches. Good condition with well balanced crown. Co dominant from 1m with included bark. Slight crown conjection.	Overhaul	B2	40
67	Common lime Tilia x europaea	Mat	Good	Mature tree located in linear strip. Suckers from base. Minor conjection in crown. Ivy growing up trunk.	Overhaul	B2	40
68	Common lime Tilia x europaea	Mat	Good	Mature tree located in linear strip dividing two sports pitches. Two main stems growing from base. Suckers from base. Minor conjection throughout crown. Slight lean to east but not significant.	Overhaul	B2	40
69	Common lime Tilia x europaea	Mat	Good	Large tree located on playing fields as part of linear strip. Well balanced crown. Crown composed of four main leaders at 2m. No visible defects.	No action necessary	B2	40
70	Common lime Tilia x europaea	Mat	Good	Large tree located in linear strip dividing two sports pitches. Good condition with well balanced crown. Co dominant from 2m. No visible defects. Heavy ivy growth up trunk.	Cut ivy	B2	40
71	Common lime Tilia x europaea	Mat	Good	Large tree located in linear strip dividing two sports pitches. Well balanced crown. Co dominant from 0.5m. Large area of bark damage on stem to the east at 0.5m. Decay present at this but not significant. Slight crown conjection.	Overhaul	B2	40
72	Common lime Tilia x europaea	Mat	Good	Large tree located in linear strip dividing two sports pitches. Co dominant from base with included bark. Not significant.	No action necessary	B2	40
73	Common lime Tilia x europaea	Mat	Good	Large tree located in linear strip dividing two sports pitches. Co dominant from 0.5m with wide union. Minor conjection throughout crown. Minor storm damage.	Overhaul	B2	40
74	Common lime Tilia x europaea	Mat	Good	Large tree located in linear strip dividing two sports pitches. Suckers from base. Good condition with well balanced crown. Inverted bark at 1.5m but not significant. Minor conjection throughout crown.	Overhaul	B2	40
75	Malus domestica	Juv	Fair	Young self seeded tree located near boundary wall. Multi stemmed from base. Long term potential limited.	No action necessary	C2	25

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
76	Horse chestnut Aesculus hippocastum	Mat	Good	Large mature tree located along boundary wall. Forming an element of screening at present. Good condition with slight lean to east. Crown consists of large stems with the majority leaning to the east. Minor deadwood throughout crown. Some storm damage where limb has been lost at 4.5m to the west.	Overhaul	A2	40
77	Horse chestnut Aesculus hippocastum	Mat	Good	Large tree located along boundary wall forming an element of screening at present. Suckers from base. Co dominant from 1.5m. Minor deadwood throughout crown. Minor congestion throughout crown.	Overhaul	A2	40
78	Horse chestnut Aesculus hippocastum	Mat	Good	Large tree located at boundary wall forming an element of screening at present. Good condition. Suckers from base. Crown consists of three large stems at 2.5m. Minor congestion throughout crown.	Overhaul	A2	40
79	Alder Alnus glutinosa	E-mat	Good	Located along boundary wall forming an element of screening at present. Good condition. Co dominant from 2m. Well balanced crown.	No action nessessary	A2	40
80	Alder Alnus glutinosa	E-mat	Good	Located along boundary wall forming an element of screening at present. Co dominant from base. Good condition. Heavy ivy growing up tree. Slight lean to north. Not significant.	Cut ivy	A2	40
81	Alder Alnus glutinosa	E-mat	Fair	Located along boundary wall forming an element of screening at present. Slight lean to north but not significant. Heavy ivy growth up trunk. No visible defects.	Cut ivy	A2	40
82	Alder Alnus glutinosa	E-mat	Fair	Located along boundary wall forming an element of screening at present. Co dominant from base. Very heavy ivy growth up trunk. Minor deadwood in crown.	Overhaul	B2	40
83	Alder Alnus glutinosa	E-mat	Fair	Located along boundary wall forming an element of screening at present. Co dominant from base. Growth suppressed due to trees 82 & 84. Heavy ivy growth up trunk.	Cut ivy	B2	40
84	Horse chestnut Aesculus hippocastum	Mat	Good	Located along boundary wall forming an element of screening at present. Suckers from base. Minor deadwood throughout crown. Ivy growth up trunk. Well balanced tree with crown composed of five large stems. Minor congestion throughout crown.	Overhaul	A2	40
85	Horse chestnut Aesculus hippocastum	Mat	Good	Located along boundary wall forming an element of screening at present. Suckers from base. Large area of bark damage to the west & south at 0.3m. Decay is visible and spreading up trunk. Deadwood throughout crown. Crown composed of three large stems. Slight lean to west. Not significant. Ivy growing up trunk.	Reduce crown by 4m & overhaul	A2	40
86	Alder Alnus glutinosa	E-mat	Fair	Located along boundary wall forming an element of screening at present. Good condition with no visible defects.	No action nessessary	A2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
87	Alder Alnus glutinosa	E-mat	Good	Mature tree located along boundary wall forming an element of screening at present. Good condition. Small area of decay to the north but not significant. Good condition with well balanced crown. Minor deadwood throughout crown.	No action necessary	A2	40
88	Horse chestnut Aesculus hippocastum	Mat	Good	Located along boundary wall forming an element of screening at present. No visible defects.	Overhaul	A2	40
89	Alder Alnus glutinosa	E-mat	Good	Located along boundary wall forming an element of screening at present. Tree forked at 3m. Tree is growing around a piece of timber that is stuck in the fork.	Remove timber. & Overhaul	A2	40
90	Alder Alnus glutinosa	E-mat	Good	Located along boundary wall forming an element of screening at present. Good condition with well balanced crown. No visible defects.	No action necessary	A2	40
91	Horse chestnut Aesculus hippocastum	Mat	Good	Located along boundary wall forming an element of screening at present. Good condition with well balanced crown. Minor congestion throughout crown.	Overhaul	A2	40
92	Horse chestnut Aesculus hippocastum	Mat	Good	Located along boundary wall forming an element of screening at present. Good condition with well balanced crown. Recent pruning has occurred with stubs remaining. Minor congestion throughout crown.	Overhaul	A2	40
93	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located along boundary wall forming an element of screening at present. Good condition with well balanced crown.	No action necessary	A2	40
94	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located along boundary wall forming an element of screening at present. Large area of bark damage has occurred to the south at base of tree which is now occluding. Minor deadwood in crown. Stubs remaining in crown post pruning.	Overhaul	A2	40
95	Horse chestnut Aesculus hippocastum	Mat	Good	Mature tree located adjacent to felled tree where regrowth is occurring. Good condition with well balanced crown. Small area of decay to west at 1m. Not significant. Minor deadwood in crown.	Overhaul	A2	40
96	Beech Fagus sylvatica	Mat	Good	Mature tree in good condition with well balanced crown. Co dominant from 0.5m with included bark. Not significant. Slight damage occurring to branches due to crossing branches. Minor congestion in crown.	Overhaul	A2	40
97	Ash Fraxinus excelsior	Mat	Good	Mature tree multi stemmed from base. Large structural roots visible on surface. Crown composed of three main stems. One of which to the south has included bark. Not significant. Minor congestion throughout crown. Minor deadwood in crown.	Overhaul	A2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
98	Holm oak Quercus ilex	Mat	Good	Mature tree located along pedestrian path. Forming part of a group of three holm oaks. Good condition with well balanced crown. Co dominant from 0.5m. Minor deadwood in crown.	Overhaul	A2	40
99	Holm oak Quercus ilex	Mat	Good	Mature tree forming part of a group of three holm oaks. Co dominant from 0.5m. Crown composed of four main stems. Base of tree contains hollows but not significant. Cavity located on one stem to the south at 0.5m. Decay fungus present and possibly entering centre of tree. Large amount of deadwood throughout crown possibly as a result of decay. Minor pockets of decay at points of past pruning.	Overhaul with crown reduction.	A2	40
100	Holm oak Quercus ilex	Mat	Good	Mature tree located along pedestrian path forming part of a group of three holm oaks. Co dominant from base with wide union. Large limb has been removed to the northeast at 1m. Decay fungus ganoderma present at base west & south of tree. Areas of decay present at points of past pruning. Not significant. Deadwood throughout crown. Large extended lime to southeast.	Overhaul with crown reduction.	A2	30
101	Holm oak Quercus ilex	Mat	Good	A large dominant located within a grass area free of competition and is a large wide-spreading tree as a result. The tree is three-stemmed from base with a dead suppressed stem still present. There is no evidence that decay has spread from the decayed stump into the base of the tree. Has had competition from 101 toward north but impact on crown development present in this direction. Very minor suppressed deadwood scattered throughout crown.	Overhaul	A2	>40
102	Holm oak Quercus ilex	Mat	Fair	Located 2m from and sub dominant to 101. Co-dominant from base. Stem to north with extensive decay present at the point of branch loss at 0.5-2m. This stem has end-weighted growth over road. Remaining stem forming an element of upper canopy with 101.	Reduce growth on stem with decay to form a stable crown.	B2	40
103	Holm oak Quercus ilex	Mat	Good	Located approximately 5m from site building. Co-dominant from 0.75m with a wide union between stems. Growing free of competition and has formed a wide spreading crown as a result. Minor light suppressed deadwood scattered throughout crown.	Overhaul	A2	>40
Tag 104 not in use					No action necessary		
105	Flowering cherry Prunus cv.	Mat	Good	A relatively well developed tree but crown suppressed toward north by presence of tree 106. Three stemmed from 1m with included bark between two stems. Light suppressed deadwood scattered throughout crown.	Overhaul	C2	20-30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
106	Horse chestnut <i>Aesculus hippocastum</i>	Mat	Good	A prominent tree adjacent to entrance road. Crown multi-stemmed from 2m with tight unions between stems. There is fairly extensive bark lifting on a number of limbs throughout crown. This will inevitably lead to upper crown dieback in the future. There is also bark damage over the road which is the result of high sided vehicles. A relatively minor section of the crown has been lost or removed due to storm damage or bark lifting. The retention of this tree would entail the development of a secondary canopy.	Overhaul	B2	30-40
107	Sycamore <i>Acer psedoplatanus</i>	Mat	Good	A prominent tree adjacent to road. Trunk dividing into 4 at 3m with wide unions between stems. Minor stem damage is present at 3.5m on north side but is not significant. Chestnut scale present throughout crown. Growing free of competition with a well developed crown.	No action necessary	A2	>40
108	Bird cherry <i>Prunus avium</i>	Mat	Good	A specimen ornamental tree within grass area at entrance. Crown full and well developed but congested with minor branches. Trunk multi stemmed from 1m with minor included bark between stems. A large branch has been removed on east side and this has resulted in the development of localised decay. This is not significant at present.	Clean out crown	B2	30
109	Holm oak <i>Quercus ilex</i>	Mat	Good	A large dominant tree on eastern edge of group. Three stemmed from base with wide unions between stems. Forming an element of upper canopy the tree has developed a tall and slender habit. Very heavy ivy growth present at base of tree and up two stems. Suitable or retention within current environment.	Cut ivy	A2	>40
110	Holm oak <i>Quercus ilex</i>	Mat	Good	A large dominant tree within group. Co-dominant from base with a wide union between stems. Bark damage is present on the southern stem at 3m but is not significant. Minor light suppressed deadwood is scattered throughout crown.	Overhaul	A2	>40
111	Holm oak <i>Quercus ilex</i>	Mat	Good	Four stemmed from 3m with wide unions between stems. Basal decay is present on south side but is not significant at present and with current shelter. A large branch has been lost and is hanging in crown. Upper canopy contains minor light suppressed deadwood but is well developed and dome shaped.	Overhaul	A2	40
112	Sycamore <i>Acer psedoplatanus</i>	Juv	Fair	A self-seeded specimen. Co-dominant from 300mm with extensive area on included bark. Forming an element of under canopy at present but of limited long-term value.	No action necessary	C2	20



Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
113	Holm oak Quercus ilex	Mat	Good	A large dominant tree within group. Co-dominant from base with wide union between stems. There is evidence of branch loss from storm damage in lower crown but not significant. Minor light suppressed deadwood scattered throughout crown.	Overhaul	A2	>40
114	Holm oak Quercus ilex	Mat	Good	A slender tree drawn up due to competition from dominant neighboring trees. Three stemmed from base with wide unions between stems. Northern stem contains two small pockets of decay at base but they are not significant at present. One stem to north very extended and end weighted with potential for failure. Minor light suppressed deadwood scattered throughout crown. Suitable for retention within current environment only.	Overhaul with a reduction of extended growth to north by 30%	B2	40
115	Holm oak Quercus ilex	Mat	Good	A large dominant tree within group. Co-dominant from base with wide unions between stems. A large area of decay is present in base at the point of a former stem failure. Although forming an element of upper canopy the development of this tree has been forced toward south due to the competition from a large neighboring sycamore. The tree has potential within the current environment only.	Overhaul with a reduction of extended branches to south by 20%	B2	40
116	Sycamore Acer psedoplatanus	Mat	Good	A large dominant tree with a wide spreading crown. Trunk co-dominant from 3m. Light suppressed deadwood scattered throughout crown.	Overhaul	A2	>40
117	Beech Fagus sylvatica	Mat	Good	Slightly sub dominant to neighboring trees but forming an element of upper canopy. The trunk is co-dominant from 3m with a wide union. A lateral stem from trunk at 2m on south side is tightly pressed against trunk and forming an area of included bark. This stem has extensive decay at its connection with trunk and this decay appears to extend into trunk to at least 0.5m below point of stem attachment. Minor light suppressed deadwood scattered throughout crown.	Overhaul with the removal of the decayed stem.	B2	40
118	Common laburnum Laburnum anagyroides		Dead		Fell	R	0
119	Sycamore Acer psedoplatanus	E-mat	Fair	A slender tree drawn up for light and forming an element of upper canopy. Very heavy ivy growth obscuring view for assessment. Light suppressed deadwood in lower crown. Not suitable for retention outside current environment.	Cut ivy	C2	20
120	Sycamore Acer psedoplatanus	E-mat	Good	A self-seeded tree at northern edge of holm oak group. Tall and slender in form with narrow unions between stems. Ivy becoming established up stems. A tree of limited merit due to form.	Cut ivy	B2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
121	Mountain ash <i>Sorbus aucuparia</i>	Mat	Fair	A multi-stemmed specimen forming an element of under canopy. Small pockets of decay present at points of branch loss. Not significant. Very heavy ivy growth obscuring view for assessment.	Cut ivy	C2	20
122	Sycamore <i>Acer pseudoplatanus</i>	E-mat	Good	A self seeded tree at northern edge of holm oak group. Co-dominant from 1m with included bark between stems. Crown relatively well developed. Minor congestion throughout crown.	Overhaul with the removal of the decayed stem.	B2	40
123	Common holly <i>Ilex aquifolium</i>	Mat	Good	A large specimen growing within open grass area. Branches drooping to ground level	No action necessary	S2	40
124	Sycamore <i>Acer pseudoplatanus</i>	E-mat	Fair	A slender tree likely to be self seeded in a neglected area. Co-dominant from 300mm and slender in habit due to competition from neighboring trees. Very heavy ivy growth up stemss.	Cut ivy	C2	20
125	Common holly <i>Ilex aquifolium</i>	Mat	Good	A large specimen growing beneath canopy of 126. No visible defects and with potential as an element of under canopy only..	No action necessary	B2	40
126	Purple beech <i>Fagus sylvatica</i> "Purpurea"	Mat	Good	A large dominant tree within area. Co-dominant from 3m but union between stems obscured by ivy. Crown framework branches also covered in ivy making assessment difficult. This is a well developed tree prominent within landscape.	Cut ivy and re-assess	A1	>40
127	Cordyline <i>Cordyline australis</i>	Mat	Good	A multi-stemmed specimen with decay in one stem but not significant.	No action necessary	S2	40
128	Ash <i>Fraxinus excelsior</i> 'Pendula'	Mat	Poor	A large tree which has previously has the status of a specimen tree. Extensive decay is present at a number of points on trunk and within framework branches. Upper crown sparse and exhibiting signs of advanced decline.	Fell	R	<10
129	Cordyline <i>Cordyline australis</i>	Mat	Good	A multi-stemmed specimen with no visible defects.	No action necessary	S2	40
130	Cherry <i>Prunus serrulata</i>	Mat	Fair	Formerly three stemmed from base with one stem now lost on east side. A large crack present between remaining stems with failure probable.	Fell	R	<10
131	Sycamore <i>Acer pseudoplatanus</i>	Mat	Fair	Growing in an open situation and free of competition from neighboring trees. This is a short tree with fairly extensive deadwood scattered throughout crown indicating decline though no outward signs or symptoms are present.	Overhaul	C2	20
132	Cherry <i>Prunus serrulata</i>	Mat	Good	A lawn specimen growing free of competition. Multi-stemmed from 2m with a degree of congestion and included bark between stems. Upper canopy congested with minor branches.	Overhaul	B2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
133	Cherry <i>Prunus serrulata</i>	Mat	Fair	A short specimen growing free of competition within a lawn area. Crown formed from a complex of horizontal branches. Branch congestion rubbing and bark inclusion a feature. Minor light suppressed deadwood scattered throughout crown.	No action necessary	B2	30
134	Leyland Cypress and Sycamore	Mat	Fair	Formerly a lawn specimen now swamped by a seeded sycamore and heavily pruned. Early form of tree now lost. Sycamore poorly formed and of limited merit.	No action necessary	C2	20
135	Highclere holly <i>Ilex altaclarensis</i>	Mat	Good	Located within an open situation and free of competition. Minor deadwood in upper crown but should not be indicative of decline.	No action necessary	C2	30
136	White willow <i>Salix alba</i>	Mat	Good	A multi stemmed specimen growing within a small shrub bed. Of limited merit as a tree but no visible defects	No action necessary	B2	30
137	Purple beech <i>Fagus sylvatica "Purpurea"</i>	Mat	Good	A large dominant tree at intersection of two internal roads. Crown formed from a number of vertical stems arising from 2-3m. Good unions generally between stems. A large occluded basal cut at 400mm on east side unlikely to be significant. A branch lost at 2m on east side with a degree of decay in stub but unlikely to be significant. Upper crown containing minor congestion.	Overhaul	A1	>40
138	Highclere holly <i>Ilex altaclarensis</i>	Mat	Good	Located beneath canopy of 137. No visible defects.	No action necessary	S2	30
139	Leyland cypress <i>x Cupressocyparis leylandii</i>	Mat	Fair	Located within lawn area. Co-dominant from 1m with a wide union between stems. A poor specimen visually with limited crown development to west. No visible defects.	No action necessary	B2	40
140	Cherry <i>Prunus serrulata</i>	Mat	Poor	Upper crown exhibiting signs of advanced decline.	Fell	R	<10
141	Purple plum <i>Prunus cerasifera pissardii</i> 'Nigra'	Mat	Fair	A scrappy tree with form typical of species. Co-dominant from base with a wide union between stems. Included bark between stems forming crown framework. Typical basal suckers present. The form of the tree could be improved but long-tree potential limited	Overhaul	C2	20
142	Highclere holly <i>Ilex altaclarensis</i>	Mat	Good	A well developed specimen free of defects.	No action necessary	S2	40
143	Cordyline <i>Cordyline australis</i>	Mat	Good	A well developed multi stemmed specimen. No visible defects.	No action necessary	S2	40
144	Tree now gone.						
145	Chinese red birch <i>Betula albo-sinensis</i>	E-mat	Fair	A large area of decay present in trunk from base to 2m. Imminent failure likely	Fell	R	<10

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
146	Ash <i>Fraxinus excelsior</i>	Mat	Good	A large tree within carpark area. The tree long predates the present tarmac surface and areas of decay within buttresses may be associated with the carparks construction. The crown is developed from three main stems. The upper crown is relatively sparse but this is unlikely to be significant. End weighted lateral branches have potential for failure and should be reduced. A branch stub is present at 3m on south side but it is unlikely that decay will extend into main trunk.	Reduced extended branches to reduce likelihood of failure.	A2	40
147	Horse chestnut <i>Aesculus hippocastum</i>	Mat	Good	A large but relatively slender tree with crown developed from four stems at 3m. An area of compression present between two stems but not likely to be significant at present. A small localised area of decay present at 3m on south side unlikely to be significant. Upper crown well developed appears free of defects.	No action necessary	A2	>40
148	Horse chestnut <i>Aesculus hippocastum</i>	Mat	Good	Formerly four stemmed from 2-3m. A large stem has been lost at 2m on south eastern side resulting in a large area of decay developing. A large portion of the tree is compromised as a result. Upper crown well foliated and appears free of defects. The retention of the tree necessitates a crown reduction to develop a secondary canopy.	Reduce weight on eastern section by 20% to begin process of secondary crown development.	B2	30
149	Sycamore <i>Acer psedoplatanus</i>	Mat	Good	Co-dominant from 2.5m with a wide union between stems. Past pruning in lower canopy is evident from occluded cuts. Minor light suppressed deadwood scattered throughout crown.	Overhaul	A2	>40
150	Sycamore <i>Acer psedoplatanus</i>	Mat	Good	The most northerly tree in the group. Located at intersection of two internal roads. Trunk three stemmed from 2m with three additional stems lost from this area. Associated decay is present at points of stem loss and extends to an unknown extent into the main trunk. The upper crown is well developed and appears free of defects.	Reduce crown by 20% to develop secondary canopy.	B2	30
151	Cordyline <i>Cordyline australis</i>	Mat	Good	A well developed multi stemmed specimen. No visible defects.	No action necessary	S2	40
152	Spanish chestnut <i>Castanea sativa</i>	E-mat	Good	Located in grass area adjacent to building. Good condition with well balanced crown. No visible defects.	No action nessessary	B2	30
153	Beech <i>Fagus sylvatica "pendula"</i>	Mat	Good	Large mature tree located at edge of group planting of holm oaks. Good condition with well balanced crown. Co dominant from 4m with included bark but not significant. Very heavy ivy growth up trunk obscuring view for assessment. Minor deadwood in crown.	Overhaul	A2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
154	Holm oak Quercus ilex	Mat	Good	Large mature tree located along pedestrian path at edge of group planting of holm oaks. Well balanced crown consisting of multi stems from 0.5m. Decay present on stem to the east at 1.5m. Crack present at this point travelling into centre of trunk. Potential point of failure in the future. Deadwood throughout crown.	Overhaul & crown reduction	A2	40
155	Horse chestnut Aesculus hippocastum	Juv	Poor	Located along boundary wall. Multi-stemmed from base. Damage has occurred to the base of the tree where cracking is visible on all stems. Minor deadwood throughout crown.	Overhaul	C2	25
156	Horse chestnut Aesculus hippocastum	Mat	Good	Located along boundary wall forming an element of screening at present. Co dominant from 1.5m. Damage has occurred to all stems where the bark appears to be cracking with this has continued into the crown with this most likely the result of bleeding canker. Deadwood throughout crown. Smaller area of decay present 0.5m to the east though not significant.	Fell	R	<10
157	Horse chestnut Aesculus hippocastum	Mat	Good	Located along boundary wall forming an element of screening at present. Co dominant from 1m. Area of decay present at 0.5m to the west. Cracks in bark caused by bleeding canker up throughout the canopy. Minor deadwood in crown.	Overhaul	C2	25
158	Horse chestnut Aesculus hippocastum	Juv	Good	Located along boundary wall forming an element of screening at present. Multi stemmed from base. Decay is evident in majority of stems where cracks in bark are present most likely caused by bleeding canker. Damage to two stems 2m north has occurred from rubbing with staining is visible at this point. Crown congested.	Fell	R	<10
159	Horse chestnut Aesculus hippocastum	Mat	Good	Located along boundary wall forming an element of screening at present. Co dominant from 2m. Well balanced crown. Minor congestion throughout crown. Small pockets of decay present from points of past pruning but not significant.	Overhaul	B2	30
160	Elder Sambucus nigra			Large shrub growing along linear strip of horse chestnut. Good condition with no visible defects.	No action necessary	S2	40
161			Dead		Fell		
162	Horse chestnut Aesculus hippocastum	Mat	Good	Located along boundary wall forming an element of screening at present. Crown composed of three large stems at 2m. Deadwood throughout crown. Minor congestion throughout crown. Bark cracking and lifting throughout tree most likely as a result of bleeding canker.	Fell	R	<10

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
163	Horse chestnut <i>Aesculus hippocastum</i>	Mat	Good	Located along boundary wall forming an element of screening at present. Co dominant from 2.5m. Cracking to barks has occurred and extends into canopy with decay present at cracks probably as a result of infestation by bleeding canker. Crown composed of three large stems with deadwood throughout crown. Growth sparse throughout crown.	Fell	R	<10
164	Sycamore <i>Acer pseudoplatanus</i>	Mat	Good	Located along wall forming an element of screening at present. Co dominant from 0.5m. Very heavy ivy growth obscuring view for assessment. Large spreading tree with no visible defects.	Cut ivy	B2	40
165	Elm <i>Ulmus glabra</i>	Juv	Good	Linear strip of elm with occasional elder & privet located along western boundary forming an element of screening at present. Good condition. No visible defects. Longterm potential limited due to dutch elm disease.	No action necessary	B2	40
166	Elm <i>Ulmus glabra</i>	E-mat	Good	A self-seeded specimen located adjacent to boundary wall. Co-dominant from base with one stem strongly oriented toward south. No visible defects but long term potential reduced due to Dutch elm disease.	No action necessary	B2	30
167	Monterey Cypress <i>Cupressus macrocarpa</i>	Mat	Good	A mature specimen located at base of boundary wall. A decayed stem at base of trunk on north side with decay extending into butt though unlikely to be significant at present. Upper crown with typical light suppressed deadwood present. Very heavy ivy up trunk obscuring view for assessment.	Cut ivy	B2	>40
168	Monterey Cypress <i>Cupressus macrocarpa</i>	Mat	Good	A large specimen located adjacent to boundary wall. Three stemmed from 0.75m with wide unions between stems. Very heavy ivy growth up stems obscuring view for assessment. Crown well structured with no visible defects. Typical accumulation of light suppressed deadwood present in crown.	Cut ivy	B2	>40
169	Monterey Cypress <i>Cupressus macrocarpa</i>	Mat	Poor	A suppressed specimen beneath large dominant tree. Of very limited long term potential or value.	Fell	R	0
Tag 170 not in use							
171	Lombardy poplar <i>Populus nigra "Italica"</i>	Mat	Good	A relatively well developed specimen in overgrown section of site. A slightly sub dominant basal stem present but main trunk well developed. Upper crown well structured with no visible defects.	No action necessary	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
172	Bird cherry Prunus avium	Mat	Poor	A sub dominant specimen within overgrown section of site. Light suppressed deadwood present in crown and limited branch structure present. Very limited long term potential.	Fell	R	0
173	Bird cherry Prunus avium	Mat	Good	A relatively well developed specimen within overgrown section of site. Tree appears in good condition though scrub sycamore at base with potential to outgrow cherry.	Remove sycamore	B2	30
174	Sycamore Acer pseudoplatanus	E-mat	Good	A self seeded specimen which has developed into a relatively large specimen. Very heavy ivy growth up trunk obscuring view for assessment. Trunk co-dominant from 2m with what appears like a sound union between stems. No visible defects in upper crown. A basal stem present to east	Cut ivy	B2	40
175	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively large well developed specimen with trunk four-stemmed from 0.5m. Unions between stems appear sound. Upper crown slightly open with very minor light suppressed deadwood present.	No action necessary	B2	30
176	Sycamore Acer pseudoplatanus	E-mat	Good	A self seeded specimen located adjacent to boundary wall. Well developed with no visible defects. Heavy ivy growth up stems obscuring view for assessment.	Cut ivy	B2	40

Tag 177 not in use

178	Sycamore Acer pseudoplatanus	E-mat	Good	Located along boundary wall forming an element of screening at present. Self seeded. Multi stemmed from base. Wide spreading tree with heavy ivy growth up trunk. No visible defects.	Cut ivy	B2	40
179	Sycamore Acer pseudoplatanus	E-mat	Good	Located along boundary wall with other self seeded trees forming an element of screening at present. Growth suppressed due to surrounding trees. Heavy ivy growth up trunk. Multi stemmed from base. Minor deadwood in crown.	Overhaul	B2	40
180	Sycamore Acer pseudoplatanus	E-mat	Fair	Located along boundary wall forming an element of screening at present. Self seeded with slight lean to north. Minor deadwood in crown.	Overhaul	B2	40
181	Sycamore Acer pseudoplatanus	Mat	Good	Located in mixed group of trees near boundary wall. Good condition with well balanced crown. Heavy undergrowth at base of tree. Minor deadwood in crown.	Overhaul	B2	40
182	Monterey Cypress Cupressus macrocarpa	Mat	Fair	Located in group trees near boundary wall. Co dominant from 1m with included bark. Staining is evident at this point to the north. Not significant. Growth suppressed due to surrounding trees. Normal amount of deadwood associated with species and age.	Overhaul	B2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
183	Monterey Cypress <i>Cupressus macrocarpa</i>	Mat	Fair	Large tree located within group trees of trees. Co dominant from 1.5m. Stubs remaining from points of past pruning. Normal amount of deadwood associated with species. Slight lean to west. Soil has been dumped at the base of trunk.	Overhaul	B2	40
184	Monterey Cypress <i>Cupressus macrocarpa</i>	Mat	Good	Large tree located in a linear strip of four cypress surrounded by self-seeded sycamore. Tree leaning to west but not significant. Wide spreading tree with deadwood associated with species & age. Soil has been dumped at the base of trunk.	Overhaul	B2	40
185	Monterey Cypress <i>Cupressus macrocarpa</i>	Mat	Good	Large tree located in linear strip of four cypresses. Soil has been dumped at the base of trunk. Co dominant from 1.5m with included bark. Not significant. Slight lean to east but not significant. Normal amount of deadwood associated with species & age.	Overhaul	B2	40
186	Cherry <i>Prunus spp</i>	Mat	Poor	Small tree within group. Poorly formed with the majority of the canopy to the east. Deadwood in crown with decay present. Decay present at 0.5m to the east . Not suitable for retention.	Fell	R	<10
187	Leyland cypress <i>X Cupressocyparis leylandii</i>	Mat	Poor	Large tree located within group. Crown suppressed to the north due to surrounding trees. Co dominant from base with kink. Not significant. Normal amount of deadwood associated with species.	Overhaul	C2	25
188	Sycamore <i>Acer psedoplatanus</i>	E-mat	Fair	A self seeded multi stemmed specimen. No visible defects.	No action necessary	C2	30
189	Elm <i>Ulmus glabra</i>	Mat	Good	A multi stemmed specimen growing to rear of former club house. No visible defects but long-term potential limited due to Dutch elm disease.	No action necessary	C2	20
190	Sycamore <i>Acer psedoplatanus</i>	E-mat	Fair	A self seeded specimen to rear of former club house. Three stemmed from 2m . No visible defects.	No action necessary	C2	30
Tags 191-200 not in use							
201	Beech <i>Fagus sylvatica "pendula"</i>	Mat	Good	A well developed tree in close proximity to entrance. No visible defects.	No action necessary	A1	>40
202	Birch <i>Betula pendula</i>	E-mat	Fair	A lawn specimen growing in close proximity to entrance. No visible defects	No action necessary	C2	40
203	Red horse chestnut <i>Aesculus x carnea</i>	Mat	Fair	Located in lawn area close to entrance to site. Three-stemmed from 2m with wide unions between stems. Cankeros growth typical of cultivar throughout tree. Forming a reasonable specimen at present but long term potential limited.	No action necessary	C2	20-30
204	Cordyline <i>Cordyline australis</i>	Mat	Good	A single-stemmed specimen growing free of defects.	No action necessary	S2	40



Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
205	Hawthorn Crataegus oxyacanthoides 'Pauls Scarlet'	Mat	Fair	A poor sparse specimen cut back in the past. Co-dominant from 2m. Pockets of decay present in lower trunk and particularly just below point of trunk separation. Limited merit and long term potential.	Fell	R	<10
206	Malus cv	Mat	Fair	Located within lawn area. Slightly exposed and wind sculpted as a result. Pockets of decay present in lower crown. Of limited merit overall.	No action necessary	C2	20
207	Holm oak Quercus ilex	Mat	Good	Located along roadway. Multi stemmed from base. Minor cavity present at base toward south. Not significant. Good condition with minor conjection throughout crown. Minor deadwood scattered throughout crown.	Overhaul	B2	>40
208	Cordyline Cordyline australis	Mat	Good	A single-stemmed specimen growing free of defects.	No action necessary	S2	40
209	Cordyline Cordyline australis	Mat	Good	Three stemmed from base. No visible defects.	No action necessary	S2	40
210	Cherry Prunus serrulata	Mat	Good	Three stemmed from 2m. Extensive deadwood scattered throughout crown indicative of advanced decline.	Fell	R	<10
211	Leyland cypress X Cupressocyparis leylandii	Mat	Good	A lawn specimen three stemmed from base. Well developed with potential as a specimen tree. The removal of minor basal stems would improve appearance.	No action necessary	B2	>40
212	Sycamore Acer psedoplatanus	Mat	Good	A large well developed tree growing free of competition. Minor deadwood scattered throughout crown but not indicative of poor health. A localised pocket of decay present at 3m at a point of branch failure. Unlikely to be significant.	No action necessary	A1	>40
213	Horse chestnut Aesculus hippocastum	Mat	Fair	A large dominant tree with a crown structure formed from a multi-stemmed framework of stems from 3m. Bark lifting is evident from base on east side and this is continuous on a number of vertical limbs into crown. These stems will be dead in a short space of time necessitating the removal of a large portion of the tree. The remaining tree is therefore compromised as a result.	Fell	R	<10
214	Red Horse chestnut Aesculus x carnea	Mat	Fair	A tree at a prominent location at the intersection of two internal roads. Typically for cultivar there is extensive cankerous growth on trunk and into crown. The vigour of the tree is unaffected at present.	No action necessary	B2	30-40
215	Holm oak Quercus ilex	Mat	Poor	Located in an open situation this tree was formerly three stemmed but has losrt one in the past. The remaining tree has suffered extensive crown damage and is now a sparse poor specimen. Very limited merit and long term potential.	Fell	R	<10
216	Common laburnum Laburnum anagyroides	Mat	Good	A relatively large multi stemmed specimen with some merit as a specimen tree. Small areas of decay present at base but not significant.	Remove minor stems from base	B2	20
217	Cordyline Cordyline australis	Mat	Good	Co-dominant from base with wide union between stems. No visible defects.	No action necessary	S2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
218	Common laburnum Laburnum anagyroides	Mat	Poor	Formerly multi-stemmed. A very poor specimen which has lost the majority of its stemss.	Fell	R	<10
219	Holm oak Quercus ilex	Mat	Good	A large dominant tree within site composed of five stems forming a large wide spreading canopy. An exudation from one stem at 0.5m indicative of internal decay but unlikely to be significant. Upper crown containing minor light suppressed deadwood.	Overhaul	A1	>40
220	Holm oak Quercus ilex	Mat	Fair	Sub-dominant to tree 219 with growth forced toward north as a result. Four-stemmed from base with wide unions between stems. One stem dead. Upper crown with minor light suppressed deadwood. Could be considered for removal in favour of 219.	Overhaul	B2	40
221	Horse chestnut Aesculus hippocastum	Mat	Good	A large mature tree growing in an open situation. Crown formerly developed from four large stems. One stem lost with a large area of decay extending into trunk as a result. Upper crown appears free of defects. The point at where a large branch was removed from the trunk at 2.5m has a large area of decay present which has potential to be linked to that on the north side. This is a prominent tree which has potential into the future through large-scale crown reduction only.	Begin process of secondary crown development with a 20% reduction.	B2	30
222	Larch Larix decidua	Juv	Good	A lawn specimen co-dominant from base. No visible defects.	No action necessary	C2	40
223	Cotoneaster Cotoneaster salicifolia	Mat	Fair	A large multi-stemmed specimen containing pockets of decay throughout.	No action necessary	S2	20
224	Cordyline Cordyline australis	Mat	Good	A single stemmed specimen which has had two basal stems removed.	No action necessary	S2	40
225	Cordyline Cordyline australis	Mat	Good	A single stemmed specimen with no visible defects	No action necessary	S2	40
226	Cordyline Cordyline australis	Mat	Good	Co-dominant from base. No visible defects.	No action necessary	S2	40
227	Common laburnum Laburnum anagyroides	E-mat	Good	A slender specimen co-dominant from base. A large branch removed at 1m on one stem has led to an area of localised decay. Not significant at present.	No action necessary	C2	20
228	Cordyline Cordyline australis	Mat	Good	Two-stemmed and located within shrub bed.	No action necessary	S2	40
229	Cordyline Cordyline australis	Mat	Good	A single stemmed specimen with no visible defects.	No action necessary	S2	40
230	Common laburnum Laburnum anagyroides	Mat	Fair	This tree has developed a strong lean toward east which is not untypical for species. Unlikely to fail in the very near future.	No action necessary	C2	20
231	Highclere holly Ilex altaclarensis	Mat	Good	A well developed specimen growing free of competition. No visible defects.	No action necessary	S2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
232	Beech Fagus sylvatica	Mat	Good	A large tree with a well developed crown growing free of competition from neighboring trees. The loss of two large stems from 3m on the north and west side of the trunk has resulted in the development of a large interconnected cavity. Remaining sound wood insufficient to maintain integrity of tree.	Fell	R	<10
233	Portuguese laurel Prunus lusitanica	Mat	Good	A large spreading specimen which although heavily pruned in the past has no defects.	No action necessary	S2	30
234	Common laburnum Laburnum anagyroides	Mat	Good	A relatively large specimen with a strong trunk lean toward east. A large area of decay is present in one major limb toward east but is unlikely to lead to failure in the near future. Further small pockets of decay are present throughout crown.	No action necessary	C2	20
235	Cordyline Cordyline australis	Mat	Good	A single stemmed specimen with no visible defects.	No action necessary	S2	40
236	Cherry Prunus serrulata	Mat	Good	A multi-stemmed specimen with included bark and compression between stems. Scattered pockets of decay present throughout crown but not significant. Crown typically congested for species.	Overhaul	C2	20-30
237	Cordyline Cordyline australis	Mat	Good	A single stemmed specimen which has had two small basal stems removed in the past. A pocket of decay is present at base of remaining trunk ut not significant.	No action necessary	S2	30
238	Spruce Picea sp.	Juv	Good	A juvenile tree planted as a lawn specimen. No visible defects.	No action necessary	C2	40
239	Sycamore Acer psedoplatanus	Mat	Good	Located approximately 7m from hospital building. A large specimen tree four stemmed from 0.5m. Each stem with at least one large pocket of decay at points of past branch failure or removal. Each stem is vulnerable to failure but stems likely to be forming a self-sustaining uunit at present. There is potential for retention with a large scale crown reduction to reduce windsail. Upper crown appears free of defects.	Reduce crown by 10m approximately to develop secondary canopy.	C2	20
240	Cedar Cedrus atlantica "Glauca"	E-mat	Good	A well developed lawn specimen. Minor light suppressed deadwood scattered throughout crown. No visible defects.	Deadwood	B1	>40
241	Sycamore Acer psedoplatanus	Mat	Good	A large specimen tree in lawn area at front of site. Growing free of competition and has developed a wide-spreading crown as a result.	No action necessary	A1	>40
242	Small leaved lime Tilia cordata	E-mat	Good	Planted as a lawn specimen and growing free of competition. The tree has developed a well balanced crown. Three stemmed from 1.5m with included bark present. This is typical for species and not a major concern at present.	Clean out crown	B1	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
243 - 245	Sycamore Acer psedoplatanus	Mat	Good	Three trees forming a self sustaining unit and a joint canopy. A pocket of decay is present in the trunk of 243 at 2.5m but is not significant. The remaining trees are appear free of defects. These trees should be retained as a group only and would not be suitable for isolation.	No action necessary	A2	>40
246	Sycamore Acer psedoplatanus	Mat	Good	Forming an element of a line of trees adjacent to carpark. A large water-filled cavity is present at 1m on east side which extends up trunk to 3m. Tree has some shelter from neighboring trees but degree of decay rendering tree unsuitable for retention within current location.	Fell	R	<10
247	Sycamore Acer psedoplatanus	Mat	Good	A dominant tree within group. Decay present at two points of branch loss on east and west sides. It is likely that these are linked forming a large cavity not fully visible from outside. Upper crown well developed and appears free of defects. Unsuitable for retention within current location.	Fell	R	<10
248	Sycamore Acer psedoplatanus	Mat	Good	A large dominant tree adjacent to carpark. Co-dominant from 0.75m with included bark and compression and grafting between stems. Each stem has a cavity at 1.75m at points of branch loss. The extent of decay is particularly extensive on the northern stem. The degree of decay on the southern stem is not quite so extensive. The tree has a large full crown but the quality of the tree is markedly reduced by extent of decay present. The tree could be retained with a substantially reduced crown but would lose its landscape value as a result.	Fell	R	<10
249	Lombardy poplar Populus nigra "Italica"	Mat	Good	The most southerly tree of the line on Grangegorman road. A large dead lateral branch present at 3.5m on southern side. There is an area of decay present just below this branch on east side. It is likely that there is some connection between the decay and stem failure. Remaining crown appears free of defects. The onset of decay brings on rapid overall decline in this genus therefore the long term potential of this tree is limited.	Fell	R	<10
250	Lombardy poplar Populus nigra "Italica"	Mat	Good	A large dominant tree within group. No visible defects.	No action nessessary	B2	30
251	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear strip. Adjacent building. Good condition with good form. Slight lean to east but not significant.	No action nessessary	B2	30
252	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear strip. Adjacent building. Good condition with no visible defects.	No action nessessary	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
253	Hawthorn Crataegus oxyacanthoides 'Pauls Scarlet'	Juv	Good	Line of three small trees located on grass margin adjacent to driveway. Good condition with no visible defects.	No action nessessary	B2	30
254	Birch Betula pendula	E-mat	Good	Located along grass margin adjacent driveway & building. Good condition with no visible defects.	No action nessessary	B2	30
255	Whitebeam Sorbus aria	E-mat	Good	Located on grass area within group of three trees. Slight area of bark damage to base of tree where a strimmer was used to cut grass. Not significant. Slight lean to east. Minor congestion throughout crown.	Overhaul	B2	30
256	Whitebeam Sorbus aria	E-mat	Good	Located on grass area within group of three trees. Tree leaning to east. Minor conjection throughout crown.	Overhaul	B2	30
257	Whitebeam Sorbus aria	Mat	Good	Located on grass area within group of three trees adjacent path. Slight lean to west but not significant. Minor conjection in crown.	Overhaul	B2	30
258	Flowering cherry Prunus cv.	Mat	Good	Dominant tree within group of four. Large surface roots present common for species. Co dominant from 0.5m with included bark but not significant. Wires running through canopy of tree with bolt embedded in trunk to the north at 3m. Minor conjection through	Overhaul	B2	30
259	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Growth suppressed to southwest. Minor deadwood throughout crown.	Overhaul	B2	30
260	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. No visible defects	No action nessessary	B2	30
261	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. No visible defects	No action nessessary	B2	30
262	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with. Minor deadwood in crown.	Overhaul	B2	30
263	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. No visible defects	No action nessessary	B2	30
264	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. Minor deadwood in crown.	Overhaul	B2	30
265	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. Minor deadwood in crown.	Overhaul	B2	30
266	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition. One stem lost in upper crown due to storm damage. Minor deadwood in crown.	Overhaul	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
267	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. Minor deadwood in crown.	Overhaul	B2	30
268	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. Minor deadwood in crown.	Overhaul	B2	30
269	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Multi stemmed from 1m. Minor deadwood in crown.	Overhaul	B2	30
270	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. Minor deadwood in crown.	Overhaul	B2	30
271	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. Minor deadwood in crown.	Overhaul	B2	30
272	Lombardy poplar Populus nigra "Italica"	Mat	Poor	Large tree located along Grangegorman rd as part of linear planting. Large cavity at base of tree to east. Decay present. Unsafe to keep in current environment.	Fell	R	<10
273	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. Minor deadwood in crown.	Overhaul	B2	30
274	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. Minor deadwood in crown.	Overhaul	B2	30
275	Lombardy poplar Populus nigra "Italica"	Mat	Good	Large tree located along Grangegorman rd as part of linear planting. Good condition with well balanced crown. Minor deadwood in crown.	Overhaul	B2	30
276	Purple beech Fagus sylvatica "Purpurea"	E-mat	Good	Located on grass area adjacent to driveway. Good condition with well balanced crown. Co dominant from 1m. Slightly congested.	Overhaul	B2	30
277	Common lime Tilia x europaea	Mat	Good	Located on grass area adjacent pedestrian path & building. Good condition with well balanced crown. Co dominant from 1m. Minor congestion throughout crown.	Overhaul	B2	30
278	Hawthorn Crataegus oxyacanthoides 'Pauls Scarlet'	Mat	Poor	Part of a linear strip of three trees along edge of building. Crown dead with few regrowths along northern side.	Fell	R	<10
279	Hawthorn Crataegus oxyacanthoides 'Pauls Scarlet'	Mat	Good	Good condition with slight lean to east but not significant. Co dominant from 0.2m with included bark. Slight area of bark damage has occurred 0.5m north where a stem has split. This branch has the potential to fail in the future. Minor congestion throughout crown.	Overhaul	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
280	Hawthorn <i>Crataegus oxyacanthoides</i> 'Pauls Scarlet'	Mat	Good	Stem kinked to the east from base. Not significant. Co dominant from 0.5m where union between stems weak and failure inevitable. Minor congestion throughout crown.	Fell	R	<10
281	Beech <i>Fagus sylvatica</i>	Mat	Good	Mature tree located in grass area as part of a group of four trees. Well balanced crown with minor congestion.	Overhaul	B2	30
282	Purple beech <i>Fagus sylvatica</i> "Purpurea"	Mat	Good	Mature tree located in grass area as part of a group of four trees. Crown composed of four large stems. No visible defects.	No action necessary	B2	30
283	Common lime <i>Tilia x europaea</i>	Mat	Good	Mature tree located on grass area as part of a group of four trees. Multi stemmed from 1m with included bark. Not significant. Minor branch congestion throughout crown.	Overhaul	B2	30
284	Common lime <i>Tilia x europaea</i>	Mat	Good	Mature tree located on grass area as part of a group of four trees. Co dominant from 0.5m. Canopy growing through surrounding trees. Minor branch congestion throughout crown.	Overhaul	B2	30
285	Weeping willow <i>Salix alba</i> "Tristis"	Mat	Good	Large tree growing on grass area in front of building. Good condition with well balanced crown. No visible defects.	No action necessary	B2	30
286	Mountain ash <i>Sorbus aucuparia</i>	Mat	Fair	Group of three trees located on grass area in front of building. Multi stemmed from base. Damage has occurred to the base of all trees possibly due to lawnmowers. Minor congestion present.	Overhaul	C2	20
287	Norway maple <i>Acer platanoides</i>	Juv	Fair	Juvenile tree with cavity 0.5m to the west. Decay present. Longterm potential limited.	Fell	R	<10
288	Norway maple <i>Acer platanoides</i> 'Drummondii'	Juv	Fair	Juvenile tree located on grass margin. Growth suppressed to the east due to surrounding trees. Co-dominant from 1.5m. Slight lean to north. Slight congestion throughout crown.	Overhaul	B2	30
289	Norway maple <i>Acer platanoides</i> "Crimson king"	Juv	Good	Juvenile tree located on grass margin adjacent carpark. Slight lean to north. Not significant. Minor congestion throughout crown.	Overhaul	B2	30
290	Norway maple <i>Acer platanoides</i>	Juv	Fair	Juvenile tree located on grass margin adjacent carpark. Growth rather sparse. Minor congestion throughout crown. Formative pruning could improve form.	Overhaul	B2	30
291	Norway maple <i>Acer platanoides</i> "Crimson king"	Juv	Good	Good condition with well balanced crown. Area of bark damage has occurred to the base of tree to the west. Bark has been stripped. Minor congestion throughout crown.	Overhaul	B2	30
292	Norway maple <i>Acer platanoides</i> "Crimson king"	Juv	Good	Good condition. Base of tree damaged by lawnmower but not significant.	No action necessary	B2	30
293	Himalayan birch <i>Betula utilis</i> var 'Jacquemontii'	Juv	Good	Good condition with no visible defects.	No action necessary	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
294	Norway maple Acer platanoides	Juv	Good	Good condition. Damage has occurred at 2m to the east where a branch has fallen off. Area free from decay at present.	Overhaul	B2	30
295	Norway maple Acer platanoides 'Drummondii'	Juv	Fair	Juvenile tree located on grass margin adjacent carpark. Crown rather light due to the removal of branches 2.5m to the east.	Carry out formative pruning	B2	30
296	Norway maple Acer platanoides 'Drummondii'	Juv	Good	Good condition with well balanced crown. Small area of bark damage to the base of tree to the south. Minor branch congestion throughout crown.	Overhaul	B2	30
297	Norway maple Acer platanoides "Crimson king"	Juv	Good	Good condition with no visible defects.	No action necessary	B2	30
298	Norway maple Acer platanoides 'Drummondii'	Juv	Fair	Young tree with bark damage at the base of the tree to the east. Decay present. Long-term potential limited.	Fell	R	<10
299	Norway maple Acer platanoides	Juv	Good	Good condition with well balanced crown. Slight kink in trunk at 1m to south . Not significant. Minor branch congestion throughout crown.	Overhaul	B2	30
300	Norway maple Acer platanoides	Juv	Good	Good condition with well balanced crown. Slight kink in trunk at 1m to south . Not significant. Minor congestion throughout crown.	Overhaul	B2	30
301	Norway maple Acer platanoides 'Drummondii'	Juv	Good	Located within carpark margin. A relatively sparse specimen with minor branch congestion throughout crown.	Overhaul	B2	40
302	Norway maple Acer platanoides "Crimson king"	Juv	Good	Located within carpark margin. A relatively sparse specimen with minor branch congestion throughout crown.	Overhaul	B2	40
303	Himalayan birch Betula utilis var 'Jacquemontii'	Juv	Good	A well developed tree in carpark margin. No visible defects	No action necessary	B2	40
304	Himalayan birch Betula utilis var 'Jacquemontii'	Juv	Good	A well developed tree in carpark margin. No visible defects	No action necessary	B2	40
305	Monterey Cypress Cupressus macrocarpa	Mat	Fair	Located within an open situation with crown somewhat sparse due to exposure to westerly winds. Some stem breakage has occurred and light suppressed deadwood is scattered throughout crown. Bark damage has resulted in the failure of a large lateral stem on west side.	Overhaul	B2	40
306	Sycamore Acer psedoplatanus	E-mat	Good	A self seeded multi-stemmed specimen at base of wall to bowling green. Co-dominant from 0.5m. No visible defects.	No action necessary	C2	40
307	Bird cherry Prunus avium	Mat	Fair	A self-seeded specimen located at base of perimeter fence to bowling green. Multi stemmed from base. Of limited merit as a tree.	No action necessary	C2	20
308	Bird cherry Prunus avium	Mat	Fair	Extensive basal decay present. Long-term potential outside current environment very limited.	Fell	R	<10
309	Birch Betula pendula	Mat	Good	A well developed tree at edge of forming bowling green. No visible defects.	No action necessary	B2	40



Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
310	Maple Acer sp.	Mat	Good	A short tree multi stemmed from 1.25m. Extensive root suckering present beneath crown. A well developed tree with merit as a specimen tree.	No action necessary	B2	40
311	Sycamore Acer pseudoplatanus	E-mat	Good	A self-seeded specimen located at edge of open space area. A large basal stem competing with main tree. Form of remaining tree relatively good.	Carry out formative pruning	C2	30
312	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen growing within a neglected hedge. No visible defects.	No action necessary	S2	40
313	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen growing within a neglected hedge. No visible defects.	No action necessary	S2	40
314	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen adjacent to footpath. No visible defects.	No action necessary	S2	40
315	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen adjacent to footpath. No visible defects.	No action necessary	S2	40
316	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen adjacent to footpath. No visible defects.	No action necessary	S2	40
317	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen adjacent to footpath. No visible defects.	No action necessary	S2	40
318	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen with an area of decay present in centre where a central stem has been lost. Decay not significant.	No action necessary	S2	40
319	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen adjacent to footpath. No visible defects.	No action necessary	S2	40
320	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen with an area of decay present in centre where a central stem has been lost. Decay not significant.	No action necessary	S2	40
Tag 321 not in use							
322	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen adjacent to footpath. No visible defects.	No action necessary	S2	40
323	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen adjacent to footpath. No visible defects.	No action necessary	S2	40
324	Cordyline Cordyline australis	Mat	Good	A single stemmed specimen. No visible defects.	No action necessary	C2	30
325	Cordyline Cordyline australis	Mat	Good	A multi stemmed specimen. No visible defects.	No action necessary	C2	30
326	Ash Fraxinus excelsior	Mat	Good	Large tree located in overgrown area of giant hogweed. Well balanced crown with some storm damage in upper canopy to the east. Minor deadwood in crown. Ivy growing up trunk.	Overhaul	A2	40

Tags 327-328 not in use

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
329	Bird cherry Prunus avium	Mat	Fair	A large mature specimen located within a grass margin in the carpark. Multi stemmed from 3m with narrow unions between stems. Crown somewhat congested with minor branches. Overhaul.	Overhaul	B2	30
330	Ash Fraxinus excelsior "Jaspidaea"	Juv	Fair	A small domed tree without a defined leader. Located within lawn area.	Carry out formative pruning	B2	30
331	Sycamore Acer psedoplatanus	Mat	Fair	A group of stems from the base of a tree now lost. Forming a self supporting group at present but with limited long term potential.	No action necessary	C2	<20
332	Horse chestnut Aesculus hippocastum	Mat	Fair	Located within grass area to rear of buildings. Evidence of root girdling at base of tree. Upper crown a little sparse indicating early decline. Multi-stemmed from 1.5m with an extensive area of included bark between two stems to east. Large pruning cuts have been made to raise canopy and have lead to localised decay. A tree of limited merit and long term potential.	No action necessary	C2	<20
333	Sycamore Acer psedoplatanus	Mat	Good	A slender tree with a vertical branch framework arising from 2 main stems from 2m. Crown raising and branch loss has occurred on the north side to 2m and has resulted in a number of areas of localised decay. These are not significant at present but do shorten the long-term potential for the tree. A relatively large branch to north has extensive decay and a large crack and should be removed. Upper crown appears free of defects.	No action necessary	B2	30
334	Sycamore Acer psedoplatanus	E-mat	Good	Co-dominant from 0.5m with a wide union between stems. A dominant tree within group with no visible defects. Could benefit from formative pruning.	Overhaul	B2	30
335	Sycamore Acer psedoplatanus	Juv	Poor	A poorly developed sub-dominant tree with limited merit and long term potential.	No action necessary	C2	15-20
336	Sycamore Acer psedoplatanus	E-mat	Good	Forming an element of upper canopy and relatively well developed.	Overhaul	B2	30
337	Sycamore Acer psedoplatanus	E-mat	Poor	A poorly formed specimen at edge of planting. Wire embedded in trunk. Co dominant from 4m. Of limited long term potential.	Remove stake and cut wire	C2	15-20
338	Sycamore Acer psedoplatanus	Juv	Poor	A three-stemmed specimen forming an element of upper canopy. Extensive area of included bark between stems. A slender tree of poor form and limited potential.	No action necessary	C2	15-20
339	Sycamore Acer psedoplatanus	Juv	Poor	A slender sub dominant suppressed tree. Tree tie embedded in trunk.	Fell	R	<10
340	Sycamore Acer psedoplatanus	E-mat	Good	A well developed tree forming an element of upper canopy. Co-dominant from 3m with a wide union between stems. No visible defects in upper crown.	No action necessary	B2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
341	Sycamore Acer psedoplatanus	Juv	Good	A tall slender tree with a dead basal stem. Crown development somewhat restricted due to presence of 343. A minor bark abrasion present at 1m on southern side with localised decay.	Remove basal stem	B2	40
342	Sycamore Acer psedoplatanus	Juv	Poor	Three stemmed from base with central stem dead. Remaining tree forming an element of upper canopy.	Remove basal stem	B2	40
343	Sycamore Acer psedoplatanus	E-mat	Good	A dominant tree within group. Well developed with no visible defects.	No action necessary.	B2	>40
344	Sycamore Acer psedoplatanus	E-mat	Fair	A well developed tree forming an element of upper canopy. Stake causing damage to bark.	Remove stake	B2	40
345	Sycamore Acer psedoplatanus	E-mat	Good	A tall slender tree forming an element of upper canopy. Three stemmed from 300mm. Central stem dead. Remaining two stems heavily covered in ivy making assessment difficult.	Cut ivy	B2	40
346	Sycamore Acer psedoplatanus	E-mat	Good	A dominant tree within group. Very heavy ivy growth making assessment impossible. No visible defects.	Cut ivy	B2	40
347	Cotoneaster Cotoneaster salicifolia	Mat	Fair	A line of mature shrubs somewhat overgrown and neglected. Minor decay present in most shrubs.	Overhaul	S2	20
348	Cotoneaster Cotoneaster salicifolia	Mat	Fair	A line of mature shrubs somewhat overgrown and neglected. Minor decay present in most shrubs.	Overhaul	S2	20
349-352	Lombardy poplar Populus nigra "Italica"	Mat	Mixed	These trees are located on the southern and eastern boundaries with the bus depot. Huge amounts of rubble now overgrown was placed in this area and up to the base of the trees. Groups 349 & 351 appear to be unaffected and are in good condition with minor deadwood in a number of cases. Groups 350 & 352 are dead and dying.	Remove groups 350 & 351 Overhaul remaining.	B2 & R	20
353	Sycamore Acer psedoplatanus	Mat	Good	Large mature tree located along boundary wall forming an element of screening at present. Slight lean to east but not significant. Small cavity at base of tree to the west. Storm damage has occurred at 2.5m where branches have fallen off. Decay present but not significant. Minor conjection throughout crown.	Overhaul	A2	40
354	Sycamore Acer psedoplatanus	Mat	Good	Large mature tree located along boundary wall forming an element of screening at present. Very heavy ivy growth up trunk obscuring view for assessment. Good condition with well balanced crown. Minor conjection throughout crown. Minor deadwood throughout crown.	Overhaul	A2	40
355	Sycamore Acer psedoplatanus	Mat	Good	A large mature tree located along boundary wall forming an element of screening at present. Slight lean to east but not significant. Minor deadwood in crown. Minor conjection throughout crown.	Overhaul	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
356	Sycamore Acer psedoplatanus	Mat	Fair	A large tree located along boundary forming an element of screening at present. Large area of decay present at the base of tree to the south. Deadwood throughout crown associated with decay. Canopy consists of three large limbs. Growth rather sparse throughout crown. Longterm potential limited.	Fell	R	<10
357	Sycamore Acer psedoplatanus	Mat	Fair	Large tree located along boundary forming an element of screening at present. Large area of decay present at the base of tree to the east. Deadwood throughout crown associated with decay. Slight lean to east. Minor storm damage to the east at 2.5m	Fell	R	<10
358	Sycamore Acer psedoplatanus	Mat	Fair	Located at the base of boundary wall forming an element of screening at present. Co dominant from 1.5m. Growth suppressed due to surrounding trees. Branches leaning over wall to the south have been pruned. No visible defects.	No action nessessary	C2	25
359	Sycamore Acer psedoplatanus	Juv	Fair	Located along boundary wall forming an element of screening at present. Pruning has occured to the south. Ivy growth up trunk. Minor conjestion.	Overhaul	C2	
360	Sycamore Acer psedoplatanus	Mat	Good	Mature tree located along boundary wall forming an element of screening at present. Recently pruned to the south. Minor deadwood in crown.	Overhaul	B2	30
361	Horse chestnut Aesculus hippocastum	Mat	Good	Large mature tree with well balanced crown. Canopy consists of three large limbs at 2m. Small pocket of decay present to the north at 0.5m. Not significant.	Overhaul	B2	30
362	Cotoneaster Cotoneaster salicifolia	Mat	Good	Mature shrub along boundary wall forming an element of screening at present. Congested. Multi stemmed from base.	Overhaul	S2	20
363	Cotoneaster Cotoneaster salicifolia	Mat	Good	Mature shrub along boundary wall forming an element of screening at present. Congested. Multi stemmed from base.	Overhaul	S2	20
364	Elm Ulmus glabra	Mat	Good	Mature tree located along boundary forming an element of screening at present. Co dominant from base. Slight lean to the north. Not significant. Minor congestion throughout crown.	Overhaul	B2	30
365	Common lime Tilia x europaea	Mat	Good	Mature tree located on grass area adjacent to path. Suckers from base. Good condition with well balanced crown. Storm damage has occured to limb at 5m to the west. Not significant. Minor congestion throughout crown.	Overhaul	A2	40
366	Sycamore Acer psedoplatanus	Mat	Good	Mature tree located along boundary wall forming an element of screening at present. Very heavy ivy growth up trunk obscuring view for assessment. Multi stemmed from 1m. Well balanced crown.	Cut ivy and reassess.	A2	40
367	Elm Ulmus glabra	Mat	Good	Located along base of boundary wall forming an element of screening at present. Co dominant from 0.5m. Branches growing from base. Minor conjestion throughout crown.	Overhaul	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
368	Common lime <i>Tilia x europaea</i>	Mat	Good	Mature tree located along boundary wall forming an element of screening at present. Good condition with well balanced crown. Minor deadwood and minor congestion throughout crown. Damage has occurred to limb at 4.5m to the east with further damage possible.	Overhaul	A2	40
369	Sycamore <i>Acer pseudoplatanus</i>	Mat	Poor	Mature tree located along boundary wall. Tree co dominant from 3m. Half of the crown to the west is dead while half the crown to the east is in leaf but extremely sparse. No damage appears to have occurred to the tree.	Fell	R	<10
370	Elm <i>Ulmus glabra</i>	Mat	Good	Located along base of boundary wall forming an element of screening at present. Good condition. Minor congestion throughout crown.	Overhaul	B2	30
371	Ash <i>Fraxinus excelsior</i>	Mat	Good	Mature tree located along boundary wall forming an element of screening at present. Debris dumped around base of tree. Growth suppressed to the north as a result of tree 372. Recently built wall to the west which may have damaged roots to facilitate foundations. Branches extended over wall to the west. Minor deadwood in crown. Minor congestion throughout crown. Limb lost to the west at 5m, no decay present.	Overhaul	B2	30
372	Sycamore <i>Acer pseudoplatanus</i>	Mat	Good	Mature tree located along boundary forming an element of screening at present. Good condition with well balanced crown. Co dominant from 2m. Minor congestion throughout crown. Minor deadwood in crown.	Overhaul	A2	40
373	Ash <i>Fraxinus excelsior</i>	Mat	Good	Mature tree located along boundary forming an element of screening at present. Co dominant from 2m. Staining evident at this point, which could be an indicator of internal decay. Cavity present at this point to the south. Wide union between stems. Potential to fail in the future. Deadwood throughout crown.	Overhaul	B2	30
374	Ash <i>Fraxinus excelsior</i>	Mat	Good	Mature tree located along boundary forming an element of screening at present. Suckers from base. Co dominant from 2m. Good condition with well balanced crown. Damage has occurred to limb at 3m to the east, where a branch has fallen off and stub remains.	Overhaul	A2	40
375	Yew <i>Taxus baccata</i>	Mat	Good	Mature tree located along boundary forming an element of screening at present. Co dominant from 0.5m. Minor congestion throughout crown. Minor deadwood in crown. Ivy growing up trunk.	Overhaul	A2	40
376	Horse chestnut <i>Aesculus hippocastum</i>	Mat	Good	Mature tree located along boundary wall forming an element of screening at present. Crown composed of three large limbs from 1.5m. Good condition with well balanced crown. Minor congestion throughout crown.	Overhaul	A2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
377	Horse chestnut <i>Aesculus hippocastum</i>	Mat	Good	Mature tree located along boundary wall forming an element of screening at present. Co dominant from 0.5m. Ivy growing up trunk. Small cavity present to the east at 4.5m. Not significant. Minor deadwood throughout crown.	Overhaul	A2	40
378	Horse chestnut <i>Aesculus hippocastum</i>	Mat	Good	Mature tree located along boundary wall forming an element of screening at present. Co dominant from 0.5m with included bark. Good condition with well balanced crown. Cavity present to the south at 2m, decay present but not significant at present.	Overhaul	B2	40
379-388	Cotoneaster <i>Cotoneaster salicifolia</i>	Mat	Fair	Two lines of shrubs which possibly formed an element of an avenue in the past. The plants have not been managed in recent times and have become leggy and swamped in ivy. They have some merit as they are large specimens. All contain extensive deadwood and are in need of total overhauls	Cut ivy and overhaul	S2	20
389	Mountain ash <i>Sorbus aucuparia</i> cv.	Mat	Fair	A large specimen located on western boundary of nursing school. Co-dominant from 0.5m with a large area of included bark. Heavy ivy growth up trunk obscuring view for assessment. Minor deadwood scattered throughout crown. A pocket of decay present in eastern stem at 2m but unlikely to be significant at present.	Cut ivy and overhaul	B2	20
390	Purple plum <i>Prunus cerasifera pissardii</i> 'Nigra'	Juv	Fair	Located along boundary wall within shrub area forming an element of screening at present. Co dominant from 1m with included bark. Branches extending over railings to the west. Minor congestion throughout crown.	Overhaul	B2	30
391	Sycamore <i>Acer pseudoplatanus</i>	Mat	Good	A well developed tree with a slight lean toward building. No visible defects.	No action necessary	B2	30

Tags 392 - 516 not in use

517	Cherry <i>Prunus serrulata</i>	Mat	Good	Mature tree with majority of growth to the south. Damage to bark 1m up trunk on eastern side where minor decay is present. Minor congestion in upper crown with damage to branches occurring due to rubbing. Areas of minor decay present on eastern side where branches have been lost. Not significant.	Overhaul	B2	30
519	Norway maple <i>Acer platanoides</i>	Mat	Good	Mature tree with slight lean to the south. Not significant. Suckers present from base. Large area of damaged bark at the base of tree to the north. Decay is evident at this point with fungal fruiting bodies present. Minor congestion in upper crown. Minor decay present where stubs have remained after past pruning. Included bark located on branch on western side of tree. Not significant	Overhaul	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
520	Birch Betula pendula	Mat	Good	Mature birch in good condition. Utility works have taken place and footpath surrounding tree has been replaced. Tree leaning to the south at 2m. Not Significant.	No action necessary	B2	30
Tags 520 - 531 in use							
531	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
532	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
533	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
534	Lombardy poplar Populus nigra "Italica"	Mat	Good	Located within avenue. Small pockets of decay present in base but not significant at present.	Deadwood	B2	30
535	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen with avenue. Co-dominant from 1.25 with a tight union between stems. Small pockets of bark damage present in base but not significant at present.	Deadwood	B2	30
536	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed tree with decay present in base. Not significant at present but should be monitored.	Monitor decay development	B2	30
537	Lombardy poplar Populus nigra "Italica"	Mat	Good	Stump.	Fell	R	0
538	Lombardy poplar Populus nigra "Italica"	Mat	Good	Located within avenue. Small pockets of decay present in base but not significant at present.	Deadwood	B2	20
539	Balsam poplar Populus balsamifera	Mat	Good	Probably mistaken at planting time for Lombardy Poplar. Heavy ivy growth up trunk obscuring view for assessment. Upper crown with typical wide spreading habit. Minor light suppressed deadwood present in crown.	Cut ivy and deadwood	B2	30
540	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
541	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
542	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
543	Lombardy poplar Populus nigra "Italica"	Mat	Good	Co-dominant from 2.5m with a wide union between stems. Partial failure of one stem. Remaining stems well developed.	Deadwood	B2	20
544	Lombardy poplar Populus nigra "Italica"	Mat	Good	Multi-stemmed from 2m with partial failure of one stem. Remaining crown well developed.	Deadwood	B2	20
545	Lombardy poplar Populus nigra "Italica"	Mat	Good	Partial failure main stem. Remaining stems well developed.	Deadwood and monitor for decay development	B2	15-20
546	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
547	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
548	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
549	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
550	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
551	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
552	Lombardy poplar Populus nigra "Italica"	Mat	Good	Co-dominant from 4m with a wide union between stems. Minor light suppressed deadwood present.	Deadwood	B2	30
553	Lombardy poplar Populus nigra "Italica"	Mat	Good	Co-dominant from 1m with a wide union between stems. Minor pocket of decay at point of branch removal on south side at 1m but not significant at present. Minor light suppressed deadwood present.	Deadwood	B2	30
554	Lombardy poplar Populus nigra "Italica"	Mat	Good	Basal decay present but not significant at present. Minor light suppressed deadwood in crown	Deadwood	B2	20
555	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present in crown.	Deadwood	B2	30



Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
556	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present in crown. Basal decay present but not significant at present.	Deadwood	B2	20
557	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
558	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
559	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
560	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
561	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
562	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
563	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
564	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
565	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present. Basal decay present but not significant at present.	Deadwood and monitor decay development	B2	20
566	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
567	Lombardy poplar Populus nigra "Italica"	Mat	Good	A relatively well developed specimen within avenue. Minor light suppressed deadwood present.	Deadwood	B2	30
568	Lombardy poplar Populus nigra "Italica"	Mat	Good	A pocket of decay in trunk at 1m to west but not significant at present.	Deadwood and monitor decay development	B2	20

Tags 569 - 759 not in use

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
760	Sycamore Acer psedoplatanus	Mat	Good	Mature tree located on grass mound adjacent to driveway. Co dominant from base. Small pockets of decay present at the base of tree to the south. Not significant at present. Trunk leaning to the east but not significantly. Minor deadwood throughout crown. Minor congestion throughout crown.	Overhaul	B2	30
761	Horse chestnut Aesculus hippocastum	Mat	Good	Crown composed of three large limbs from 0.5m. Area of localised decay to the bark at 0.5m to the west. Cracking and loosening of bark associated with bleeding canker has occurred but is not significant at present. Small area of decay present at base of tree to the south. Cavity present with decay to the east at 2m. Not significant at present. Minor congestion throughout crown. Minor deadwood in crown.	Overhaul	B2	30
762	Horse chestnut Aesculus hippocastum	Mat	Good	Suckers from base. Damage has occurred to limb where the branch has ripped while being pruned. Congestion throughout crown.	Overhaul	B2	30
763	Horse chestnut Aesculus hippocastum	Mat	Good	Good condition with well balanced crown. Minor congestion throughout crown. Stubs remaining from past pruning.	Overhaul	B2	30
764	Horse chestnut Aesculus hippocastum	Mat	Good	Crown composed of three large limbs from 1m. Minor congestion and deadwood throughout crown.	Overhaul	B2	30
765	Horse chestnut Aesculus hippocastum	Mat	Good	Slight lean to the east. Stubs remaining due to past pruning. Deadwood and minor congestion throughout crown.	Overhaul	B2	30
766	Horse chestnut Aesculus hippocastum	Mat	Good	Pruning has been carried out in the past. Fallen branches throughout crown. Damage has occurred to limb to the west at 7m where the bark appears to be cracking. Not significant at present. Deadwood and minor congestion throughout crown.	Overhaul	B2	30
767	Horse chestnut Aesculus hippocastum	Mat	Good	Located along road way as part of a linear strip of poplar & horse chestnut. Good condition with well balanced crown. Minor congestion throughout crown. Recent pruning has been carried out.	Overhaul	B2	30
768	Horse chestnut Aesculus hippocastum	Mat	Good	Suckers from base. Area of bark damage to the north at 2m, where a branch has torn away from the main stem. Small cavities present at points of past pruning. Not significant at present. Minor congestion throughout crown. Minor deadwood throughout crown.	Overhaul	B2	30
769	Horse chestnut Aesculus hippocastum	Mat	Good	Suckers from base. Co dominant from 1m. Stubs remaining from past pruning. Minor congestion throughout crown.	Overhaul	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
770	Horse chestnut Aesculus hippocastum	Mat	Good	Co dominant from 1m with included bark but not significant. Pruning has been carried out in the past. Large limb removed to the south at 1m. Minor congestion throughout crown. Minor deadwood throughout crown.	Overhaul	B2	30
771	Horse chestnut Aesculus hippocastum	Mat	Fair	Co dominant from 1.5m. Forked branch to the south at 1.5m with included bark. Cracking has occurred to limb at this point and should be removed. Bark has been damaged at this point in the past. Minor congestion throughout crown.	Overhaul	B2	30
772	Horse chestnut Aesculus hippocastum	Mat	Poor	Co-dominant from 1m. Crown composed of three large limbs. Suckers from base. Damage has occurred to limb to the south at 7m where branch has fallen off. Not significant. Crown rather sparse.	Overhaul	C2	25
773	Horse chestnut Aesculus hippocastum	Mat	Poor	Large limb lost at base of tree to the east. Poor crown formation. Long-term potential limited.	Fell	R	<10
774	Horse chestnut Aesculus hippocastum	Mat	Poor	Tree leaning to the west but not significant. Pruning has occurred in the past. Cavity present with decay to the north at 3m but not significant at present. Minor congestion throughout crown.	Overhaul	C2	25
775	Horse chestnut Aesculus hippocastum	Mat	Good	Co-dominant from 1.5m with included bark. Not significant. Pruning has occurred in the past. Suckers from base. Minor congestion throughout crown.	Overhaul	B2	30
776	Horse chestnut Aesculus hippocastum	Mat	Good	Pruning has occurred in the past. Area of damage has occurred to stem at 2m to the west where a pruning cut was made half way into stem and left without removal. Branch topped further up stem. Minor congestion throughout crown.	Overhaul	B2	30
777	Horse chestnut Aesculus hippocastum	Mat	Good	Located along building adjacent to football pitches. Good condition with well balanced crown. Large limb removed to the south at 3m where included bark was present. Area of decay present at past pruning cut to the north at 3m. Not significant. Minor congestion throughout crown.	Overhaul	B2	30
778	Horse chestnut Aesculus hippocastum	Mat	Good	Located along building adjacent carpark to football pitches. Good condition with well balanced crown. Slight lean to south. Not significant. Co dominant from 1m. Crown composed of two large limbs with included bark. Not significant. Minor congestion throughout crown.	Overhaul	B2	30
779	Horse chestnut Aesculus hippocastum	Mat	Good	Co dominant from 0.5m with wide union. Minor deadwood throughout crown. Minor congestion throughout crown.	Overhaul	B2	30
780	Horse chestnut Aesculus hippocastum	Mat	Good	Co dominant from 1.5m. Stem removed to the east at 1m. Minor congestion throughout crown. Minor deadwood throughout crown.	Overhaul	B2	30

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
781	Horse chestnut Aesculus hippocastum	Mat	Good	Co dominant from 2m with included bark. Potential weak area at this point. Area of decay present to the south at 1.5m at point of past pruning. Minor congestion throughout crown. Slight lean to south. Not significant.	Overhaul	B2	30
782	Horse chestnut Aesculus hippocastum	Mat	Fair	Large dead limb from neighboring poplar located between two stems to the west at 2m. Damage has occurred to the south canopy due to fallen limb. Cavity present to the north at 1.6m but not significant. Stubs remaining from fallen branches. Minor congestion throughout crown.	Overhaul	C2	25
783	Horse chestnut Aesculus hippocastum	Mat	Good	Generally in good condition. Stubs remaining from past pruning. Large branch from neighboring poplar extending into canopy. Minor congestion throughout crown.	Overhaul	B2	30
784	Horse chestnut Aesculus hippocastum	Mat	Poor	Growth suppressed due to surrounding trees. Minor congestion throughout crown.	Overhaul	C2	25
785	Horse chestnut Aesculus hippocastum	Mat	Good	Crown composed of three large limbs from 1m. Stubs remaining from points of past pruning. Minor congestion throughout crown.	Overhaul	B2	30
786	Horse chestnut Aesculus hippocastum	Mat	Good	Slight kink in trunk at 1.5m but not significant. Minor congestion throughout crown.	Overhaul	B2	30
787	Horse chestnut Aesculus hippocastum	Mat	Good	Co dominant from 1m. Slight lean to south. Not significant. Suckers from base. Stubs remaining from points of past pruning. Minor congestion throughout crown.	Overhaul	B2	30
788	Horse chestnut Aesculus hippocastum	Mat	Fair	A relatively well developed tree with minor congestion throughout crown.	Overhaul	B2	30
789	Horse chestnut Aesculus hippocastum	Mat	Good	Slight lean to east. Not significant. Decay present at base of tree to the north. Not significant at present. Minor congestion throughout crown.	Overhaul	B2	30
790	Horse chestnut Aesculus hippocastum	Mat	Good	Co dominant from 1m with included bark but not significant. Minor congestion throughout crown.	Overhaul	B2	40
791	Horse chestnut Aesculus hippocastum	Mat	Good	Co dominant from 1m. Stubs remaining from points of past pruning. Minor congestion and deadwood throughout crown.	Overhaul	B2	40
792	Holm oak Quercus ilex	Mat	Good	A large dominant tree in area developed from six stems forming a broad crown. A large pruning cut present at base of one stem to east but associated localised decay not significant. Minor deadwood scattered throughout crown.	Overhaul	A2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
793	Holm oak Quercus ilex	Mat	Fair	A suppressed specimen but still forming an element of upper canopy. A dead stem present from 300mm and minor deadwood scattered throughout crown. Of limited long-term value.	Overhaul	C2	15
794	Holm oak Quercus ilex	Mat	Good	A large dominant specimen formed from three stems. Basal decay present in northern stem but not significant at present. Minor deadwood scattered throughout crown.	Overhaul	A2	40
795	Holm oak Quercus ilex	Mat	Good	A large dominant specimen at southern edge of area. This is a more vertical tree than most with upper crown formed from two main stems. There is an area of included bark between these stems but is not significant in current environment. A lateral stem to south has decay present but is not significant at present. Minor deadwood scattered throughout crown.	Overhaul	A2	40
796	Holm oak Quercus ilex	Mat	Fair	A relatively short tree at southern edge of area forming an element of under canopy. Co-dominant from base with a wide union between stems. Minor deadwood scattered throughout crown.	Overhaul	A2	40
797	Holm oak Quercus ilex	Mat	Poor	A multi stemmed specimen suppressed with crown development forced toward south as a result Extensive decay in base and in all stems up to 3m. No long term potential.	Fell	R	<10
798	Holm oak Quercus ilex	Mat	Poor	A poor specimen suppressed by neighboring trees with growth crown development limited. Multi stemmed from 1.25m with a basal stem also present. All development at an extreme angle to east. A large bracket fungus at base indicating the presence of extensive decay. No long term potential	Fell	R	<10
799	Holm oak Quercus ilex	Mat	Good	A large dominant specimen forming a strong element of upper canopy. Multi-stemmed from base with with tight unions between stems. This is a large extended tree which is reliant on large neighboring trees. A limb to east extending into neighboring trees should be removed.	Remove extended eastern limb.	A2	40
800	Holm oak Quercus ilex	Mat	Good	A large dominant specimen forming an element of upper canopy. Crown mainly concentrated toward east due to competition from surrounding trees Not excessive in current environment. A basal limb is over-extended and leaning on tree identified for removal and should be removed. Minor deadwood scattered throughout crown.	Overhaul and remove basal limb.	A2	40
801	Holm oak Quercus ilex	Mat	Good	A large dominant specimen forming a strong element of upper canopy. Three stemmed from 0.5m with one stem at an extreme angle to east. Remaining tree formed from three vertical stems. Minor deadwood scattered throughout crown.	Overhaul and remove basal limb.	A2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
802	Holm oak <i>Quercus ilex</i>	Mat	Fair	A slender straight specimen formerly co-dominant from base forming an element of upper canopy. No visible defects but tree limited to current environment only. A basal cavity present on north side is relatively extensive.	Fell	R	<10
803	Holm oak <i>Quercus ilex</i>	Mat	Fair	A large dominant specimen at northern edge of area. Several bracket fungus fruit bodies present at base indicating the presence of decay. The significance of decay reduced by extent of shelter present remaining sound wood. Minor deadwood scattered throughout crown.	Overhaul and remove basal limb.	B2	20
804	Holm oak <i>Quercus ilex</i>	Mat	Good	A large dominant specimen forming an element of upper canopy. Multi stemmed from base with wide unions between stems. A number of limbs extended particularly toward west and south. Not significant within current environment. A minor basal stem toward north is dead. Stubs from pruning cuts are present at base but associated localised decay no significant	Overhaul and remove basal limb.	A2	40
805	Holm oak <i>Quercus ilex</i>	Mat	Fair	A multi-stemmed specimen from base forming an element of upper canopy. Development forced toward east due to competition from surrounding trees. A basal stem dead and deadwood scattered throughout crown.	Overhaul and remove basal limb.	B2	30
806	Holm oak <i>Quercus ilex</i>	Mat	Fair	A large multi stemmed specimen only part forming an element of upper canopy with remaining crown forced toward south and forming an element of a lower canopy. Deadwood scattered throughout crown.	Overhaul and remove basal limb.	B2	30
807	Holm oak <i>Quercus ilex</i>	Mat	Fair	A multi stemmed specimen forming an element of both upper and lower canopy with branches screening the southern aspect of the area. A cavity is present at base of northern stem but is not significant at present within current environment.	Overhaul and remove basal limb.	B2	30
808	Sycamore <i>Acer pseudoplatanus</i>	E-mat	Good	A self-seeded specimen in a small former ornamental bed. A straight specimen with a well developed crown. Very heavy ivy growth obscuring view for assessment.	Cut ivy growth	B2	40
809	Larch <i>Larix decidua</i>	Mat	Fair	Planted within a former shrub area. Tip typically wind-sculpted. The tree has a wide spreading crown for species due to a lack of competition from surrounding trees. Very heavy ivy growth obscuring view for assessment.	Cut ivy growth	B2	40
810	Birch <i>Betula pendula</i>	Mat	Good	A well developed tree within a lawn area to north of hospital building. No visible defects.	Cut ivy and overhaul	B2	40
811	Purple plum <i>Prunus cerasifera pissardii</i> 'Nigra'	Mat	Poor	A poor specimen in a state of decline with upper crown lost/removed.	Cut ivy	B2	40
812	Bay laurel <i>Laurus nobilis</i>	Mat	Good	A very large specimen multi-stemmed from base. Becoming embedded in railings. Has potential if base cleaned up of poor growth.	No action necessary	B2	40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
813	Lawsons cv Chamaecyparis lawsoniana	E-mat	Good	A well developed cone shaped tree to rear of house. No visible defects	No action necessary	C2	20
814	Apple Malus domestica cv	Mat	Dead		Fell	R	<10
815	Apple Malus domestica cv	Mat	Good	A relatively well developed tree in need of an overhaul to reduce crown congestion.	Overhaul	B2	40
816	Bay laurel Laurus nobilis	Mat	Good	A very large specimen multi stemmed from base. Ivy established up several stems. Extensive basal suckering present.	No action necessary	C2	20
817	Apple Malus domestica cv	Mat	Poor	Sub-dominant to surrounding trees. A large lateral branch dead to west with decay extending into main trunk.	Fell	R	<10
818	Sycamore Acer psedoplatanus	Mat	Good	A self seeded specimen adjacent to boundary wall. Co-dominant from base with compression between stems. No visible defects but of limited value as a tree due to form and position beside wall.	Clean up base	B2	40
819	Apple Malus domestica cv	Mat	Good	A well developed tree with minor pockets of decay consistent with age. Extensive minor branch congestion in crown.	Overhaul	B2	40
820	Apple Malus domestica cv	Mat	Poor	In decline as evidenced by extensive deadwood scattered throughout crown.	Fell	R	<10
821	Sycamore Acer psedoplatanus	Mat	Good	A multi-stemmed self-seeded specimen adjacent boundary wall. Very heavy ivy growth obscuring view for assessment. Long term potential limited due to form and location beside wall.	No action necessary	B2	>40
822	Flowering cherry Prunus cv.	E-mat	Good	A well developed tree in grass area. No visible defects.	Clean up base	B2	40
823	Apple Malus domestica cv	Mat	Good	A relatively well developed tree but becoming smothered in ivy making assessment impossible. No visible defects	No action necessary	C2	10
824	Bird cherry Prunus avium	Mat	Good	A well developed tree growing free of competition. Crown well developed as a result. Minor mower damage to surface present. Very heavy ivy growth obscuring view for assessment. Minor branch congestion throughout crown.	No action necessary	A2	40
825	Common lime Tilia x europaea	Mat	Good	Mature tree located within footpath adjacent to Grangegorman road. Good condition with slight kink in trunk two metres to the east. Not significant. No visible defects.	No action necessary	A2	40
826	Cherry Prunus serrulata	Juv	Good	Juvenile tree located within footpath as part of a linear strip of trees along a cul de sac to Marne Vilas. Good condition with no visible defects.	Remove tree tie	B2	>40

Number	Species	Age	Vigour	Comments	Recommendations	Category	Long-term potential Years
827	Cherry Prunus serrulata	Mat	Good	Mature tree located within footpath as part of a linear strip of trees within cul de sac to Marne Villas. Area of bark damage has occurred 1m to the north. Decay present but not significant at present. Co dominant from 2m with included bark but not significant at present. Minor deadwood throughout crown.	Overhaul	C2	15
828	Cherry Prunus serrulata	Mat	Good	Mature tree located within footpath as part of a linear strip of trees along a cul de sac to Marne Villas. Co dominant from 1.5m with included bark but not significant. Stubs remaining at points of past pruning. Minor deadwood throughout crown.	Overhaul	B2	40
829	Cherry Prunus serrulata	Mat	Good	Mature tree located within footpath as part of a linear strip of trees within cul de sac to Marne Villas. Co dominant from 1.5m with included bark but not significant. Damage has occurred to branch at 2.5m to the north. Decay present but not significant at present. Stubs remaining at points of past pruning.	Overhaul	B2	40
Tags 830 - 997 not in use							
998	Bird cherry Prunus avium	Mat	Fair	A self seeded specimen located up against hospital building. Co-dominant from base with stems inter-twined. Base becoming enmeshed in fence.	Fell	R	<10
999	Bird cherry Prunus avium	Mat	Fair	A multi stemmed specimen with a small shrub to rear of hospital building. Included bark present between stems. A tree of limited merit and long term potential.	No action necessary	C2	20
1000	Sycamore Acer psedoplatanus	Mat	Good	A large tree located 4m from southern side of hospital building. The crown is formed from four vertical stems. The crown is reduced in extent toward south . No visible defects.	No action necessary	A2	40



Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
1	6.5	280	N2, S4, E3, W4	0.2
2	18	990	N7, S8, E7, W8	2
3	15	260 av	N4, S6, E0, W9	4.5
4	15	290 av	N6, S7, E6, W7	3
5	15	200	N4, S4, E3, W5	2.5
6	20	850	N10, S9, E7, W10	2
7	20	350 av	N3, S7, E6, W7	1
8	7	315	N3,S3, E3, W3	0
9	18	1000	N10, S7, E8, W6	2.5
10	16	720	N6, S6, E,6 W6	3
11	12	565	N4, S5, E4, W1	3
12	12	535	N5, S4, E4, W5	3
13	6	190	N5, S4, E5, W3	0
14	18	550	N6, S9, E8, W10	3
15	18	1020	N9, S11, E10, W11	1
16	13	1130	N10, S11, E12, W11	3
17	18	510 av	N9, S7, E8, W9	2
18	5.5	250av	N4,S2, E2, W2	0
19	5.5	250av	N4, S3, E4, W2	0
20	18	1260	N10, S11, E9, W8	2.2
21	19	650 av	N7, S10, E9, W9	3
22	16	960	N12, S10, E12, W10	2
23	18	560	N3, S5, E6, W6	5
24	18	510	N3, S2, E9, W0.5	4.5
25	14	620	N6, S7, E7, W5	6
26	14	450	N7, S5, E4, W6	4
27	14	640 av	N8, S8, E9, W8	2
28	20	910	N8, S8, E5, W7	2.5
29	4.5	283	N4, S4, E2, W5	0
30	6av	450 av	N3, S4, E2, W3	1.5-2
31	20av	600av	N2, S2, E2, W 2	2
32	16	680	N5, S3, E5, W5	2.5
33	20	690	N6, S4, E5, W5	2
34	20	760	N6, S6, E4, W4	2
35	20	520	N6, S5, E2, W2	1.5
36	20	500	N2, S3, E2, W2	1.5
37	20	600	N7, S6, E3, W5	2.5
38	20	700	N9, S8, E6, W3	0.2
39	20	680	N8, S6, E4, W2	0.2
40	20	640	N2, S2, E2, W2	0.2
41	20	660	N8, S1, E6, W0	0.2
42	20	510	N4, S3, E4, W3	0.1
43	18	560	N7, S5, E5, W4	0.1
44	17	670	N4, S5, E4, W3	0.3
45	20	640	N4, S6, E5, W3	0.1
46	9	1099	N2,S2, E2, W2	1.5
47	16	450 av	N5,S7, E5, W6	2
48	16	550 av	N5,S6, E5, W7	2
49	16	400 av	N5,S7, E5, W7	2
50	12	644	N10, S8, E5, W8	2.5
51	11	720	N4, S6, E5, W4	3
52	11	660	N4, S5, E5, 6W	2.5

Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
53	1.8	670	N0, S0, E0, W0	-
54	11	720	N5, S5, E4, W4	3
55	10	690	N3, S4, E5, W5	3
56	8	520	N3, S4, E5, W3	3
57	10	620	N5, S4, E5, W5	3
58	7	350	N3, S3, E3, W2	3
59	9	450	N3, S4, E5, W5	3
60	1.8	480	N0, S0, E0, W0	NA
61	9	430	N3, S4, E5, W4	3
62	9	500	N5, S5, E7, W5	3
63	9	590	N4, S4, E5, W4	1.5
64	8	280	N4, S4, E4, W4	2
65	6	190	N3, S2, E3, W3	1
66	7	430	N4, S4, E4, W4	2
67	11	520	N5, S4, E5, W5	2.5
68	8	500	N5, S5, E5, W3	1
69	8	400	N5, S4, E5, W5	2.5
70	9	500	N4, S5, E4, W5	3
71	8	740	N4, S5, E5, W5	1.5
72	10	496	N5, S4, E4, W3	3
73	11	480	N6, S6, E5, W5	2.5
74	10	590	N5, S4, E3, W4	2.5
75	4	250	N5,S5, E4, W4	0.5
76	16	640	N6, S7, E4, W6	2
77	16	680	N6, S6, E5, W4	0.1
78	16	600	N5, S5, E5, W5	0.1
79	15	300	N2, S3, E3, W4	0.5
80	14	210 av	N3, S3, E3, W3	0.1
81	15	190	N2, S3, E3, W3	2.5
82	16	190 av	N3, S4, E2, W3	0.5
83	16	160 av	N4, S2, E4, W2	0.5
84	16	700	N7, S7, E6, W7	0.1
85	10	270	N3, S2, E4, W3	2
86	12	170	N2, S3, E3, W2	3
87	12	190	N2, S2, E2, W2	3
88	16	660	N5, S7, E7, W5	3.5
89	10	260	N4, S3, E4, W2	2
90	12	230	N3, S2, E3, W2	2
91	18	720	N6, S6, E6, W6	2.5
92	17	710	N4, S7, E6, W6	2
93	9	640	N6, S6, E6, W3	2
94	10	1900	N7, S7, E5, W5	0.1
95	17	1040	N7, S7, E6, W5	2
96	12	470	N5, S6, E5, W6	8
97	13	250	N5, S5, E6, W6	0
98	18	640	N4, S5, E5, W5	2.5
99	18	490 av	N6, S8, E7, W6	2.5
100	18	730	N7, S9, E7, W6	4
101	20	600 av	N3, S12, E11, W10	2.5
102	19	500 av	N8, S2, E5, W10	0.1
103	19	650 av	N10, S8, E9, W7	2.5
Tag number 104 not in use				

Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
105	12	400	N6, S6, E3, W6	2.5
106	16	670	N11, S13, E14, W12	2.5
107	20	1180	N7, S8, E8, W7	2
108	10	240 av	N7, S5, E5, W6	0.5
109	22	460 av	N6, S11, E10, W5	2
110	22	550 av	N10, S10, E5, W6	2.5
111	21	660	N7, S6, E9, W3	2
112	9	160	N3, S4, E3, W4	1
113	19	530 av	N7, S8, E6, W6	2.5
114	15	410	N8, S8, E3, W4	2
115	15	400 av	N10, S8, E3, W4	0.1
116	17	710	N7, S8, E4, W7	2
117	13	650	N7, S9, E4, W7	2
118	7	120 av	N7, S0, E2, W1	0.5
119	18	160 av	N4, S1, E4, W2	0.1
120	18	180 av	N4, S3, E5, W5	0.5
121	14	140 av	N4, S2, E3, W2	0.2
122	17	300 av	N5, S5, E2, W5	0.5
123	10	250	N5, S4, E4, W4	0.1
124	8	250	N4, S5, E3, W3	-
125	7	355	N3, S5, E5, W3	1
126	22	820	N7, S10, E8, W8	0.2
127	5	470	N3, S3, E3, W3	1
128	11	690	N7, S6, E6, W6	0
129	6	245	N2, S2, E2, W2	0
130	7	535	N6, S5, E7, W6	2.5
131	9	620	N5, S7, E6, W5	2.5
132	9	630	N6, S5, E4, W6	2
133	4	470	N3, S3, E3, W3	1.5
134	8	225	N3, S2, E2, W5	0
135	8	520	N3, S3, E4, W3	1.8
136	8	345	N8, S5, E6, W5	0
137	20	930	N7, S7, E7, W6	1
138	7	220	N2, S2, E2, W2	0.2
139	14	135 av	N3, S3, E3, W2	2.5
140	6	560	N4, S6, E4, W5	1.5
141	9	130 av	N5, S3, E4, W3	0.1
142	7	260	N3, S3, E2, W3	0
143	4.5	240	N3, S2, E1, W2	0
144	6	260	N5, S4, E3, W3	1
145	4	180	N2, S3, E3, W2	1.8
146	15	870	N7, S8, E7, W9	3
147	13	1005	N4, S7, E9, W7	3
148	14	1210	N7, S7, E11, W8	3
149	15	865	N6, S4, E9, W10	3
150	15	1805	N9, S10, E9, W9	3
151	5	200	N2, S2, E2, W2	1.8
152	6	365	N5, S4, E4, W4	1.5
153	12	480	N6, S4, E3, W6	0.5
154	18	400 av	N5, S6, E4, W6	0.1
155	12	200 av	N3, S7, E7, W4	0.1
218	5	340	N3, S2, E4, W1	2.5

Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
156	11	730	N4, S6, E6, W5	2.5
157	12	860	N7, S8, E8, W6	2.8
158	8	300	N5, S6, E9, W4	0
159	18	700	N3, S7, E6, W6	2
160	7	250	N6, S4, E7, W4	0
161	8	620	N5, S3, E8, W5	3
162	10	750	N6, S8, E9, W3	3
163	12	620	N7, S5, E8, W5	4.5
164	13	620	N6, S10, E8, W7	0
166	10	840	N6, S7, E6, W7	3
167	10	560	N5, S6, E6, W6	4
168	10	590	N6, S6, E6, W8	1.2
169	9	470	N3, S2, E2, W2	1.5
170	8	440	N4, S6, E4, W4	2
171	17	530	N3, S0, E4, W0	5
172	8	340	N3, S3, E5, W2	2
173	9	250	N5, S4, E2, W6	0.3
174	8	440	N4, S5, E5, W4	0.5
175	17	500	N3, S2, E3, W2	1
176	10	250	N2, S3, E4, W2	1.5
Tag number 177 not in use				
178	11	400	N6, S7, E4, W8	0.5
179	11	280	N4, S6, E2, W2	0.5
180	10	280	N0, S5, E6, W1	1.2
181	9	280	N4, S3, E6, W5	1.2
182	9	500	N4, S2, E7, W3	3
183	11	940	N4, S4, E7, W8	3
184	10	620	N5, S2, E6, W7	3
185	10	870	N2, S8, E8, W10	3
186	6	370	N2, S3, E3, W2	2.5
187	8	250	N3, S2, E3, W2	0
188	6	220	N3, S3, E3, W5	0
189	10	300	N4, S4, E5, W4	0
190	9	220	N3, S4, E4, W3	-
201	12	280	N4, S4, E5, W5	2
202	9	140	N3, S3, E3, W1	2
203	12	750	N5, S5, E5, W6	2.5
204	4	250	N1, S1, E1, W2	3
205	8	200	N2, S4, E4, W2	2.5
206	10	210	N5, S5, E4, W4	1
207	12	500 av	N4, S4, E4, W5	1
208	4	340	N2, S2, E2, W2	2.5
209	4	280	N2, S2, E2, W3	2.5
210	5	780	N6, S5, E9, W8	2
211	9	450	N5, S6, E8, W3	0
212	20	930	N8, S10, E10, W9	2
213	20	820	N7, S9, E9, W8	2
214	12	590	N5, S5, E5, W5	2.5
215	13	400 av	N4, S5, E5, W2	2
216	8	280 av	N5, S7, E7, W4	0.1
217	5	95	N2, S2, E2, W3	2.5
268	23	850	N4, S3, E3, W3	1.5

Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
219	13	710	N9, S0, E6, W7	20
220	13	470	N11, S10, E10, W11	13
221	13	1099	N11, S8, E7, W10	15
222	12	190	N2, S2, E2, W2	5
223	6	500	N6, S5, E5, W7	6
224	6	420	N2, S2, E2, W2	3
225	5	420	N2, S2, E2, W2	2.5
226	4	125	N2, S2, E2, W2	2
227	5	190	N3, S2, E2, W3	3
228	5	280	N2, S2, E2, W2	3
229	4	220	N1, S1, E1, W1	2
230	4	410	N0, S6, E6, W1	5
231	5	290	N3, S3, E3, W3	5
232	13	725	N8, S7, E10, W7	13
233	5	410	N5, S4, E3, W5	6
234	5	490	N4, S1, E5, W6	4
235	6	395	N1, S3, E2, W2	3
236	6	335	N7, S6, E7, W6	9
237	5	320	N2, S2, E2, W2	3
238	6	230	N2, S2, E2, W2	2.5
239	16	890av	N8, S10, E6, W11	17
240	11	380	N4, S6, E5, W4	0.5
241	20	750	N8, S7, E11, W8	2
242	12	270	N4, S4, E4, W4	1
243	22	510	N8, S4, E7, W4	3.5
244	22	500	N0, S12, E6, W12	2
245	20	580	N8, S6, E3, W10	2.5
246	14	800	N5, S5, E5, W10	5
247	20	670	N6, S4, E7, W8	2
248	16	990	N6, S6, E7, W6	3
249	20	930	N3, S4, E3, W3	2
250	20	920	N3, S4, E3, W3	2
251	20	980	N3, S4, E3, W3	2
252	20	950	N3, S3, E3, W3	2
253	20	1010	N3, S3, E3, W3	2
254	5	157	N1, S3, E1, W1	1
255	6	220	N4, S5, E4, W4	2
256	5	220	N3, S4, E4, W3	2
257	5	220	N2, S3, E5, W3	2
258	6	377	N5, S3, E3, W4	2
259	8	550	N7, S6, E7, W6	3
260	24	785	N3, S2, E3, W1	2
261	24	785	N4, S2, E3, W2	2
262	24	785	N4, S3, E3, W2	2
263	23	400	N2, S2, E2, W1	1.5
264	23	850	N2, S2, E2, W2	2
265	23	760	N2, S2, E2, W2	2
266	23	760	N3, S2, E2, W2	1.5
267	23	710	N2, S2, E2, W2	1.5

Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
269	23	870	N4, S3, E4, W2	1.5
270	23	870	N4, S3, E4, W2	1
271	23	820	N4, S3, E3, W3	1.5
272	24	780	N3, S2, E2, W3	2
273	24	780	N2, S2, E2, W2	2
274	23	840	N3, S3, E3, W3	0.5
275	23	840	N2, S2, E2, W2	0.5
276	7	360	N5, S7, E4, W6	0.5
277	10	470	N5, S5, E5, W6	2
278	6	250	N3, S1, E,3 W2	1
279	6	250	N4, S2, E4, W3	1
280	6	250	N2, S3, E2, W3	1
281	8	400	N4, S4, E5, W5	2
282	8	400	N5, S6, E5, W3	2
283	12	400	N4, S,5 E,5 W 4	2
284	12	400	N5, S5, E,4 W 4	2
285	9	310	N2, S4, E3, W5	1.5
286	6	120	N3, S2, E3, W2	0.5
287	5	220	N4, S3, E4, W1	2
288	5	220	N3, S4, E2, W3	2
289	5	220	N3, S2, E2, W2	2
290	5	220	N3, S2, E2, W3	2
291	5	220	N2, S2, E2, W4	2
292	5	220	N3, S3, E4, W3	2
293	5	220	N2, S2, E2, W2	2
294	5	220	N3, S2, E3, W2	2
295	5	220	N4, S3, E3, W3	2
296	5	220	N2, S2, E1, W2	2
297	5	220	N2, S2, E2, W3	2
298	5	220	N3, S2, E3, W3	2
299	5	220	N1, S1, E1, W1	2
300	5	220	N3, S3, E3, W3	2
301	5	220	N1, S2, E1, W2	2
302	5	220	N4, S3, E3, W3	2
303	5	120	N4, S2, E4, W1	2
304	5	120	N2, S2, E2, W3	2
305	20	1005	N6, S6, E8, W5	4
306	9	280	N3, S4, E4, W2	1
307	7	220	N4, S4, E4, W4	1
308	7	610	N5, S6, E8, W4	2
309	9	235	N3, S4, E3, W2	2
310	10	420	N5, S5, E5, W4	1.5
311	11	500	N2, S2, E3, W3	0.5
312	8	150av	N2, S3, E1, W2	4
313	8	150av	N2, S2, E2, W2	4
314	8	150av	N2, S2, E3, W2	4
315	8	150av	N4, S2, E3, W3	4
316	8	150av	N2, S3, E3, W2	4
317	8	150av	N3, S2, E3, W2	4

Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
318	8	150av	N2, S2, E1, W2	4
319	8	150av	N2, S3, E3, W3	4
320	8	150av	N1, S3, E2, W2	4
321	8	150av	N2, S2, E2, W2	4
322	8	150av	N2, S2, E2, W2	4
323	8	150av	N4, S, E,3 W3	4
324	8	150av	N3, S2, E3, W3	4
325	8	150av	N2, S2, E2, W2	4
326	16	973	N12, S10, E11, W9	8
Tags 327 & 328 not in use				
329	8	690	N9, S9, E7, W7	2
330	4	140	N2, S3, E3, W3	1
331	10	200av	N4, S4, E3, W5	0
332	10	680	N6, S6, E6, W6	2
333	13	750	N5, S5, E5, W5	3
334	12	210	N5, S6, E4, W3	3
335	10	140	N2, S1, E1, W2	3.5
336	10	180	N3, S3, E2, W3	3
337	10	230	N2, S2, E2, W3	3
338	10	160	N3, S2, E2, W3	2.5
339	4	70	N1, S1, E1, W1	0
340	10	235	N3, S3, E3, W3	3
341	10	235	N3, S2, E2, W4	3
342	10	175	N2, S3, E4, W2	3
343	12	260	N3, S3, E2, W5	3
344	12	205	N3, S3, E5, W2	2
345	12	225	N3, S4, E3, W3	2
346	12	270	N3, S4, E3, W5	3
347	12	250	N3, S3, E3, W3 av	3
348	12	250	N3, S3, E3, W3 av	2
349	12	420 av	N, S2, E3, W1	0.2 av
350	12	420 av	N2, S2, E2, W2	0.2 av
351	24 av	880 av	N3, S4, E3, W3	2
352	24 av	880 av	N2, S3, E1, W1	2
353	17	745	N6, S6, E6, W6	2
354	14	630	N8, S5, E5, W9	4
355	13	690	N3, S8, E8, W9	5
356	14	850	N10, S8, E11, W12	4
357	12	500	N0, S6, E5, W2	5
358	12	200	N2, S2, E2, W3	4
359	13	230	N0, S0, E0, W0	1
360	11	500	N4, S4, E6, W6	3
361	18	755	N11, S9, E9, W7	5
362	6	95	N1, S4, E1, W3	1
363	6	95	N6, S3, E2, W4	1
364	10	280	N5, S3, E3, W3	2
365	14	440	N7, S6, E7, W7	5
366	18	560 av	N7, S6, E7, W8	x
367	12	785	N6, S4, E5, W2	0.1
368	22	900	N7, S9, E7, W7	0.5
369	17	290	N7, S7, E9, W8	4

Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
370	12	370	N6, S5, E8, W6	1.5
371	21	520	N4, S7, E7, W8	1.5
372	20	850	N8, S5, E8, W8	2
373	20	680	N8, S11, E8, W8	2
374	18	620	N8, S7, E8, W7	2
375	14	420 av	N6, S6, E6, W5	0.5
376	16	570	N4, S8, E7, W9	3
377	19	370 av	N9, S9, E9, W5	2
Tags 378 & 379 not in use				
380	8	400	N4, S3, E5, W5	2
381	8	400	N2, S5, E3, W4	2
382	8	400	N2, S5, E5, W4	2
383	8	400	N5, S4, E4, W4	2
384	8	460	N3, S4, E4, W4	2
385	8	460	N3, S3, E5, W4	2
386	8	460	N3, S2, E4, W5	2
387	8	460	N4, S3, E4, W3	2
388	8	460	N5, S4, E4, W5	2
389	7	460	N6, S5, E4, W2	3
390	7	200	N3, S3, E2, W1	1
391	20	740	N3, S3, E4, W3	4
Tags 392 - 516 not in use				
517	15	360	N2, S5, E4, W2.5	2
518	15	460	N1.5, S1, E5, W2	4
519	11	480	N4, S5, E5, W6	3
Tags 520 - 530 not in use				
531	19	680	N2, S2, E2, W2	4
532	19	610	N2, S2, E2, W2	4
533	19	700	N2, S2, E2, W2	4
534	19	530	N2, S2, E2, W2	5
535	19	640	N2, S2, E2, W2	5
536	19	700	N2, S2, E2, W2	4
537	4	560	NA	Na
538	19	650	N2, S2, E2, W2	8
539	19	840	N5, S6, E6, W4	4
540	19	730	N2, S2, E2, W2	1
541	19	730	N2, S2, E2, W2	4
542	19	670	N2, S2, E2, W2	5
543	19	990	N2, S2, E2, W2	2
544	19	765	N2, S2, E2, W2	6
545	19	850	N2, S2, E2, W2	5
546	19	640	N2, S2, E2, W2	6
547	19	800	N2, S2, E2, W2	1
548	19	1120	N2, S2, E2, W2	4
549	19	860	N2, S2, E2, W2	4
550	19	860	N2, S2, E2, W2	4
551	19	860	N2, S2, E2, W2	4
552	19	710	N2, S2, E2, W2	8
553	19	960	N2, S2, E2, W2	6
554	19	910	N2, S2, E2, W2	3
555	19	780	N2, S2, E2, W2	5

Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
556	19	720	N2, S2, E2, W2	6
557	19	740	N2, S2, E2, W2	6
558	19	720	N2, S2, E2, W2	3
559	19	670	N2, S2, E2, W2	4
560	19	700	N2, S2, E2, W2	6
561	19	740	N2, S2, E2, W2	10
562	19	710	N2, S2, E2, W2	3
563	19	760	N2, S2, E2, W2	3
564	19	810	N2, S2, E2, W2	2
565	19	670	N2, S2, E2, W2	5
566	19	760	N2, S2, E2, W2	3
567	19	790	N2, S2, E2, W2	3
568	19	620	N2, S2, E2, W2	8
Tags 569 - 759 not in use				
760	16	600 av	N7, S4, E6, W7	2
761	17	920	N5,S5,E5,W5	3
762	16	570	N5,S4,E5,W3	3
763	15	590	N5,S4,E7,W5	3
764	16	690	N4,S4,E5,W4	3
765	17	660	N4,S2,E4,W3	3
766	17	960	N5,S4,E5,W5	4
767	14	620	N4,S4,E5,W3	4
768	13	600	N2,S2,E4,W2	4
769	14	740	N4,S4,E5,W4	3
770	16	720	N2,S3,E3,W3	5
771	16	590	N2,S2,E3,W2	2
772	13	770	N3,S1,E3,W4	2
773	12	520	N1,S1,E2,W3	4
774	16	720	N2,S3,E4,W4	6
775	15	570	N4,S4,E4,W4	2
776	15	560	N5,S3,E3,W4	5
777	16	660	N6,S4,E4,W4	4
778	16	770	N5,S5,E5,W5	4
779	16	690	N4,S4,E4,W5	3
780	17	630	N2,S4,E4,W4	4
781	17	660	N3,S4,E3,W3	2
782	13	560	N2,S1,E3,W3	3
783	14	450	N1,S4,E3,W4	2.5
784	5	330	N3,S3,E1,W3	3
785	16	720	N4,S4,E3,W5	4
786	15	350	N3,S3,E2,W3	3
787	15	530	N4,S4,E4,W4	3
788	13	250	N4,S3,E3,W2	3
789	13	330	N4,S3,E3,W4	3
790	13	530	N4,S4,E4,W3	3
791	20	670	N4,S4,E5,W5	3
792	16	500 av	N8, S9, E6, W9	2
793	11	190	N0, S6, E4, W0	0.2
794	17	350	N6, S7, E8, W7	1
795	17	700	N1.5, S6, E6, W6	1

Tree No.	Height m.	D.B.H. mm.	Spread m	Clear Stem
796	12	280av	N0, S4, E3, W4	2.5
797	16	260 av	N0, S10, E6, W3	2.5
798	14	640	N0, S10, E10, W2	0.3
799	18	390 av	N9, S0, E10, W0	2
800	18	520	N3, S1.5, E10, W2	0.3
801	18	500 av	N2, S6, E9, W2	0.2
802	17	250	N0.5, S2.5, E0, W3	0.1
803	18	490 av	N9, S6, E4, W10	3
804	17	360 av	N6, S10, E3, W10	1
805	17	250 av	N0, S9, E10, W0	1
806	16	300 av	N0, S9, E10, W2	0.5
807	18	200 av	N0, S10, E10, W1	0.5
808	14	240	N2, S4, E2, W4	0.2
809	16	640	N6, S6, E7, W3	4
810	13	270	N3, S4, E3, W3	2
811	7	230	N2, S1.5, E1.5, W2	0.5
812	9	210	N4, S4, E2, W2	0.1
813	7	140	N2, S2, E2, W3	0.1
814	Dead			
815	10	230	N6, S5, E5, W5	2
816	13	150	N5, S5, E5, W4	0.1
817	8	220	N4, S4, E4, W1.5	0.5
818	13	360	N7, S2, E5, W6	1
819	9	290	N5, S5, E5, W5	1.5
820	8	260	N4, S5, E5, W3	3.5
821	16	190	N5, S3, E6, W1	1.5
822	11	160	N3, S2, E4, W5	1.5
823	8	350	N5, S4, E4, W4	1
824	7	380	N5, S5, E7, W7	2
825	11	280	N3, S3, E3, W3	2
826	8	120	N2, S2, E2, W2	1.5
827	16	410	N5, S5, E3, W4	2
828	15	200	N4, S3, E2, W5	3
829	15	350	N4, S5, E2, W3	3

### TREE PROTECTION

Tree protection fencing must be erected before construction works commence and must be in accordance with BS 5837 (2005) or the specification supplied by the landscape architect.

- a. Oil, bitumen, cement or other materials likely to be injurious to a tree should not be stacked or discharged within 10m of a bole, and materials generally should not be stacked or discharged within 5m of a bole. It is essential that allowance is made for the slope of the ground so that damaging materials such as concrete washings, mortar or diesel oil cannot run towards trees.
- b. Concrete mixing should not be carried out within 10m of a tree.
- c. Fires should not be lit in a position where the flames could extend within 5m of foliage, branches or trunk, bearing in mind the size of the fire and the wind direction.
- d. As the majority of tree roots occur within the top 600mm of soil changes to soil levels within the root zone can have serious consequences for tree health. Increases in soil levels within the root zone of trees can lead to root asphixiation and ultimately to tree decline and/or death. A reduction in soil levels may expose roots to drying out and/or being damaged and have the same effect on the tree as described above.

### Tree Root Protection

The Root Protection Area should be calculated using Table 1 as an area equivalent to a circle with a radius 12 times the stem diameter for single stem trees and 10 times basal diameter for trees with more than one stem arising below 1.5m above ground level.

**Table1. Calculating the Root Protection Zone**

Number of stems	Calculation
Single stem tree	$\text{RPA (m}^2\text{)} = \frac{\left( \text{stem diameter (mm) @ 1.5 m x 12} \right)^2 \times 3.142}{1000}$
Tree with more than one stem arising below 1.5m above ground level.	$\text{RPA (m}^2\text{)} = \frac{\left( \text{basal diameter (immediately above root flare (mm) x 10} \right)^2 \times 3.142}{1000}$
Note The 12x multiplier is based on NJUG 10 (9) and published by Matheny and Clark	





# GRANGEGORMAN DEVELOPMENT

## WASTE MANAGEMENT STRATEGY

### DOCUMENT CONTROL SHEET

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## 1 EXECUTIVE SUMMARY

The redevelopment of the Grangegorman lands will involve the development of a new urban quarter for the Dublin Institute of Technology (DIT), new Health Service Executive (HSE) healthcare facilities and the integration of the existing social and business community. This will be achieved by developing in line with Dublin City Council's vision for the sustainable development of the city.

This document sets out a strategy for the sustainable management of waste generated during the redevelopment and when the site is operational. It has been developed in line with current national, regional and local waste management policy. Source separation is the core principle of for managing wastes at Grangegorman in line with the Waste Hierarchy approach..

The conscientious management of waste and resources at any location can improve the overall sustainability of a development and also provide a demonstrable saving to development costs. This is true in all stages of a development from site clearance and demolition through construction to operation and ultimately deconstruction. This strategy provides a framework within which these aims will be achieved at the Grangegorman Development site.

The Strategy sets out best practice guidelines for excavation, demolition and construction activities undertaken during site development works with regard to waste. These guidelines will ensure sustainable waste and material management procedures are maintained on-site during all stages of development. Also set out are the potential requirements for, and the procedures involved in getting, the necessary Local Authority Approvals to carry out specified waste and resource management activities during development.

The Waste Strategy also describes how best to manage waste generated on a day-to-day basis when the site is operational. It details the different waste streams generated, where they will arise and how they will be managed in the most sustainable manner. Storage requirements are identified for wastes generated and suitable locations selected so as to minimise heavy vehicular impact on the site ensuring the quality pedestrian experience envisioned for the site is maintained.

The Waste Strategy makes the following key recommendations:

### **Excavation & Demolition Wastes**

- All clean material generated on-site, and not requiring reprocessing, will be stored and reused on-site during latter stages of development.
- All material generated on-site, deemed as having reuse potential for latter stages of development but requiring reprocessing, will undergo reprocessing on-site. These activities will more than likely require local authority approval.
- Waste material generated during excavation and demolition works and requiring further processing off-site must be transported to a suitably approved facility by a local authority approved contractor.
- The construction team will maintain a log of the materials disposed off-site. The log should include the contractors used for disposal, the ultimate destination of the waste and the permits required for transportation and disposal activities.

### **Construction Wastes**

- A tight estimation of the materials required and a careful programming of delivery of the same will prevent the generation of waste due to over-ordering and spoilage due to lengthy storage and associated risks.
- Care will be taken on-site in the handling and storage of materials in order to prevent wastage.
- Waste generation from off-cuts, trimmings and breakages will be carefully stored and reused onsite during construction
- Excessive production of waste by individual sub-contractors will be monitored.

- Excess materials, which are not used on site, will be stored safely and removed by the appropriate contractor or sub contractor to be reused on another construction site.
- Wastes generated on site that cannot be reused will be source-segregated on-site, stored appropriately and removed off-site for recovery/recycling to an approved facility in the area.

### **Operational Wastes**

- Wastes generated in each building should be separated at source where possible.
- A minimum requirement for each building is a three-bin system to collect dry recyclables, organic waste and residual waste.
- As much as possible, recyclable materials will be separated from the mixed waste streams at source in the campus buildings. Waste will be transferred to temporary storage areas serving the buildings and from there brought to a central storage area for bulk collection.
- Appropriate areas should be located for the temporary storage of waste.
- Appropriate areas should be located for the central storage of waste. These are the areas to which waste from the temporary storage areas is delivered and from where waste is then taken off-site for treatment by the authorised waste collectors. (An alternative option for the collection of waste from the temporary storage areas at each cluster of buildings is provided for but is not the recommended option)
- Waste storage areas should be located so as to minimise on-site vehicular movement due to waste transportation. Proposed locations and specifications for these areas are provided in the main document.

## 2 INTRODUCTION

A draft strategic plan has been prepared for the site and is currently being considered by Government. Designation for the site as a Strategic Development Zone has been sought and a draft planning scheme is being prepared.



**Figure 2.1: Aerial View of Site**

The site is being redeveloped to create a new city quarter that incorporates the Dublin Institute of Technology (DIT), bringing together all campuses at one location, with new health care facilities for the Health Service Executive (HSE), a primary school, a public library, public spaces, community facilities and a commercially developed mixed-use development.

RPS Consulting Engineers have prepared a waste strategy for the site. The strategy sets out the management framework for waste generated during the demolition of existing buildings on the site, construction wastes and also operational wastes generated on a daily basis when the redevelopment is complete. The plan takes into account the requirements of the relevant national, regional and local waste policies.

### 3 RELEVANT WASTE POLICY

#### 3.1 WASTE POLICY

##### 3.1.1 NATIONAL WASTE POLICIES

The introduction of the Waste Management Act in 1996 set out a legislative framework for the management of wastes in Ireland. Irish Waste Management Policy has been set out in a series of Policy Statements, starting with *Changing Our Ways* in 1998 followed by *Delivering Change* (2002), *Taking Stock and Moving Forward* (2004) and the *National Biodegradable Waste Strategy* (2006), which set targets and objectives for municipal waste management. The *National Hazardous Waste Management Plan 2008 – 2012* sets out policy objectives for the better management of hazardous wastes in Ireland, increased prevention and improved collection. A brief summary of each policy statement is provided below.

The development of waste policy in Ireland has been consistent since its genesis in *Changing Our Ways*. The Waste Hierarchy was given clear expression and policies were developed based on it. Whilst *Changing Our Ways* identified the key issues relating to waste management in Ireland and set targets to be achieved, *Delivering Change* specified a number of actions to be taken to promote prevention and minimisation and also re-use and recycling. *Taking Stock and Moving Forward* continued the progress hitherto made by apportioning money to various aspects of the integrated waste management policy. Following on from these, waste strategies have been developed for particular waste streams such as biodegradable waste and hazardous wastes with importance placed on the highest elements of the Waste Hierarchy.

*Changing Our Ways*, which was addressed to local authorities, outlined the need for a regional framework and the delivery of strategic waste plans by which national policy objectives and targets will be delivered/achieved. It introduced the need to develop an integrated waste management approach based on the waste hierarchy (See Figure 3.1), favouring waste prevention, reuse and recycling ahead of recovery and disposal. This document introduced national recycling targets for municipal and construction and demolition wastes.

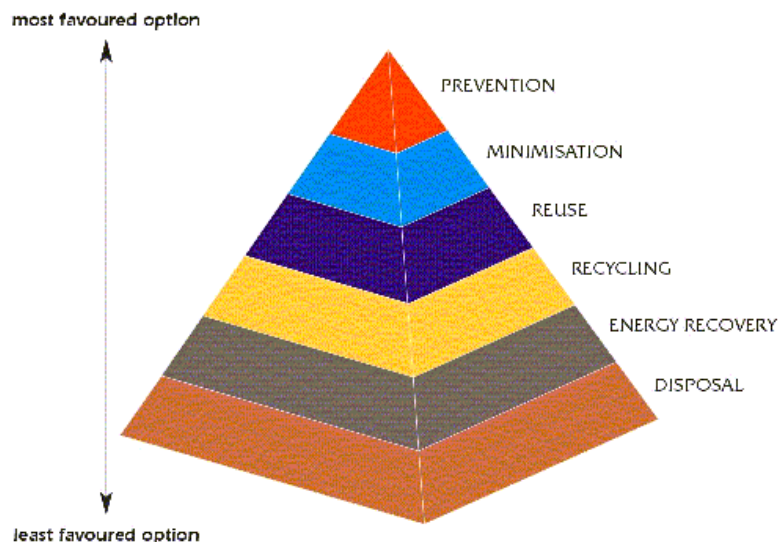


Figure 3.1: Waste Hierarchy

*Delivering Change* was published in 2002 and examined the factors influencing and practical measures required to achieve the government's policy objectives for the prevention, re-use and recycling of waste in order to move away from landfill. It described actions aimed towards developing the more desirable options on the waste hierarchy.

In addition to the promotion of prevention, minimisation, re-use and recycling of waste, *Delivering Change* addressed the responsibility of producers for the environmental impact of the goods and materials that they place on the market. The public sector was to lead by example by developing waste management plans that would promote prevention, re-use and recycling, set objectives in relation to management of specific waste types and report on the performance of the authorities.

The *National Biodegradable Waste Strategy* established a policy for the diversion of biodegradable municipal waste from landfill in accordance with the Landfill Directive (1999/31/EC). It was built on existing national policy established since *Changing Our Ways*. Biodegradable waste includes paper, cardboard, food waste, garden waste and textiles. The Strategy introduced a phased diversion of biodegradable waste from landfill. The targets included:

- A reduction to 75% of 1995 levels in the quantity of biodegradable waste going to landfill by 2006.
- A reduction to 50% of 1995 levels in the quantity of biodegradable waste going to landfill by 2009.
- A reduction to 35% of 1995 levels in the quantity of biodegradable waste going to landfill by 2016.

The National *Hazardous Waste Management Plan 2008-2012* deals with the prevention of hazardous waste and the setting of targets towards this goal. The Plan also identifies facilities currently available for the collection, recovery or disposal of hazardous wastes, and makes recommendations regarding prevention, collection, developing infrastructure and striving towards self sufficiency in the management of hazardous wastes.

### **3.1.2 WASTE POLICY IN THE DUBLIN REGION**

Central to the development in waste management policy in Ireland was the need for strategic waste management planning on a regionalised basis, which would allow national policies to be effected. The local authorities in the Dublin Region adopted the first Regional Waste Management Plan in 2001. It set out to put in place a new integrated waste management approach based on the waste hierarchy. An emphasis was placed on prevention, reuse, recycling and recovery in order to reduce the existing over-reliance on landfill.

The second generation of regional planning followed with the publication of the *Waste Management Plan for the Dublin Region 2005 – 2010* (hereafter Dublin Waste Plan). It underlined the importance of the national policy objectives and compliance with them. It sought to make further progress with respect to prevention, reuse, recycling and recovery. A regional recycling target of 59% was adopted.

The Dublin Waste Plan includes comprehensive policy objectives for the collection and recycling of household, commercial, industrial construction and hazardous waste streams. The following objectives were set out for the management of household, commercial and hazardous waste streams:

The Dublin Waste Plan also sets out Guidelines for Waste Storage Facilities, which set out minimum standards for the storage of waste generated by apartments and commercial/industrial developments. They specify that provision should be made for waste storage for dry recyclable waste, organic waste and residual waste. Their standards are included as Appendix B.



### **3.1.3 LOCAL WASTE POLICIES**

Dublin City Council has introduced Household Waste Bye-Laws and Commercial Waste Bye-Laws that set out specific instructions for the presentation, storage and collection of these waste streams and have been included in Appendix C. In particular, these bye-laws set out the conditions for storage and presentation of waste and help to implement the policies of the Dublin Waste Plan.

The requirements of the Dublin Waste Plan and the Bye-laws have been taken into account in the formation of the Strategy.

### **3.1.4 FUTURE WASTE REGULATIONS**

The Department of the Environment, Heritage & Local Government (DEHLG) are currently drafting the Waste Management (Food Waste) Regulations. This new statutory instrument will require the producers of organic waste to separate this material out from the mixed waste stream. This will apply, in particular, to commercial premises such as restaurants, cafés, hospitals, schools etc. It also applies to industrial or office buildings where food is supplied to employees. These Draft Regulations have been taken into account in this waste strategy.

## **3.2 C&D WASTE POLICY**

The Government set a national target of 85% for the recovery of C&D wastes to be achieved by 2013. While good progress has been made in pursuit of the Government targets for the recycling of construction and demolition waste, progress has been largely achieved through the reuse of spoil waste (soil and stones) for engineering works at landfill sites and in land reclamation activities. To date the performance achieved in the prevention of waste and reuse of C&D waste derived materials during site development works has been limited.

In tandem with the development of national waste policy, a Construction Voluntary Industry Initiative was launched in 2004 which required all industry stakeholders to commit to improved sustainable management practices on site. The requirement for Project Construction and Demolition Waste Plans to be prepared was an outcome of the initiative. National guidelines to assist contractors and developers in the preparation of the waste plans were launched in July 2006 by the Department of the Environment Heritage and Local Government.

Each Plan is required to address the following aspects of the project:

- Analysis of the waste arisings/material surpluses
- Specific waste management objectives for the project
- Methods proposed for prevention, reuse and recycling of wastes
- Material handling procedures; and
- Proposals for education of workforce and plan dissemination programme.

Objectives to achieve more sustainable waste management practices throughout the construction and demolition sector are also highlighted in the Dublin Waste Plan. The following requirements are placed upon the construction industry within the Plan:

- Encourage prevention and minimisation at the design stage of development
- Implement good on-site waste management including minimisation and separation
- Submit 'C&D Waste Plans' for approval for relevant developments at the planning stage, as set out in Construction Voluntary Initiative
- Employ best practice during demolition work, i.e. use of selective demolition techniques
- Comply with all other waste management requirements as set out in the Plan.

Furthermore, the Plan also states as an objective that the use of large construction sites as suitable locations for temporary recycling facilities for the duration of site works should be promoted and encouraged.

It should be an objective to ensure that the resource of C&D waste is employed in the most beneficial manner practicable through optimal reuse and recycling activities. In light of the above, the Grangegorman Development will aim to reuse as much of the spoil generated as part of the construction works within the footprint of the development and to maximise the prevention and recycling of other construction wastes. Demolition and excavation material will be processed as required to ensure the maximum resource potential is achieved.

## 4 MANAGEMENT OF EXCAVATION & DEMOLITION WASTE

This section outlines the best practices for maximising the resource value of all materials generated during the excavation and demolition works at the Grangegorman site. This potential will be realised using the various methods highlighted in this section. Adhering to sustainable best practice in managing construction and excavation waste on-site offers the following advantages:

1. Compliance with policy, legislation and regulations on waste management
2. Economical alternative for land-based disposal
3. Controls waste disposal and transportation costs
4. Conserves natural resources and reduce dependency on virgin materials
5. Uses less energy in material/aggregate production.

At this stage, material balance calculations have not been calculated for the planned development works hence the financial savings from maximising reuse on-site and reducing the need to import virgin materials cannot be quantified.

### 4.1 SUSTAINABLE MANAGEMENT OF EXCAVATION MATERIALS

The excavated material generated during the development works can be divided into three broad categories. These are as follows and the strategy for the sustainable management of these materials is detailed below:

1. Clean Excavation Material
2. Contaminated / Made Ground
3. Hazardous Materials

#### **Clean Excavation Material- Topsoil, Subsoil**

As the Grangegorman site currently has large areas of green cover there is expected to be a significant volume of clean natural soil excavated on-site. This material will mostly be made up of topsoil interspersed with vegetation and subsoil.

It is planned to maximise the reuse on-site for all quantities of excavated topsoil and subsoil, provided the material is suitable. Excavated material should be stockpiled with topsoil and subsoil and stored separately for subsequent re-use on-site and off-site. Topsoil is a valuable resource which can be used for landscaping purposes and it is important the material is source separated and kept clean. Potential on-site applications for reuse of topsoil and subsoil include:

- Backfill – quantities of suitable subsoil will be reused during suitable excavation works.
- Base material – topsoil will be reused during the construction of landscaped areas.
- Land Remediation – some quantities of subsoil will be required in land remediation/levelling applications within the site although exact details are not available at this stage.
- Landscaping – topsoil will be reused, where possible, for new planting proposed around the site.

Particular site-specific considerations to be taken into account in relation to soil storage are highlighted in Section 4.3.

#### **Contaminated / Made Ground**

Initial site investigation works carried out on-site have found some pockets of contaminated ground requiring disposal off-site after excavation. The plots identified seem to be localised and do not extend across large areas of the site. Material suspected to be contaminated with heavy metals or hydrocarbons will be segregated from cleaner stockpiles and stored at a dedicated processing area on the Grangegorman site. Samples of materials will be taken and removed for testing at an approved

laboratory. The material will be tested for a suite of parameters including heavy metals and organics. The turnaround time for such a test is usually 5-10 days, depending on the required level of urgency. Based on the results from the laboratory this material will be removed off-site for disposal at a licensed landfill facility. If the material is unsuitable for landfill disposal a competent contractor will be employed to remove and transport the material to a specialist treatment facility as required. Material found to be contaminated with heavy metals or hydrocarbons will not be processed or made available for reuse.

Made ground is solid ground that has been formed by filling and compaction of hardcore and general fill material. It may contain any type of general fill materials including brick, rock, ceramic, clay, gravel or concrete. Investigation works carried out on-site have highlighted large areas of made ground across the site. Reported depths of made ground varied mostly across the site from 1-2 metres. However, depths of 3-3.9 metres were recorded in some areas. Made ground can be processed and segregated using the same techniques as described in Section 4.2.2, however not all materials recovered during processing may be suitable for reuse on-site hence local authority approval is required to process such material. See Section 4.3 for further information regarding approvals.

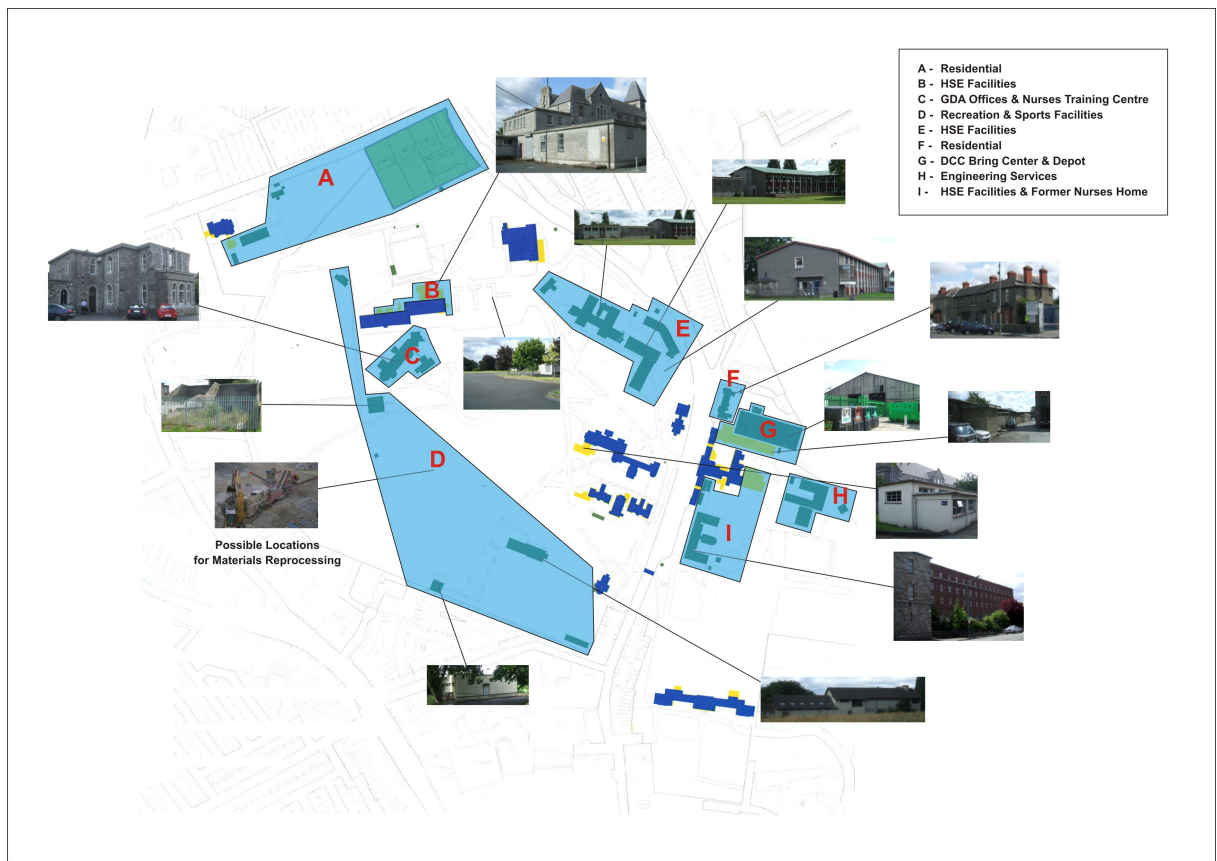
Potential uses on-site for the reusable fraction of made ground mainly involve using the reprocessed and graded hardcore fraction as general fill for paving or groundwork. The reuse potential for made ground may vary depending on the quality and type of material excavated. As highlighted in the site investigation works, some pockets of made ground contain relatively high levels of lead contamination. These contaminated pockets and any other areas of contaminated ground encountered will not be suitable for reuse through basic reprocessing. Should the need arise during construction, further site investigations and testing may be required to classify other areas of ground where contamination is suspected.

#### **Hazardous Materials**

Hazardous materials have not been identified during the initial site investigation works carried out on-site. However, considering the age of the site, it is possible that some may be encountered. Any hazardous materials encountered during the excavation process will be segregated out from the mixed waste and placed in a sealed container/skip and taken off-site for storage. Hazardous waste will not knowingly be stockpiled or processed at the processing site. The hazardous waste container will be removed by a specialist contractor as required and recovered or disposed of at a licensed facility. Due to the age of some buildings there may be potential for encountering asbestos containing materials, further information on this is provided in Section 4.4.

## **4.2 SUSTAINABLE MANAGEMENT OF DEMOLITION WASTES**

A number of existing structures have been earmarked for full or partial demolition on-site. Figure 4.1 details the structures to be demolished as part of the site clearance works for the planned Grangeorman development.



**Figure 4.1: Structures to be demolished**

In order to maximise the reuse potential of all demolition wastes generated on-site a selective and staged demolition process will be used during all structural clearance works. This should be carried out using some or all of the following techniques as necessary:

- Selective demolition/deconstruction
- Material reprocessing
- Segregated storage

#### 4.2.1 SELECTIVE DEMOLITION

Selective demolition involves sequencing demolition activities to allow for the separation and sorting of the various building materials. Selective demolition is usually termed “Deconstruction” as it is carried out in the opposite manner to the construction process - the last thing to go on when the building was first constructed, is usually the first material to be removed during selective demolition. The last process involved in selective demolition is the general demolition of the buildings support structure.

A typical selective demolition sequence is outlined below and similar approaches are recommended for the demolition of the buildings on-site if suitable:

1. Building investigations are first carried out on each structure requiring demolition. This investigation should highlight all materials to be salvaged and the sequencing of deconstruction activities to follow.
2. Initial deconstruction is carried out by manually removing all internal appliances, doors, plumbing, cabinets, casings and molding leaving a bare structural interior.
3. The next step involves the removal of all wall coverings, insulation, wiring and plumbing pipes.

4. The roof is removed at this stage leaving the building's structural frame.
5. Depending on the material type, (i.e. block, reinforced concrete, structural steel), mobile mechanical equipment is now used to demolish the remaining structure. The demolition of the main building structure shall only begin after all the non-structural materials have been stripped and removed.
6. If, after this stage, materials remain that require segregation, then as a good practice they should be sorted on-site using either manual or mechanical techniques into different groups (e.g. metals, asphalt, inert waste, etc.). Sorted materials not required on-site for reuse are now available for delivery to recycling facilities as far as possible (e.g. metals).

Investigations of the buildings planned to be demolished have not been completed at this stage so it is quite difficult to ascertain the level of selective demolition to be carried out at the Grangegorman development. The level of deconstruction to be implemented will be determined by a range of contributing factors including:

- Original method of construction (e.g., pre-fabricated, pre-cast, cast in-situ, etc.)
- Material type, quality & quantity
- Resources available for deconstruction
- Cost
- Site requirements
- Market conditions for materials

Valuable materials on the building, e.g. copper roofing, glazing, timber, etc., are all easily recoverable and can have significant value both on and off-site if deconstructed and stored adequately. Initial investigations around the Grangegorman site have indicated that buildings such as the HSE facilities in Area G and some sports facilities in Area F (See Figure 4.1) may be especially suitable for selective demolition. It is recommended that all buildings are surveyed and investigated and a deconstruction plan is put in place for each structure.

### **4.3 MATERIAL REPROCESSING**

The reprocessing of excavated or demolition materials is designed to combine a series of mechanical processing stages (Crushing, screening/classification, sorting and separation) to achieve greater reuse potential from all or part of the processable material generated on-site. Reprocessing can be carried out either off-site or on-site. The materials generated at Grangegorman which are suitable for reprocessing include:

1. Demolition waste generated during structural demolition works
2. Asphalt generated during pavement / carpark excavation works
3. Excavated Made Ground.

Any processing of materials on-site may be subject to obtaining the necessary waste approval (e.g. certificate of registration or permit), refer to section 4.6.

A summary of the main stages typically followed in the processing of materials are detailed on the page overleaf:

1. Separating materials into ordered stockpiles is an important first step and oversize materials are typically kept separate from other waste streams. Usually stockpiles of waste asphalt will be kept separate from stockpiles of waste masonry materials, to ensure compliance with best practice.



**Figure 4.2 Stockpiles of waste masonry and waste blacktop materials**

2. Stockpiled materials are loaded into the processing plant by a digger where materials are crushed and screened.



**Figure 4.3 Recycling Plant in Operation**

3. Oversize material (>100mm) and undersize material (<100mm) can be reused or reprocessed depending on the reuse requirements.



**Figure 4.4 Oversize recycled concrete**



**Figure 4.5 Undersize recycled concrete**

4. Recycled asphalt can be processed in the same way as detailed in points 1 – 3.

Possible end use materials and options on-site for these reusable reprocessed fractions of material include:

- a. Topsoil for use in landscaping works
- b. Aggregates / general fill material for use in ground consolidation works
- c. Secondary aggregates / general fill material for use in drainage works
- d. Secondary aggregates for use in road (capping layer and sub-base) construction
- e. General fill for pavement construction or general groundworks
- f. General fill material for construction of site roads, hard standings and plant areas.

Possible end uses for reprocessed and segregated materials are variable and are usually developed on a site-specific basis arising from the requirements of each particular development.

Consideration should also be given to the reuse of large pieces of both demolition and construction materials in public realm features. The utilisation of metals, wood or stone generated during development works as raw materials for a DIT-produced art installation would provide a focal point, linking the past with the present, for the development.

#### **4.4 MATERIAL STORAGE**

Throughout the excavation or demolition processes, it is important all materials identified or processed for reuse are stored separately to avoid contamination and to maximise their potential for reuse on-site.

A suitable location is required within the site footprint for the temporary storage of materials generated and available for reuse at a later stage of construction.

The material storage area should be located in a suitable part of the site and meet the following criteria:

- The area should be sufficient distance away from local residents so as to minimise environmental nuisance such as noise or visual appearance,
- Should be far enough away from construction areas so as not to impede any construction work on-site.

It is important to note topsoil should not be stored in stockpiles greater than 2 - 4 metres in height. Depending on the sensitivity of the end use requirements and length of storage time, stockpile can damage the soil matrix such as to deem the material unsuitable for its particular end use requirement.

#### **4.5 ASBESTOS MATERIALS**

Due to the age of some of the buildings to be demolished or refurbished there will be a need to undertake an asbestos survey (Type 2 or Type 3) of these existing premises at the site. The aim of the survey will be to determine the presence of asbestos containing materials (ACMs) in the buildings, which may pose serious health and safety risks if remained undetected until later stages of the project.

If ACMs are found to be present a competent contractor must be employed to remove the materials prior to demolition or refurbishment works. After the competent contractor is appointed to carry out the works, a detailed methodology of the works will be prepared and submitted to the Health and



Safety Authority (HSA) for approval. The HSA are entitled to inspect the works when underway to ensure compliance with the methodology statement and relevant regulations.

## **4.6 APPROVALS**

The aim during the development at Grangegorman will be to recover and reuse as much of the material generated during the demolition and excavation works as possible on-site. The recovery and reuse of material may be subject to regulatory controls for wastes with specific approvals (A Waste Permit or Certificate of Registration) required to be put in place prior to implementing waste management procedures.

The following sections outline when approvals are required, the different types of approvals available and how these are obtained.

### **4.6.1 WHEN ARE APPROVALS REQUIRED?**

The requirement to put in place a regulatory approval for the processing of excavated materials and or demolition materials hinges on the classification of the material as a waste or a resource.

If material falls into one of the following categories, it is a waste and processing of the material will require a regulatory approval:

- The material is contaminated with other waste materials (e.g. timber, plastics, oils, etc.)
- The material is not suitable for reuse on-site without special processing (crushing, screening, grading are not special processing)
- The material is surplus to the needs of the site.

Although it is anticipated that a large proportion of materials generated during the excavation works will be clean and suitable for reuse on-site. Waste materials will also be generated from demolition and excavation activities. If processing is to take place on-site a Waste Permit or Certificate of Registration will need to be put in place prior to activities commencing.

### **4.6.2 TYPES OF WASTE APPROVALS**

The activities at the site will most likely require either a waste permit or Certificate of Registration issued by the local Authority to be put in place.

It is important to note that a determination on the approval required for the project activity can be sought from the EPA in accordance with Article 11 (1) of the Waste Management (Facility Permit and Registration) Regulations SI No. 827 of 2007, as amended. This procedure assists applicants in clarifying the correct approval required and speed up the application process.

Each approval covers a different scale of activity with a Waste Permit regulating more significant operations. Table 4.1 sets out relevant processing type activities as covered by the different approvals.

Approval Type	Activities Covered	Quantities Covered (Tonnes / Year)
Certificate of Registration	Recovery of Excavation Spoil (Clay, sand, gravel, stone)	< 25,000 Tonnes
	Recovery of C&D Waste ( Concrete, bricks, tiles)	< 10,000 Tonnes < 1,500 Tonnes Waste Material for disposal
Waste Permit	Recovery of Excavation Spoil (Clay, sand, gravel, stone)	< 100,000 Tonnes
	Recovery of C&D Waste ( Concrete, bricks, tiles)	< 50,000 Tonnes < 7,500 Tonnes Waste Material for disposal

**Table 4.1: Summary of Activities and Material Quantities covered under approvals**

Further activities covered by these approvals are provided in Table 4.1 in Appendix B.

All other activities not covered by either a Certificate of Registration or a Waste Permit including all activities relating to hazardous wastes are covered by an EPA Waste Licence. It is expected, that the volume of materials to be processed on-site at Grangegorman will not require a Waste Licence although consultation with the EPA should be undertaken.

#### 4.6.3 APPLYING FOR APPROVALS

The application process and associated timeline for putting in place the approval varies for each type of approval required. A summary of the application process is outlined in Appendix B for each approval.

#### 4.6.4 APPROVALS FOR MANAGING MATERIALS OFF-SITE

Excess material exported off-site is classified as waste, and the following requirements apply to the movement of waste:

- The off-site movement of waste may only be carried out by a contractor with a valid Waste Collection Permit.
- Waste may only be transported to a facility that holds a valid Waste Licence, Waste Permit or Certificate of Registration.

Best site practice is for the Grangegorman Development Association to maintain a database of records for the project with the destination of all waste materials and the appointed collector logged.

#### 4.7 SUMMARY

The implementation of sustainable practices for the management of excavated and demolition materials at the Grangegorman site will deliver high levels of reusable materials. Appropriate controls will need to be put in place if required and the main recommendations from this chapter are as follows:

1. All clean material generated on-site and not requiring reprocessing, whether excavation or demolition material, will be stored and reused on-site during latter stages of development. A suitable area will be chosen on-site for material storage until required. This activity, (in isolation), will not require local authority approval.
2. It is recommended that all material generated on-site deemed as having reuse potential for latter stages of development but requiring reprocessing, undergo the necessary level of reprocessing

- on-site. These activities will more than likely require local authority approval; the appropriate regulatory control depends on the quantity of material to be processed.
3. A local authority approved contractor will transport all materials not reused on-site to a suitable and designated off-site facility. Waste material generated during excavation and demolition works must be sent to a suitably approved facility.
  4. It is recommended that the construction team maintain a log of the materials disposed off-site. The log should include the contractors used for this disposal, the ultimate destination of the waste and the permits required for transportation and disposal activities.

## 5 MANAGEMENT OF CONSTRUCTION WASTE

This section outlines sustainable practices which will be employed on-site when managing each of the following materials and wastes generated during construction:

- Concrete, Masonry and Slate Materials
- Packaging Waste
- Metal Materials
- Wood and Timber Materials
- Glass and Other Materials
- Hazardous Materials

Contractors appointed on-site will be required to comply with the sustainable management practices and develop some actions further.

### 5.1 CONCRETE, MASONRY AND SLATE MATERIALS

Concrete, masonry and slate materials will be used throughout the construction but especially at the two “hearts” area (Upper Terrace and Arts Centre), Broadstone Gate, North Circular Road entrance and other gateways. The proposed management of these materials are detailed in Table 5.1.

<b>Ordering</b>	Careful ordering of quantities and programming the timings of deliveries will result in the prevention of waste which typically results from over-ordering and spoilage due to lengthy storage and associated risks.
<b>Handling &amp; Storage</b>	These materials are of relatively high value so care should be taken on-site to ensure careful handling and storage of them to prevent wastage. Materials should be stored securely until required and remain wrapped and bound to minimise spoil.
<b>Prevention</b>	A policy of tight estimation of materials, including concrete and masonry quantities, will be followed on-site to prevent unnecessary wastage. Sub-contractors employed will be responsible for concrete, masonry and slate waste arisings from their activities and will be required to conform to the requirements of the site C&D Plan. Excessive waste production by sub-contractors should be monitored.
<b>Re-use on-site</b>	Waste generation from off-cuts, trimmings and breakages will be carefully stored and reused onsite during construction e.g. at corner or wall/roof- ends. Masonry stone or blocks could also be re-used for landscaping purposes. Specific Resource Recovery Stations should be designated to facilitate the storage of such materials during construction.
<b>Re-use off-site</b>	Excess concrete, masonry and slate materials, which are not used on site, will be stored safely and removed by the appropriate contractor or sub contractor to be reused on another construction site.
<b>Waste Recovery</b>	Any concrete, masonry and slate wastage generated on site, which cannot be reused, will be source-segregated on-site and stored separately in a suitable receptacle to prevent cross-contamination. These materials will be removed off-site for recovery/recycling to a permitted or licensed facility in the area where not used as a fill material.

**Table 5.1: Sustainable Management Plan for Concrete, Masonry and Slate Materials**

### 5.2 PACKAGING WASTE

Almost all materials delivered to the construction site will be wrapped and protected by packaging material e.g. plastic film, wooden pallets, cardboard, metal wrap, cellophane wrapping, styrofoam

etc. It is important that packaging material is managed efficiently to ensure that the site remains free of windblown and discarded packaging material.

Since the establishment of the REPAK producer responsibility scheme, many building suppliers will take back packaging waste used to wrap materials. The Grangegorman Development Agency will encourage appointed contractors to source such suppliers to minimise packaging waste on-site and associated waste management costs for recovery/disposal.

<b>Handling &amp; Storage</b>	Packaging is designed to protect materials during transportation and should remain in place until absolutely necessary to prevent spoilage/damage of the material. Once packaging is removed it should be stored in a dedicated skip. The skip should be kept covered to prevent littering and contamination.
<b>Prevention</b>	A policy of tight estimation of materials will prevent excess packaging waste delivered to the site.
<b>Minimisation</b>	Suppliers which take back packaging waste from materials should be identified when sourcing materials to minimise packaging waste generation on-site.
<b>Re-use/ Recycling off-site</b>	Any packaging material which can be returned to a supplier should be stored separately and securely and be presented in good condition for re-use or recycling.
<b>Waste Recovery</b>	Packaging material which cannot be returned to a supplier should be separated into individual waste streams e.g. cardboard, paper, plastic, wood etc and presented for recovery off-site at an appropriate permitted/ licensed facility.

**Table 5.2: Sustainable Management Plan for Packaging Waste**

### 5.3 METAL MATERIALS

Metal materials will be used throughout the construction site primarily in structural and reinforcement applications in the new development buildings. Metal panelling may also be considered on a case-by-case basis for some building envelopes, especially in the two “hearts” areas. Metal materials will be carefully managed on site to reduce environmental risks and to minimise the costs.

<b>Ordering</b>	Careful ordering of quantities and programming the timings of deliveries will result in the prevention of waste, which typically results from over-ordering and spoilage due to lengthy storage and associated risks.
<b>Handling &amp; Storage</b>	These materials are of relatively high value so care should be taken on-site to ensure careful handling and storage of them to prevent wastage. Materials should be stored securely until required and remain wrapped and bound to minimise spoil.
<b>Prevention</b>	A policy of tight estimation of materials will prevent excess metal materials delivered. Sub-contractors employed will be responsible for metal waste arisings from their activities and will be required to conform to the requirements of the site C/D Plan.
<b>Minimisation</b>	Re-bar to be used during construction will be ‘made to order’, where possible, to minimise on-site labour and excess trimmings on-site.
<b>Re-use/ Recycling off-site</b>	Ferrous and non-ferrous metals will be stored separately on-site in skips to ensure maximum recovery of the material off-site at a permitted facility.
<b>Waste Recovery</b>	All metals not used on-site will be source separated, stored and sold on to authorised handlers for recycling off-site.

**Table 5.3: Sustainable Management Plan for Metal Materials**

## 5.4 WOOD AND TIMBER MATERIALS

Wood and Timber materials will be used extensively in the new development. These materials will need to be handled carefully onsite to prevent dampness, warping of the wood and fungal attack.

<b>Ordering</b>	Careful ordering of quantities and programming the timings of deliveries will result in the prevention of unnecessary waste quantities, which typically result from over-ordering and spoilage due to lengthy storage and associated risks.
<b>Handling &amp; Storage</b>	The materials should be kept dry and bound and packaging should only be removed from wood and timber materials when they are to be used.
<b>Prevention</b>	A policy of tight estimation of materials will prevent excess wood and timber materials delivered. Sub-contractors employed will be responsible for wood/timber waste arisings from their activities and will be required to conform to the requirements of the site C/D Plan.
<b>Minimisation</b>	Proper storage of wood and timber materials in clean covered skips will minimise the risk of damage to the materials and encourage reuse.
<b>Re-use on-site</b>	Wood and timber materials can be reused onsite with opportunities for use in shuttering and joinery applications. Excess timber materials may also be wood-chipped and used as cover for trees and bedding.
<b>Re-use off-site</b>	Excess wood/timber materials, which are not used on site, will be stored safely and removed by the appropriate contractor or sub contractor to be reused on another construction site.
<b>Waste Recovery</b>	Any wood wastage generated on site, which cannot be reused, will be source-segregated on-site and stored in a suitable receptacle to prevent cross-contamination. These materials will be removed off-site for recovery/recycling to a permitted or licensed facility in the area.

**Table 5.4: Sustainable Management Plan for Wood and Timber Materials**

## 5.5 GLASS AND OTHER MATERIALS

Glazing features have been identified in a number of buildings throughout the new development, especially along the major urban path of St. Brendan's Way. Glass arriving on site will need to be managed extra carefully on-site to minimise wastage due to breakage and accidents.

<b>Ordering</b>	Careful ordering of quantities and programming the timings of deliveries will result in the prevention of unnecessary waste quantities, which typically result from over-ordering and spoilage due to lengthy storage and associated risks.
<b>Handling &amp; Storage</b>	Materials including glass delivered to the site will be kept bound and packaging should only be removed materials when they are to be used. Breakable materials such as glass will be stored in a safe location away from vehicular movements into the site, or areas where significant sources of vibration are likely to occur, e.g. heavy materials delivery areas, areas being piled etc.
<b>Prevention</b>	A policy of tight estimation of materials will prevent excess materials delivered to the site. Sub-contractors employed will be responsible for waste arisings from their activities and will be required to conform to the requirements of the site C/D Plan.
<b>Re-use on-site</b>	If possible materials should be separated on-site and stored safely to maximise reuse on site. This policy will be applied to all suitable materials.
<b>Re-use off-site</b>	Excess materials, which are not used on site, will be stored safely and removed by the appropriate contractor or sub contractor to be reused on another construction site.

<b>Waste Recovery</b>	<p>General construction material wastes generated on site, which cannot be reused, will be managed in an environmentally safe manner on-site. Materials of significant quantities will be source-segregated on-site and stored in a suitable receptacle to prevent cross-contamination. These materials will be removed off-site for recovery/recycling to a permitted or licensed facility in the area.</p> <p>A general skip will also be used on site in which mixed general waste can be disposed. This material will be removed off-site or further separation and recovery. If general waste becomes contaminated on-site, it will be removed off-site for safe disposal at an appropriate facility.</p>
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**Table 5.5: Management of Glass and Other Materials**

**5.6 HAZARDOUS MATERIALS**

Hazardous materials such as oils, paints, fuels and other chemicals etc which will be used during the construction process will be treated carefully to minimise the risk of spillages, environmental pollution or accidents on-site.

<b>Ordering</b>	Careful ordering of quantities and programming the timings of deliveries will result in the prevention of unnecessary waste quantities, which typically result from over-ordering and spoilage due to lengthy storage and associated risks.
<b>Handling &amp; Storage</b>	Hazardous materials will be carefully handled and stored on-site in designated areas. These areas will be separate from non-hazardous materials to avoid contaminations and pollution. Depending on the quantities of hazardous materials accepted at the site, it may be necessary to provide a temporary bunded area. This will need to be reviewed and monitored during construction.
<b>Prevention</b>	A policy of tight estimation of materials will prevent excess materials delivered to the site. Sub-contractors employed will be responsible for hazardous waste arisings from their activities and will be required to conform to the requirements of the site C/D Plan.
<b>Re-use off-site</b>	Excess materials, which are not used on site, will be stored safely and removed by the appropriate contractor or sub contractor to be reused on another construction site.
<b>Waste Recovery or Disposal</b>	Hazardous waste materials generated on-site will be stored safely and removed off-site by contractor permitted to transport hazardous wastes for safe recovery or disposal

**Table 5.6: Sustainable Management Plan for Hazardous Materials**

## 6 MANAGING OPERATIONAL WASTES

The proposed development at Grangegorman primarily consists of the new campus for the DIT and new health care facilities for the Health Service Executive (HSE). The new DIT campus will bring students, staff and faculties from across Dublin into one location. The Grangegorman campus will include faculty buildings, administration buildings, libraries, student accommodation, laboratories, performance halls and workshops. Also incorporated in the development are a primary school, public spaces and some commercially-developed buildings such as retail units.

The mixed-use nature of the development means that there will be a wide selection of waste streams being generated. This waste strategy will set out a comprehensive management system for the collection and recycling of non-hazardous, hazardous and risk wastes when the site is operational.

The waste strategy for the Grangegorman development must comply with policy objectives of the Dublin Waste Plan and the Dublin City Council Bye-laws in relation to storage, source separation and presentation for collection of both household and commercial waste.

The relevant policy objectives of the Dublin Waste Plan are set out in Chapter 3.

### 6.1 WASTE GENERATION

In order to design a comprehensive waste strategy for Grangegorman, it is necessary to understand the main waste streams that will be generated at the development when operational. Following from that, the waste profile for each building type is identified. This allows for localised waste management within each building which feeds into the overall site waste management.

#### 6.1.1 KEY WASTE STREAMS

The waste streams most likely to arise at the Grangegorman development can be broadly grouped as follows:

- **Mixed Dry Recyclables (MDR):** This typically includes non-confidential waste paper, newspaper, leaflets, card, plastic bottles and packaging, aluminium cans and tins and Tetra Pak cartons.
- **Confidential Papers:** This waste stream typically arising from administration offices is of a sensitive nature and often requires shredding either on-site or off-site.
- **Organic Waste:** This mainly refers to the food waste generated at the site. Quantities of garden waste will also be generated but these may be collected separately.
- **Glass:** This refers to container glass (bottles and jars) generated at the site. This waste stream should be collected separately from other recyclables.
- **Mixed Residual Waste (MRW):** This refers to general mixed waste that is not collected in the separate recycling bins.
- **'Household' Hazardous Wastes:** 'Household' hazardous wastes arising at the site will include aerosols, cleaning agents, paints and batteries.
- **Hazardous Waste:** This refers to hazardous waste arising from the laboratories, i.e. chemical waste, and from the HSE facilities, i.e. risk waste.
  - **Chemical Waste:** Chemical wastes generated by the laboratories on the campus are hazardous and will require different treatment to the typical hazardous wastes above.
  - **Risk Waste:** This refers to healthcare and other clinical waste, e.g. swabs/dressings, sharps/syringes, used Petri dishes, biological samples etc.
- **WEEE:** Waste Electrical & Electronic Equipment such as computers, printers and other Information and Communications Technology (ICT) equipment.
- **Textiles:** Materials such as clothing, rags etc.



## 6.1.2 BUILDING TYPES AND ASSOCIATED WASTES

The building types in the new Grangegorman urban quarter can be grouped according to their functional uses: educational, administration offices, residential, commercial, healthcare and scientific laboratories. Each of these building types will have their own waste profile requiring appropriate management. The storage and collection of these wastes is set out in Section 6.2.

### **Educational Buildings & Administration Office Buildings**

Educational buildings at Grangegorman will include:

- Libraries,
- Faculty buildings,
- Cafes, and the
- Primary school.

They can be grouped with the administration offices on campus because of the similarity of the waste generated.

The key waste streams generated from these buildings will be:

- Mixed dry recyclables,
- Confidential papers,
- Organic waste (including cooking oil) and
- Mixed residual waste.

There will also be quantities of the following waste types that need to be managed:

- Glass Waste,
- Mixed residual waste and
- 'Household' hazardous wastes.

The educational buildings will generate the highest tonnages of waste when the campus is operational.

It is expected that the student teaching kitchens will generate significant quantities of organic waste, which will need to be addressed at the new site. At the existing facilities in Dublin, it has been reported that uneaten food makes up a significant portion of the organic waste. There is also a lot of waste cooking oil is generated in the kitchens.

### **Residential Buildings**

Residential buildings at Grangegorman will include:

- Student accommodation and
- Housing facilities for patients in the HSE facility.

The wastes generated from the residential buildings will be:

- Mixed dry recyclables,
- Organic waste and
- Mixed residual waste.
- Glass Waste,
- 'Household' hazardous wastes, and
- Textiles

It is expected that significant quantities of glass will be generated from the student accommodation. The hazardous wastes generated will most likely include batteries, aerosols, etc. Textiles would include old clothing. (There is also a small potential for risk waste to be generated at the residential units of the HSE facilities.)

### **Commercial Buildings**

The commercial buildings in the development will be a mix of retail units and the waste streams generated from these buildings would include:

- Mixed dry recyclables,
- Mixed residual waste and
- Organic waste.

### **Healthcare Units**

Healthcare units at Grangegorman will include:

- Clinical primary care facilities (HSE) and
- Student healthcare service.

Quantities of risk waste will be generated from those operations and will require careful management. These wastes include:

- Biological material, dressings, etc.
- Sharps/syringes.

### **Laboratories**

Laboratories generate two main types of waste:

- Chemical wastes such as chlorinated and non-chlorinated solvents, acids, photographic fixers etc.
- Clinical & biological waste.
- Gaseous emissions are also generated in laboratories. Fume hoods should always be used in laboratories where the user of certain chemical agents may be exposed to a health risk due to emissions from the chemicals.

### **Workshops**

Waste generated in workshops includes C&D-type waste including:

- Mechanical waste, i.e. metal components, oils, oil filters etc
- Timber waste from carpentry
- Paints
- Bricks
- Electrical waste

## **6.2 WASTE STORAGE AND COLLECTION**

The management of waste streams at the Grangegorman site will be based on the policy objectives of the Dublin Waste Plan. The source separation of materials will be the key principle for managing wastes and recyclable materials generated on site. As much as possible, recyclable materials will be separated at source from the mixed waste streams in the campus buildings. Cleaning staff will collect and transfer wastes to temporary storage areas serving the buildings. The location and design of

these storage areas will be progressed at the detailed design stage of the project and should take account of the recommendations set out in the following sections.

The Strategy proposes two options for waste storage and collection. Option 1 proposes the use of temporary waste storage areas at each building or block of similar buildings from where the waste is moved to central storage areas. At the central storage areas, materials will be compacted for bulk collection off-site. Option 2 proposes the collection of waste from the temporary storage areas at each building or block of buildings. This option will not include a central storage area.

### 6.2.1 TEMPORARY WASTE STORAGE AREAS

Source segregated waste will be transferred from the point of collection to the appropriate collection receptacles located in the temporary storage areas on a regular basis. The waste will be subsequently transferred from the temporary storage areas.

It is recommended that temporary storage areas are located close to the point of waste generation and are designed within the footprint of the buildings. Alternatively, a temporary waste storage area could be located to serve a small group of buildings of a similar use (where practicable) provided it will not result in staff handling the waste having to carry bags over too great a distance.

The waste storage areas should be located as close as possible to service routes. This minimises the impact of on-site movement of waste and facilitate the collection and transfer of materials. The waste should be moved from the temporary storage areas to the main central storage area on a daily basis.



Adequately-sized areas for the temporary storage of waste need to be provided at each building to ensure that the required number of bins can be accommodated. A minimum of three bins will be required at each storage area for the separate collection of mixed dry recyclables, organic waste and mixed residual waste. The design of proposed bin storage areas need to take account of other issues such as health and safety, accessibility, movement of bins to and from the central storage area, visibility, odour generation and cleaning.

A secure temporary storage area must also be provided for at the healthcare facilities for any risk waste generated.

The collection of 'household' hazardous wastes should also be provided for at buildings. Each building should have a small receptacle for the collection of batteries. These receptacles can be brought to the central storage collection areas when full and collected when the need arises. Similarly for other household hazardous wastes such as aerosols.

#### Bin Types in Temporary Storage Areas

Table 6.1 shows the different types of bins proposed for the storage of waste at the temporary storage areas.

Waste Stream	Typical Collection Bin	Image	Comment
Mixed Dry Recyclables	1,100 litre		Mixed dry recyclables will be collected in recyclable bags by staff at the various collection points and transferred to 1,100 litre bins in the temporary storage areas.
Organic Waste	240 litre		Organic waste will be collected in an appropriately-sized receptacle, e.g. 240-litre bin, in kitchens and restaurants. It will then be transferred to the temporary waste storage area.

Glass bank	2,000 litre approx.		<p>Glass collection receptacles should be located at certain points on campus, preferable close to service routes, where the glass generation is likely to be highest, e.g. cafeterias, student venues/bars, student accommodation etc. Glass should be separately collected according to colour, i.e. clear, green and brown.</p> <p>A mixture of wheelie bins and conventional glass banks are recommended for the site to be used where appropriate. The appropriateness of the collection receptacle is determined by the quantity of glass collected at a particular location.</p> <p>Where conventional glass banks are considered more desirable, they should be sited at locations accessible for collection and close to entrance/exit points in order to minimise vehicular movement across the site.</p>
Mixed Residual Waste	1,100 litre		<p>Mixed residual waste will most likely be collected in bags from multiple collection points in the campus buildings and transferred to 1,100 litre bins in the temporary storage areas.</p>

**Table 6.1: Bin Types in Temporary Storage Areas**

## 6.2.2 CENTRAL WASTE STORAGE AREAS

The Grangegorman Masterplan describes a site with two ‘hearts’. These are the two main activity centres at the development: the academic ‘heart’ and the arts ‘heart’. Each area will generate significant quantities of wastes which will need to be managed. It is recommended that two central waste storage areas are developed to serve each of the two main activity centres. A central storage area will be the destination for wastes from the temporary storage areas and will be designed to deliver storage and collection frequencies. This approach will help minimise on-site movement including the movement of bins from temporary storage areas and also refuse collection vehicles moving the waste off-site.

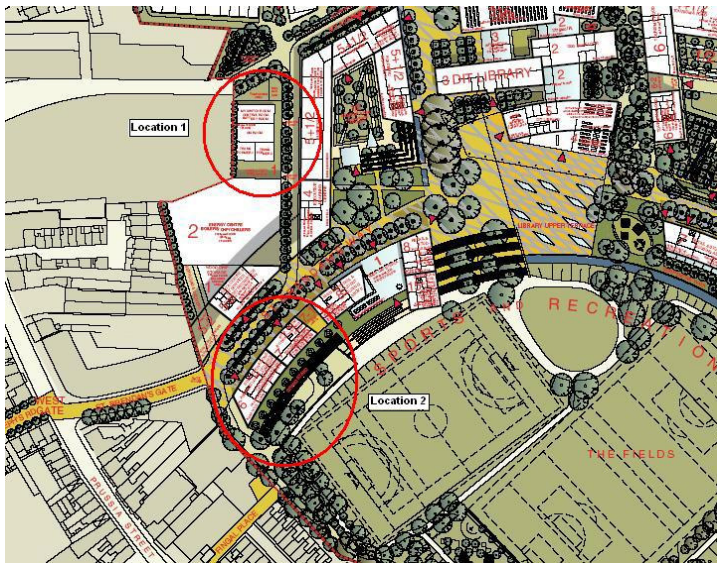
The central waste storage areas should be adequately sized to allow for two waste compactors (one for mixed dry recyclables and one for residual waste), the storage of organic waste, glass waste, WEEE and other wastes such as timber, metals and bulky waste. Figure 6.4 shows a sample layout of the proposed central storage area. The gross floor area of this central storage area would be approximately 200 m<sup>2</sup>.

### Waste Storage Area for Eastern Part of Campus

There are two proposed locations for the storage area serving the academic ‘hub’. Both are identified in Figure 6.1.

The first location is a site initially proposed for a 110 kV sub-station. However, the final use for this particular site has not been finalised. If available, this site would be the recommended location for waste storage.

The alternative location is centred on the DIT Building Maintenance facility, which is located beneath the student accommodation and would be accessible to refuse collection vehicles. The section of this area facing onto the sports and recreation fields would be most suitable and would accommodate the waste receptacles in a linear fashion with a screen to reduce the visibility of the storage facilities.

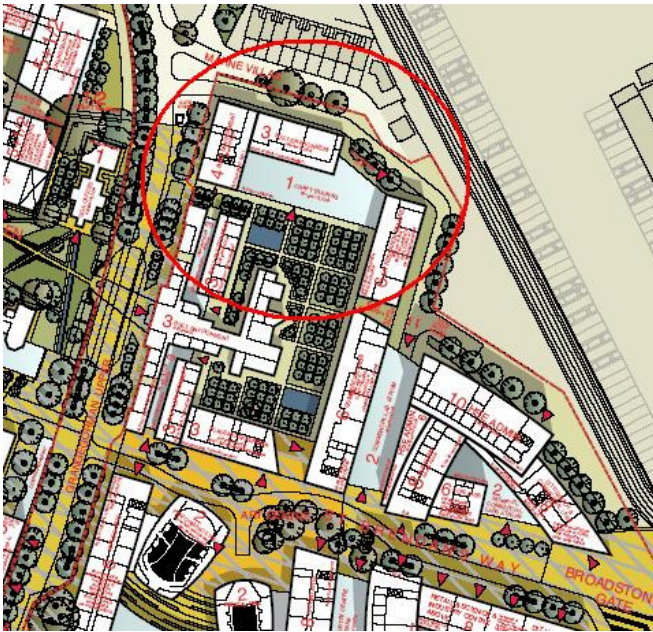


**Figure 6.1: Proposed Central Waste Storage Areas Serving Academic ‘Hub’**

### **Waste Storage Area for Western Part of Campus**

The central storage area serving the arts ‘hub’ is proposed to be located in the general area indicated in Figure 6.2. This storage area will also accommodate a Bring Centre facility for local residents to replace the existing Dublin City Council Bring Centre. There are three possible location options within this area:

1. Along the boundary wall with Marne Villas, in a linear fashion, and adjacent to the access point from Grangegorman Upper. This would allow the Bring Centre section to be gated with specific opening times thus minimising anti-social behaviour and the potential for illegal dumping and noise. The waste storage area for the Grangegorman site would be separate to this facility but adjoining it on its western end.
2. If local residents were to object to Option 1, then a similar but less preferable option would be to move the Bring Centre facilities further towards the adjacent Broadstone site. This would involve residents driving into the site in order to place their recyclables in the appropriate receptacles. This option may likely result in a higher incidence of illegal dumping unless access to the site is monitored outside of Bring Centre opening hours.
3. In the event that Option 1 and Option 2 are not feasible, it may be possible to accommodate deep storage bins, or similar, in front of the new building that will be located just north of the Clock Tower building.



**Figure 6.2: Proposed Central Waste Storage Areas Serving Arts ‘Hub’**

The locations have been proposed based on the proximity to access for refuse collection vehicles and the possibility of adequate free space to locate a waste storage area. The final location of the waste storage area will be considered in more detail at the next stage of the project.

#### **Layout of Central Storage Areas**

It is proposed to use compactor skips in the central waste storage areas for certain waste streams to improve storage efficiencies on site. This will help reduce collections on-site providing cost savings and a reduction in environmental emissions.

Each compactor and container will have a footprint of approximately 20 m<sup>2</sup>. Depending on types of wheelie bins used at the campus, it may be appropriate to select a compactor with a built-in bin lifter for loading of waste. This will require sufficient clearance, which enlarges the operational footprint for the compactor. The waste storage area should be laid out to facilitate easy collection of the waste containers.



**Figure 6.3: Waste Compactor and Container**

Aside from the compaction units for dry recyclables and residual waste, the storage area should provide for the collection of:

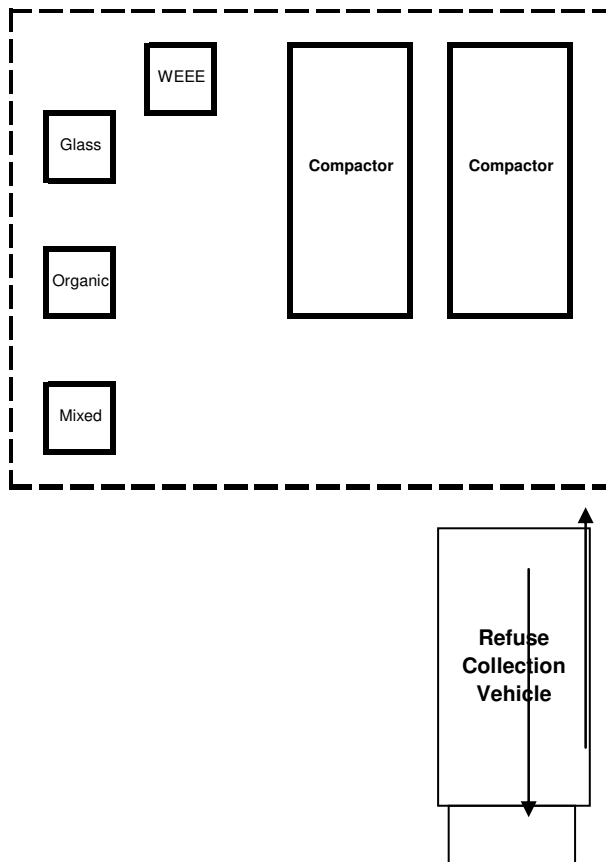
- Organic waste
- Glass
- WEEE
- Other wastes, e.g. timber, metals, bulky waste.

The storage area for organic waste will need to accommodate as many 240-litre bins as there are on site in the temporary storage areas. Similarly for the glass waste.

Storage should be provided for Waste Electrical and Electronic Equipment (WEEE) as per the Sixth Schedule of the WEEE Regulations (S.I. No. 340 of 2005). The required footprint of this storage area will be relatively small as the largest component of WEEE is ICT equipment and this will be dealt with as part of the contract with the suppliers of this equipment.

Space should also be set aside for the collection of other waste types such as timber, metal and bulky waste as it arises on site. A skip would be suitable for the storage of such waste.

The sample layout of a central storage area is shown in Figure 6.4 below.



**Figure 6.4: Sample Layout of a Central Waste Storage Area**

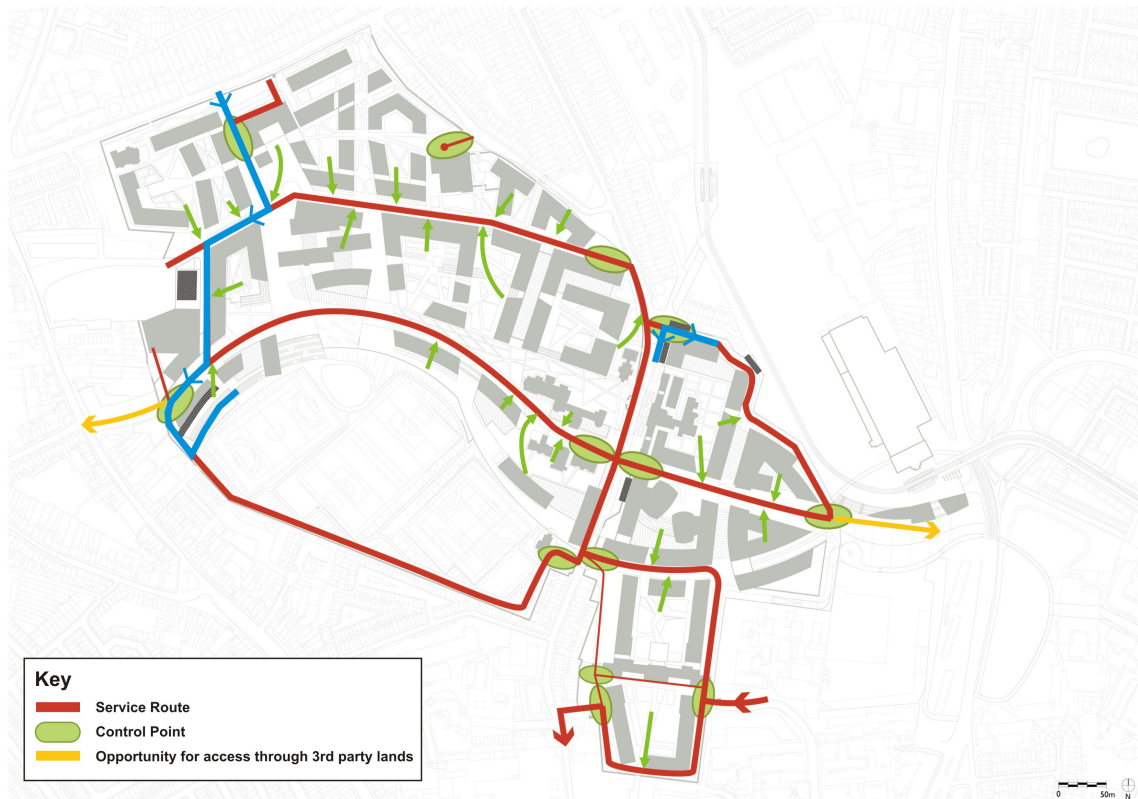
The dimensions of the central storage area will depend on the area it is serving. It is likely that a central storage area serving the western side of the site will be bigger because it is serving a bigger area of the site, i.e. the area to the west of the Lower Grangeegorman Road. It is envisaged that a footprint of 150 m<sup>2</sup> would be the required for this central storage area.

The lower storage requirements on the eastern side of the campus would mean that an approximate area of 120 m<sup>2</sup> would be adequate for the central storage area serving this side of the site.

The central storage area that incorporates the Bring Centre replacing the existing Bring Centre in Grangegorman, which is being removed, will require an additional area of approximately 40 - 50 m<sup>2</sup> in order to accommodate additional collection receptacles and the greater waste storage requirements.

Figure 6.5 shows both the on-site and off-site movement of waste. The blue arrows indicate preferred routes for refuse collection vehicles collecting waste from the proposed central storage areas. A collection buggy should be used to tow 1,100-litre bins as they can move several bins at a time thus reducing the on-site vehicular movement. The green arrows indicate the movement of waste from buildings to the central storage areas along the site service routes.

The movement of waste off site will be carried out at off-peak times to avoid congestion, i.e. early morning or evening collections.



**Figure 6.5: Movement of Waste**

An alternative option would mean the collection of waste from the temporary storage areas for each building or cluster of similar buildings by the refuse collection vehicles.

### 6.2.3 RECOMMENDATION

The use of central storage areas would be a preferable storage and collection system. This system allows the use of static compactors, which results in better efficiencies. The movement of waste to central storage areas means that the refuse collection vehicles will have a minimal impact on the site and will also result in lower waste transport emissions.



The site will also have to include a Bring Centre for the local residents in lieu of an existing facility, which is to be removed. This requires an appropriately sized storage area to accommodate the collection of waste generated on the site and from residents within the vicinity of the site. This would be in keeping with the collection and storage strategy set out in the preferred option.

### 6.3 ON-THE-GO WASTES

On-the-go waste will be generated by people moving through the campus and will be collected in pedestrian litter bins. These bins will be located at various points on site to encourage people to dispose of their waste responsibly. They will be located across the site where the footfall is highest.

The standard pedestrian litter bin is typically used for the collection of on-the-go waste. These bins make no distinction made between recyclable, organic or residual waste. The bins are fixed and require emptying on a daily basis and it is likely that multiple collections will be required where pedestrian traffic is greatest on the site. A small collection vehicle should be used for this purpose to enable staff to empty as many bins as possible en route to the central storage area.

Anecdotal evidence would suggest that 50% of on-the-go waste is recyclable, which means that significant recyclable waste is being disposed of to landfill. It is recommended that alternatives to the standard litter bin be considered. Below are some of the possible alternatives.

#### Multi-Section Litter Bins

These are similar to the traditional open-bins but with openings and receptacles for different materials. Typically, these bin units target the collection of plastics, aluminium cans and mixed waste in the one bin but would can be arranged to collect recyclables and mixed waste as required. These types of bins reduce the amount of potentially recyclable material being disposed of to landfill. These bins would also need to be serviced regularly. Contamination and mixing of waste streams may still be an issue though not to the same degree as standard litter bins. DIT already uses such bin types in some areas of their campus.

#### Static Compactor Street Bins

A static compactor street bin is a litter bin which contains an internal compaction unit. An example is shown in Figure 6.6. This provides the unit with increased collection capacity. The collection capacity may be as much as five times greater than the capacity of a standard litter bin with the same footprint. The increased capacity reduces the number of times the bin needs to be emptied, which frees up resources and reduces collection vehicle movements on site.

Static street compactor bins are already in use in at least one other university in Ireland and have proven to be successful thus far.



Figure 6.6: Static Compactor Bin

## Deep Storage Bins

These types of storage bins have been used internationally for several years and are typically used where there is limited storage capacity. There are different types of deep storage bins with basic and more automated systems available.

Typically, these bins have a significant percentage of their storage capacity underground, thus reducing the above-ground footprint. When the container is full, it is emptied by a refuse collection vehicle with a mechanical arm, which lifts the liner out of the bin and empties the contents via an opening at the bottom. These bins are particularly suitable to busy open areas and possibly for the student accommodation.



**Figure 6.7: Deep Storage Waste Collection Vehicle**

As part of the waste strategy, an alternative collection system has been considered in terms of viability and suitability for the site.

Envac's Automated Waste Collection system is a fully enclosed vacuum system consisting of a number of (indoor and outdoor) collection points/inlets linked together by an underground network of pipes (400-500mm in diameter) for the collection and transportation of waste, which transports the waste to a central collection station (See Figure 6.8). When a refuse bag is deposited into an inlet, it is temporarily stored in a chute on top of a discharge valve. All of the inlets connected to the collection station are automatically emptied at regular intervals. The control system switches on the fans and a vacuum is created in the network of pipes. An air inlet valve is opened to allow transport air to enter the system.



**Figure 6.8: Schematic of Envac System**

When the discharge valves below each of the chutes are opened, the waste bags fall down into the network of pipes and are sucked to the collection station. The waste enters the collection station and into a compactor which compacts the refuse in the sealed container.

The system is suitable for separating waste for recycling as there is an inlet and container for each waste fraction. The control system directs a diverter valve to convey each category of sorted waste into the correct container. When the container is full, the truck to collect and conveys it to a treatment facility.

One of the main advantages of the Envac system is the reduction in on-site movement of waste except for the collection of full containers from the central collection station.

However, the system is quite expensive and a payback period of 20-30 years would be expected. The staged construction process and the laying of the required pipes for the full site may not be compatible. Also, there will be several different waste streams generated on the site which would not be suitable for the Envac system. This would mean supplementing the expensive Envac system with more traditional waste collection systems.

## **6.4 PARK & GARDEN WASTE**

Given the large area of parkland sports pitches and quadrangles planned for the development, a lot of park and garden waste, most of which will be grass, will be generated. There are two options for managing this garden waste:

- The garden waste may be collected and composted on-site or taken off-site by an approved waste collector.
- A 'grass-cycling' approach may be taken. 'Grass-cycling' is where grass is recycled naturally by leaving the fine clippings on the surface as part of a frequent mowing regime. This is well suited to Irish climatic conditions and it can contribute to the fertilisation of the pitches and other grass areas, while reducing potential for the growth of weeds.

## **6.5 HAZARDOUS WASTES**

The planned campus will generate quantities of hazardous wastes (as defined in 6.1.1) such as chemical and risk wastes which will require specific management. Other hazardous wastes such as batteries, aerosols, fluorescent tubes, etc will be managed through the main system described in Sections 6.2, 6.3 and 6.4.

It is recommended that hazardous waste be stored in a standalone facility, ideally at ground level due to the weight of the drums of liquid chemical waste, i.e. chlorinated and non-chlorinated solvents. The bundled storage for the drums of liquid chemical waste should be in a secure area with CCTV monitoring. The storage of wheeled bins containing biohazard waste need not necessarily be indoors but must also be secure. The storage area for liquid chemical waste must have spark-proof lighting fittings because of the flammable nature of some of the vapours generated and have adequate ventilation. There must also be an upper and lower extraction system that is separate to the extraction system. This will ensure the collection of those gases heavier than air which sink to floor-level and those which are lighter and rise to ceiling-level.

The waste storage area should be located near to the source of hazardous waste generation, i.e. the science faculty and the HSE facilities. As it is planned that these buildings will be adjacent to one another, the movement of waste to the storage area is minimised.

## **6.6 SUMMARY**

The proposals set out in this Strategy are designed to follow the policy objectives of the Dublin Waste Plan. This approach prioritises the waste management options higher up the waste hierarchy. The

Waste Strategy for Grangegorman seeks to minimise the generation of waste and to maximise the level of reuse and recycling of resources generated.

The Grangegorman development includes buildings of several different uses: educational, administration, residential and retail as well as open public spaces. Each building will generate different waste stream, which will be managed in keeping with the objectives of the Dublin Waste Plan. A strategy based on source separation of materials will be employed at the site to maximise materials recycling and recovery.

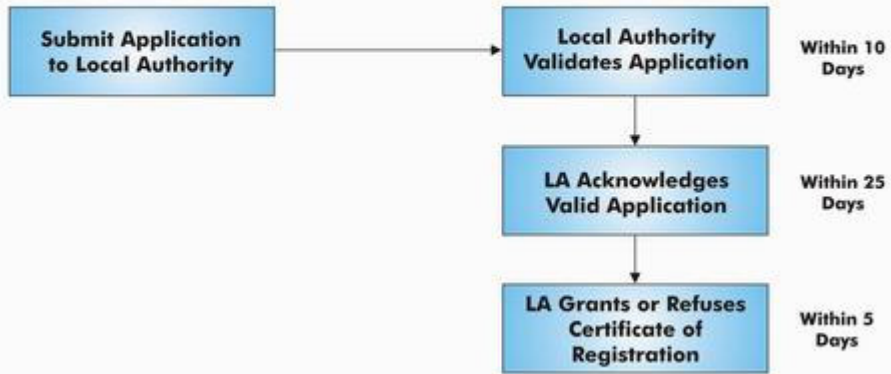
Each building or cluster of buildings of similar type will accommodate a temporary collection area where waste from the building(s) will be collected before being transferred to a central storage area. The Strategy proposes two central storage areas based on the natural division of the site and the layout of the development, which means there will be two main (waste) activity centres on the site. Locations for the storage area serving each of the two main activity centres are proposed based on proximity to external access points, planned vehicular access routes and planned use of the space. These central storage locations should minimise heavy vehicular movement on-site.

The Strategy complies with existing waste management policies and also takes into account future waste legislation that is currently at draft stage and which will have an impact on waste management at Grangegorman. It is also in keeping with Dublin City's 'Sustainable Vision' for future development in Dublin, which seeks a flexible strategy that incorporates key sustainability principles and can evolve as the development evolves.

## **APPENDIX A**

### **Application Process and Activities Covered by Regulatory Approvals for Wastes**

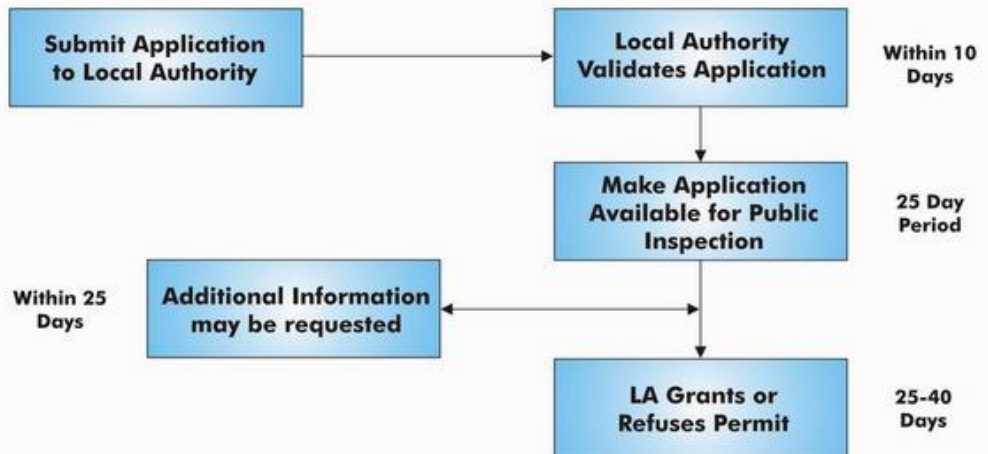
### Certificate of Registration Application Process



### **Certificate of Registration Application Process**

The cost of an application for a Certificate of Registration for Classes 5, 6, 7 and 10 is €600, all other classes are €300/.

### Waste Permit Application Process



### **Waste Permit Application Process**

The cost of an application for a waste facility permit for Classes 5, 6 and 7 is €2,000.

5.	<p>Recovery of excavation or dredge spoil, comprising natural materials of clay, silt, sand, gravel or stone and which comes within the meaning of inert waste, through deposition for the purposes of the improvement or development of land, where—</p> <p>(a) the activity shall have the principal objective that the waste serves a useful purpose in replacing other materials which would have had to be used for that purpose, thereby conserving natural resources, and</p> <p>(b) the waste-related activity consists of the direct use of the waste material without further processing other than normal industrial practice, and</p> <p>(c) the works do not constitute exempted development within the meaning of Classes 11 (b) and 11(f) of Exempted Development — Rural within part 3 of the second schedule of the Planning and Development Regulations 2001 (S.I. No. 600 of 2001), and</p> <p>(d) the total quantity of waste recovered at the site shall not exceed 25,000 tonnes.</p>
6.	<p>Recovery of inert waste (other than excavations or dredgings comprising natural materials of clay, silt, sand, gravel or stone), for the purpose of the improvement or development of land where—</p> <p>(a) the activity shall have the principal objective that the waste serves a useful purpose in replacing other materials which would have had to be used for that purpose, thereby conserving natural resources, and</p> <p>(b) the waste-related activity consists of the direct use of the waste material without further processing other than normal industrial practice, and,</p> <p>(c) the works do not constitute exempted development within the meaning of Classes 11 (b) and 11(f) of Exempted Development — Rural within part 3 of second schedule of the Planning and Development Regulations 2001 (S.I. No. 600 of 2001), and</p> <p>(d) the total quantity of waste recovered at the site shall not exceed 10,000 tonnes.</p>
7.	<p>Recovery of inert waste arising from construction and demolition activity, including concrete, bricks, tiles, or other such similar material, at a facility (excluding the improvement or development of land) where—</p> <p>(a) the annual intake shall not exceed 10,000 tonnes, and</p> <p>(b) the maximum quantity of residual waste consigned from the facility for submission to disposal at an authorised facility shall not exceed 1,500 tonnes per annum.</p>

**A selection of activities covered by Certificate of Registration; Class 5, 6, 7; 3<sup>rd</sup> Schedule Part II Waste Management (Facility Permit and Registration) Regulations 2007; S.I. No. 821 of 2007.**

5.	<p>Recovery of excavation or dredge spoil, comprising natural materials of clay, silt, sand, gravel or stone and which comes within the meaning of inert waste, through deposition for the purposes of the improvement or development of land, where—</p> <p>(a) the activity shall have the principal objective that the waste serves a useful purpose in replacing other materials which would have had to be used for that purpose, thereby conserving natural resources,</p> <p>(b) the waste-related activity consists of the direct use of the waste material without further processing other than normal industrial practice, and</p> <p>(c) the total quantity of waste recovered at the facility is less than 100,000 tonnes.</p>
6.	<p>Recovery of inert waste (other than excavations or dredgings comprising natural materials of clay, silt, sand, gravel or stone) through deposition for the purposes of the improvement or development of land, where —</p> <p>(a) the activity shall have the principal objective that the waste serves a useful purpose in replacing other materials which would have had to be used for that purpose, thereby conserving natural resources, and</p> <p>(b) the waste-related activity consists of the direct use of the waste material without further processing other than normal industrial practice, and</p> <p>(c) the total quantity of waste recovered at the facility is less than 50,000 tonnes.</p>
7.	<p>Recovery of inert waste arising from construction and demolition activity, including concrete, bricks, tiles, or other such similar material, at a facility (excluding land improvement or development) where—</p> <p>(a) the annual intake shall not exceed 50,000 tonnes, and</p> <p>(b) the maximum quantity of residual waste consigned from the facility for collection, onward transport and submission to disposal at an authorised facility shall not exceed 7,500 tonnes per annum.</p>
8.	<p>The reception, storage and composting of biowaste at a facility where—</p> <p>(a) the maximum amount of compost and biowaste held at the facility does not exceed 6,000 cubic metres at any time, and</p> <p>(b) the annual intake shall not exceed 10,000 tonnes.</p>
9.	<p>The reception, temporary storage and recovery of used batteries and accumulators where-</p> <p>(a) from 26 September 2008, the treatment and recycling of used batteries and accumulators meets the requirements of article 12 of Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and</p> <p>(b) the annual intake shall not exceed 1,000 tonnes.</p>

**A selection of activities Covered by Waste Permit; Class 5, 6, 7, 8 & 9; 3<sup>rd</sup> Schedule Part I Waste Management (Facility Permit and Registration) Regulations 2007; S.I. No. 821 of 2007**



## **APPENDIX B**

### **Guidelines for Waste Storage Facilities**

## **Standards for Apartments**

The requirements set out in this Plan for the collection, Storage and Presentation of Household Waste and for the requirement to segregate waste into separate fractions are to facilitate the collection of dry recyclables, organic kitchen/garden waste and residual waste.

Bins that comply with IS EN 840 1997 must be used. Ideally 1,100 Litre Bins should be used with dimension of 1.3 metres long by 1.0metres wide by 1.3 metres high and with a load capacity of approximately 0.5 tonnes. Other types of receptacles may only be used with the written consent of the Local Authority.

There must be enough storage space for a minimum of 1No. 1,100 Litre Bin per 15 people availing of the communal collection scheme for residual household waste.

Sufficient space must be provided to accommodate the collection of dry recyclables and organic kitchen waste/garden waste. Provision should also be made for the collection of glass (separated by colour) in Bottle Banks within the curtilage of the apartment block. The total footprint of each of these banks is 4metres by 2 metres wide. The location must be external, with sufficient access and clearance for servicing using a crane.

The bin storage areas must not be on the public street and should not be visible or accessible to the general public.

The bin storage areas should be designed so that each bin within the storage area is accessible to occupants of the apartment block (including people with disabilities).

Suitable wastewater drainage points should be installed in the bin storage area for cleaning and disinfecting purposes.

If the waste is collected by a private contractor, that contractor must be the holder of a current Waste Collection Permit.

Sufficient access and egress must be provided to enable bins to be moved easily from the storage area to an appropriate collection point on the public street nearby. The access and egress area should have no steps and have a minimal incline ramp.

Where a bye law is in place regarding waste presentation in the Local Authority, this must be adhered to in the development of suitable waste storage areas.

## **Standards for Commercial/Industrial Developments**

The requirements set out in this Plan for the collection, Storage and Presentation of Household Waste and r the requirement to segregate waste into separate fractions to facilitate the collection of dry recyclables, organic kitchen/garden waste and residual waste.

Bins that comply with IS EN 840 1997 must be used. Ideally 1,100 Litre Bins should be used with dimension of 1.3 metres long by 1.0 metres wide by 1.3 metres high and with a load capacity of approximately 0.5 tonnes. Other types of receptacles may only be used with the written consent of the Local Authority.

There must be enough storage space for a minimum of 1 No. 1,100 Litre Bin per 10 bags to be collected.

Sufficient space must be provided to accommodate the collection of dry recyclables and organic kitchen waste/garden waste. Provision should also be made for the collection of glass (separated by colour) in Bottle Banks within the cartilage of the apartment block. The total footprint of each of these banks is 4metres by 2 metres wide. The location must be external, with sufficient access and clearance for servicing using a crane.

The bin storage areas must not be on the public street and should not be visible or accessible to the general public.

The bin storage areas should be designed so that each bin within the storage area is accessible to occupants/employees of the development (including people with disabilities).

Suitable wastewater drainage points should be installed in the bin storage area for cleaning and disinfecting purposes.

A waste collection contract must be signed with the local authority or a private waste collector who is the holder of a Waste Collection Permit, prior to the commencement for the collection of waste. Private contractors are required to provide the recycling services prescribed in the Plan.

Sufficient access and egress must be provided to enable bins to be moved easily form the storage area to an appropriate collection point on the public street nearby. The access and egress area should have no steps and have a minimal incline ramp.

Where a bye law is in place regarding waste presentation in the Local Authority, this must be adhered to in the development of suitable waste storage areas.

## **APPENDIX C**

### **Dublin City Council Bye-laws for the Storage, Separation at Source and Presentation for Collection of Waste**

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Project title	Grangegorman Development	Job number	D7390.10
cc		File reference	I001
Prepared by	Niall Cunningham	Date	22 March 2011
Subject	Foul Effluent Generation and Potable Water Demand Estimates		

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## 1. INTRODUCTION

This technical note is a brief summary of the methodology employed to generate the foul and potable water estimates for the Grangegorman site. Appended to this technical note are the foul and potable water demand estimates for the development for each of the design years.

It should be noted that the estimates prepared and presented in this technical note have been developed at the very outset of the detailed design process. The figures presented are therefore conservative estimates based on maximum population figures. The volumetric and biological loading rates used in the design calculation take no account of any design sustainability approach, a key area of focus of the Grangegorman design team.

It is therefore envisaged that the loading estimates presented in this technical note will reduce as the detailed design for the Grangegorman site is developed. Updated estimates will be presented with subsequent planning applications.

## 2. METHODOLOGY

It is envisaged that the development of the Grangegorman site will be implemented in three phases. The first phase will be complete by 2016, the second by 2020 and the final and full development of the site by the year 2030.

Using the accommodation schedule developed at master plan stage as a starting template, the schedule of accommodation was developed for all elements for each design year. Both the Dublin Institute of Technology (DIT) and the Health Service Executive (HSE) were consulted and the schedule of accommodation was revised to reflect the most up to date development quantum including buildings, floor areas and anticipated population estimates.

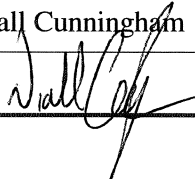

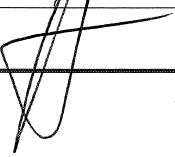
The foul effluent loading rates used in the calculation for the site are those as recommended by the Environmental Protection Agency (EPA) – Ref Wastewater Treatment Manual – Treatment Systems for Small Communities, Business, Leisure Centres and Hotels.

The potable water demand figures are based on the assumption that the foul/wastewater flow volume estimates would typically represent 80% of the potable water consumption on the site. Again this approach is general considered to be conservative.

### 3. PRESENTATION OF FOUL GENERATION AND POTABLE WATER DEMAND ESTIMATES

The estimates for the development for the three design years for both foul and potable water are presented in tabulated format and appended to this technical note. For ease of reference, the results are divided into four elements and within those elements further broken into tranches showing the accommodation schedule proposed to be complete for that design year. The corresponding total loading, volumetric and biological, are shown opposite each building with sub-totals for each element and overall total for each design year also presented.

#### DOCUMENT CHECKING (not mandatory for File Note)

	Prepared by	Checked by	Approved by
Name	Niall Cunningham	Pat Finnegan	Paul Coughlan
Signature			

# **Foul Effluent**

## Grangegorman Foul Effluent Generation 2016

1 P.E. = 200 l/person/day  
 1 BOD<sub>5</sub> P.E.= 60 g BOD<sub>5</sub>/day  
 Day = 9:00am-5:30pm  
 Evening= 5:30pm-9:30pm  
 Student residences= Before 9:00am, after 5:30pm

Element 1 HSE Facilities			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Tranche 1	Package 1	Replacement Mental Health - Total Area 14,510m <sup>2</sup> - Planning submission 3112/09	7,300	99	87
		Laundry Refurb Daycare - 200m <sup>2</sup> Studio - 800m <sup>2</sup>	1,450	3	7
		Connolly Norman Refurb	560	15	25
	Package 2	*DIT Optometry	600	12	22
<b>Sub-total Element 1 HSE Facility - 2016</b>				<b>133</b>	<b>148</b>

Element 2 (DIT) (Core and Complimentary Elements)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Tranche 1	Package 1A	Primary Infrastructure	N/A		
	Package 2A	Tourism & Food, Science, Engineering Craft Training (Part), DIT Research Ce	37,360		
		Population		1,320	2200
		Teaching kitchens - 2500m2 assume 400 covers/day		30	100
		Laboratory - 3000m2			
	Package 2B	Business, Library with support space	28,300		
		Academic Hub		60	100
		Business		960	1600
		Computer(ICT) & Facilities Management		30	50
		General Public using Library facilities		90	150
	Package 2C	Cafeteria incl staff common, Social Hub (Part), Student Housing (Part) and R	8,800		
		Student Union		68	113
	Package 2E	Student Hub (Part)and Clock Tower Refurb	6,970	30	50
	Package 2F	Applied Arts	21,340		
		Applied Arts		990	1650
	Junior Music - 200 students for 3 hours each 1 day per week		12	20	
	performance space - 500 visitors 1 day per week		25	83	
Package 2G	Cafeteria and Retail (Part)	3,800			
	Staff		27	45	
Package 2H	Indoor Sports	2,000			
Package 2J	Student Housing (Part)	31,820			
	1000 Beds		600	500	
Package 2M	Research Centre included 2A	3,900			
Package 2N	Science & Industry Centre/Incubation 1 Person/20m2	5,300	80	133	
	Sports Pitches and Parkland	N/A			
Tranche 2	Package 2L	Sports Centre	6,980	216	433

Element 4 (GDA Managed Developments)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Tranche 1	Package 2	Primary Shcool 1 pupil/6m2	2,770		
		DCC Library refer 2B	1,660	90	150
<b>Sub-total Elements 2, 3 &amp; 4 - 2016</b>				<b>4,689</b>	<b>7500</b>

<b>Total - All Elements 2016</b>				<b>4,823</b>	<b>7,648</b>
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## Grangegorman Foul Effluent Generation 2020

1 P.E. = 200 l/person/day  
 1 BOD<sub>5</sub> P.E.= 60 g BOD<sub>5</sub>/day  
 Day = 9:00am-5:30pm  
 Evening= 5:30pm-9:30pm  
 Student residences= Before 9:00am, after 5:30pm

Element 1 HSE Facilities			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Tranche 1	Package 1	Replacement Mental Health - Total Area 14,500m <sup>2</sup>	7,300	99	87
		- Planning submission 3112/09	7,200	99	87
		- Remaining Area			
	Laundry Refurb	Daycare - 650m <sup>2</sup>		3	7
		Studio - 800m <sup>2</sup>		15	25
	Package 2	Connolly Norman Refurb	560	12	22
		Primary Care	4,100	59	123
Package 3	*DIT Optometry	600	5	8	
	High Support Hostel	1,010	15	19	
Residential Private		6,500	216	238	
<b>Sub-total Element 1 HSE Facility - 2020</b>				<b>522</b>	<b>615</b>

Element 2 (DIT) (Core and Complimentary Elements)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Tranche 1	Package 1A	Primary Infrastructure	N/A		
	Package 2A	Tourism & Food, Science, Engineering Craft Training (Part), DIT Research Cent	37,360	1,320	2200
		Population		30	100
		Teaching kitchens - 2500m <sup>2</sup> assume 400 covers/day Laboratory - 3000m <sup>2</sup>			
	Package 2B	Business, Library with support space	28,300		
		Academic Hub		60	100
		Business		960	1600
		Computer(ICT) & Facilities Management General Public using Library facilities		30	50
	Package 2C	Cafeteria incl staff common, Social Hub (Part), Student Housing (Part) and Res	8,800		
		Student Union		68	113
	Package 2E	Student Hub (Part)and Clock Tower Refurb	6,970	30	50
	Package 2F	Applied Arts	21,340		
		Applied Arts Junior Music - 200 students for 3 hours each 1 day per week performance space - 500 visitors 1 day per week		990	1650
	Package 2G	Cafeteria and Retail (Part)	3,800		
Staff			27	45	
Package 2H	Indoor Sports	2,000	62	124	
Package 2J	Student Housing (Part)	31,820			
	1000 Beds		600	500	
Package 2M	Research Centre included 2A	3,900			
Package 2N	Science & Industry Centre/Incubation	5,300			
	1 Person/20m <sup>2</sup>		80	133	
Sports Pitches and Parkland			N/A		
Tranche 2	Package 2D	Engineering & Built Environment incl Craft Training (Part)	31,860	1,605	2675
	Package 2K	Student Housing (part)	28,370		
		1000 Beds		600	500
Package 2L	Sports Centre	6,980	216	433	

Element 3 (Mixed Use)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Mixed Use Population 1/27m <sup>2</sup> /d - 2020			60,430	224	373

Element 4 (GDA Managed Developments)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Tranche 1	Package 1	Primary School 1 pupil/6m <sup>2</sup>	2,770		
	Package 2	DCC Library refer 2B	1,660	90	150
Tranche 2	Package 3	Social Housing 1 person/27m <sup>2</sup>	3,300	37	61
<b>Sub-total Elements 2, 3 &amp; 4 - 2020</b>				<b>7,228</b>	<b>11,170</b>

<b>Total - All Elements 2020</b>				<b>7,750</b>	<b>11,785</b>
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**Grangegorman Foul Effluent Generation 2030**

1 P.E. = 200 l/person/day  
 1 BOD<sub>5</sub> P.E.= 60 g BOD<sub>5</sub>/day  
 Day = 9:00am-5:30pm  
 Evening= 5:30pm-9:30pm  
 Student residences= Before 9:00am, after 5:30pm

Element 1 HSE Facilities			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Tranche 1	Package 1	Replacement Mental Health - Total Area 14,500 <sup>2</sup>	7,300	99	87
		- Planning submission 3112/09 floor area 8754m <sup>2</sup>	7,200	99	87
		- Remaining Area 5756m <sup>2</sup>	1,450		
	Package 2	Laundry Refurb			
		Daycare - 650m <sup>2</sup>		3	7
		Studio - 800m <sup>2</sup>		15	25
Package 3	Connolly Norman Refurb	560	12	22	
	Primary Care	4,100	59	123	
	*DIT Optometry	600	5	8	
Tranche 2	Package 3	High Support Hostel	1,010	15	19
		Community Generated Rehab	1,400	4	8
		Primary Care	7,500	65	142
		Dementia Unit	1,700	42	35
		Community Nursing Unit	5,500	20	42
		Respite/Intermediate Care Unit	1,400	23	22
Services for People with Disabilities	3,100	6	12		
Residential Private		6,500		216	238
HSE Expansion		8,000		198	156
<b>Sub-total Element 1 HSE Facility - 2030</b>				<b>881</b>	<b>1030</b>
Element 2 (DIT) (Core and Complimentary Elements)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Tranche 1	Package 1A	Primary Infrastructure	N/A		
	Package 2A	Tourism & Food, Science, Engineering Craft Training (Part), DIT Research Cent	37,360		
		Population		1,320	2200
		Teaching kitchens - 2500m <sup>2</sup> assume 400 covers/day Laboratory - 3000m <sup>2</sup>		30	100
	Package 2B	Business, Library with support space	28,300		
		Academic Hub		60	100
		Business		960	1600
		Computer(ICT) & Facilities Management General Public using Library facilities		30	50
	Package 2C	Cafeteria incl staff common, Social Hub (Part), Student Housing (Part) and Res	8,800		
		Student Union		68	113
	Package 2E	Student Hub (Part)and Clock Tower Refurb	6,970	30	50
	Package 2F	Applied Arts	21,340		
		Applied Arts		990	1650
		Junior Music - 200 students for 3 hours each 1 day per week performance space - 500 visitors 1 day per week		12	20
	Package 2G	Cafeteria and Retail (Part)	3,800		
		Staff		27	45
Package 2H	Indoor Sports	2,000	62	124	
Package 2J	Student Housing (Part) 1000 Beds	31,820	600	500	
Package 2M	Research Centre included 2A	3,900			
Package 2N	Science & Industry Centre/Incubation 1 Person/20m <sup>2</sup>	5,300	80	133	
Sports Pitches and Parkland			N/A		
Tranche 2	Package 2D	Engineering & Built Environment incl Craft Training (Part)	31,860	1,605	2675
	Package 2K	Student Housing (part) 1000 Beds	28,370	600	500
		Sports Centre	6,980	216	433
	Package 2Q	Research Centre 1 Person/20m <sup>2</sup>	7,890	120	200
		additionally funded performance space 800 visitors 2 days per week	3,580	40	133
<b>Element 3 (Mixed Use)</b>			<b>Total Area (m<sup>2</sup>)</b>	<b>Total</b>	
Mixed Use			60,430		
Population 1/100m <sup>2</sup> /d - 2020				224	373
Population 1/100m <sup>2</sup> /d - 2030				448	746
Element 4 (GDA Managed Developments)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	Biological P.E.
Tranche 1	Package 1	Primary School 1 pupil/6m <sup>2</sup>	2,770		
	Package 2	DCC Library refer 2b	1,660	90	150
Tranche 2	Package 3	Social Housing 1 person/27m <sup>2</sup>	3,400		
				37	61
<b>Sub-total Elements 2, 3 &amp; 4 - 2030</b>				<b>7,762</b>	<b>12,188</b>
<b>Sub-total Elements 1, 2, 3 &amp; 4 - 2030</b>				<b>8,643</b>	<b>13218</b>
Expansion on elements 2, 3 & 4 by 2030 (10%)				776	1219
<b>Total - Full Site Development</b>				<b>9,419</b>	<b>14,437</b>

# Potable Water

# Grangegorman Potable Water Demand 2016

1 P.E. = 200 l/person/day

Day = 9:00am-5:30pm

Evening= 5:30pm-9:30pm

Student residences= Before 9:00am, after 5:30pm

Element 1 HSE Facilities			Total Area (m <sup>2</sup> )	Total
				Volumetric P.E.
Tranche 1	Package 1	Replacement Mental Health - Total Area 14,510m <sup>2</sup>		
		- Planning submission 3112/09	7,300	124
		Laundry Refurb	1,450	
		Daycare - 200m <sup>2</sup>		4
		Studio - 800m <sup>2</sup>		19
		Connolly Norman Refurb	560	15
	Package 2	*DIT Optometry	600	6
<b>Sub-total Element 1 HSE Facility - 2016</b>				<b>167</b>

Element 2 (DIT) (Core and Complimentary Elements)			Total Area (m <sup>2</sup> )	Total
				Volumetric P.E.
Tranche 1	Package 1A	Primary Infrastructure	N/A	
	Package 2A	Tourism & Food, Science, Engineering Craft Training (Part), DIT Research Ce	37,360	1,650
		Population		38
		Teaching kitchens - 2500m <sup>2</sup> assume 400 covers/day		
		Laboratory - 3000m <sup>2</sup>		
	Package 2B	Business, Library with support space	28,300	75
		Academic Hub		1,200
		Business		38
		Computer(ICT) & Facilities Management		113
		General Public using Library facilities		
	Package 2C	Cafeteria incl staff common, Social Hub (Part), Student Housing (Part) and R	8,800	84
		Student Union		38
	Package 2E	Student Hub (Part)and Clock Tower Refurb	6,970	
	Package 2F	Applied Arts	21,340	1,238
		Applied Arts		15
	Junior Music - 200 students for 3 hours each 1 day per week		31	
	performance space - 500 visitors 1 day per week			
Package 2G	Cafeteria and Retail (Part)	3,800	34	
	Staff		78	
Package 2H	Indoor Sports	2,000		
Package 2J	Student Housing (Part)	31,820	750	
	1000 Beds			
Package 2M	Research Centre	3,900		
	included 2A		99	
Package 2N	Science & Industry Centre/Incubation	5,300		
	1 Person/20m <sup>2</sup>			
	Sports Pitches and Parkland	N/A		
Tranche 2	Package 2L	Sports Centre	6,980	270

Element 4 (GDA Managed Developments)			Total Area (m <sup>2</sup> )	Total
				Volumetric P.E.
Tranche 1	Package 2	Primary Shcool	2,770	113
		1 pupil/6m <sup>2</sup>		
		DCC Library	1,660	
		refer 2B		
<b>Sub-total Elements 2, 3 &amp; 4 - 2016</b>				<b>5,862</b>

<b>Total - All Elements 2016</b>				<b>6,028</b>
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## Grangegorman Potable Water Demand 2020

1 P.E. = 200 l/person/day

Day = 9:00am-5:30pm

Evening= 5:30pm-9:30pm

Student residences= Before 9:00am, after 5:30pm

Element 1 HSE Facilities			Total Area (m <sup>2</sup> )	Total
				Volumetric P.E.
Tranche 1	Package 1	Replacement Mental Health - Total Area 14,500m <sup>2</sup>		
		- Planning submission 3112/09	7,300	124
		- Remaining Area	7,200	124
	Package 2	Laundry Refurb	1,450	
		Daycare - 650m <sup>2</sup>		4
		Studio - 800m <sup>2</sup>		19
Package 3	Connolly Norman Refurb	560	15	
	Primary Care	4,100	74	
	*DIT Optometry	600	6	
Residential Private			1,010	19
Sub-total Element 1 HSE Facility - 2020			6,500	270

Element 2 (DIT) (Core and Complimentary Elements)			Total Area (m <sup>2</sup> )	Total
				Volumetric P.E.
Tranche 1	Package 1A	Primary Infrastructure	N/A	
	Package 2A	Tourism & Food, Science, Engineering Craft Training (Part), DIT Research Cent	37,360	1,650
		Population		25
		Teaching kitchens - 2500m <sup>2</sup> assume 400 covers/day Laboratory - 3000m <sup>2</sup>		
	Package 2B	Business, Library with support space	28,300	
		Academic Hub		75
		Business		1,200
		Computer(ICT) & Facilities Management General Public using Library facilities		38
	Package 2C	Cafeteria incl staff common, Social Hub (Part), Student Housing (Part) and Res	8,800	
		Student Union		84
	Package 2E	Student Hub (Part)and Clock Tower Refurb	6,970	38
	Package 2F	Applied Arts	21,340	1,238
		Junior Music - 200 students for 3 hours each 1 day per week performance space - 500 visitors 1 day per week		15
Package 2G	Cafeteria and Retail (Part)	3,800		
	Staff		34	
Package 2H	Indoor Sports	2,000	78	
Package 2J	Student Housing (Part)	31,820		
	1000 Beds		750	
Package 2M	Research Centre included 2A	3,900		
Package 2N	Science & Industry Centre/Incubation 1 Person/20m <sup>2</sup>	5,300	99	
Sports Pitches and Parkland			N/A	
Tranche 2	Package 2D	Engineering & Built Environment incl Craft Training (Part)	31,860	2,006
	Package 2K	Student Housing (part)	28,370	
		1000 Beds		750
Package 2L	Sports Centre	6,980	270	

Element 3 (Mixed Use)		Total Area (m <sup>2</sup> )	Total
			Volumetric P.E.
Mixed Use Population 1/27m <sup>2</sup> /d - 2020		60,430	280

Element 4 (GDA Managed Developments)			Total Area (m <sup>2</sup> )	Total
				Volumetric P.E.
Tranche 1	Package 1	Primary School 1 pupil/6m <sup>2</sup>	2,770	113
	Package 2	DCC Library refer 2B	1,660	
Tranche 2	Package 3	Social Housing 1 person/27m <sup>2</sup>	3,300	46
Sub-total Elements 2, 3 & 4 - 2020				92

<b>Total - All Elements 2020</b>				<b>9,675</b>
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## Grangegorman Potable Water Demand 2030

1 P.E. = 200 l/person/day

Day = 9:00am-5:30pm

Evening= 5:30pm-9:30pm

Student residences= Before 9:00am, after 5:30pm

Element 1 HSE Facilities			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	
Tranche 1	Package 1	Replacement Mental Health - Total Area 14,500 <sup>2</sup>	7,300	124	
		- Planning submission 3112/09 floor area 8754m <sup>2</sup>	7,200	124	
		- Remaining Area 5756m <sup>2</sup>	1,450		
	Package 2	Laundry Refurb			4
		Daycare - 650m <sup>2</sup>			19
		Studio - 800m <sup>2</sup>			15
Package 3	Connolly Norman Refurb	560	74	6	
	Primary Care	4,100	6	19	
	*DIT Optometry	600	5	81	
Tranche 2	Package 3	High Support Hostel	1,010	25	
		Community Generated Rehab	1,400	29	
		Primary Care	7,500	7	
		Dementia Unit	1,700		
		Community Nursing Unit	5,500		
		Respite/Intermediate Care Unit	1,400		
Services for People with Disabilities	3,100				
Residential Private		6,500	270		
HSE Expansion		8,000	248		
<b>Sub-total Element 1 HSE Facility - 2030</b>				<b>1,101</b>	
Element 2 (DIT) (Core and Complimentary Elements)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	
Tranche 1	Package 1A	Primary Infrastructure	N/A		
	Package 2A	Tourism & Food, Science, Engineering Craft Training (Part), DIT Research Cent	37,360	1,650	
		Population		37	
		Teaching kitchens - 2500m <sup>2</sup> assume 400 covers/day			
	Package 2B	Laboratory - 3000m <sup>2</sup>			
		Business, Library with support space	28,300	75	
		Academic Hub		1,200	
		Business		38	
	Package 2C	Computer(CT) & Facilities Management		113	
		General Public using Library facilities			
		Cafeteria incl staff common, Social Hub (Part), Student Housing (Part) and Res	8,800	84	
	Package 2E	Student Union			
		Student Hub (Part)and Clock Tower Refurb	6,970	38	
	Package 2F	Applied Arts	21,340	1,238	
		Applied Arts		15	
Junior Music - 200 students for 3 hours each 1 day per week			31		
Package 2G	performance space - 500 visitors 1 day per week				
	Cafeteria and Retail (Part)	3,800	34		
Package 2H	Staff				
	Indoor Sports	2,000	78		
Package 2J	Student Housing (Part)	31,820	750		
	1000 Beds				
Package 2M	Research Centre	3,900			
	included 2A				
Package 2N	Science & Industry Centre/Incubation	5,300	99		
	1 Person/20m <sup>2</sup>				
Sports Pitches and Parkland			N/A		
Tranche 2	Package 2D	Engineering & Built Environment incl Craft Training (Part)	31,860	2,006	
		Student Housing (part)	28,370	750	
	Package 2L	1000 Beds			
		Sports Centre	6,980	270	
Package 2Q	Research Centre	7,890	150		
	1 Person/20m <sup>2</sup>				
additionally funded performance space			3,580	50	
800 visitors 2 days per week					
Element 3 (Mixed Use)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	
Mixed Use			60,430	280	
Population 1/100m <sup>2</sup> /d - 2020				560	
Population 1/100m <sup>2</sup> /d - 2030					
Element 4 (GDA Managed Developments)			Total Area (m <sup>2</sup> )	Total	
				Volumetric P.E.	
Tranche 1	Package 1	Primary School	2,770	113	
	1 pupil/6m <sup>2</sup>				
Tranche 2	Package 2	DCC Library	1,660		
	refer 2B				
Tranche 2	Package 3	Social Housing	3,400	46	
		1 person/27m <sup>2</sup>			
<b>Sub-total Elements 2, 3 &amp; 4 - 2030</b>				<b>9,702</b>	
<b>Sub-total Elements 1, 2, 3 &amp; 4 - 2030</b>				<b>10,803</b>	
Expansion on elements 2, 3 & 4 by 2030 (10%)				970	
<b>Total - Full Site Development</b>				<b>11,773</b>	

Grangegorman Development Agency

**Grangegorman**

Flood Risk Assessment

D 7390.10

Issue 3 | April 2011

**Ove Arup & Partners Ireland**

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Dublin 4  
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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number D 7390.10

**ARUP**





# Document Verification

# ARUP

<b>Job title</b>		Grangegorman		<b>Job number</b>	
				D 7390.10	
<b>Document title</b>		Flood Risk Assessment		<b>File reference</b>	
<b>Document ref</b>		D 7390.10			
<b>Revision</b>	<b>Date</b>	<b>Filename</b>	Grangegorman_Flood Risk Assessment_Issue 1_D 7390-10.docx		
Issue 1	23/03/11	<b>Description</b>	Issue 1		
			Prepared by	Checked by	Approved by
		Name	Niall Cunningham	Stephen Fraser	Paul Coughlan
		Signature			
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		<b>Description</b>	Issue 2		
			Prepared by	Checked by	Approved by
		Name	Niall Cunningham	Stephen Fraser	Sean Mason
	Signature				
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		<b>Description</b>			
			Prepared by	Checked by	Approved by
		Name	Niall Cunningham	Julie Ascoop	Sean Mason
	Signature				
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		<b>Description</b>			
			Prepared by	Checked by	Approved by
		Name			
	Signature				

Issue Document Verification with Document





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## Appendices

### Appendix A

Existing Services

### Appendix B

Proposed SuDS Measures

### Appendix C

Historic Flood Maps



# 1 Introduction

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The Grangegorman development is situated within Dublin's North Inner City on the site of St Brendan's Hospital. The development lies east and west of Grangegorman Road Upper and has a total area of approximately 70 acres. The site currently comprises a number of health and administration buildings set in large green space areas.

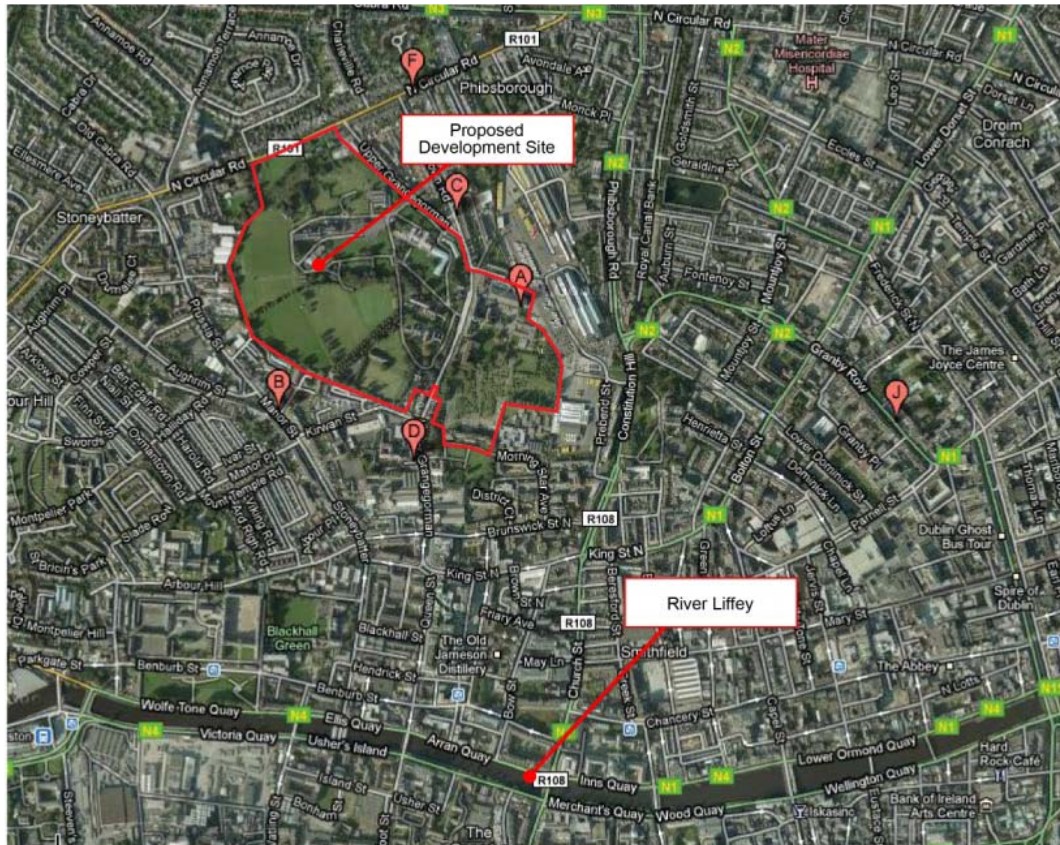
The Grangegorman Development Agency (GDA) is the statutory agency established by the Irish Government to promote and facilitate the development of the Grangegorman site. The GDA's objectives for the site include the provision of:

- new health care facilities for the Health Services Executive (HSE)
- a new urban campus for Dublin Institute of Technology (DIT), bringing together all students and staff into one location
- new arts, cultural, recreational and public spaces to serve the community and the city
- a primary school, public library and children's play spaces, and
- complementary mixed-use development

The writing of this report coincides with the development of the Draft Planning Scheme document and so in that context no detailed design for the Grangegorman site has been carried out. The report therefore should not be interpreted as a definitive detailed flood management strategy for the development but rather the identification of historical flood issues and a high level strategic over view of the proposed redevelopment of the site and the surface water management plan to be adopted to minimise flood risk both within the site and downstream of same. Detailed flood risk management proposals will form part of subsequent planning submissions.

## 2 Existing Environment

For ease of reference, the area of site lying west of Grangegorman Road will be referred to as the West Site and the area of site lying east of Grangegorman Road will be referred to as the East Site. A site location map is shown in Figure 2.1.



**Figure 2.1 Site Location**

The site is predominantly greenfield with a number of medical healthcare buildings, a primary school and disused church situated on the site. A number of these existing building will be retained and the remainder demolished as part of the re-development. All existing underground utilities including wet services, within the site, will be decommissioned and new utility provision constructed as part of the re-development.

The existing Dublin City Council (DCC) public sewer infrastructure within the environs of the site is combined sewer infrastructure. In addition the Bradoge, a DCC combined sewer system, traverses the Grangegorman site.

While the exact alignment of the Bradoge through the Grangegorman site has yet to be established, it is thought to enter the West Site at the rear of the houses at the junction of Grangegorman Road Upper and the North Circular Road. The Bradoge travels along the back of these houses, running parallel to Grangegorman Road Upper, before crossing Grangegorman Road and entering the East Site close to the junction of Grangegorman Road and Marine Villas. The combined system then appears to diverge with one leg travelling on through Broadstone Bus Depot and the other travelling south down the middle of the East Site before exiting onto North King Street. A map showing the approximate alignment of the Bradoge through the Grangegorman site and other DCC combined sewer infrastructure within the environs of the site is included in Appendix A.

From 'Rivers of Dublin', Claire I. Sweeny, 1991:

*'Proceeding diagonally along the Cabra Road the water course comes to a point on the southern footpath opposite Dowth Avenue and then turns sharply southwards down the back gardens and around a recent development on the west side of Charleville Road.*

*It meanders on to a gap between Royal Terrace and Charleville Terrace on the North Circular Road and across this road to a curved back boundary of the premises on the west side of Grangegorman Upper.*

*Passing into Grangegorman Hospital grounds for 60 metres, it turns out to the Grangegorman Road upper and follows this boundary road southwards for about 280m to where the roadway widens on the bend.*

*From here the watercourse line passed around the north side of the Richmond Female Penitentiary (Later Grangegorman Hospital Annex) to the rear of the Engine Shed and Turntable of Broadstone & great Western Railway Terminus (opened in 1851, now road vehicle shops)'*

Currently all foul sewer from the existing buildings and surface water from hard standing and roofed area within the site discharges, unattenuated, to the DCC combined drainage system including the Bradoge. It is therefore likely that the peak discharge rates from the site to the public network are high.

The DCC combined sewer system currently serving the Grangegorman site has a number of storm overflows that discharge to the River Liffey during periods of intense rainfall.

### 3 Proposed Re-Development

---

The re-development of the site comprises the retention and refurbishment of a number of mostly listed structures and the construction of new education hubs and associated support infrastructure on the 70 acre site.

Within the site, new public realm infrastructure will be constructed to service the building and open space areas and this infrastructure will include separate foul sewer and surface water collection networks.

The new foul sewer within the site is to be connected to the existing 375mm combined sewer along Grangegorman Road. In addition, the current practice of discharging foul sewer from the Grangegorman site to the Bradoge will be discontinued with the redevelopment of the Grangegorman site.

There is an existing dedicated surface water sewer situated in Smithfield that was constructed at the time Smithfield square was being redeveloped. This sewer outfalls to the River Liffey and terminates at the top of Smithfield square along North King Street. It is intended that this surface water sewer will be extended as far as the Grangegorman site, and that the new surface water sewer within the site will connect to the new surface water sewer extended from Smithfield.

This proposed new surface water infrastructure external to the Grangegorman site will be delivered by the GDA in tandem with any first phase development of the site itself.

Following a condition and alignment survey of the Bradoge through the Grangegorman site, it is proposed to realign the Bradoge, as appropriate, to facilitate the new building infrastructure. Further, any sections of the Bradoge remaining as per the existing alignment and identified as being of poor structural integrity will be remediated as appropriate.

Storm water management for the re-developed site will be such as to achieve equivalent greenfield run-off conditions from the Grangegorman site and will comprise a combination of Sustainable Drainage Systems (SuDS) treatment measures that focus on the quantity and quality of surface runoff from the site and also incorporate amenity and biodiversity into the strategy. Figure 3.1 summarises the surface water management strategy for the Grangegorman site.



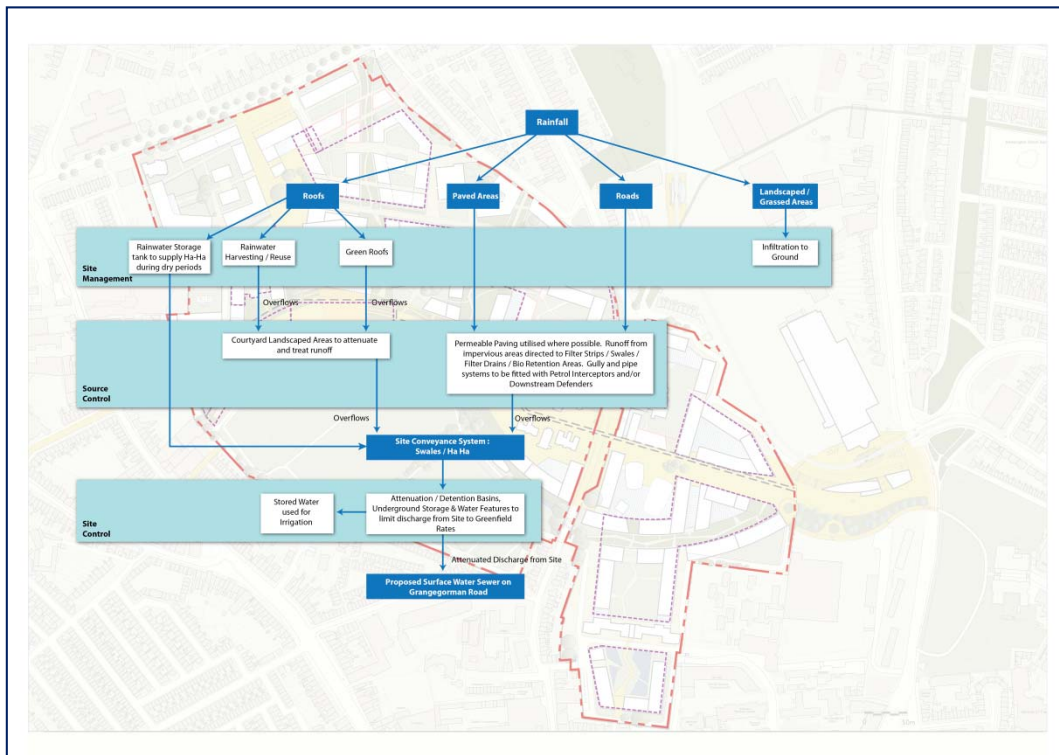


Figure 3.1 – Grangegorman Surface Water Management Strategy

A contoured map of the proposed development is included in Appendix B and illustrates some of the SuDS features proposed for the Grangegorman Site which include swales, attenuation ponds, permeable surfaces, detentions basins, green roofs and rain water harvesting.

Flooding routing within the site will be such as to convey flood waters to green space areas such as the playing pitches at the southern end of the site. Flood volumes for up to and including the 1 in 100 year event will be contained within the Grangegorman site. Flood routing external to the site, for events greater than the 1 in 100 year, will be via the provision of the new dedicated 600mm surface water sewer which will be constructed in tandem with the first phase of the re-development of the Grangegorman site.

Dublin City is also a member city of the Flood Resilient City project which promotes the 4 'A' of Awareness, Avoidance, Alleviation and Assistance when considering pluvial flood management. Some of the measures proposed in the surface water management for the site include swales, ha-ha's, permeable paving, ponds, green roofs and rain water harvesting. The discharge rate of surface runoff from the site to the new dedicated surface water sewer on Grangegorman Road will be limited to a maximum of 2l/s/ha. The various attenuation features will have combined capacity to accommodate pluvial volumes equivalent to the 1 in 100 year event within the confines of the site.

The EU Water Framework Directive 2000/60/EC commits member states to preventing deterioration and achieving at least good status in our rivers, lakes, estuaries, coastal and ground waters. The Eastern River Basin District (ERBD) Plan was produced jointly by the local authorities and a project team for the Eastern River Basin District. The Plan sets the strategy for implementing the Directive in eastern river basin district. The proposed Grangegorman surface water and flood management strategies as outlined in this flood risk assessment document acknowledge the objectives as set down in the Plan.

Specific focus will also be given to implementing a policy of sustainable use and re-use of water and grey water respectively with a view to reducing the potable water demand for the site and also the volume of foul effluent generated by the development.

## 4 Analysis of Flood Hazards

---

### 4.1 Historical

A copy of the OPW's Floodmaps.ie report for the Grangegorman Area is shown in Appendix C.

**Tidal** - An extreme tide and flood event was recorded across Dublin City and Fingal County on 1<sup>st</sup> February 2002. The tide was highest on record since 1922, being in excess of 1 metre above the predicted tide for that day, and caused extensive flooding at a number of locations across the city – some drawings outlining the areas known to have flooded are also included in Appendix C. Rainfall and river flows were not significant contributing factor to the flooding with 1.8mm falling on 31<sup>st</sup> January 2002 and 10.4mm falling on 1<sup>st</sup> February 2002.

Through the centre of Dublin City none of the Liffey walls were breached. It is reported that the water levels came to within 100mm of breaching at the pedestrian entrances to the boardwalk. Some flooding did occur on Wolfe Tone Quay, Victoria Quay and Wood Quay however it is thought that this arose as a result of water backing up un-flapped outfalls.

No flooding was recorded in the area where the Smithfield surface water outfalls to the Liffey.

**Fluvial** – Fluvial flooding is flooding due to the presence of a river or stream.

With reference to the Bradoge, which traverses the site and although now is a combined sewer was originally a river system, there appears to be no historic record of flooding within the site.

The main river of significance in proximity to the Grangegorman site is the River Liffey, which ultimately is where most of the catchment Grangegorman is situated within drains to. Fluvial flooding was noted on tributary rivers, such as the Camac during Hurricane Charlie in 1986. Other flood events of note occurred on the Liffey at Leixlip and further upstream in 1954, 1993 and 2000. None of these events caused any breaching of the River Liffey walls through the city centre. In fact this section of the Liffey is predominantly influenced by tidal rather than fluvial flow.

**Pluvial** – Pluvial flooding is caused by surface water runoff due to direct rainfall.

There are no historic records of pluvial flooding either within or within the environs of the Grangegorman site.

**Ground water** – a first stage geotechnical site investigation was carried out on the Grangegorman site at master planning stage and concluded that the site comprised predominantly of boulder clays with moderate to poor drainage characteristics. As there are no known historic flooding issue of any description on the site, ground water is not thought to present any significant flood risk.

## 4.2 Flood Zones

### 4.2.1 Zone Definitions

The new “Planning System and Flood Risk Management Guidelines” published in November 2009 by the Department of the Environment, Heritage and Local Government use three different flood zones to define areas of flood risk. Flood zones are geographical areas within which the likelihood of flooding is in a particular range and they are a key tool in flood risk management within the planning process as well as in flood warning and emergency planning. There are three types or levels of flood zones defined for the purposes of these Guidelines:

**Flood Zone A** – where the probability of flooding from rivers and the sea is highest (greater than 1 in 200 for coastal flooding). Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space, outdoor sports and recreation, would be considered appropriate in this zone.

**Flood Zone B** – where the probability of flooding from rivers and the sea is moderate (between 1 in 1000 year and 1 in 200 for coastal flooding). Less vulnerable development, such as retail, commercial and industrial uses, sites used for short-let for caravans and camping and secondary strategic transport and utilities infrastructure, and water-compatible development might be considered appropriate in this zone.

**Flood Zone C** – where the probability of flooding from rivers and the sea is low (less than 1 in 1000 for both river and coastal flooding). Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast).

The new guidelines are aimed at driving vulnerable developments out of the areas at high risk of flooding so that in zone A and B no development should take place.

### 4.2.2 Grangegorman Site Flood Zoning

The nearest recorded flood event took place at the River Liffey during the tidal surge event on 1<sup>st</sup> February 2002. The peak recorded tide at Dublin Port was +2.95mAOD.

The predicted 1 in 200 year combined tidal and fluvial level on the Liffey as outlined in the Dublin Coastal Flooding Protection Project (DCFPP) is +3.13mAOD.

The predicted 1 in 1000 year combined tidal and fluvial level from the same document is 3.31 mAOD.

The Office of Public Works (OPW) has indicated that +0.5m freeboard is sufficient for the purposes of coastal flooding. Using this freeboard value and adding the flood level as indicated in the DCFPP Table 4.1 outlines the flood zone levels.

**Table 4.1**

<b>Flood Zone</b>	<b>Level (mAOD)</b>
Zone A less than 1:200	below +3.63
Zone B between 1:200 and 1:1000	between +3.63 and +3.93
Zone C greater than 1:1000	Above +3.93

The lowest elevation of the Grangegorman site is circa 13mAOD. The site is therefore classified as lying entirely within a Flood Zone C area.

### 4.3 Allowing for Climate Change

The new “Planning System and Flood Risk Management Guidelines” advise a precautionary approach with regard to climate change. The precautionary approach includes:

- Ensuring that the levels of structures designed to protect against flooding, such as flood defences, land-raising or raised floor levels are sufficient to cope with the effects of climate change over the lifetime of the development they are designed to protect; and
- Ensuring that structures to protect against flooding and the development protected are capable of adaptation to the effects of climate change when there is more certainty about the effects and still time for such adaptation to be effective.

The draft guidance by the OPW “Assessment of Potential Future Scenarios for Flood Risk Management“(separate to the guidelines), advises on future scenarios and allowances for climate change. It identifies two scenarios: the Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS) with an allowance for mean sea level for both of +0.5m and +1m respectively.

The former (the MRFS) is intended to represent a ‘likely’ future scenario, based on the wide range of predictions available and with the allowances for increased flow, sea level rise, etc. within the bounds of widely accepted projections.

The latter (the HEFS) is intended to represent a more extreme potential future scenario, but one that is nonetheless not significantly outside the range of accepted predictions available, and with the allowances for increased flow, sea level rise, etc. at the upper the bounds of widely accepted projections.

The water levels from the DCFPP, shown in section 4.2.2 above, do not include an allowance for climate change. In order to account for climate change a value for sea level rise must be added to the DCFPP values. The following table 4.2 outlines the updated DCFPP water levels.

**Table 4.2**

<b>Return Period</b>	<b>Level (mAOD)</b>
1:200	+3.63
1:1000	+3.93

## 5 Conclusions and Recommendations

---

It is envisaged the redevelopment of the site will present no significant increase in risk of flooding either within the site or downstream of the site.

This site itself is situated within Flood Zone C which has a low probability of flooding from rivers and coast. Taking climate change into consideration, the site continues to have a low probability of flooding.

The introduction of segregated surface water and foul infrastructure within the site and a new dedicated surface water sewer external to the site will reduce the peak flow impact on the combined sewer by removing unattenuated surface water flow from same. This will likely constitute a net benefit to the existing combined sewer system, and has the potential to reduce the frequency of storm overflow spills from the DCC combined sewer system to the River Liffey.

The implementation of a series of surface water attenuating features within the site with capacity to store up to the 1 in 30 flood event will ensure the risk of flooding is minimal. In addition, the ground profile within the site will be engineered to ensure that flood events up to the 1 in 100 year will be contained within the site. Volumes greater than the 1 in 100 year equivalent event will be routed via the new dedicated 600mm surface water sewer to be provided external to the site.

The realignment and refurbishment of the Bradoge through the Grangegorman site will minimise risk of structural failure and collapse of the culvert and potential risk of flooding within the site.

Limiting the surface water discharge from the site to a maximum of 2 l/s/ha to the new surface water sewer on Grangegorman road combined with storage of flood volumes equivalent to the 1 in 100 year event within the site will minimise the risk of flooding to areas downstream of the Grangegorman site.

As indicated in the introduction, the writing of this report coincides with the development of the Draft Planning Scheme document and so in that context no detailed design for the Grangegorman site has been carried out.

Detailed sustainable drainage and flood risk management design will be incorporated into the public realm and individual plot areas across the Grangegorman site, the details of which will be submitted with subsequent planning applications.

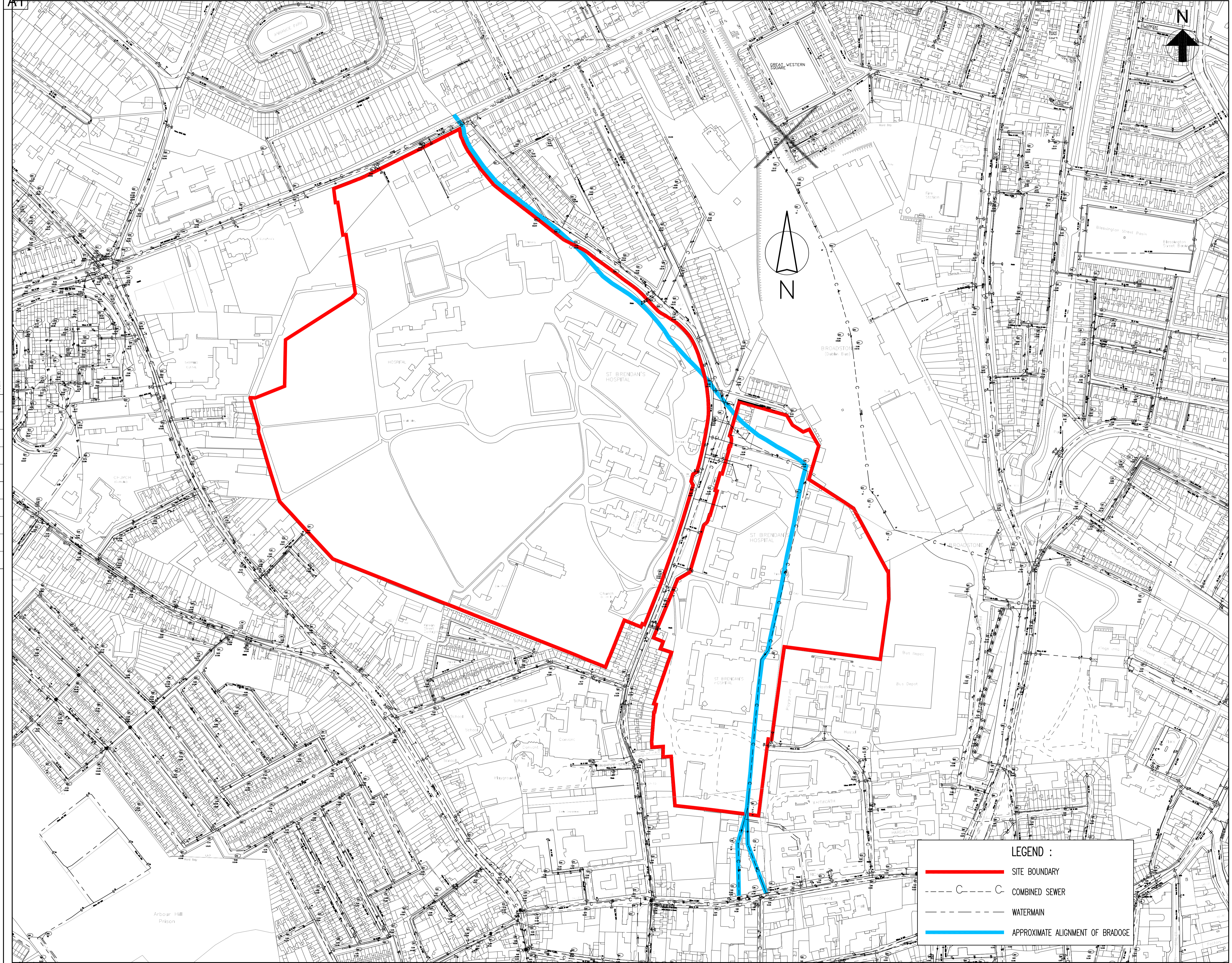
Notwithstanding this, the Grangegorman site has no known historic flooding issues, lies in a zone of low flow risk and, with the implementation of appropriate on site sustainable drainage and flood management systems, will likely pose minimal risk to the catchment downstream of the site.



## Appendix A

### Existing Services

A1



**LEGEND :**

- SITE BOUNDARY
- - - C - - - COMBINED SEWER
- - - WATERMAIN
- APPROXIMATE ALIGNMENT OF BRADOGUE

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P1	22/03/11	NK	PRELIMINARY ISSUE	NC
Rev.	Date	By	Description	Chd. By

Drawing Status  
**PRELIMINARY**

Job Title  
**GRANGEGORMAN**

Drawing Title  
**EXISTING SERVICES MAP**

**ARUP** 50 Ringwood Road Dublin 4  
Tel 01-234455 Fax 01-6683169  
E-Mail dublin@arup.com

DUBLIN CORK LIMERICK  
Originator NK  
Scales 1:200 @ A1  
Checked Approved Date 22/03/11

Job No. <b>D7390-10</b>	Drawing No. <b>SK-C007</b>	Rev. <b>P1</b>
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## **Appendix B**

### **Proposed SuDS Measures**



GREEN ROOF



DETENTION BASIN



GEO-CELLULAR STORAGE



PERMEABLE SURFACE FINISHES



OPEN TROUGH



SWALES



RETENTION

- LANDSCAPED AREAS SUITABLE FOR SURFACE WATER ATTENUATION
- 20,50 - PROPOSED LEVELS
- EARTH MOUND
- 20 - EXISTING CONTOUR LEVELS

Issue	Date	By	Chkd	Appd

Client  
 Job Title  
**GRANGEGORMAN PUBLIC REALM**  
 Scale at A1  
 1:2000  
 Discipline  
**INFRASTRUCTURE**

**ARUP**  
 Arup, 50 Ringsend Road  
 Dublin 4  
 Tel +353(0)1 233 4455 Fax +353(0)1 668 3169  
 www.arup.ie

Drawing Title  
**SURFACE WATER MANAGEMENT**  
 Drawing Status  
**PRELIMINARY**  
 Job No  
**D7390.10 SK-C006**  
 Issue  
**P2**



- LANDSCAPED AREAS SUITABLE FOR SURFACE WATER ATTENUATION
- 20,50 - PROPOSED LEVELS
- EARTH MOUND

Issue	Date	By	Chd	Appd

Client

Job Title  
**GRANGEGORMAN  
 PUBLIC REALM**

Scale at A1  
 1:1000  
 Discipline  
 INFRASTRUCTURE

**ARUP**

Arup, 50 Ringsend Road  
 Dublin 4  
 Tel +353(0)1 233 4455 Fax +353(0)1 668 3169  
 www.arup.ie

Drawing Title  
**PROPOSED PITCH CONTOURS**

Drawing Status  
**PRELIMINARY**  
 Job No  
**D7390.10**  
 Drawing No  
**SK-C009**  
 Issue  
**P1**

## Appendix C

### Historic Flood Maps

## Summary Local Area Report

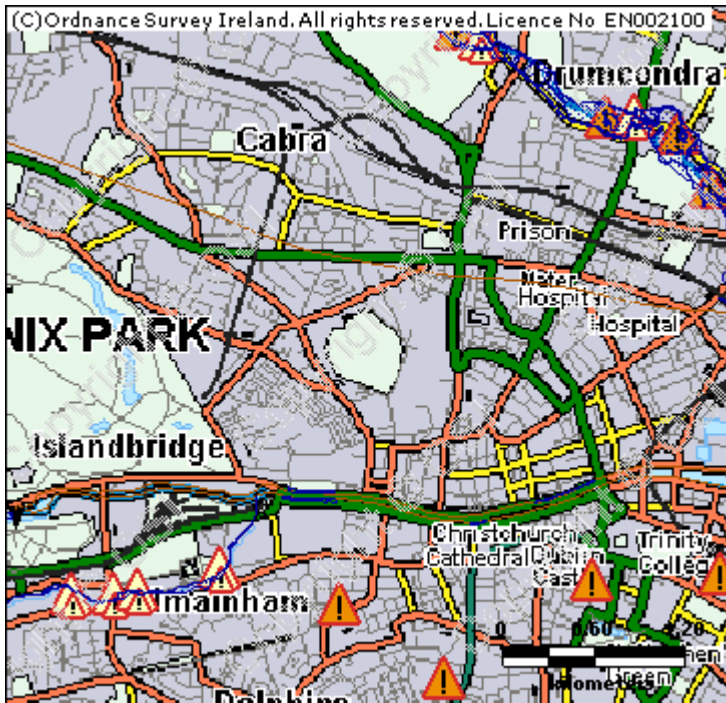
This Flood Report summarises all flood events within 2.5 kilometres of the map centre.

The map centre is in:

County: Dublin

NGR: O 144 352

This Flood Report has been downloaded from the Web site [www.floodmaps.ie](http://www.floodmaps.ie). The users should take account of the restrictions and limitations relating to the content and use of this Web site that are explained in the Disclaimer box when entering the site. It is a condition of use of the Web site that you accept the User Declaration and the Disclaimer.



Map Scale 1:49,682

Map Legend	
	Flood Points
	Multiple / Recurring Flood Points
	Areas Flooded
	Hydrometric Stations
	Rivers
	Lakes
	River Catchment Areas
	Land Commission *
	Drainage Districts *
	Benefiting Lands *

\* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained in the Glossary.

## 25 Results

	1. Tolka December 1954 County: Dublin	Start Date: 08/Dec/1954 Flood Quality Code: 1
Additional Information: <a href="#">Photos (2)</a> <a href="#">Reports (13)</a> <a href="#">Press Archive (9)</a> <a href="#">More Mapped Information</a>		
	2. Tolka November 2002 County: Meath, Dublin	Start Date: 13/Nov/2002 Flood Quality Code: 1
Additional Information: <a href="#">Photos (126)</a> <a href="#">Reports (9)</a> <a href="#">Videos (3)</a> <a href="#">Press Archive (13)</a> <a href="#">More Mapped Information</a>		
	3. Dublin City Tidal Feb 2002 County: Dublin	Start Date: 01/Feb/2002 Flood Quality Code: 1
Additional Information: <a href="#">Photos (32)</a> <a href="#">Reports (10)</a> <a href="#">Press Archive (27)</a> <a href="#">More Mapped Information</a>		
	4. Tolka Richmond Road Drumcondra Nov 2000 County: Dublin	Start Date: 05/Nov/2000 Flood Quality Code: 3
Additional Information: <a href="#">Reports (5)</a> <a href="#">Press Archive (5)</a> <a href="#">More Mapped Information</a>		
	5. Tolka Richmond Road August 1986 County: Dublin	Start Date: 25/Aug/1986 Flood Quality Code: 1

Additional Information: Reports (4) More Mapped Information



6. Tolka Botanic Ave area August 1986

Start Date: 25/Aug/1986

County: Dublin

Flood Quality Code:1

Additional Information: Photos (6) Reports (5) Press Archive (1) More Mapped Information



7. Tolka Glasnevin August 1986

Start Date: 25/Aug/1986

County: Dublin

Flood Quality Code:3

Additional Information: Reports (2) More Mapped Information



8. Tolka Nov 1968

Start Date: 25/Nov/1968

County: Dublin

Flood Quality Code:3

Additional Information: Reports (5) Press Archive (1) More Mapped Information



9. Tolka Nov 1965

Start Date: 25/Nov/1965

County: Dublin

Flood Quality Code:3

Additional Information: Photos (2) Reports (6) Press Archive (2) More Mapped Information



10. Tolka September 1946

Start Date: 20/Sep/1946

County: Dublin

Flood Quality Code:3

Additional Information: Reports (10) More Mapped Information



11. Tolka September 1931

Start Date: 03/Sep/1931

County: Dublin

Flood Quality Code:3

Additional Information: Reports (10) Press Archive (1) More Mapped Information



12. Tolka November 1915

Start Date: 12/Nov/1915

County: Dublin

Flood Quality Code:3

Additional Information: Reports (10) More Mapped Information



13. Tolka November 1901

Start Date: 12/Nov/1901

County: Dublin

Flood Quality Code:3

Additional Information: Reports (9) More Mapped Information



14. Tolka November 1898

Start Date: 23/Nov/1898

County: Dublin

Flood Quality Code:3

Additional Information: Reports (9) More Mapped Information



15. Tolka October 1880

Start Date: 28/Oct/1880

County: Dublin

Flood Quality Code:3

Additional Information: Reports (7) More Mapped Information



16. Camac August 1986

Start Date: 25/Aug/1986

County: Dublin

Flood Quality Code:2

Additional Information: Reports (3) More Mapped Information



17. Camac Turvey Ave Recurring

Start Date:

County: Dublin

Flood Quality Code:3

Additional Information: Reports (1) More Mapped Information



18. Camac Carrickfoyle Terrace Recurring

Start Date:

County: Dublin

Flood Quality Code:3

Additional Information: Reports (1) More Mapped Information



19. Camac Kearns Place Recurring

Start Date:

County: Dublin

Flood Quality Code:3

Additional Information: Reports (1) More Mapped Information

---



20. Camac Bow Bridge Recurring

Start Date:

County: Dublin

Flood Quality Code:3

Additional Information: Reports (1) More Mapped Information

---



21. Clanbrassil Street June 1963

Start Date: 11/Jun/1963

County: Dublin

Flood Quality Code:3

Additional Information: Reports (3) Press Archive (2) More Mapped Information

---



22. Grafton Street June 1963

Start Date: 11/Jun/1963

County: Dublin

Flood Quality Code:3

Additional Information: Reports (3) Press Archive (2) More Mapped Information

---



23. Poddle Tributary Marrowbone Lane Jan 1941

Start Date: 21/Jan/1941

County: Dublin

Flood Quality Code:4

Additional Information: Reports (1) More Mapped Information

---



24. Tolka Jan 2005

Start Date: 07/Jan/2005

County: Dublin

Flood Quality Code:3

Additional Information: Reports (1) More Mapped Information

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25. Tolka April 1909

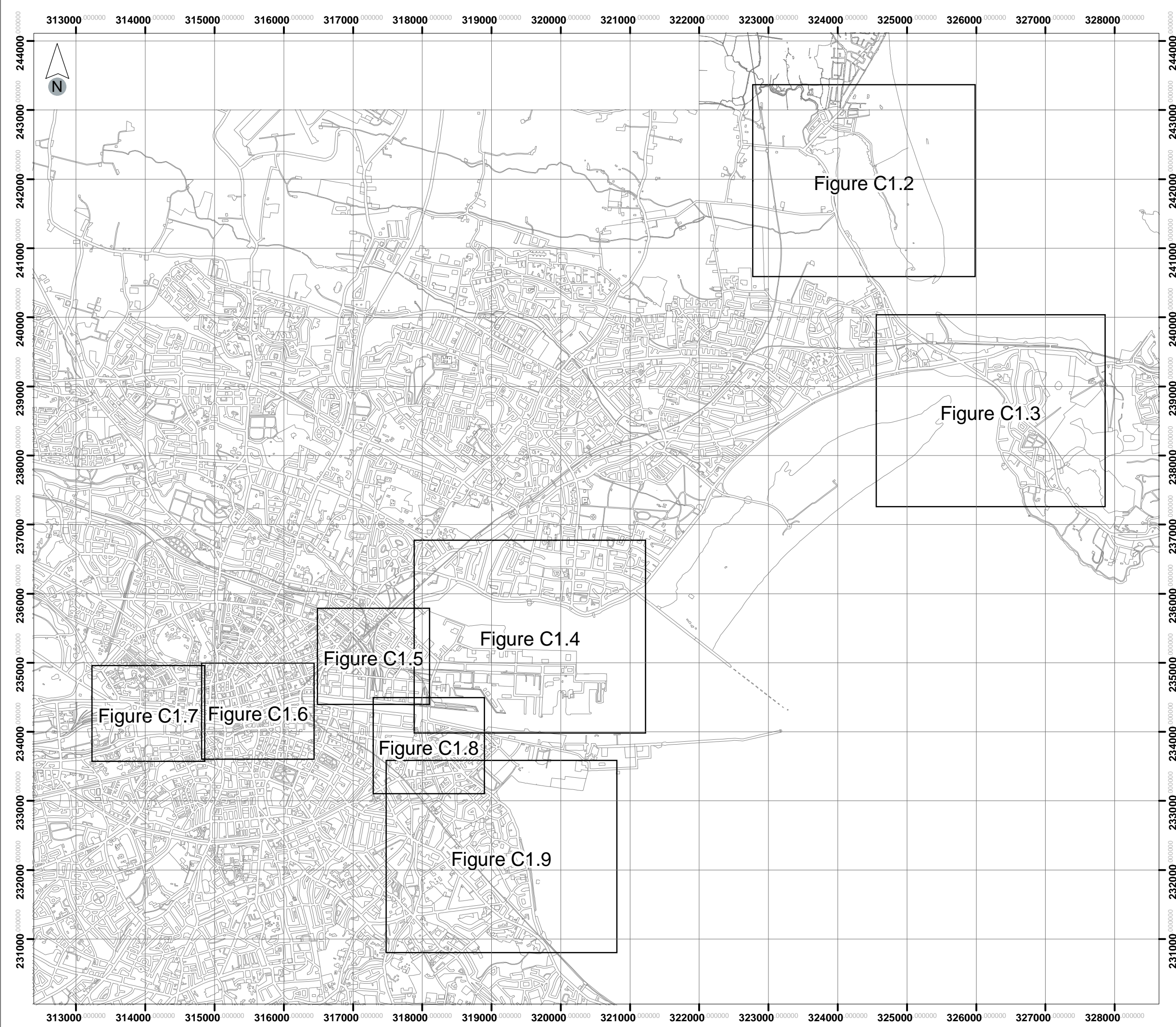
Start Date: 03/Apr/1909


County: Dublin

Flood Quality Code:4

Additional Information: Reports (4) More Mapped Information

---



Key:  
 Detailed Map Areas

Source:  
 Ordnance Survey Ireland. All rights reserved.  
 Licence Number 2003/07CCMA/Dublin City Council.

Title:  
**AREAS KNOWN TO HAVE FLOODED ON 1st FEBRUARY 2002:**  
 1 of 9

Project:  
**DUBLIN COASTAL FLOODING PROTECTION PROJECT**

Client:  
**DUBLIN CITY COUNCIL**

IN ASSOCIATION WITH :  
 FINGAL COUNTY COUNCIL  
 THE DEPARTMENT OF COMMUNICATIONS,  
 MARINE AND NATURAL RESOURCES IN  
 ASSOCIATION WITH OFFICE OF PUBLIC WORKS

Date: OCT 2004	Scale: Nominal Scale
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Figure:  
**C1.1**



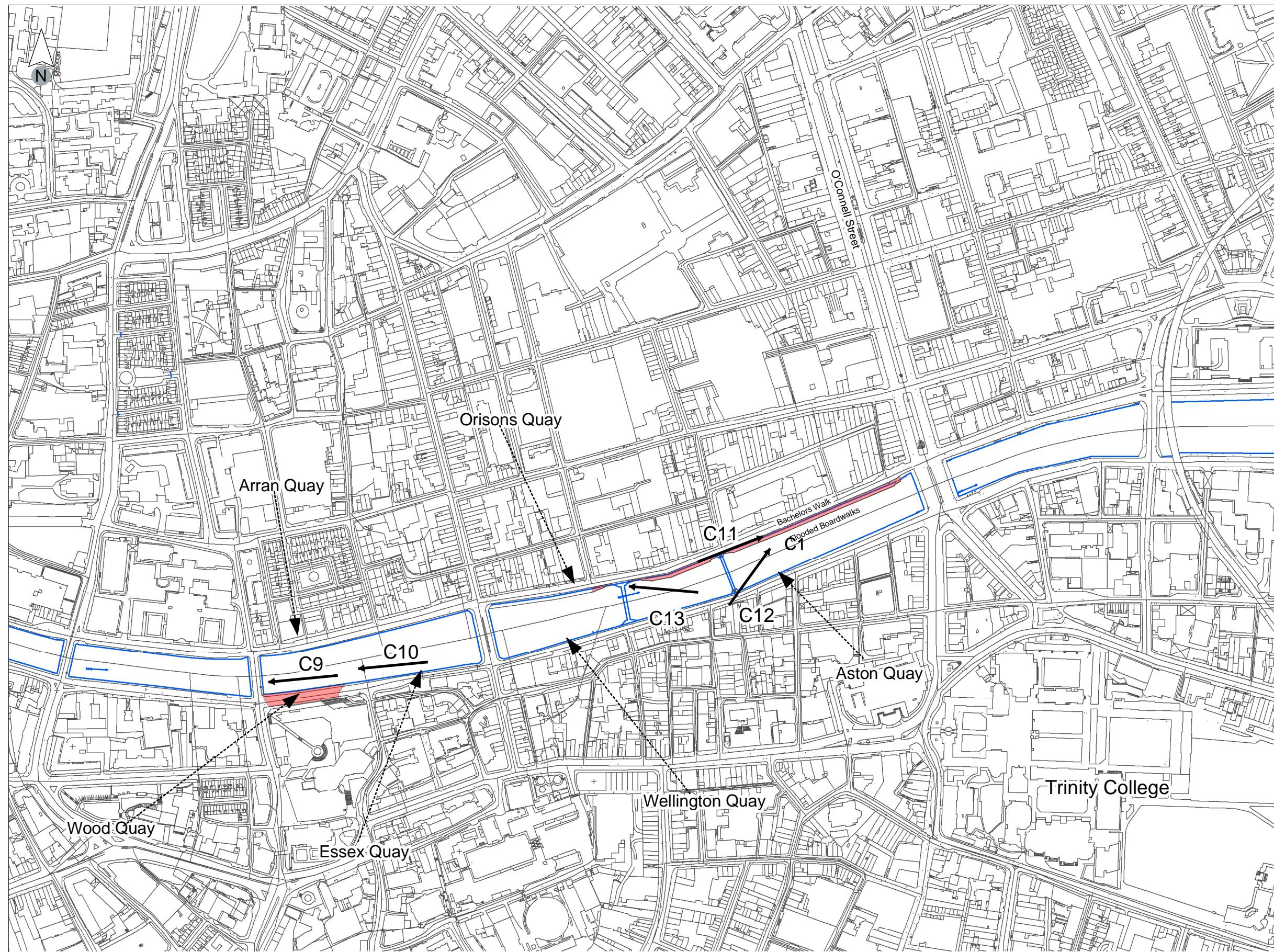
Dublin City Council  
 Comhairle Cathrach Bhaile Átha Cliath

**safer**  
 FOR THE STRATEGIES AND ACTIONS  
 FOR FLOOD EMERGENCY RISK MANAGEMENT

Department of Communications, Marine and Natural Resources  
 Roinn Cumarsáide, Mara agus Aeráire Náisiúna

OPW  
 Office of Public Works





**Key:**

- C1 Location and direction of photograph C1 in Appendix C2
- Possible flood paths
- Flood areas as identified by FCC & DCC staff
- Additional Flood areas identified by site inspection and through discussions with public but not confirmed

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Title:  
**AREAS KNOWN TO HAVE FLOODED ON 1st FEBRUARY 2002:**  
6 of 9

Project:  
**DUBLIN COASTAL FLOODING PROTECTION PROJECT**

Client:  
**DUBLIN CITY COUNCIL**

IN ASSOCIATION WITH :

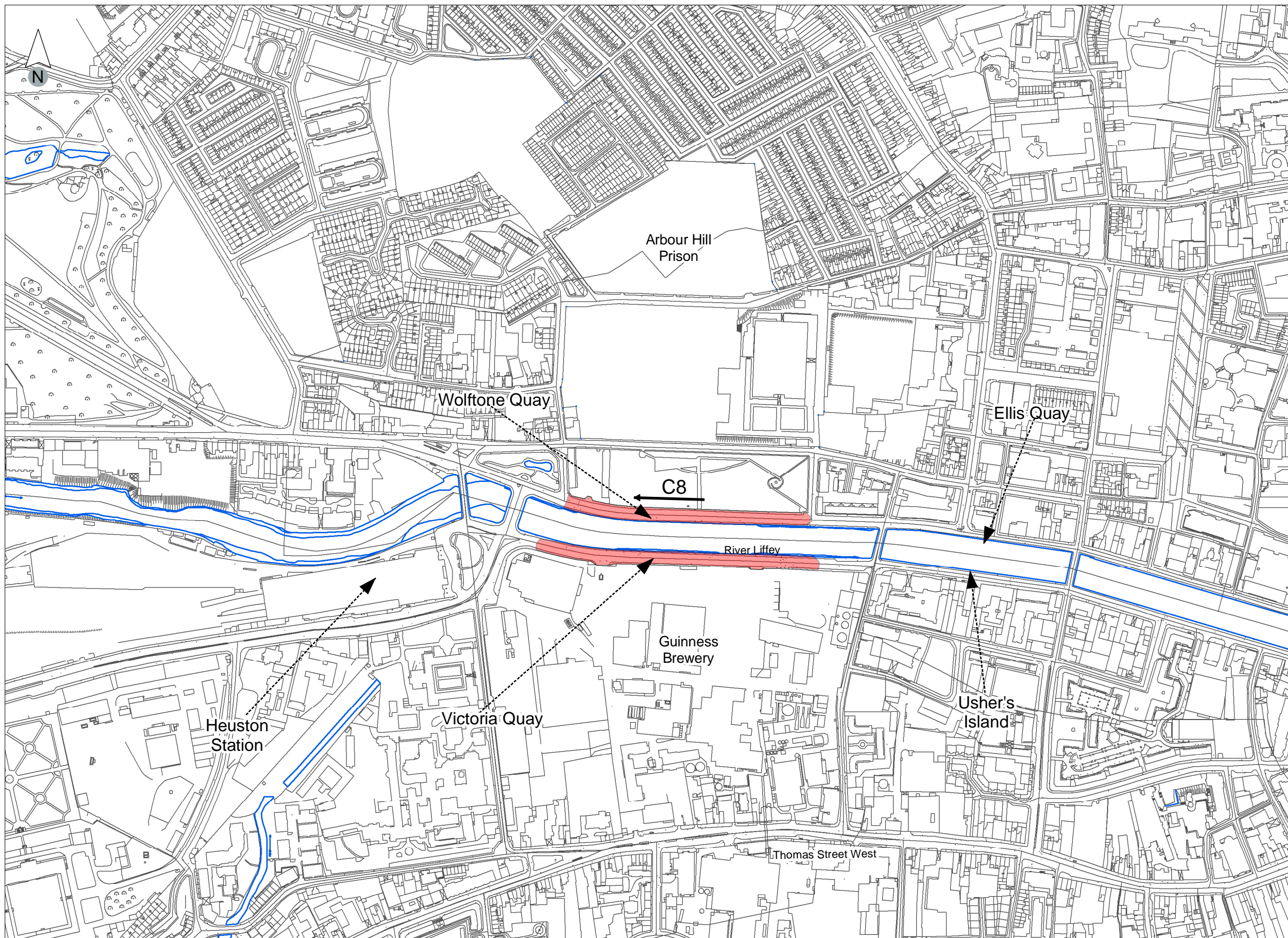
FINGAL COUNTY COUNCIL  
THE DEPARTMENT OF COMMUNICATIONS,  
MARINE AND NATURAL RESOURCES IN  
ASSOCIATION WITH OFFICE OF PUBLIC WORKS

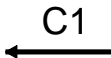



Date:  
OCT 2004

Scale:  
Nominal Scale

Figure:  
**C1.6**





- Key:
-  C1 Location and direction of photograph C1 in Appendix C2
  -  Possible flood paths
  -  Flood areas as identified by FCC & DCC staff
  -  Additional Flood areas identified by site inspection and through discussions with public but not confirmed

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Title:  
**AREAS KNOWN TO HAVE FLOODED ON 1st FEBRUARY 2002:**  
7 of 9

Project:  
**DUBLIN COASTAL FLOODING PROTECTION PROJECT**

Client:  
**DUBLIN CITY COUNCIL**

IN ASSOCIATION WITH :

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THE DEPARTMENT OF COMMUNICATIONS,  
MARINE AND NATURAL RESOURCES IN  
ASSOCIATION WITH OFFICE OF PUBLIC WORKS

Date:  
OCT 2004

Scale:  
Nominal Scale

Figure:  
**C1.7**





**Grangegorman**  
**Development Agency**  
Gníomhaireacht Forbartha  
Ghráinseach Ghormáin

## ***The Grangegorman Development What Would You Like to See?***

**Response Report setting out how the  
Project and its Master Plan address issues  
raised by DIT students at the consultation  
workshop held in November 2007**

**Date August 2008**

## Introduction

The re-development of the 73 acre Grangegorman site in the heart of Dublin will amount to the greatest single investment in the north inner city. The new city quarter will incorporate all of Dublin Institute of Technology (DIT) in one location, new primary and community health facilities for the Health Service Executive (HSE), as well as new facilities for the local community.

The Grangegorman Development Agency (GDA) and DIT Students' Union (DITSU) wished to engage with DIT students in detail on specific issues of interest. A consultation workshop was held on Tuesday 6th November 2007 in DIT Aungier Street and was facilitated by Nurture Development.

The DITSU issued an open invitation to DIT students to engage in a consultation workshop. The purpose of the workshop was to enable DIT students, as an important stakeholder in the project, to articulate their aspirations and vision for the new Grangegorman campus. This vision would, in conjunction with the vision of other stakeholders, inform the masterplanning process.

The workshop focused on four key questions which were as follows:

***What are the strengths/assets of what DIT currently offers its students that should be continued on the Grangegorman Campus?***

***From a DIT student perspective, what additional facilities and amenities are needed?***

***Looking to the future, in light of the current strengths and needs of the student body, what is your vision for the new campus?***

***What are your priorities in terms of those wishes and aspirations?***

Various visions for the development were articulated during the workshop and these have been incorporated into one overall vision as many common themes emerged in relation to the hopes and dreams of the student group.

This report reflects on the strengths and needs of DIT students and the vision of the student body in relation to the new campus on Grangegorman.

## Section One: Strengths and Assets

***What are the strengths/assets of what DIT currently offers its students that should be continued on the Grangegorman Campus?***

	Responses
<b>1.1 Location</b>	
<ul style="list-style-type: none"> <li>DIT buildings are located in or close to the city centre which ensures that they are all easily accessible in terms of public transport.</li> </ul>	The DIT Campus at Grangegorman will also be close to city centre and be accessible by public transport.
<ul style="list-style-type: none"> <li>DIT's multi-site layout has advantages for individual faculties in that all services are located in the same building. Some of the buildings such as Aungier Street have good facilities and are fully equipped.</li> </ul>	Facilities on the new campus will be student-centred with the concept of 'one stop shops' for student related services. The campus itself is compact and all main facilities will be in close proximity.
<b>1.2 Education</b>	
<ul style="list-style-type: none"> <li>DIT offers a wide range of courses and programmes that emphasise the application of subject matter through practical experience and placements. There is a strong focus on teaching in DIT and small class sizes facilitate a good work ethic and help build strong relationships between students and academic staff.</li> </ul>	DIT programme provision will continue on the DIT campus with a similar emphasis on promoting staff student interaction, facilitated further by a variety of meeting places on site.
<ul style="list-style-type: none"> <li>There are strong ties to the business world with a number of qualifications carrying professional accreditation.</li> </ul>	These ties will be enhanced with the new campus and promoted through Science Park activity on campus.
<b>1.3 Brand</b>	
<ul style="list-style-type: none"> <li>DIT qualifications have a strong reputation and the qualifications from a number of faculties, such as Bolton Street and Cathal Brugha Street, are held in high regard.</li> </ul>	The DIT campus will enhance the image and overall brand of DIT and in turn its credentials.
<ul style="list-style-type: none"> <li>This reputation should serve as the benchmark for all the qualifications offered by DIT in the future and the very practical style of tuition and applicability of learning to the jobs market should continue.</li> </ul>	This will be maintained on the DIT campus.

<b>1.4 Ethos and Culture</b>	
<ul style="list-style-type: none"> <li>There is a great sense of community and camaraderie amongst the student body with a strong sense of each student being a 'name not a number'.</li> </ul>	Bringing all of DIT's students and staff together in faculty-based buildings at a single location will enhance this sense of community.
<ul style="list-style-type: none"> <li>The student population is a diverse one.</li> </ul>	This will be maintained.
<ul style="list-style-type: none"> <li>The multi-site composition of the college has resulted in some healthy inter-site rivalry.</li> </ul>	Healthy cross-faculty interaction will be encouraged.
<b>1.5 Academic Services and Facilities</b>	
<i>Library</i>	
<ul style="list-style-type: none"> <li>There is a significant amount of overall library space between the various colleges with some colleges better served in terms of library facilities than others. While the Aungier Street Library is too small, it has good facilities.</li> </ul>	The DIT campus will have consistent state of the art library facilities with enhanced library operations available to all students on the new campus. Library space will be significantly greater than that provided now.
<b>1.6 Recreational Services and Facilities</b>	
<i>Common Areas</i>	
<ul style="list-style-type: none"> <li>There are large common areas in most of the DIT sites where students can relax without having to spend money and these should be incorporated into the new campus.</li> </ul>	Common areas for students will be designed into each building and complemented by a student union and student services areas/spaces to meet.
<i>Support Services</i>	
<ul style="list-style-type: none"> <li>There are some excellent Support Services available to students such as counseling, free medical services including access to GP services and to financial aid.</li> </ul>	These will transfer and be enhanced on the campus.
<ul style="list-style-type: none"> <li>There is a strong student union with representatives who work with students on a range of issues.</li> </ul>	This will be supported by enhanced students' union facilities.
<i>Sports/Clubs/Societies</i>	
<ul style="list-style-type: none"> <li>There is a great reputation and passion within the college for sports, with one of the biggest GAA club membership across all third level institutions. This should continue to be supported and nourished because it can influence students when choosing a third level college.</li> </ul>	Sporting facilities as well as the sport and recreation service on the DIT campus at Grangegorman will address student sport, recreation, training and competitive needs at DIT, providing playing pitches and a wide variety of indoor and outdoor sports amenities, activities and facilities..
<ul style="list-style-type: none"> <li>There is a strong framework of clubs and societies who are currently provided with rooms for activities and storage facilities by the college.</li> </ul>	The campus will have designated central spaces for clubs and societies
<ul style="list-style-type: none"> <li>There is a gym (albeit limited in size)</li> </ul>	There will be a range of indoor sports

and equipment) and swimming pool facilities.	facilities including: sports halls, fitness gym, swimming pool, handball and squash courts and associated changing facilities.
<ul style="list-style-type: none"> <li>• There are a substantial number of football pitches available to the sports clubs.</li> </ul>	There will be 3 pitches available on the new campus (1 being all weather) with additional pitches being accessible off campus.

## Section Two: Current and Future Needs

***From a DIT student perspective, what additional facilities and amenities are needed now and in the future?***

	Responses
<b>2.1 Accommodation</b>	
<ul style="list-style-type: none"> <li>Student accommodation is vital for the new campus. The University of Limerick accommodation was proposed as a possible model.</li> </ul>	There will be student accommodation on campus with single ensuite bedrooms for each student.
<ul style="list-style-type: none"> <li>This modern and safe student accommodation should be comprised of apartments with single bedrooms and shared living spaces with cooking and laundry facilities.</li> </ul>	Student accommodation will centre on single bedrooms with related facilities.
<ul style="list-style-type: none"> <li>It is important that the accommodation provided is affordable for students.</li> </ul>	Student accommodation will be competitively priced for students
<ul style="list-style-type: none"> <li>The student accommodation should be located close to the Students' Union, the sports facilities, clubs and societies.</li> </ul>	Student accommodation will be woven through the campus with much of it being adjacent to sports facilities with the remainder in close proximity.
<b>2.2 Clubs and Societies</b>	
<i>Sport</i>	
The following permanent dedicated sports facilities are required for DIT:	
<ul style="list-style-type: none"> <li>A running track</li> </ul>	A running track- an outdoor jogging loop, an indoor jogging track will be provided on campus.
<ul style="list-style-type: none"> <li>A minimum of two GAA side by side floodlit pitches.</li> </ul>	3 playing pitches will be provided on campus. One of these will be an artificial turf floodlit playing and training pitch. Additional playing and training facilities will also be provided off campus.
<ul style="list-style-type: none"> <li>A top of the range gym with extensive equipment</li> </ul>	A full gym will be provided
<ul style="list-style-type: none"> <li>Other pitches that are available to the various sports clubs and societies for training and matches</li> </ul>	Pitches will be available to meet the playing and training needs of sports clubs and societies.
<ul style="list-style-type: none"> <li>Dedicated indoor training and sports facilities.</li> </ul>	There will be a full range of indoor facilities
<ul style="list-style-type: none"> <li>A floodlit Astro turf/all weather pitch</li> </ul>	This will be provided.
<ul style="list-style-type: none"> <li>Squash courts</li> </ul>	Squash courts will be provided.
<ul style="list-style-type: none"> <li>Space for a dedicated archery club with dedicated</li> </ul>	The DIT Archery Club may use the sports hall for their activities.



targets.	
<ul style="list-style-type: none"> <li>• Competition standard swimming pool with a floor that can be raised which is suitable for inter-varsities</li> </ul>	There will be a 25 metre x 8 lane swimming pool will be provided.
<ul style="list-style-type: none"> <li>• A Sports Hall with a spring loaded wooden floor</li> </ul>	A 3 Basketball Court Size Sports Hall (which can be sub-divided) with appropriate floor surfaces will be provided.
<ul style="list-style-type: none"> <li>• Climbing wall</li> </ul>	An indoor climbing wall will be provided.
<ul style="list-style-type: none"> <li>• A dry ski slope or ice rink.</li> </ul>	It is not proposed to provide such a facility on campus.
<ul style="list-style-type: none"> <li>• Halls for training:</li> </ul>	There will be a sports hall.
<ul style="list-style-type: none"> <li>• Shower facilities that are available to all students. These would also help promote cycling to college, thus reducing student and staff reliance on cars.</li> </ul>	There will be a full range of changing facilities, with showers.
<ul style="list-style-type: none"> <li>• DIT should employ a physiotherapist for sports injuries</li> </ul>	The possibility of facilitating a physiotherapy service will be investigated.
<ul style="list-style-type: none"> <li>• The facilities provided should be at a sufficiently high standard so as to ensure that the college can host both national and international competitions.</li> </ul>	Sports facilities will be benchmarked against best practice worldwide.
<i>Media/Arts</i>	
<ul style="list-style-type: none"> <li>• There should be a multi-purpose recreational room with retractable seating like the Helix for debates/guest speakers and performances.</li> </ul>	There will be a multi purpose venue for student activities.
<ul style="list-style-type: none"> <li>• Broadcasting facilities are needed and could include web/radio/TV studios. These should be available to clubs and societies.</li> </ul>	Student media production facilities which will be available to clubs and societies are provided for in the Student Centre Brief.
<ul style="list-style-type: none"> <li>• A one screen cinema/theatre is needed.</li> </ul>	The facility to show films will be incorporated into the multi-use facility being planned for students.

<b>2.3 Student Services and Facilities</b>	
<i>Common Areas</i>	
<ul style="list-style-type: none"> <li>• Large open spaces and breakout rooms are required for students to meet for group work and to socialise and there should also be outdoor areas such as a courtyard with seating.</li> </ul>	A full range of breakout facilities will be provided.
<ul style="list-style-type: none"> <li>• A confined smoking space that isn't in front of the</li> </ul>	This will be considered.

entrance ways is required.	
<i>Restaurants/ Commercial</i>	
<ul style="list-style-type: none"> <li>There should be one large subsidised canteen that serves good quality food alongside commercial franchises/coffee shops.</li> </ul>	There will be 2 large 'food hall' type canteen facilities provided on campus with a range of supporting facilities such as coffee shops.
<ul style="list-style-type: none"> <li>There should be a number of Student Union shops throughout the campus.</li> </ul>	It is intended that existing students' union facilities will be re-accommodated on campus
<ul style="list-style-type: none"> <li>There should be a supermarket, a launderette, an off license and student equipment shops on campus.</li> </ul>	The campus will have a range of commercial facilities ranging from convenience stores, coffee shops, stationery shops and bookshops etc. These facilities will be determined by DIT in the coming months.
<i>Social/Entertainments Facilities</i>	
<ul style="list-style-type: none"> <li>A student bar and Entertainments area (which would include a stage/music area) is required which must be receptive to clubs and societies. They should be student friendly (with no restrictions on dress codes).</li> </ul>	This facility will be provided
<ul style="list-style-type: none"> <li>Three student bars across the site are required. These should include a sports bar, a smaller bar with food and a multi purpose venue with bar for Entertainments which could alternatively serve as a stage or gallery.</li> </ul>	A single bar is planned for students on campus, plus additional social/entertainment areas.
<i>Student Services</i>	
<ul style="list-style-type: none"> <li>A central Student Services building is required and it should be clearly identifiable to any student who requires assistance.</li> </ul>	A central 'one stop shop' for students is planned.
<ul style="list-style-type: none"> <li>There should be more support from DIT to assist students seeking accommodation particularly first year students.</li> </ul>	This service currently exists and will be enhanced on the new campus
<ul style="list-style-type: none"> <li>There should be improved facilities and increased space available for the Student Union.</li> </ul>	Good facilities for students' union activities will be provided on campus
<ul style="list-style-type: none"> <li>There should be improved access for the disabled student population.</li> </ul>	The DIT campus will facilitate universal access.
<i>Creche/Childcare</i>	
<ul style="list-style-type: none"> <li>There should be a crèche on campus with an adequate</li> </ul>	There will be a creche on campus for students of DIT.

number of places.	
<b>2.4 Academic Services and Facilities</b>	
<i>Library</i>	
<ul style="list-style-type: none"> <li>Library facilities are very poor in a lot of the colleges and library opening hours need to be extended, with 24/7 availability during exam time.</li> </ul>	Library services will be enhanced with the opening of a single central Institute library, facilitating extended opening hours.
<i>IT/Science Facilities</i>	
<ul style="list-style-type: none"> <li>IT facilities are also poor and need upgrading so that they are fully integrated.</li> </ul>	The campus will have full IT infrastructure to facilitate communication.
<ul style="list-style-type: none"> <li>Modern well equipped laboratories are required.</li> </ul>	Modern – state of the art laboratories will be provided
<b>2.5 Transport</b>	
<ul style="list-style-type: none"> <li>DIT should have its own transport available to hire for clubs and societies when organising activities that cannot take place on campus, such as sailing.</li> </ul>	This suggestion will be investigated.
<ul style="list-style-type: none"> <li>Secure student car parking is required.</li> </ul>	Limited car parking will be available to students & staff of DIT
<ul style="list-style-type: none"> <li>Proper lockup and storage facilities for cyclists (including shower facilities) are required.</li> </ul>	This will be provided
<ul style="list-style-type: none"> <li>There should be an adequate provision of cycle lanes on site.</li> </ul>	Cycle lanes will be incorporated
<b>2.6 Security</b>	
<ul style="list-style-type: none"> <li>On campus security should provide for the safety of students at all times both day and night and at weekends.</li> </ul>	Security will be provided across the campus
<b>2.7 Sustainability</b>	
<ul style="list-style-type: none"> <li>There should be appropriate and safe chemical waste disposal.</li> </ul>	This will be provided.

### ***Section Three: A Vision for the new Campus***

***Looking to the future, in light of the current strengths and needs of the student body, what is your vision for the new campus?***

The new campus should aspire to be at the leading edge in relation to all aspects of college life, including buildings, sports, arts and cultural facilities, teaching equipment

etc. It is important that the campus has a clear identity as a third level institution, while it is also recognised that DIT should maintain its links and services to the community.

	<b>Responses</b>
<b>3.1 Physical Environment</b>	
<ul style="list-style-type: none"> <li>The campus should be a campus for the future which sets out to be at the forefront in terms of facilities and services.</li> </ul>	The masterplan provides a framework for such a vision
<ul style="list-style-type: none"> <li>Faculties will be located on campus in a manner that facilitates good communication and integration of the different schools and departments.</li> </ul>	Academic adjacencies and co-location of facilities has received much attention in the planning of this campus
<ul style="list-style-type: none"> <li>The campus will have a warm welcoming atmosphere with simple, easy to navigate buildings that will be colour coded and have consistent room numbering.</li> </ul>	Creating a warm and inviting campus is a critical objective in campus design.
<ul style="list-style-type: none"> <li>The campus will have modern buildings that are designed with the focus on the needs of students and staff and are equipped with the top of the range technical equipment.</li> </ul>	The aim of the masterplan to devise just such a process
<ul style="list-style-type: none"> <li>There will be interesting attractive innovative landscaping and architecture that fits in with existing buildings and there will be efficient building use.</li> </ul>	Landscaping and good design are key features of the proposed campus.
<ul style="list-style-type: none"> <li>There will be efficient use of buildings throughout the campus.</li> </ul>	This is another key feature of the proposed campus
<ul style="list-style-type: none"> <li>There will be a prominent water feature such as a pond/lake and green public areas for casual recreational use.</li> </ul>	There will be a water feature and abundant green spaces
<b>3.3 Student Facilities and Amenities</b>	
<ul style="list-style-type: none"> <li>All student facilities including accommodation, entertainments and sports facilities will be located on the campus in a manner</li> </ul>	The masterplan for the campus envisages a social/student hub to facilitate such interaction. In addition the campus will encourage and promote community access.

that supports community life of students and the easy movement of people.	
<ul style="list-style-type: none"> <li>Student services will be centralised with registrations, banking facilities, counseling, disability services, societies, a clubs office and the Students' Union all located within the one building.</li> </ul>	This will be achieved through a 'student one stop shop'.
<ul style="list-style-type: none"> <li>There will be common areas of varying sizes, other than the library, canteen and classrooms that are dispersed throughout the campus. These areas will be relatively quiet with comfortable soft furnishings so that they can be used for group work or socialising.</li> </ul>	This is an objective for the new campus.
<ul style="list-style-type: none"> <li>There will be studio spaces and meeting rooms available to students.</li> </ul>	There will be a wide range of facilities available to the student body.
<ul style="list-style-type: none"> <li>There will be commercial spaces throughout campus so that students can access shops and restaurants easily.</li> </ul>	The campus will have a range of commercial facilities such as shops, coffee shops, etc., spread across the campus.
<ul style="list-style-type: none"> <li>Through links with the HSE, a high standard will be set in terms of the medical, dental and physiotherapy services offered on the campus.</li> </ul>	Links with the HSE on campus are planned
<ul style="list-style-type: none"> <li>Students will have excellent access to the facilities on campus and will not have to compete with the local community for access.</li> </ul>	The primary focus of the DIT campus is to serve the needs of the students and staff of DIT
<ul style="list-style-type: none"> <li>Access to facilities will be on a membership basis for all eligible parties including students, staff and the community.</li> </ul>	This type of membership is being considered.

<b>3.4 Academic Services and Facilities</b>	
<i>Library</i>	
<ul style="list-style-type: none"> <li>There will be a state of the art library that can accommodate the maximum number of students during exam time.</li> </ul>	There will be a state of the art library, with more user spaces than currently provided.
<i>IT</i>	
<ul style="list-style-type: none"> <li>The computer rooms in the laboratories and the library will be for scholastic use only while there is a separate computer room that is designated for social use.</li> </ul>	A variety of computer facilities will be provided in the library complex.
<ul style="list-style-type: none"> <li>There will be wifi coverage both indoor and outdoor, throughout the campus.</li> </ul>	Widespread WiFi access will be available.
<b>3.5 Student Accommodation</b>	
<ul style="list-style-type: none"> <li>The modern and safe accommodation will be well designed with common rooms located on the ground floors.</li> </ul>	Student accommodation of a high standard will be provided.
<ul style="list-style-type: none"> <li>The accommodation will be dispersed throughout the campus so as to maximise movement of people.</li> </ul>	Student accommodation will be dispersed through the campus.
<ul style="list-style-type: none"> <li>The accommodation will be electronically policed so as to ensure optimum security.</li> </ul>	Security will be a priority for student accommodation.
<b>3.6 Transport</b>	
<ul style="list-style-type: none"> <li>There will be good transport to and through the campus.</li> </ul>	There will be good transport available to the campus.
<ul style="list-style-type: none"> <li>There will be a good transport system for getting around the campus, including proper cycle routes (with changing and storage facilities for cyclists), pedestrian walking routes from public transport stops and also throughout the campus.</li> </ul>	The masterplan for the campus proposes a pedestrian and cycle friendly campus with good public transport access
<ul style="list-style-type: none"> <li>There is a balance to be achieved between having car parking available for students and maximising the green space available. The campus itself should be car-free.</li> </ul>	There will be a balance between carparking and open spaces with priority being given to maintaining open spaces. Car travel around the campus will be minimised.

<p><b>3.7 Security</b></p> <ul style="list-style-type: none"> <li>As it will be an open campus, security will have to be well designed, taking into consideration that there will be people moving throughout the campus on a 24/7 basis. The campus will be well lit with working security cameras.</li> </ul>	<p>The campus will have full security to meet its varied needs.</p>
<p><b>3.8 Sustainability</b></p> <ul style="list-style-type: none"> <li>The campus will be as sustainable as possible with green energy alternatives such as solar panels, wind turbines and recycling facilities being employed.</li> </ul>	<p>The masterplan envisages a sustainable campus which promotes 'green energy'.</p>
<ul style="list-style-type: none"> <li>There should be an organic garden which could provide work as a business venture, supplying students or the canteens/restaurants on campus.</li> </ul>	<p>This will be landscaped in the detailed planning phase to follow the masterplanning/strategic planning process.</p>
<ul style="list-style-type: none"> <li>The renewable energy sources should be made available to students and staff for research purposes.</li> </ul>	<p>It is envisaged that this will happen on campus.</p>

## Section Four: Priorities

*What are your priorities in terms of those wishes and aspirations?*

	Responses
<ul style="list-style-type: none"> <li>Multi-purpose recreation areas: with bars, theatres, sports facilities such as gyms, pitches, swimming pools, etc.</li> </ul>	All of these facilities are planned for the campus.
<ul style="list-style-type: none"> <li>Appropriately resourced Clubs and Societies.</li> </ul>	Dedicated space will be provided for these purposes.
<ul style="list-style-type: none"> <li>A centralised base for the Students' Union.</li> </ul>	This is planned for in the masterplan.
<ul style="list-style-type: none"> <li>Student accommodation.</li> </ul>	This is planned for in the masterplan.
<ul style="list-style-type: none"> <li>Adequate transport to and around the campus.</li> </ul>	This is planned for in the masterplan.
<ul style="list-style-type: none"> <li>Common area that allow for comfortable and relaxed interaction amongst students.</li> </ul>	This is planned for in the masterplan.
<ul style="list-style-type: none"> <li>Integrated IT with WiFi throughout the campus.</li> </ul>	This is planned for in the masterplan.
<ul style="list-style-type: none"> <li>A campus that is secure and safe for students</li> </ul>	This is planned for in the masterplan.
<ul style="list-style-type: none"> <li>Restaurants/shops that meet the needs of students.</li> </ul>	This is planned for in the masterplan.
<ul style="list-style-type: none"> <li>Good academic equipment</li> </ul>	This is planned for in the masterplan.
<ul style="list-style-type: none"> <li>A sustainable campus</li> </ul>	This is planned for in the masterplan.
<ul style="list-style-type: none"> <li>Library facilities that can accommodate everyone, particularly at examinations time.</li> </ul>	This is planned for in the masterplan.



## Section Five: Concerns in relation to the Grangegorman Development

	Responses
<ul style="list-style-type: none"> <li>If the campus is to be an Access Campus that also serves the surrounding area, this may have implications for security on site.</li> </ul>	The balance across user groups will have to be managed by DIT with priority being given to students & staff of DIT.
<ul style="list-style-type: none"> <li>The location of a primary school warrants careful consideration as the presence of young children on campus would be incompatible with college life e.g. sexual health programmes and Rag Week.</li> </ul>	To date the proximity of existing DIT facilities to primary schools has not created any problems and has often created opportunities for valuable interaction in areas such as supervised study, etc.
<ul style="list-style-type: none"> <li>The new campus in Grangegorman may result in less car usage as many students already avail of accommodation in the surrounding areas of Stoneybatter, Fairview, North Circular etc and most likely will continue to do so.</li> </ul>	This is to be encouraged.
<ul style="list-style-type: none"> <li>There was a perception amongst some students that misinformation regarding the new campus has been provided to students.</li> </ul>	The DIT Campus Planning Team has student representation and these representatives have proved very helpful in communicating goods quality feedback to the student body.
<ul style="list-style-type: none"> <li>There were some concerns expressed as to whether or not the site will be able to accommodate all parties. The suggestion was made that some areas or facilities may need to be 'ringfenced' solely for students use. It is important that students are able to avail of the services on offer and that issues such public access to student bar facilities etc are duly considered.</li> </ul>	The masterplan demonstrates that while there are constraints the needs of the DIT are being achieved.
<ul style="list-style-type: none"> <li>There was a concern that students would lose out to the community and/or</li> </ul>	This should not be the case.

<p>corporate organisations in relation to facilities due to revenue generating capacity of these two groups and the need for DIT to generate revenue.</p>	
<ul style="list-style-type: none"> <li>The swimming pool is currently fully booked and there were concerns as to whether the swimming pool on the new campus will be able to cater for external groups.</li> </ul>	<p>A single swimming pool is planned for the campus.</p>
<ul style="list-style-type: none"> <li>There was also concern expressed that Grangegorman is the focus in relation to funding and that there is insufficient focus on the present.</li> </ul>	<p>DIT is working closely with DIT Students' Union to ensure facilities and services for existing students are not neglected and where possible enhanced.</p>
<ul style="list-style-type: none"> <li>There was a question as to how land is to be allocated between the various stakeholders.</li> </ul>	<p>The masterplan for the Grangegorman site plans for 65 acres campus which meets the needs of DIT.</p>
<ul style="list-style-type: none"> <li>There was a request for some information as to the proposed relationship between students and the HSE.</li> </ul>	<p>This is an issue yet to be determined.</p>
<ul style="list-style-type: none"> <li>The financial model employed in generating funding and revenue for DIT should not result in students being placed at a financial disadvantage.</li> </ul>	<p>There is no intention to disadvantage any student of DIT by creating the new campus</p>



**Grangegorman**  
Development Agency  
Gníomhaireacht Forbartha  
Ghráinseach Ghormáin

# **The Grangegorman Development**

## **Briefing Paper**

**May 2008**

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# 1 Introduction

The Grangegorman Development Agency (GDA) is in the process of developing a Strategic Plan for the redevelopment of Health Service Executive lands (HSE) at Grangegorman in Dublin 7.

The plan is to develop a new city quarter focused around health and education, in a way that is sensitive to the context of the Grangegorman site, its surrounding neighbourhoods and the existing community.

The development will include:

- new health care facilities for the Health Service Executive (HSE)
  - a new urban campus in one location for Dublin Institute of Technology (DIT)
  - new arts, cultural, sports & recreational and high quality public spaces to serve the community and the city
  - new primary school, public library, and children's play spaces
- and all within a high quality area with strong physical linkages to Smithfield, Phibsborough, Prussia street/Manor Street, Constitution Hill and the City Centre.

This redevelopment will change the nature of the area and the GDA wants your views on what should be contained in the Strategic Plan.

All submissions should be in writing and should contain the name and address of the person making the submission. Submissions will be accepted up to **Wednesday 18 June, 2008** and can be made by post to **Grangegorman Development Agency, St. Brendan's Hospital, Grangegorman, Dublin 7** or by email to [ceo@ggda.ie](mailto:ceo@ggda.ie). All relevant submissions received will be acknowledged in writing and will be carefully considered by the GDA.

## **2 Background**

The redevelopment of the 73-acre Grangegorman site in Dublin, its role in accommodating both educational and healthcare uses, and its potential to contribute to the economic growth and connectivity of the neighbourhood and city has been recognised as a key public project in the current National Development Plan and is an objective of the *Dublin City Development Plan 2005-2011*.

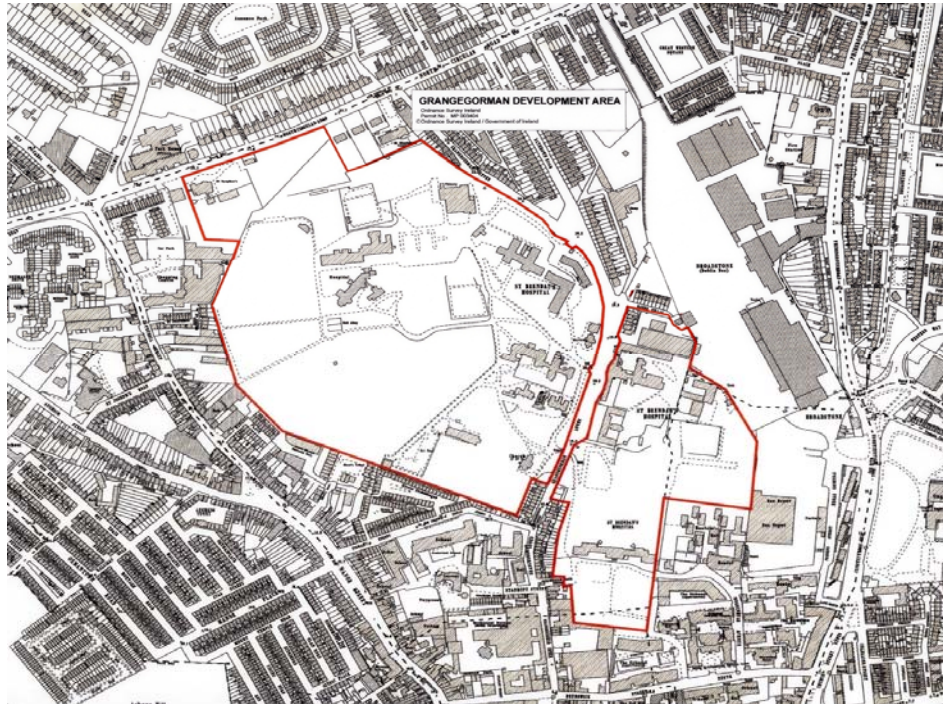
The Grangegorman site, close to Dublin City Centre, represents one of the largest urban development sites in Dublin City. The Grangegorman site and the adjacent Broadstone site, owned by CIE, have been designated as a Framework Development Area (FDA) in the City Development Plan with the objectives of integrated long-term development of both sites.

## **3 The GDA and its role**

The Grangegorman Development Agency (GDA) was established through the Grangegorman Development Agency Act 2005.

The general aim of the Act is to facilitate the development of the 73 acre Grangegorman site in Dublin as a modern campus for the Dublin Institute of Technology (DIT), to provide the Health Service Executive (HSE) with upgraded primary health and social care facilities and to provide other facilities including those for the community.

The GDA's overall function is to plan and project manage the development in an integrated and sustainable manner. Under the 2005 Act the statutory remit of the GDA applies within the area broadly outlined below in red.



The Grangegorman site (outlined in red) with the North Circular Road at the top, Prussia Street/Manor Street to the left and Broadstone to the right.

## 4 Strategic Plan Objectives

The content of a Strategic Plan for the development of the Grangegorman site is explicitly scoped out in Section 12 of the Grangegorman Development Agency Act 2005 Act.

The Strategic Plan is to be a written statement and plan indicating the objectives for the development including the following:

- the provision for the needs of the Minister for Education and Science, the Minister for Health and Children, the Dublin Institute of Technology, the Health Service Executive and the Grangegorman neighbourhood
- the provision of services (for example, roads, water, transport on site)
- public transport requirements

- the management and refurbishment of property including listed buildings
- the provision of recreational facilities
- the provision of research and development facilities
- the provision of facilities to exploit any research, consultancy or development work undertaken by the Agency in conjunction with the DIT or the HSE
- subject to the Minister's approval in writing, the setting of a budget for the strategic plan and a strategy for its delivery within the set budget
- the development of commercial activities
- facilitating access to, and use of, facilities forming part of the Grangegorman site by residents in the Grangegorman neighbourhood
- the development of the Grangegorman site in the context of land usage in the vicinity and in a manner that is sympathetic with its urban setting.

In creating the strategic plan for the Grangegorman site the GDA must:

- have regard to the Dublin City Development Plan; and
- consult with certain bodies, the local community and other persons having a relevant interest.

## **5 Planned Development**

The proposal is to plan for and implement a multi-phased development that can provide for:

- a high quality area with strong physical linkages to Smithfield, Phibsborough, Prussia Street/Manor Street, and the City Centre.



- new health care facilities for the HSE which will enable the HSE to deliver a service model for Health Care services broadly comprising:
  - provision for Mental Health Care
  - provision for Primary, Community and Continuing Care
  - provision for Older persons
  - provision for people with Disabilities

This range of HSE facilities can provide local, modernized healthcare services across Dublin North West within a quality environment.

- A new urban campus for DIT, where all the functions of DIT are to be consolidated on the Grangegorman site including academic buildings, craft training facilities, sports facilities, student accommodation, and research and development enterprises. These facilities will enable the delivery of educational services by DIT in accordance with their statutory remit and their mission charter.
- new arts, cultural, sports and recreational and public spaces to serve the community and the city.
- a primary school, under the patronage of Educate Together. The school is designated to be a 16 classroom school with ancillary special education rooms.
- the GDA has been in discussion with Dublin City Council on the possibility of co-locating a City Council branch library with the DIT main library on the site. Realisation of this opportunity is dependent on funding.
- to support the two large public body occupiers, DIT and HSE, an appropriate level of retail and commercial development is required. In addition, as part of the newly created city quarter

other mixed-use development can be developed to deliver on the objectives of the City Development Plan.

- other appropriate supporting developments.

For further information on the Grangegorman Development see the website [www.ggda.ie](http://www.ggda.ie)

## **6 Next Stage**

The submission or observations you may choose to make in response to this briefing paper will be considered by the GDA in its ongoing preparation of a Strategic Plan.

It is envisaged that the Strategic Plan will be available by Autumn 2008 for consideration in draft form. Under the statutory process as set out in Section 12(4) of the Grangegorman Development Agency Act 2005, there will be an opportunity at that stage, Autumn 2008, for further submissions on the Draft Strategic Plan.

***We look forward to your submission and observations on the Strategic Plan at this stage of our consultation process for the Grangegorman Development.***

**Appendix 12 – GDA’s response to submissions**



**Grangegorman**  
Development Agency

Consideration by the GDA following calls for submissions in  
respect of preparing a draft Strategic Plan

July 2008

Key Elements of Submission	GDA Consideration
<p><b>1. Private individual</b> Supports overall development in an area that needs to 'change with the times'</p>	Noted
<p><b>2. Fingal Place Residents' Associations</b> Want undertaking from GDA not to grant <b>access to Prussia Street</b>, from Grangegorman site, via Fingal Place as this would cause 'considerable nuisance to the residents'.</p>	<p>Met residents on 8<sup>th</sup> July.</p> <p>Access from Prussia St/Manor St/ Stoneybatter is very limited due to the existing urban structure. Fingal Place is one of the few possible accesses to the site. Permeability from this sector would greatly suffer if this access was to be removed from Land use plan. A major purpose of this access is to provide access for the local community to the sports and recreation areas. The GDA intends a controlled gated pedestrian access.</p>
<p><b>3. Private individual</b> Wants an assurance that letters from Ministers of Health and the Taoiseach to effect that all <b>mental health patients on site</b> would be housed in appropriate and modern accommodation on the site prior to any development.</p>	HSE have published a detailed brief for their facilities which reflects best practice for mental healthcare.
<p><b>4. Private individual</b> An area should be set aside for <b>food production</b> on the site.</p>	Noted. A significant percentage of the overall site area is being retained in open space and landscaped but it is not considered that the best use of the spaces would be met by food production areas.
<p><b>5. Private individual</b> Avoid setting <b>lights into pavements</b> as these create a hazard for the disabled. Be careful when creating runways for skateboarders and cyclists. Ensure all facilities are adequately lighted.</p>	These points will be taken in to account as appropriate at design stage.
<p><b>6. Enterprise Ireland</b> Supports overall thrust of project. Planned development should include <b>provision of enterprise space</b> for small business that may not be R&amp;D related. Noted that funding for Incubator Facility on the site already approved.</p>	The Strategic Plan will provide for the creation of enterprise space for small businesses. These businesses may or may not be R&D related.

<p><b>7. Cumann Luthchleas Gael</b></p> <ul style="list-style-type: none"> <li>Want <b>two GAA pitches which would accommodate four soccer/rugby pitches and other field sports such as hockey</b>. A 3G floodlit surface on both pitches. Sports Pavilion should also be designated a GAA Pavilion. Further provision should be made for newly planned school on site.</li> <li>St Brendan’s GAA Club want access to playing facilities in line with right to <b>sporting lease</b> granted by HSE in 1992</li> </ul>	<p>The land use plan provides space for two mixed use sport pitches. The Strategic Plan will address the issue of access to facilities.</p> <p>Noted. However, GDA do not accept the legal rights asserted.</p>
<p><b>8. Residents of Grangegorman Villas</b></p> <ul style="list-style-type: none"> <li>Want review of <b>location of main student accommodtation</b>, lower house due to potential noise disruption. DIT Campus not best served by placement of student accommodation on the peripheries of the site bordering private houses. Uneven distribution of the student population around Grangegorman Road Lower will result as local apartments will be let to students.</li> <li><b>Height, scale and density</b> of main student accommodation block, lower house, is unsuitable as this will result in loss of privacy; will increase light pollution and negatively affect quality of light. Maximum height of 3 stories desirable with buildings moved considerably further back towards Broadstone site. There should not be open balconies on the exterior of any building facing Grangegorman Villas.</li> <li>Location of proposed <b>public walkway</b> behind houses is unsuitable as it will increase risk of break-in, noise and nuisance. If lit this would produce further light pollution. Place walkway on the farthest side from homes.</li> </ul>	<p>Student accommodation is dispersed across the site at suitable locations. Where it is adjacent to existing residences it is at an appropriate distance and scale. The provision of student accommodation on campus will remove significant movement of students on a daily basis accessing campus facilities. Student accommodation will assist in animating the campus in off peak times and in the process assist in creating a vibrant community.</p> <p>Height and scale were carefully reviewed in the light of these comments.</p> <p>Circulation/service space associated with the housing is necessary as with any residential facility. Access to this space can be controlled. Best practice standards for public lighting will apply. The provision of south access road is due to servicing requirements. Public walkways will provide access for residents to the park and play spaces.</p>

<ul style="list-style-type: none"> <li>• Bars in combination with café/restaurants are preferable, and should be located as far away from Grangegorman Villas as possible. Route between student accommodation and <b>college bar</b> should not pass by private houses but remain contained within the campus.</li> <li>• Wall on Grangegorman Road Lower should be retained.</li> <li>• General concern about traffic, sewerage, water supply and security; issues that will be addressed further as project progresses.</li> </ul>	<p>Bar facilities are located internally in the campus. Students will inevitably have to move to and from any such amenity on public roads as many students will not live on campus. Local community concerns have been and will be taken on board and are reflected in the land use plan.</p> <p>A careful strategy for the complete boundary wall is articulated in the land use plan. It includes part retention and certain appropriate interventions. There will be removal of certain sections of the wall on Grangegorman Road Lower.</p> <p>These issues have been considered in the land use plan.</p>
<p><b>9. TKB Southgate Associates</b></p> <ul style="list-style-type: none"> <li>• <b>Historic buildings</b> should be conserved as they are found. The objective for the management and refurbishment of protected structures should be to meet the requirements set down by current conservation principles, techniques and best practice (references provided).</li> <li>• Where changes are essential, a minimum of intervention should result. Specific suggestions made about recording and cataloguing of items removed; cleaning and repair meet Code requirements; authenticity of missing elements to be verified; materials used in new structures to be designed to ensure they are compatible with historic materials; integrity of adjoining historical buildings should be maintained; and archaeological consultation will precede design of structures.</li> </ul>	<p>All works to protected structures will have due regard to D/EHLG guidelines. The draft Strategic Plan spells out the broad strategy for listed buildings. Once detailed design gets under way the issues raised in the submission will be considered in more detail.</p> <p>Conservation and re-use of protected structures are at the heart of the draft Strategic Plan for the development of the site. The detailed design will address all the specific points raised.</p>
<p><b>10. Private individual</b> Provide space for small community <b>garden/allotment</b> (tiny community garden at Sitric Road). Specialist should examine what needs to be done to minimise damage to <b>wildlife</b>. Consider artificial nesting sites for jackdaws and swifts.</p>	<p>Ecological appraisal of the site has been carried out. Development will be carefully managed to mitigate impacts and overall landscape will be enhanced by new planting.</p>
<p><b>11. St. Josephs Road Residents Association</b> Concerned about what is planned in respect of two</p>	<p>The structures that would be affected by the Prussia</p>

protected red brick houses facing St. Joseph's Road on Prussia Street	St. entrance are not protected structures. The listed building at 29 Prussia St. is not marked for demolition and will not suffer any impact from the plan
<p><b>12. Private individual</b></p> <p>Name the East-West road the Tony Gregory Path. Consider a helicopter pad, planting a Norwegian pine tree and small butterfly patches in the gardens</p>	No names have been fixed for roads. Other points noted. Planting concept has due regard to biodiversity issues and inclusion of native species. A helipad is not planned.
<p><b>13. Enterprise Ireland</b></p> <p>Wishes to engage about provision of suitable accommodation for small start-up enterprises which is scarce and expensive.</p>	The land use plan provides for the creation of enterprise space for small businesses, These businesses may or may not be R&D related and accordingly space will be available to support local business start-ups.
<p><b>14. Kieran A. O'Connor on behalf of St Brendan's Hockey Club</b></p> <ul style="list-style-type: none"> <li>• Club claims an entitlement to a sporting lease in respect of current hockey pitch and use of adjacent pavilion.</li> <li>• Want a Sporting Lease in respect of a floodlit astro-turf hockey pitch and pavilion with suitable dimensions with exclusive rights on specified dates/times.</li> <li>• GDA to cover cost of Club having to hire alternative pitches and changing facilities during construction of new facilities</li> </ul>	<p>Noted. However, GDA do not accept the legal rights asserted and will deal with this matter via solicitors.</p> <p>The land use plan provides for an all weather pitch available for hockey with associated flood lighting and changing rooms.</p>
<p><b>15. Councillor Emer Costello</b></p> <p>Supports representations made by <b>St. Josephs Residents' Association</b> who want two houses at entrance of St. Brendan's Way at Prussia Street refurbished and not demolished. Concerns also expressed about traffic implications, with residents of very unhappy about prospect of re-opening a pedestrian entrance at <b>Fingal Place</b>.</p>	See responses to submission 11 and 2 above.
<p><b>16. Rathdown Road Residents</b></p> <p>Supports imaginative approach taken about development. Concerns expressed about traffic management during construction phase and on completion. Submit following for consideration:</p>	Met a group of residents on 15 <sup>th</sup> July to discuss the issues.

<ul style="list-style-type: none"> <li>• Very significant volume of traffic will be generated</li> <li>• Vehicular access points to the site should be only from the main arterial routes which adjoin the site. Route from Prussia Street would be appropriate provided a route independent of existing residential streets can be arranged.</li> <li>• With exception of proposed primary school, vehicular traffic should be directed away from minor residential roads such as Rathdown Road, Orchard Terrace, and Upper and Lower Grangegorman.</li> <li>• Car parking demand should be realistically assessed and adequate number of places be provided. Already limited off-street parking for residents should not be exacerbated.</li> <li>• Want sight of Traffic Management Plan for construction phase. Parking should be provided on-site for construction workforce and service vehicles.</li> <li>• Noted no model has been prepared for projected traffic volumes and control of its access and distribution within the site.</li> <li>• Draft Land use plan as presented could be modified with only a minimal impact on overall design concept to accommodate the principle of vehicular access via the main arteries only.</li> </ul>	<p>Traffic management during construction and operation is dependent on phasing and will be detailed at the planning stage. Traffic volumes to/from the site have been assessed in broad detail at this stage, the limited quantum of car parking and 'flat' travel patterns should result in a negligible impact for the residents. Vehicular access will be primarily from Constitution Hill and NCR, with minor access off Grangegorman Road and Morning Star Avenue.</p> <p>There will be access to a limited amount of car parking and service routes off Grangegorman Road. Rathdown Road and Grangegorman Road will cater for access to the primary school.</p> <p>Car parking provision will be sufficient to enable the normal operation of a development of this type and size, without encouraging car parking overspill onto neighbouring residential areas. A relatively limited amount of spaces provided will prevent a negative traffic impact on local road network. Some on-street car parking will be provided throughout the site.</p> <p>Detailed traffic modelling will be carried out at the planning stage. Sufficient analysis has been completed for this stage.</p>
<p><b>17. Pallas Contemporary Projects</b> Has gallery space at 111 Grangegorman Road and would like to be considered as a potential partner organisation. Pallas facilitates educational placements for graduate artist interns, including DIT students.</p>	<p>DIT welcomes and supports such interaction</p>
<p><b>18. Grangegorman Residents Alliance</b></p> <ul style="list-style-type: none"> <li>• Strategic Plan must: adopt <b>best practice models</b>; 'learn from previous mistakes'; take</li> </ul>	<p>Noted.</p>



<p>into consideration the Grangegorman neighbourhood (as defined in the GDA Act).</p> <ul style="list-style-type: none"> <li>• New buildings need to be sympathetic to existing architectural heritage in the neighbourhood, with <b>maximum heights of 5/6 stories</b>.</li> <li>• Minimum of <b>50% of the Campus must be kept as green space</b>.</li> <li>• More <b>trees</b> should be planted to counter air and noise pollution.</li> <li>• Good quality <b>street furniture</b> must be provided.</li> <li>• Funds from <b>development levies</b> and other sources must be used for the benefits of the residents in the neighbourhood.</li> <li>• Sufficient <b>community facilities</b> such as Community Halls must be provided.</li> <li>• Number of <b>playgrounds</b> should correspond to child population in the neighbourhood.</li> <li>• There must be sufficient <b>places for existing as well as the additional population at every level of education</b>.</li> <li>• The Strategic Plan should set out how <b>education participation rates</b> will be better than the national average.</li> <li>• The Plan must ensure there is good <b>quality housing</b>.</li> </ul>	<p>Noted</p> <p>The land use plan contains large area of green spaces. For information, the Dublin City Council zoning requirement is 20% open space.</p> <p>Additional trees will be planted.</p> <p>Land use plan addresses this in its guidelines.</p> <p>A matter for Dublin City Council.</p> <p>The land use plan details the community facilities that are envisaged and how DIT facilities can be utilised.</p> <p>Playspaces, and requirements for different age groups and disabled children are catered for in the land use plan.</p> <p>Noted. The Department of Education and Science has not advised of a need for a secondary school on site, having carried out their demographic assessment.</p> <p>This is not a function of the GDA.</p> <p>The land use plan is built on the principle of providing sustainable and good quality residential accommodation.</p> <p>The land use plan addresses these issues and the</p>
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<ul style="list-style-type: none"> <li>• A comprehensive assessment of public transport and traffic needs must be included. <b>Public transport</b> in the area needs to be dramatically improved prior to the introduction of additional population into the neighbourhood. There should be a strong bias in favour of <b>pedestrians, cycling</b> and public transport against private vehicles with pedestrian-only zones in the neighbourhood. Pedestrian crossing need to be prioritised. Footpaths must be improved and widened.</li> <li>• All <b>public services</b> must be sufficient for existing and additional neighbourhood populations.</li> <li>• New <b>sub-post office and Garda station</b> on campus should be included in the Plan.</li> <li>• The Plan must ensure the <b>safety and security</b> of the neighbourhood population.</li> <li>• The Plan must ensure sufficient: <b>healthcare provision</b> for all healthcare needs of the neighbourhood; affordable childcare facilities; youth facilities; facilities for the older population; cultural, sports and leisure facilities; measures for employment opportunities and the creation of economic opportunities.</li> </ul>	<p>Draft Strategic Plan sets out the transportation and movement strategy.</p> <p>Noted</p> <p>Neither of these facilities have been requested by those agencies. The Gardaí will be facilitated by DIT with meeting space in accordance with a model of policing that the Gardai use at DCU.</p> <p>This is addressed in the land use plan through careful design of uses and spaces.</p> <p>The Strategic Plan including its land use plan sets out in detailed how the HSE's requirements can be met.</p> <p>The Strategic Plan addresses economic aspects.</p>
<p><b>19. North West Inner City Disability Awareness Working Group</b></p> <ul style="list-style-type: none"> <li>• Want a disability advocate appointed.</li> <li>• Consultation meetings should be held at (specific) locations that are accessible for the disabled.</li> <li>• There is a need for a designated respite centre on the site which would have social and activities for disabled people (especially</li> </ul>	<p>Disabled access has been taken into account at a level appropriate to the land use plan and will be fundamental to detailed design. Play space requirements for disabled children are catered for . Disability provision will be at the forefront of the site design.</p> <p>The HSE can utilise its facilities for a wide variety of uses. It is a matter for the HSE .</p>

<p>young people) on model of Carmel Fallon respite home in Clontarf. The respite centre for older people would be a separate facility.</p> <ul style="list-style-type: none"> <li>• GP services should be part of primary care unit.</li> <li>• All recreational services on site should be accessible to disabled people. Play areas for children should be designated to allow disabled children to use them.</li> <li>• There is a need for reliable and accessible transport links.</li> <li>• A support and training service for carers is needed on site.</li> <li>• Above-minimum standards for disabled access to buildings is required.</li> </ul>	<p>This is planned for within HSE facilities.</p> <p>All recreational facilities will be planned to meet the needs of universal access.</p> <p>This is provided for within the land use plan</p> <p>Noted</p> <p>Noted</p>
<p><b>20. Private individual</b></p> <ul style="list-style-type: none"> <li>• Richmond Hospital (former) should be considered for joint-use library location.</li> <li>• Bolton Street and <b>Yarnhall</b> complex should be retained in the portfolio to house the Bolton Trust and Centre for Exploration and Discovery for Children.</li> <li>• More study is needed to integrate Markets area within 'Green Fingers' plan.</li> <li>• Negotiations should be opened with OPW on use of derelict Garda Sports Ground at Phoenix Park.</li> <li>• There needs to be strong connectivity with Phibsboro LAP and HARP.</li> <li>• Factor in Arts and Science 60-place post-primary cluster school on Campus incorporating three local secondary schools.</li> <li>• Carry out inventory of (specific) buildings off Campus.</li> </ul>	<p>Richmond Hospital (former) is outside scope of GDA's area.</p> <p>These buildings are planned for disposal to fund DIT facilities on site.</p> <p>Noted . Strategic Plan addresses the site in an overall local and city context.</p> <p>DIT are examining a wide range of sports options outside the site.</p> <p>Agreed. Land use plan addresses both these areas carefully.</p> <p>Secondary school will not be provided on site. See response to Submission no. 18.</p> <p>Noted.</p> <p>Land use plan is conceived to serve the wide</p>

<ul style="list-style-type: none"> <li>Put strong focus on designing an Intercultural Campus to plan for up to 10% overseas students.</li> </ul>	<p>spectrum of users of DIT and HSE, and primary school. DIT seeks to enhance its international student intake on the new campus.</p>
<p><b>21. Private individual</b></p> <p>Designate area around Grangegorman Upper and Lower as a Home-Zone status under the National Play Policy (2004). Thorough participative planning process needed with children and teenagers. Play Officer should be appointed.</p>	<p>Noted. Play areas are spread throughout the site in areas that are most accessible to children.</p>
<p><b>22. Dublin Transportation Office</b></p> <p>Supports the development on the basis that walking, cycling and public transport are the primary modes of transport. The current RPG promote the delivery of: a well-designed urban environments enhancing the quality of life for residents and workers alike. The site would benefit from a substantial improvement in accessibility. The policies and development objectives of the Strategic Plan need to be informed by public transport proposals, likely development patterns in the adjacent Phibsborough/Mountjoy area and likely development patterns on the adjacent Broadstone lands. Specific proposals include:</p> <ul style="list-style-type: none"> <li>Note should be taken of DTO's <i>Platform for Change</i>, including complementary <b>land use policies for site in the Metropolitan Area</b>, including a detailed description of the timescale and phasing of the development, the associated supporting transport measures and the transport impacts at various stages (p 67).</li> <li>A <b>transport strategy</b> should be prepared as part of the Strategic Plan to consider: local walking and cycling networks; accessibility to LUAS; traffic management; bus infrastructure measures; car parking provision and parking management; cycle parking. The transport strategy could be a key element in achieving the objective of a developing a carbon neutral campus.</li> <li>A detailed <b>mobility management plan</b> for all developments should be prepared as part of the transport strategy and should be reviewed regularly. Concomitant with the</li> </ul>	<p>Noted and agreed.</p> <p>The draft Strategic Plan will address all these issues. This plan will be prepared as part of the planning process cycle in due course.</p> <p>Integrated mixed-uses are planned. Various types of residential developments are required by DIT and HSE. Pedestrian amenity is a core concept for the site.</p>

<p>phasing of development.</p> <ul style="list-style-type: none"> <li>The <b>pattern of development</b> should reflect a mixed use approach rather than a series of uses that are discrete from one another. The site should support a broad mix of residential types at higher densities. A high level of pedestrian amenity should also be pursued.</li> </ul>	<p>The land use plan reflects a completely integrated approach.</p>
<p><b>23. Railway Procurement Agency</b></p> <p>Fully supportive of planned development. Public transport has an important role to play in this regard. Transport 21 provides for implementation of new LUAS line extending from the city centre through Broadstone/Grangegorman to Liffey Junction/Broombridge on the Maynooth line. Convenient access from Grangegorman lands to stops/s on this LUAS line will be critical. Central to this consideration will be the manner in which the access arrangements from Grangegorman on to the surrounding road network at Constitution Hill integrates with a planned LUAS crossing at this location. In planning for this access and the physical linkages to the surrounding community, the GDA should not forego the opportunity to create a landmark entrance at Constitution Hill and one that would respect the surrounding and historic setting. RPA will continue to provide the GDA with any assistance to ensure this much needed and important contribution to this quadrant of the city is brought to fruition.</p>	<p>GDA considers that the Constitution Hill/Broadstone entrance as important for the project and will work closely with the RPA in relation to the new LUAS line.</p>
<p><b>24. Private individuals</b></p> <ul style="list-style-type: none"> <li>Clarification required about right turning lane on NCR and vehicular access off the NCR.</li> <li>Clarification also required about precise nature of access by local community groups to DIT's sports and leisure facilities.</li> <li>Concerned that HSE has not been allocated more of the site. Primary concern should be that of the aged and sick.</li> <li>DIT should be at the forefront of research programmes designed to enhance the quality of education, health and other services in the</li> </ul>	<p>Access off the North Circular Road is detailed in the land use plan.</p> <p>This will be set out in the Strategic Plan.</p> <p>HSE has been allocated at least 12.5% of the site in line with the (2002) Government decision. This allocation meets the specified needs of the HSE as documented in their Strategic Brief for masterplanning purposes.</p> <p>DIT is Ireland's largest provider of part-time education with a large outreach programme targeting the needs of the north inner city.</p>

<p>local area.</p> <ul style="list-style-type: none"> <li>Disappointed by reference to the Park House office block and do not want this building used as a yardstick for building heights in the vicinity.</li> <li>Noted that houses on NCR adjacent to Grangegorman are 2-3 stories (and not 3-4 stories as stated in draft land use plan.</li> <li>Not in favour of proposed use of Maureen Potter name for a road on the site.</li> <li>DIT should take lead in pressing for early intervention educational initiatives in the neighbourhood.</li> <li>DIT should also work to maximise the tourist potential of the area.</li> <li>Concerned about car parking, in particular as regards on-street parking and require clarification about these plans.</li> <li>Location of HSE facilities and offices may cause communications issues.</li> </ul>	<p>Not used as a yardstick but simply benchmarked to give an overall picture of heights in the area.</p> <p>Correct heights have been added to the survey.</p> <p>Noted. Road names are not as yet decided. In the land use plan it is now called Ivy Avenue.</p> <p>DIT is working alongside many agencies in Dublin's inner city and will play its role.</p> <p>DIT will be able to assist tourism particularly through the availability of accommodation in the summer period within its student residences. DIT is Ireland's largest provider of tourism education and is Ireland's only designated centre for tourism education by the World Tourism Organisation. It is envisaged that the campus will become a destination for visitors and tourists to Dublin City.</p> <p>Public transport will be the main means of access to the development. Limited car parking will be provided for HSE/DIT. See response to submission no. 16.</p> <p>The HSE facilities have been located in agreement with the HSE who have carefully considered the necessary adjacencies.</p>
<p><b>25. Private individuals</b></p> <p>Questions the extent to which sustainability factors have been incorporated into the Land use plan. Raised possibility of sponsoring local farmer to supply food for use on the site.</p>	<p>Noted. Sustainability principles are incorporated into the land use plan and the Draft Strategic Plan.</p>
<p><b>26. Private individual</b></p> <p>Supports proposed Broadstone/Constitutional Hill and other connections to open up the site. Welcomes proposed Educate Together primary school and</p>	<p>Noted. Limited extent of site cannot provide for city farm or allotments. Bird nesting and bat roosting needs will be respected in the delivery of the</p>

<p>suggests that a small city farm and allotment site be added. In favour of proposed use of water and Bradog River. Recommends that buildings be designed to incorporate sites for birds and bats. Opposed to students driving cars onto the campus. Sites adjacent to Grangegorman should be included in the plan.</p>	<p>development. Limited (1,100) space provision for DIT and HSE car parking. The land use plan addresses the Broadstone/Constitutional Hill and other issues raised in the submission.</p>
<p><b>27. Residents of Upper Grangegorman</b></p> <ul style="list-style-type: none"> <li>• Do not agree that current proposal is sympathetic with its urban setting, in particular along some boundaries.</li> <li>• Proposal to locate 80% of buildings on north of site is imbalanced.</li> <li>• Want details of economical impact of Grangegorman development on the value of adjacent properties.</li> <li>• Want details of ground level survey and proposed levels for the buildings and shadow studies for the loss of light. Want one story buildings set back 20 metres from the site boundary with native trees planted.</li> <li>• Want details of current and proposed vehicular and pedestrian traffic analysis and forecasts for the NCR, Rathdown Road and Upper Grangegorman</li> <li>• Want traffic forecasts in scenario where proposed additional provision of public transport does not materialise.</li> </ul>	<p>The land use plan takes these issues into account in the scale and massing of buildings.</p> <p>The DIT development will represent the largest single capital investment in higher education in the State's history. It will create a state of the art campus and in the process provide a range of facilities not currently available. It will create employment opportunities The HSE helath and residential developments will support significant urban regeneration. The faculties for both bodies are supported by economic analysis in accordance with the Department of Finance requirements</p> <p>New buildings carefully respect existing residences in terms of distance and shadowing.</p> <p>See response to Submission no. 16.</p> <p>The supporting public transport provision is approved by Government and included in Transport 21.</p>

<ul style="list-style-type: none"> <li>• The site should not be occupied until public transport infrastructure is in place.</li> <li>• Concerned about proposed height and density of buildings adjacent to properties on Upper Grangegorman from point of view of loss of light and privacy to the rear of the houses</li> <li>• Concerned about proposed pedestrian path over wall at rear of houses on Upper Grangegorman on grounds of security and potential noise levels. Want minimum open space of 10 metres between boundary wall and path and then 10 metres of tree planting.</li> <li>• As compensation want provision to rear access of houses on Upper Grangegorman and the provision of parking (referenced Lansdowne Road residents compensation scheme)</li> <li>• There should be a standard palate of finishes for all the buildings to work from.</li> <li>• Rats need to be exterminated on site prior to construction work.</li> <li>• Upper Grangegorman should be designated as assess only or one-way.</li> </ul>	<p>See response to Submisson no. 8</p> <p>See response to Submission no. 8</p> <p>GDA will not be providing residents' parking on the site.</p> <p>Guidelines for designers are being incorporated in the land use plan.</p> <p>Noted.</p> <p>It will become a traffic calmed two-way public road.</p>
<p><b>28. Na Fianna CLG</b></p> <p>View Grangegorman as wonderful opportunity to address the issue of providing world class sporting and community facilities to the local community. The club's single greatest difficulty is acquiring and maintaining access to playing facilities to accommodate their 90 teams. The Club has embarked upon a €400,000 project for facilities in response to the Phibsboro LAP. With a view to increasing participation in active team sports, and to meet the balance of its needs, Na Fianna require the following at Grangegorman:</p> <ul style="list-style-type: none"> <li>• One full-sized grass pitch</li> <li>• One flood lit full size synthetic pitch</li> </ul>	<p>Met the Club's representative on 31<sup>st</sup> July.</p> <p>This is an urban sports campus with limited outdoor pitches being provided. DIT will still need to access pitches off campus in other locations to meet its requirements and consequently it is not possible to satisfy Na Fianna's needs. The availability of new indoor facilities should be of benefit to Na Fianna.</p>



<ul style="list-style-type: none"> <li>• Replacement pitch for loss of Albert College pitch during metro construction</li> <li>• Three additional juvenile pitches</li>   <li>• One floodlit training size synthetic pitch</li>   <li>• One training wall</li>   <li>• All sporting facilities are made available to local clubs at a minimum cost</li> </ul>	
<p><b>29. Tony Gregory T.D.</b> Supported the concerns of FingaL Place residents regarding opening up the pedestrian access.</p>	See response to Submission no. 2.
<p><b>30. Cyprian Brady T.D.</b> Supported aspirations of Na Fianna GAA Club regarding access to sporting facilities on site.</p>	See response to Submission no. 28