

Strategic Environmental Assessment

Environmental Report

Barrysparks Local Area Plan

July 2011



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Fingal County Council



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Non-Technical Summary

1.1 Introduction

On the 21st September 2010, Fingal County Council commenced the preparation of the Barrysparks Local Area Plan, Swords, Co. Dublin by seeking submissions from the public and statutory bodies. The lands, extending to approx 10ha, are zoned MC, where the objective is to “*Protect, provide for and/or improve major town centre facilities*”.

The Development Plan map of Swords comprises 4 specific local objectives related to the LAP lands (see figure 2):

- 322** Prepare a Local Area Plan accommodating high-density high-quality mixed-use development, which ensures connectivity between Major Town Centre lands east and west of the R132 and facilitates a multi-modal interchange at Swords Metro Stop, via Swords Metro Plaza (Metro Plaza comprises a well-designed architectural bridge over the R132, connecting lands east and west of R132 to each other and to Swords Metro North Stop; and a vehicular connection under the R132).
- 323** Require a minimum 10% of the proposed development site area be designated for use as public open space. The Council has the discretion to allow provision of the remaining public open space requirement to be located outside of the development site area, or to accept a financial contribution in lieu, in order to provide or to upgrade small parks, local parks, urban parks, Swords Regional Park and/or recreational/amenity facilities, subject to the open space or facilities meeting the open space ‘accessibility from homes’

standards for each public open space type specified in Table OS1.

- 313** Promote the development of a multi-modal transport interchange, providing for strong vehicular and pedestrian links between the historic Town Centre, Pavilions development area and Barrysparks LAP area.
- 335** Develop a detailed road design for Airside-Feltrim Link Road within the corridor and ensure the delivery of this road in tandem with/prior to development of adjoining RS and HT lands.

The draft Barrysparks Local Area Plan sets out the planning framework and overall strategy for the proper planning and sustainable development of the Barrysparks lands and is valid for a period of 6 years from the date of adoption¹, provided the objectives of the local area plan remain consistent with the development plan in force.

This Strategic Environmental Assessment (SEA) Environmental Report was prepared in parallel with the preparation of the Local Area Plan and complies with the requirements of the Planning and Development (Strategic Environmental Assessment) Regulations 2004, which transpose into Irish law the requirements of Directive 2001/42/EC of 27th June 2001, commonly known as the Strategic Environmental Assessment (SEA) Directive.

¹ Unless otherwise extended, as provided for under Section 12 of the Planning and Development (Amendment) Act 2010.

1.2 SEA Methodology

Strategic Environmental Assessment is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme before the decision is made to adopt the plan or programme.

The SEA process undertaken for the Barrysparks Local Area Plan is as follows: -

- **Screening:** In examining the LAP area and proposed development, it was determined by the Planning Authority that the proposed LAP would be likely to have a significant impact on the environment and therefore a full Environmental Report was required.
- **Scoping:** The Planning Authority liaised with statutory consultees to identify key issues of concern that should be addressed in the environmental assessment of the Plan. This stage included consultations with the DOEHLG, The Department of Communications, Marine and Natural Resources, the EPA and the NRA. The results of these consultations were taken into consideration in the making of the Draft Local Area Plan.
- **Draft Environmental Report:** The likely significant environmental effects of implementing the Local Area Plan are identified and evaluated within this draft Environmental Report.

- **Consultation:** The public, statutory and public authorities will be consulted on this draft environmental report and draft Local Area Plan.
- **Final Environmental Report:** The findings of the draft report and the outcome of consultations will be reviewed in deciding whether to adopt or modify the draft Local Area Plan.
- **SEA Statement:** Following a decision to adopt the draft Local Area Plan, a SEA Statement will be published to establish how the SEA process influenced the outcome and how environmental considerations have been integrated into the final Local Area Plan.

1.3 Compatibility with other Plans and Programmes

The SEA Directive requires an analysis of the plan's "relationship with other relevant plans and programmes" (Annex 1a) and of the "environmental protection objectives, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation" (Annex 1e). A list of the relevant policies, plans and environmental objectives was compiled and their requirements analysed.

The following International, National, Regional and Local Plans, Legislation and Guidelines were assessed: -

1.4 Legislation

- Planning and Development Acts 2000-2010
- Directive 2001/42/EC on the Assessment of the effects of certain plans and programmes on the environment

- The European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004)
- Planning and Development (Strategic Environmental Assessment) Regulations (2004)
- Environmental Liabilities Directive (2004/35/CE)
- Water Framework Directive (2000/60/EC)
- Groundwater Directive (2006/118/EC)
- Bathing Directive (2006/7/EC)
- European Communities (Energy Performance of Buildings Regulations 2006) S.I 666 of 2006

National Plans and Policy

- National Development Plan 2007-2013.
- National Spatial Strategy 2002-2020.
- Transport 21 (2005).
- Smarter Travel – A Sustainable Transport Future, 2009-2020.
- Sustainable Development – A Strategy for Ireland (1997).
- Sustainable Development - International, European and National Context
- Sustainable Development – Local Context
- Towards Sustainable Local Communities: Guidelines on Local Agenda 21 (2001).
- National Climate Change Strategy, 2007-2012
- Ireland's Pathway to Kyoto Compliance
- The Green paper 'Towards a Sustainable Energy Future for Ireland' (2006)
- National Heritage Plan (2002).
- Draft National Biodiversity Plan 2010-2015

Planning and Environmental Guidelines

- Strategic Environmental Assessment Guidelines – Implementation of SEA Directive (201/42/EC)
- Development Plan Guidelines (2007)
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Local Authorities (Dec. 2009)
- The Planning System and Flood Risk Management – Guidelines for Planning Authorities
- Landscape and Landscape Assessment, 2000
- Draft Spatial Planning and National Roads Guidelines
- Retail Planning Guidelines for Planning Authorities, 2005
- Sustainable Residential Development Urban Areas – Guidelines for Planning Authorities (May 2009)
- Best Practice Urban Design Manual
- Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities DOEHLG (2007)
- The Provision of Schools and the Planning System
- Childcare Facilities-Guidelines for Planning Authorities, 2001.
- Development Management Guidelines

Regional Planning Context

- Regional Planning Guidelines for the Greater Dublin Area 2010-2022.
- Retail Strategy for the Greater Dublin Area 2008-2016
- Dublin Transportation Office - Platform for Change - Strategy, 2000-2016. This is currently under review.
- Greater Dublin Strategic Drainage Study (GDSDS).

County Development Plan and other studies

- Fingal Development Plan 2011-2017.
- Swords Masterplan (2009).
- Your Swords, An Emerging City, Strategic Vision 2035 (2008)

1.5 Draft Barrysparks Local Area Plan

The aim of the Local Area Plan is to provide for the optimal future development strategy for the area in the interests of sustainable development and integration with the planned rail network of Metro North. The LAP will be used as the principal development management tool for the Barrysparks Local Area Plan lands and will allow for the coordinated development of the area having regard to the delivery of key economic, social and environmental infrastructure.

Barrysparks LAP Vision:

Create a coherent, sustainable and high-density mixed-use urban quarter at Barrysparks, which will form an extension to the existing Swords town centre, at a highly accessible location supported by planned high quality Metro North and bus public transport improvements. Development will maximise connectivity between 'Major Town Centre' zoned lands east and west of the R132, and facilitate development of a multi-modal interchange at Swords Metro Plaza. Barrysparks LAP will accommodate a range of mixed uses and services appropriate for a growing town centre, including retail, office, residential, and community facilities, with a focus on the development of a high density well-designed urban environment, to be developed in tandem with Metro North.

The development of Barrysparks has a role to play in ensuring Swords development as a vibrant major town with a thriving

economy, an excellent place to live and work, with appropriate civic and community facilities. This modern new quarter will exemplify the highest standards of civic and urban design, creating a unique sense of place, within an attractive public realm. The development will maximise accessibility afforded by Metro North, the bus network, and associated Metro Plaza public transport interchange, and will be supported by appropriate road, pedestrian/cyclist routes, and other infrastructure, with an emphasis on connections and integration with the existing town centre core. The Barrysparks LAP will support economic development through a mix of uses, supported by a high quality public transport network, and will support self sustaining vibrant communities.

Key Issues

The following key issues will be examined as part of the development strategy for Barrysparks and will further the objectives/vision for Swords and the town centre area, as supported by Fingal Development Plan 2011-2017, Your Swords An Emerging City Strategic Vision 2035, and Swords Masterplan:

Strategic Objectives:

Expansion and Consolidation of Swords Town Centre

1. Contribute to the consolidated development and expansion of Swords town centre, through the creation of a new high-density urban quarter, maximising upon the LAP's town centre location and proximity to proposed Swords Metro Stop.
2. Support a mix of uses and services within this new urban quarter, which will support the day and evening economy, within a vibrant street environment.

3. Facilitate the long term development of Swords as a Level 2 Major Town Centre and ensure the location of comparison retail anchors in Barrysparks complements the existing retail areas of Main Street and Pavilions development area and consolidates Swords retailing function.
4. Promote a mix of employment opportunities, including those in offices, retailing, enterprise, recreational and community sectors. Barrysparks will strive to provide a sustainable level of employment in terms of the number and quality of jobs available in Swords town centre.
5. Contribute towards the future housing needs of Swords and the wider Fingal area, accommodating a range of high quality residential options, proximate to a high quality public transport corridor.

Accessibility and Connectivity

1. Ensure full integration of the LAP lands with existing town centre, proposed Swords Metro Stop, improved bus network, and public transport interchange at Swords Plaza, thereby reducing car dependency and supporting sustainable modes of transport/smarter travel.
2. Ensure development of LAP lands provides for improvements/connections to surrounding road infrastructure as well as development of new permeable and legible internal street network.
3. Promote the development of well-designed, safe, direct and attractive pedestrian and cycle routes linking the LAP lands to the Swords Metro Stop, Pavilions development area and Swords Main Street, as well as areas southeast of the LAP lands, which will be connected via the proposed Airside-Feltrim Link Roads.

4. Develop a parking and vehicular access strategy which will support the objective of maximising connectivity to the site, while promoting use of public transport.

Legible and Attractive Urban Quarter

1. Create a sense of place having regard to the incorporation of natural environmental features, context, layout, scale, and quality urban design.
2. Promote development of a strong urban form within a network of streets and attractive public spaces, with a focus on high quality architectural design and finishes to the development, with particular focus on those buildings fronting onto the R132 and Swords Metro Plaza.
3. Develop a high quality public realm that adds value to public places and is supportive of public life and encourages walking.
4. Implement an urban design framework which provides an appropriate height and massing framework for the LAP area and provides guidance to direct and support development.

Green Infrastructure and Sustainable Development

1. Develop and enhance existing green infrastructure, create new habitat areas where any are lost, and develop a new high quality well landscaped public realm, connecting into the wider green network in Swords.
2. Contribute to the creation of a 'green city' at Swords through the formation of a sustainable urban quarter which makes efficient use of existing resources and promotes sustainable design.
3. Ensure a development framework which has due regard to environmental and micro-climatic conditions.

4. Phase development in a sustainable way, in line with the availability of supporting infrastructure, including waste water treatment.

1.6 Consultations

In this SEA the prescribed bodies that have been consulted are: -

- Environmental Protection Agency
- Department of Environment, Heritage and Local Government
- Department of Communications, Marine and natural Resources

1.7 Baseline Environment

Before impacts on the environment can be predicted, it is necessary to achieve an understanding of the relevant existing conditions. Baseline data was collected using the indicators described in the

Study Area	Completed by
Biodiversity/Flora & Fauna	Roger Goodwillie
Bat Assessment for Barrysparks Local Area Plan	Brian Keeley and Barry Ryan
Soil	Ground Investigations Ireland
Water	Pat O'Gorman & Associates
Archaeology/Cultural Heritage	Margaret Gowen & Co Ltd. and Archer Heritage Planning
Transportation	Roghan & O'Donovan

1.7.1 Environmental Baseline and Key Issues

The following baseline information was assessed as part of the LAP/SEA process:

- Biodiversity/Flora and Fauna
- Population and Human Health

SEA Directive. These topics are biodiversity, fauna, flora, population, human health, soil, water, air/climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship of these factors.

All available existing data sources were used including C.S.O., Environmental Protection Agency (EPA), Geological Survey Ireland, O.P.W., N.P.W.S., Fingal County Council data on water, air, noise and traffic, relevant EIS's.

Additional studies were carried out in the areas of: -

- Soil
- Water
- Air & Climatic Factors
- Material Assets/Cultural Heritage (including Architecture and Archaeological Heritage)
- Landscape
- Transport
- Identified data gaps in scoping document

Each component was investigated, with particular focus on those key issues, where it was considered that there are likely to be significant environmental effects. The key issues represent: -

- Aspects of the environment that will need careful consideration; and/or
- Opportunities to optimise the contribution that the LAP makes to securing sustainable development.

The key issues relate to:

- Water Services – It is important that the Gaybrook Stream, which leads to the Broadmeadow/Malahide Estuary (Natura 2000 site) is protected in the future development of the LAP lands. It is also important to ensure development is adequately treated and SUDS principles are assessed and implemented in any future development.
- Biodiversity/Flora and Fauna – Protection of existing, limited ecology is important in the conversion of the LAP lands from greenfield to an urban environment, with a focus on enhancement of biodiversity throughout the development.
- Transportation – Sustainable development of the LAP lands will be supported with the planned development of the Metro North public transport rail corridor, adjoining the LAP area.

The LAP must ensure an integrated land use and public environmental protection objectives, targets and indicators have been identified:

transport strategy is developed to support patronage of public transport and reduce car usage.

Baseline information exists and specific studies have been undertaken in relation to these issues. In this way the planning authority has ensured no negative direct or indirect environmental impacts on the LAP lands, as well as on the wider area, as a result of the strategy for development of the Barrysparks area.

1.8 Monitoring: Strategic Environmental Objectives, Targets, Indicators

Having regard to the issues arising from the scoping process and the assessment of the existing environmental parameters, the following

SEA Objectives	Targets	Indicators
Biodiversity, Flora and Fauna		
B1 Conserve and enhance the diversity of habitats and species.	No development approved that would have a significant impact on protected habitats, species, or their sustaining resources by development within or adjacent to the LAP lands. Incorporate biodiversity into design of buildings and overall development of LAP lands.	Percentage of unique habitats and species lost in designated sites. Landscaping and biodiversity proposals contained in Masterplans and planning applications.

	Improvement or at least no deterioration in quality of Gaybrook Stream.	Water quality status of the Gaybrook Stream.
Population and Human Health	Targets	Indicators
P1 Improve people's quality of life based on high quality residential, working and recreational environments and on sustainable travel patterns.	<p>Urban Design and Landscape Masterplans to be developed, in compliance with parameters established in LAP.</p> <p>Provide a range of residential units of appropriate sizes and types, as well as tenure.</p> <p>Provide high quality private open space for residential units.</p> <p>Provide high quality public open space/recreational facilities for residents, workers and visitors to the area, in accordance with Urban Design and Landscape Masterplans.</p> <p>Provide and distribute Social and Affordable housing in accordance with Fingal Housing Strategy.</p> <p>Provide in advance of demand high quality public transport and walking/cycling facilities.</p>	<p>Submission of masterplans for each phase of development, subject to written agreement of Fingal County Council, prior to/in support of submission of planning applications for that phase.</p> <p>Individual planning applications.</p> <p>Individual planning applications.</p> <p>Provision of adequate open space/recreational facilities to cater for residential and working demand in each Phase of development.</p> <p>Individual planning applications.</p> <p>Early delivery of Metro North, Metro Plaza, and linkages to town centre and other areas, in accordance with phasing programme established in LAP.</p>

	Provision of local employment opportunities, in proximity to high quality public transport service.	Provision of retail/office development adjoining Swords Metro Stop and Swords Metro Plaza.
Soil	Targets	Indicators
S1 Minimise the amount of waste soil sent to landfill and reuse on site if possible.	No contamination incidents. Reuse as much existing soil as possible for landscaping of site.	Recorded on site incidents of contamination. Quantity of contaminated soil removed from site. Quantity of soil retained on site for landscaping and other uses.
Water	Targets	Indicators
W1 Achieve and maintain good ecological and water quality status for all	Improvement or at least no deterioration in surface water quality by 2015, particularly within Gaybrook Stream. Improvement or at least no deterioration in ground water quality by 2015.	Changes in water quality of Gaybrook Stream as identified during water quality monitoring for the WFD. Biotic quality rating of river waters at EPA monitoring locations.

surface water, groundwater, existing rivers and streams, particularly those entering the estuaries.	SUDS to form a major part of all surface water proposals.	Changes in groundwater quality as identified in monitoring programmes. % of planning applications that incorporate SUDS.
W2 Promote sustainable use of water and water resources	Planning applications to include minimum water use efficiency measures	% of planning applications which include minimum water use efficiency measures.
W3 Ensure that new development is adequately serviced by foul drainage infrastructure	No new development to commence within the Plan area until such time as capacity is available within Swords Wastewater Treatment Pant.	Prior to development of each phase/any application being made, written confirmation from Fingal Water Services Department shall be required to state that capacity is available and extent of that capacity.
Air/Climatic Factors	Targets	Indicators
A1 Protect and enhance ambient air quality and contribute to national climate change policy.	No limit values exceeded. Increase usage of public transport, cycling and walking.	EPA air quality indicators from Swords air monitoring station. Increase in number of cycle/pedestrian routes and links in the area. Modal Split using public transport, new cycle and pedestrian paths.

	Reduce use of private transport. High energy efficiency of new buildings.	Car parking demand. Number of new buildings with A1-B3 BER Rating.
Noise	Targets	Indicators
N1 Minimise environmental and transport related noise.	Maintain daytime noise levels to less than 70 dB. Maintain night-time noise levels to 55dB.	Number of complaints from householders. Incorporation of noise reduction measures (for buildings as well as roads) and increased levels of insulation in construction of buildings, as part of planning application process.
Cultural Heritage	Targets	Indicators
C1 Protect all recorded and previously unidentified archaeological sites from inappropriate development that would adversely affect the site or setting.	<p>No developments permitted over the lifespan of the Plan which result in full or partial loss of:</p> <ul style="list-style-type: none"> • archaeological sites listed on the Record of Monuments and Places; • areas identified as being of archaeological potential and significance; • the context of the above within the surrounding landscape where relevant. <p>Refer all planning applications, which may impact on heritage to the DOEHLG.</p> <p>Supervision of all site clearance works, particularly addressing areas identified in the earlier geophysical surveys or in areas unable to be surveyed due to condition of terrain to ensure no</p>	<p>Number of developments permitted over the lifetime of the plan which result in full or partial loss of:</p> <ul style="list-style-type: none"> • archaeology listed on the Record of Monuments and Places; • areas identified as being of archaeological potential and significance; • the context of the above within the surrounding landscape where relevant. <p>Number of planning applications referred to DoEHLG.</p> <p>Monitoring of planning conditions attached to grants of planning permission.</p>

	loss of sites or artefacts, without proper recording.	
Landscape	Targets	Indicators
L1 Develop a new urban landscape, while respecting the existing landscape character of the area and existing development in the area.	<p>Retain as much of existing vegetation on site as possible. Particularly perimeter vegetation and woodland/marsh area on adjoining lands to southeast.</p> <p>Assimilation of development of LAP lands into existing landscape and creation of new landscape.</p>	<p>Proportion of existing vegetation retained in new development.</p> <p>Submission of Landscape Masterplan(s).</p>
Transport	Targets	Indicators
T1 Facilitate sustainable movement, through greater use of public transport and other sustainable modes such as walking and cycling.	<p>High % of persons using Metro, bus, cycling and walking as modes of transport, in accordance with projected modal split, established within LAP.</p> <p>Ease of movement through site for pedestrians and cyclists.</p> <p>Ease of access from Metro/bus to LAP lands/ expanded town centre</p>	<p>Modal Split using public transport, new cycle and walking paths.</p> <p>% of persons arriving at Barrysparks by bike/on foot.</p> <p>% use of bicycle shelters provided.</p> <p>% of persons arriving at Barrysparks by Metro/bus.</p>

1.9 Consideration of Alternatives

The detailed options for the future development of Barrysparks were derived following consultations in house with relevant departments of Fingal County Council.

The proposed **constants** will be: -

- Integration of Metro Stop with adjoining land uses.
- Incorporation of Metro Plaza and The Rise Street, which are key public transport routes/interchange points.
- Accommodation of Metro Plaza and Metro Box infrastructural projects.
- Alignment of internal street, referred to as Eastern Avenue, to avoid a large area of wetland/woodland on adjoining lands.
- Available capacity within Swords Waste Water Treatment Plant and sufficient water supply.
- No development shall commence within the LAP lands until the Government approves the awarding of the main infrastructural contract by the RPA for the construction of Metro North to Swords.

The proposed **variables** will be: -

1. Metro

- Development is not linked to the delivery of Metro.
- Metro operational before Phase 1 is completed.
- Metro operational after Phase 1 is completed.

2. Landuse Mix

- Retail and Commercial core to be located adjoining R132, with residential on remaining portion of land.

- Retail, commercial and residential uses mixed throughout, with focus of residential overlooking key internal streets and R132, and adjoining existing residential development.

4 options have been developed, based upon a combination of public transport scenarios and alternative mixes of uses, in accordance with the terms of Article 5 of the SEA Directive

- Option 1: Do Nothing Scenario
- Option 2: Low-Medium Density Mixed-Use development, delivered prior to delivery of Metro North, with a residential zone and commercial zone
- Option 3: Medium-Higher Density Mixed-Use development, with mix of uses throughout development area, and Metro North delivered prior to occupation of Phase 2
- Option 4: Medium-Higher Density Mixed-Use development, with operation of Metro North prior to occupation of Phase 1

Option Evaluation and Selection of Preferred Option

Each option was evaluated against a set of environmental objectives.

Options 3 and 4 emerge as the strongest options at a strategic level, with option 3 from a planning perspective being the preferred option.

Under option 3, development is dependent on the delivery of the Metro prior to occupation of Phase 2 development and supports development on both sides of Swords Metro Stop from the outset, thereby encouraging patronage of Metro North and use of public transport at an early stage of development. The principle difference between options 3 and 4 is the development context to support Swords Metro Stop and the availability of public transport at early

stages of development, even where the entire development of the Pavilions extension is not available – it is important to prioritise the availability of an improved public transport network at an early stage, even where this comes ahead of the completion of the entire commercial/residential development. If public transport is available ahead of a completed development site, it will ensure that those residents/employees/visitors to the area get used to availing of public transport and therefore establish a sustainable travel pattern, something which is difficult to achieve when public transport is provided last/at a late stage in development of an area.

There must be availability within the Swords WWTP to support the development as part of option 3. It also envisages that Pavilions Phase 3 will be delivered, in so far as it relates to delivery of The Rise bridge, prior to the occupation of Phase 2. This will ensure development of The Rise is set within a development area and not isolated in terms of its context.

The performance of each option against Environmental Objectives is depicted in matrix format, using a set of symbolic ratings. The appraisal outlines a scale of impacts using symbols/colours, to highlight the most favourable options.

Environmental Assessment of Preferred Option

Following selection, Development Option 3 was advanced through the formulation of Local Area Plan Objectives and Policies.

Further assessment was considered necessary: -

(a) To ensure that the Environmental Objectives derived are compatible with each other,

- (b) To test the Local Area Plan strategic objectives for compatibility with the Environmental Objectives, and
- (c) To test detailed policies of the Local Area Plan for compatibility with the Environmental Objectives.

There are a number of Objectives that are predicted to Likely to have Negative Impact on the Environment.

As a result of the findings detailed above a detailed set of mitigation measures have been set out in Section 11 of the Environment Report.

1.10 Mitigation Measures

Mitigation measures are measures envisaged to prevent, reduce and as fully as possible, offset any significant adverse impacts on the environment of implementing the proposed Development Plan.

Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration is given in the first instance to preventing such effects or, where this is not possible for stated reasons, to lessening or offsetting those effects. Mitigation measures can be roughly divided into those that: *avoid* effects; *reduce* the magnitude or extent, probability and/or severity of effect; *repair* effects after they have occurred, and; *compensate* for effects, balancing out negative impacts with other positive ones.

A number of local objectives are incorporated within the LAP to address the following areas and ensure mitigation of any potential impacts (the proposed local objectives are set out in detail in the full Environmental Report in Section 11):

Biodiversity / Flora & Fauna

The land use plan for the development of Barrysparks may conflict with the conservation of designated and non-designated species located within the Local Area Plan lands and on adjoining lands. Developing the road network within the site so as to avoid significant impacts on the wetland area will mitigate this potential threat. This may be achieved by spanning the wetland area by way of a bridge.

The development of a SUDS pond for the attenuation of surface water will create a significant new waterbody to complement the existing wetland area and will provide additional habitat for the range of species that currently are found in the wetland/woodland area.

The landscaping plans will be required to take into account the existing vegetation types present on site and where possible existing vegetation will be retained, in particular boundary vegetation.

A bat survey will be carried out, as part of the first planning application for development on the site. If bats are identified on site bat boxes will be required to be installed at an appropriate location, to encourage the bats to roost at an alternative location, while protecting their presence in the area.

Soil

The soils have been determined to be generally uncontaminated. As much soil as possible will be reused on site for landscaping purposes. The method of site stripping will be required to be addressed in the construction management plan, including storage of soil, to ensure that the quality of soil is maintained and is capable of being reused on site.

Water

All planning applications will be required to formulate a comprehensive SUDS strategy, which will address water quantity, quality, amenity and habitat enhancement aspects of natural drainage, and to ensure that no threat is posed to the water quality status of the Broadmeadow estuary as a result of the development of the lands.

In order to prevent pollution of the Broadmeadow estuary from foul effluent, no development will be occupied on site until the Swords wastewater treatment plant has been upgraded to sufficiently accommodate the projected development floor-space.

In order to limit unnecessary water usage, leaks and excessive consumption of the water supply a Water Management and Conservation Plan detailing how best practice in water conservation shall be applied will be required in all planning applications.

Air Pollution

Effective mitigation measures in terms of air quality will involve active mobility management to encourage high usage of public transport through good traffic management plans.

However, improvements in air quality are likely over the next few years as a result of the on-going comprehensive vehicle inspection and maintenance program, fiscal measures to encourage the use of alternatively fuelled vehicles and the introduction of cleaner fuels. Recent EU legislation, based on the EU sponsored Auto-Oil programmes, has imposed stringent emission standards for key pollutants for passenger cars to be complied with in 2006 (Euro IV) and for diesel HGVs introduced in 2006 and 2008 (Euro IV and V).

In relation to fuel quality, EU Fuel Directive (98/70/EC) has introduced significant reductions in both sulphur and benzene content of fuels. All of these measures should ensure improved air quality in future years.

All buildings will be required to achieve the highest possible BER Rating possible, which will result in low output in CO² emissions.

Noise

The noise baseline has identified that noise emanating from the M1 will have the greatest impact on the site. This is particularly relevant for residential units, which will be developed at the upper levels of the town centre buildings. The designers of the buildings will be required to design noise mitigation measures that will reduce the impact of road noise on the quality of life of the occupants of the residential units both internally and externally.

Within the Local Area Plan lands all planning applications will be required to include provision for low noise surfacing.

All future developments must ensure that residential amenity is given high priority when considering the location of late night noise generating activities.

Archaeology

All planning applications which will have an impact or potential impact on a Recorded Monument will be required to have an archaeological test carried out on site prior to the commencement of construction. The results will be recorded and kept on record.

Transportation

The provision of additional roads will generate additional private car trips in area. To mitigate against this several objectives in the Local Area Plan, encourage the use of public transport (Metro – Bus), walking and cycling. The first phase of development will not be operational until such time as the Metro North is operational and the bus/ pedestrian/ cycling link has been provided to the exiting town centre, in accordance with the phasing programme with the LAP.

Environmental Report

1.0 Introduction

1.1 Requirement for Strategic Environmental Assessment

This is the Draft Environmental Report for the proposed Barrysparks Local Area Plan 2011–2017, which forms part of the Strategic Environmental Assessment (SEA) process. This is the first Local Area Plan to be prepared for the subject lands.

The purpose of this Environmental Report is: -

- to assess the likely significant environmental effects from the implementation of the Barrysparks Local Area Plan (LAP);
- to develop mitigation measures to reduce identified significant impacts of the LAP; and
- to identify monitoring procedures to assess the impact of the LAP over its lifetime.

The report has been prepared to comply with the provisions of the SEA Regulations (the European Communities [Environmental Assessment of Certain Plans and Programmes] Regulations 2004 (S.I. 435 of 2004), and, The Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 436 of 2004). This report should be read in conjunction with the draft Local Area Plan and Appropriate Assessment Screening Report.

1.2 Requirement for a Local Area Plan

The LAP lands are zoned MC, where the objective is to “*Protect, provide for and/or improve major town centre facilities*”.

The Development Plan map of Swords comprises 4 specific local objectives related to the LAP lands (see figure 2):

- | | |
|------------|---|
| 322 | Prepare a Local Area Plan accommodating high-density high-quality mixed-use development, which ensures connectivity between Major Town Centre lands east and west of the R132 and facilitates a multi-modal interchange at Swords Metro Stop, via Swords Metro Plaza (Metro Plaza comprises a well-designed architectural bridge over the R132, connecting lands east and west of R132 to each other and to Swords Metro North Stop; and a vehicular connection under the R132). |
| 323 | Require a minimum 10% of the proposed development site area be designated for use as public open space. The Council has the discretion to allow provision of the remaining public open space requirement to be located outside of the development site area, or to accept a financial contribution in lieu, in order to provide or to upgrade small parks, local parks, urban parks, Swords Regional Park and/or recreational/amenity facilities, subject to the open space or facilities meeting the open space ‘accessibility from homes’ standards for each public open space type specified in Table OS1. |
| 313 | Promote the development of a multi-modal transport interchange, providing for strong vehicular and pedestrian links between the historic Town Centre, Pavilions development area and Barrysparks LAP area. |
| 335 | Develop a detailed road design for Airside-Feltrim Link Road within the corridor and ensure the delivery of this road in tandem with/prior to development of adjoining RS and HT lands. |

No development can take place within the area prior to the adoption of the Local Area Plan. Development proposals will be required to comply with the provisions of the Local Area Plan.

The LAP is consistent with the objectives of the Fingal Development Plan 2011-2017. The LAP has been prepared in accordance with sections 18, 19 and 20 of the Planning and Development Act 2000 (as amended), which set out the provisions for the preparation of Local Area Plans.

This LAP shall remain in force for a period of 6 years from the date of adoption², provided the objectives of the local area plan remain consistent with the objectives of the development plan in force.

1.3 Legislative Background for SEA and AA

Strategic Environmental Assessment

On the 5th June 2001, the European Council adopted Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment ("the SEA Directive") (EU, 2001), which took effect in the member states on the 21st July 2004. The Directive requires all European Union member States, including Ireland, to systematically evaluate the likely significant effects of implementing a plan or programme prior to its adoption.

The Strategic Environmental Assessment Directive, as set out in Article 1 of Directive 2001/42/EC of 27th June 2001 states that: -
'the objective of the Directive is to provide for a high level of protection of the environment and to contribute to the integration of

² Unless otherwise extended, as provided for under Section 12 of the Planning and Development (Amendment) Act 2010.

environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with the Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment'.

The Directive (2001/42/EC) was transposed into Irish Law to cover the area of land use planning via The Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 436 of 2004). These regulations specifically deal with the procedures for the assessment of the likely significant effects on the environment of certain plans and programmes, with SEA being mandatory for: -

- Regional Planning Guidelines
- City and County Development Plans
- Variations of Development Plans
- Local Area Plans, with a population of 10,000 persons or more
- Planning schemes in Strategic Development Zones (SDZs).

The SEA process is designed to ensure that significant environmental effects arising from plans are: -

- properly identified and assessed;
- subject to public participation;
- taken into account by decision makers;
- regularly monitored.

SEA is an important instrument to help to achieve sustainable development in public planning and policy making. Particular benefits of SEA include: -

- To support sustainable development;

- To improve the evidence base for strategic decisions;
- To facilitate and respond to consultation with stakeholders;
- To streamline other processes such as Environmental Impact Assessments of individual development projects.

Fingal County Council determined that in accordance with Section 14B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 that an environmental report should be prepared outlining the likely significant effects on the environment of implementing the proposed Local Area Plan. A Scoping Report was prepared and circulated to relevant environmental authorities. This Scoping Report informed the level and detail of the information contained in this Environmental Report, which in turn has informed the content of this LAP.

Appropriate Assessment

The requirement for Impact Assessment of plans or projects originates from Article 6(3) and (4) of European Union (EU) Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, commonly known as the ‘Habitats Directive’, which is implemented in Ireland through the European Communities (Natural Habitats) Regulations of 1997.

The purpose of a Habitats Directive Assessment of local authority plans is to ensure the protection of the integrity of European ‘Natura 2000’ sites is included as an integral part of the planning process at a local level.

The Barrysparks Local Area Plan lands do not form part of any natural heritage designations (SAC’s, SPA’s or NHA’s). However, Brodameadow/Malahide Estuary Natura 2000 site is located

c1.5km northeast of the lands. A Stage 1 Screening report has been prepared by Natura Environmental Consultants to determine if the development of Barrysparks lands would have a significant effect on the integrity of this or any other site.

The Screening Report has concluded that the Barrysparks Local Area Plan is not likely to have significant adverse impacts on the integrity of the Natura 2000 site, which includes Broadmeadow/Swords SPA and Malahide Estuary cSAC.

1.4 Overview of the Plan Lands

The Barrysparks LAP lands, which are approximately 10 ha in area, are located on the south-eastern edge of the existing Swords town centre area. The lands are largely agricultural/abandoned grassland, with a small number of dwellings located along the north-eastern edge of the lands, with the access to these dwellings through a cul-de-sac entrance from Drynam Road. There is an additional direct access to the majority of the Barrysparks lands at the northern corner of the lands from Drynam Road, proximate to the Malahide roundabout.

The LAP lands are bound to the northwest by the R132 and the Pavilions Shopping Centre; to the southwest by Airside Business park and office complex; to the northeast by housing accessed from the Drynam Road; and to the southeast by undeveloped greenfield land, which is proximate to a local distributor road at Airside Retail Park and Holywell residential development. Nearby, to the east lies the M1 motorway, while the Swords Metro North Stop will be located immediately adjacent to the lands along the median of the R132. It is approximately 350 metres (5 minutes walking distance) from southeastern boundary of the Barrysparks LAP lands to Swords

Metro Stop and 550 metres from Swords Metro Stop to Swords Main Street.

The development of the Barrysparks LAP area provides an opportunity to support the balanced development of Swords on its south-eastern side. The development of the subject lands will expand and consolidate the commercial/ retailing/ residential/ community core of Swords, maximising upon the location of the lands adjoining the proposed high quality Metro North public transport corridor and Swords Metro Stop. This land bank must

integrate seamlessly with Pavilions and Swords Main Street if it is to be a successful town centre extension.



Comhairle Contae Fhine Gall
Fingal County Council

Barrysparks LAP

Legend

- LAP Boundary
- Pavilions (including proposed Phase 3 expansion)
- Retail
- Offices
- Offices above Retail
- Residential
- Residential above Retail
- Public Square and Pedestrian / Cycle Route
- Urban Park and Open Green Spaces
- Existing Marsh and Woodland

- ① A community / leisure facility shall be accommodated within this area
- ② Protect existing residential amenity
- ③ A crèche shall be accommodated in this area
- ④ Cafes/Restaurants
- B SUDS Detention Basin
- P SUDS Retention Pond
- Public Transport link - 'The Rise'
- ↔ 'Metro Box' underpass

Director of Services: Gilbert Power

Senior Planner: Rachel Kenny

Executive Planner: Una O'Neill

Prepared by: Una O'Neill | Drawn By: BGA

Adopted July 2011 | NTS

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2.0 SEA Methodology

2.1 SEA Process

The main steps in this SEA process involves screening, scoping, carrying out of a baseline study, the consideration of alternatives, environmental assessment of the objectives of the plan, the formulation of mitigation and monitoring measures, public consultation and the preparation of a SEA statement.

The following steps (i) to (vi) are being followed in the SEA process for this Local Area Plan: -

- (i) **Screening:** To determine which plans and programmes are likely to have a significant impact on the environment (completed – SEA required)
- (ii) **Scoping:** To liaise with statutory consultees to identify key issues of concern that should be addressed appropriately in the environmental assessment/report of the Plan (completed).

The scoping of the proposed plan involved an assessment of compliance with relevant plans and guidance documents at international, national, regional and local level and consideration of the issues, which would result in likely significant impacts on the environment as a result of the proposed development. Consultation took place in-house within Fingal County Council with the Heritage Officer, Biodiversity Officer, Conservation Officer, Environment Department, Transportation Department, Water Services Department, Community Recreation and Amenities Department.

The following relevant statutory bodies were consulted with regard to their opinion on what issues should be included in the SEA: -

- Environmental Protection Agency (EPA).
- Department of Environment, Heritage and Local Government.
- Department of Communications, Marine and Natural Resources.

Section 5 addresses in detail the outcome of the statutory consultations.

The scoping report identified certain elements of the environment that require further investigation in order to establish whether the implementation of the Draft Local Area Plan would have significant effects on the environment. The categories of the environment that were identified and the issues which required further assessment are detailed below.

Environmental Category	Further investigation required
Biodiversity / Flora & Fauna	Assess the effects of implementing the Local Area Plan on the existing biodiversity of the lands. Conduct a Bat Survey Woodland / Wetland Survey
Water	Assess the effects of implementing the Local Area Plan on the capacity of the surface water and wastewater systems in Swords.
Cultural Heritage	Assess the effects of implementing the Local Area Plan on the archaeological

	heritage of the lands.
Transportation	Assess the effects of implementing the Local Area Plan on the existing and proposed road networks and the role of public transport, particularly Metro North in reducing dependence on private transport.

(iii) Draft Environmental Report: The likely significant environmental effects of implementing the Local Area Plan are identified and evaluated, mitigation proposals incorporated and monitoring proposals identified (this document represents this stage).

Baseline data was collected for this draft Environmental Report using the indicators described in the SEA Directive. These topics are biodiversity, fauna, flora, population, human health, soil, water, air/climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship of these factors. The impacts to be considered include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative.

Before impacts on the environment can be predicted, it is necessary to achieve an understanding of the relevant existing conditions. All available existing data sources were used including C.S.O., Environmental Protection Agency (EPA), Geological Survey Ireland, O.P.W., N.P.W.S., Fingal County Council data on water, air, noise and traffic, relevant EIS's.

Additional studies were carried out in the areas of: -

Study Area	Completed by
Biodiversity/Flora & Fauna	Roger Goodwillie
Soil	Ground Investigations Ireland
Water	Pat O'Gorman & Associates
Archaeology/cultural heritage	Margaret Gowen & Co Ltd.
Transportation	Roughan & O'Donovan Transport Planning
Local Area Plan	MacCabe, Durney, Barnes
Local Area Plan (graphics)	Bruce Gilbreth Architects

The environmental assessment of the objectives of the Local Area Plan is a central component of this report. The report comprises of a series of matrixes, which were used to refine and focus objectives used in the Local Area Plan. Environmental objectives were developed and were used to test the environmental and sustainability impacts of each of the development options. The criteria were devised using the issues raised at pre-plan consultations and the scoping exercise carried out as part of the SEA process.

As part of the assessment the following were tested: -

- The Environmental Objectives were tested for compatibility with each other.
- The Environmental Objectives were tested for compatibility with the Strategic Local Area Plan Objectives.
- The compatibility of the Environmental Objectives and the general objectives of the Local Area Plan were tested, in order to ensure that no conflicts arise between objectives.

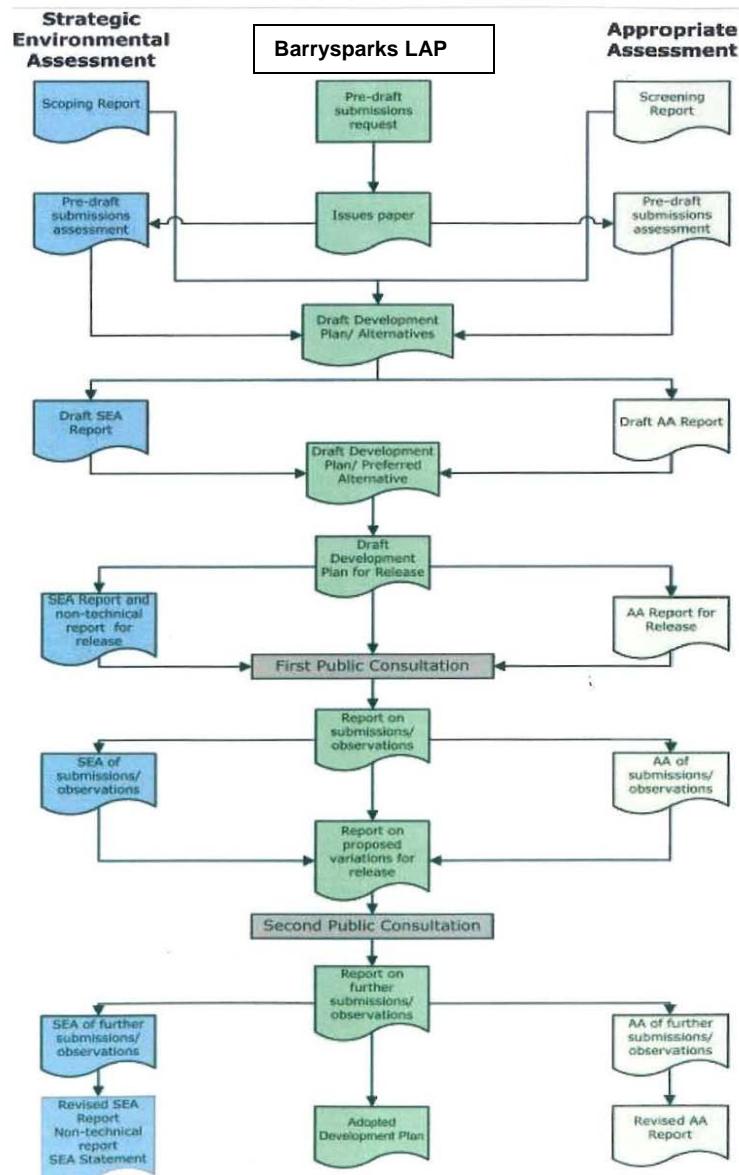
Mitigation measures to prevent or reduce significant adverse effects posed by the Local Area Plan, or to maximise any benefits arising,

which were recommended for inclusion in the Plan are identified under Section 11. The alternatives are also presented in this report, as are measures concerning monitoring in Section 7.

- (iv) **Consultation:** Consulting the public, statutory and public authorities, on the draft environmental report and draft Local Area Plan, giving adequate time for the receipt of submissions (ongoing stage).
- (v) **Final Environmental Report:** Taking account of the findings of the draft report and the outcome of consultations, in deciding whether to adopt or modify the draft Local Area Plan, a final environmental report will be published.
- (vi) **SEA Statement:** As required by the SEA Directive and the SEA Regulations a document referred to as an SEA Statement³ will be produced and made available to the public following the adoption of the Local Area Plan to make known, how the SEA process influenced the outcome and identify how environmental considerations have been integrated into the final Plan.

The development of the LAP, SEA and Appropriate Assessment are conducted concurrently and each process contributes to the development of each document at each stage. The iterative process used in the preparation of the Local Area Plan, SEA and Appropriate Assessment are presented in the following diagram:

³Department of the Environment, Heritage and Local Government (2004) Implementation of SEA Directive (2001/42/EC): Guidelines for Regional Authorities and Planning Authorities and Planning Authorities Dublin: Government of Ireland.



In guidance issued by the Department of Environment, Heritage and Local Government (DoEHLG), the following steps are recommended in the preparation of an environmental report. These steps have been broadly followed in this report, with minor amendments in order to fit the particular circumstances and attributes of the study area.

Steps in Preparing Environmental Report

Stage	Action
1	An outline of the background to, the contents and main objectives of, the plan, and of its relationship with other relevant plans and programmes.
2	Summarise the survey findings and identify key development issues for the plan.
3	Description of the relevant aspects of the current state of the environment and the likely evolution of the environment without the implementation of the plan (do nothing scenario).
4	Develop a list of the environmental protection objectives based on international, EU and national level policies, which are relevant to the plan and describe how they have been taken into account in the preparation of the plan.
5	Examine a number of alternative development options based on objectives in step 4.
6	Evaluate each option against Step 4 objectives to identify the most appropriate option.
7	Outline of the reasons for selecting the alternatives considered and a description of how the assessment was undertaken including any difficulties. Select the

	most appropriate option. Prepare detailed objectives.
8	Description of the likely significant effects of the chosen option on the environment (biodiversity, human health, cultural heritage, air, soil, water etc).
9	Modify chosen strategy to prevent, reduce and as fully as possible offset any significant adverse effects on the environment caused by implementing the plan.
10	Description of proposed monitoring measures.
11	A non-technical summary of the information provided under the above headings.

2.2 Appropriate Assessment

The Appropriate Assessment screening report has been published concurrently with the SEA of the Local Area Plan, and is clearly distinguishable from it.

3.0 Compatibility with Other Plans and Policies

The SEA Directive requires an analysis of the plan's "relationship with other relevant plans and programmes" (Annex 1a) and of the "environmental protection objectives...which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation" (Annex 1e). A list of the relevant policies, plans and environmental objectives was compiled and their requirements analysed.

The following International, National, Regional and Local Plans, Legislation and Guidelines were assessed. Some of the key documents are further outlined in detail below: -

Legislation

- Planning and Development Acts 2000-2010

2.3 Legislative Requirements

This report complies with the provisions of the SEA Regulations and has been prepared in accordance with Schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I No. 436 of 2004).

2.4 Difficulties Encountered

The significant quantity of environmental data specific to the Swords area such as Environmental Impact Statements, coupled with the fact that several site specific reports were generated for the purposes of this report meant that no significant difficulties were encountered in the SEA process.

- Directive 2001/42/EC on the Assessment of the effects of certain plans and programmes on the environment
- The European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004)
- Planning and Development (Strategic Environmental Assessment) Regulations (2004)
- Environmental Liabilities Directive (2004/35/CE)
- Water Framework Directive (2000/60/EC)
- Groundwater Directive (2006/118/EC)
- Bathing Directive (2006/7/EC)
- European Communities (Energy Performance of Buildings Regulations 2006) S.I 666 of 2006

National Plans and Policy

- National Development Plan 2007-2013
- National Spatial Strategy 2002-2020
- Transport 21 (2005)
- Smarter Travel – A Sustainable Transport Future 2009-2020
- Sustainable Development – A Strategy for Ireland (1997)
- Towards Sustainable Local Communities: Guidelines on Local Agenda 21 (2001)
- National Climate Change Strategy, 2007-2012
- Ireland's Pathway to Kyoto Compliance
- Government White Paper, Delivering a Sustainable Energy Future for Ireland (2007)
- National Heritage Plan (2002)
- National Biodiversity Plan (2002)

Planning and Environmental Guidelines

- Strategic Environmental Assessment Guidelines - Implementation of SEA Directive (2001/42/EC)
- Development Plan Guidelines (2007)
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Local Authorities (Dec 2009)
- The Planning System and Flood Risk Management – Guidelines for Planning Authorities (Nov 2009)
- Retail Planning Guidelines for Planning Authorities (2005)
- Sustainable Residential Development in Urban Areas – Guidelines for Planning Authorities (May 2009)
- Urban Design Manual, A Best Practice Guide (2009)
- Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities DOEHLG (2007)

- Childcare Facilities-Guidelines for Planning Authorities, (2001)
- Draft Landscape and Landscape Assessment (2000)
- Draft Spatial Planning and National Roads Guidelines
- The Provision of Schools and the Planning System (2008)
- Development Management Guidelines (2007)

Regional Planning Context

- Regional Planning Guidelines for the Greater Dublin Area 2010-2022
- Retail Planning Strategy for the Greater Dublin Area 2008-2016
- Dublin Transportation Office - Platform for Change - Strategy, 2000-2016 (under review by NTA for 2010-2030)
- Greater Dublin Strategic Drainage Study (GDSDS)

Fingal Development Plan, Local Area Plans and Guidance Documents

- Fingal County Development Plan 2011-2017
- Guidance document: Your Swords, An Emerging City, Strategic Vision 2035 (2008)
- Guidance document: Swords Masterplan (2009)

3.0 Compatibility with other Plans and Policies

3.1 National Plans and Policy

National Development Plan 2007-2013

Launched in December 2007, the National Development Plan was prepared to underpin the development of a dynamic competitive economy over 7-year period 2007-2013. It is an economic plan (not a land uses plan), which sets out the governments infrastructural development spending plans for the country in areas such as housing, public transport, industry, water supply, education and health. It includes a number of strategic objectives for the Eastern Region and the Dublin Gateway with one specific reference relevant to the Barrysparks Local Area Plan as follows:-

The Dublin Gateway

To maintain the economic competitiveness and help meet the NSS vision for the (Dublin) Region, key investment priorities over the period of the Plan will include:

Implementation of the key public transport elements of *Transport 21*, including the completion of Metro North to the Airport and Swords, a major extension of the light-rail network, enhancement of suburban rail and DART services, the provision of additional bus services and further development of the Quality Bus Corridors;

Unlike the earlier 2000-2006 NDP, which derived much of its funding from the EU, the current NDP is to source most of its funding domestically. Despite recent cutbacks in funding, the Government has remained committed to funding the delivery of the planning stage of the Metro North Project while the construction is to be funded by PPP.

The Local Area Plan is considered to be consistent with this Plan.

National Spatial Strategy 2002-2020

The National Spatial Strategy 2002-2020 sets out a vision for balanced regional development throughout the country, with particular focus on sustainable social, economic and physical development between the gateways, hubs and other urban and rural areas at the heart of the strategy. The Strategy seeks to establish a framework for appropriate development at a regional level, which makes provision for strategically located urban centres, particularly 'Gateways' and to unlock potential for progress, growth and development in a more balanced way across Ireland, supported by more effective planning. As set out in the NSS, Barrysparks, as part of Swords Town Centre is located within the Dublin & Mid East Region, adjacent to the M1, which is a strategic National Transportation Corridor.

Two of its key principles are intended to minimise transport related energy consumption and are central to the principles of the Barrysparks Local Area Plan i.e.: -

- maximising access to, and encouraging use of, public transport, cycling and walking; and
- developing sustainable urban and rural settlement patterns and communities to reduce distance from employment, services and leisure facilities and to make use of existing and future investments in public services; including public transport.

The National Spatial Strategy is also promoting the physical consolidation of large urban areas, which is required to provide an

efficient system of public transport in light of the substantial investment that is planned under Transport 21⁴.

Transport 21

In November 2005, the Government announced a 10-year national transport plan (investment plan), which provides for the construction of Metro North linking Dublin City centre with Swords, via Dublin Airport. The Swords Metro Stop is to be developed on the western edge of the Barrysparks Local Area Plan lands.

Funding has been provided in Budget 2009 for the continued progress of the project.

The policies and objectives of the Local Area Plan are consistent with the provisions of Transport 21.

Smarter Travel – A New Transport Policy for Ireland 2009-2020

Smarter Travel: A New Transport Policy for Ireland 2009 - 2020 sets out Government's policy objectives with respect to promoting a significant modal shift from private transport to public transport and sustainable transport modes over the period up to 2020. It identifies 5 key goals, which are: -

- To reduce overall travel demand;
- To maximise the efficiency of the transport network;
- To reduce reliance on fossil fuels;
- To reduce transport emissions; and
- To improve accessibility to transport.

In order that these goals can be achieved and to ensure that we have sustainable travel and transport by 2020, the following targets have been established by the government: -

- Future population and employment growth will predominantly take place in sustainable compact forms, which reduce the need to travel for employment and services.
- Reduce the share of car commuting.
- Alternative modes of transport such as walking cycling and public transport will be supported.
- Reductions in the no of kilometres travelled per car and reductions in greenhouse gas emissions.

Actions set out to achieve the above include the development of Metro and the development of bus interchange facilities with the metro, to ensure efficient and connected public transport options. The Metro North stop adjacent to the Local Area Plan lands and the bus facilities within the site will provide good connections to the wider public transport network within Dublin.

Maximising Irelands Energy Efficiency –The National Energy Efficiency Action Plan 2009-2020

The government has committed to reducing energy demand by 20% by 2020, through energy efficiency measures. The Action Plan identifies policies and measures that can help achieve the 20% target.

Energy efficiency in buildings and the use of green forms of transport including cycling, walking busses and Metro will contributed to the achievement of these targets. The Local Area Plan has take into consideration the objectives of the Action Plan.

⁴ National Climate Change Strategy

Sustainable Development – A Strategy for Ireland (1997).

The national strategy for sustainable development provides a framework for the achievement of sustainability at a local level. It provides that planning authorities take account of sustainable development considerations in the preparation of development plans. The Strategy encourages coordination between land use, transport, and infrastructure planning so that policies and objectives support 'sustainable development'. The Planning and Development Acts 2000-2010 give effect to the sustainable provisions of the Strategy. The principle of sustainable development is an intrinsic element of the Barrysparks Local Area Plan.

Sustainable Development - International, European and National Context

The Irish Government is obliged to promote and implement sustainable development as part of their EU commitments, as first developed at the 1984 'World Commission on Environment and Development' which set about preparing 'a global programme of change'. This was confirmed in the 1987 Brundtland Report which aimed to analyse the linkages between a number of global issues, which included population, depletion of species, energy, industry, industry and human settlement.

The aims of the Brundtland report were further progressed within the Rio Declaration (1992) and Amsterdam Treaty (1997). The improvement of all aspects and quality of peoples living environment, together with social equality (Agenda 21) is prioritised and promoted. In response to these commitments Ireland drew up a national strategy in 1997, which endorsed and promoted Agenda 21, 'Sustainable Development: A Strategy for Ireland' This strategy was followed by 'Making Ireland's Development Sustainable' (2002). The

principles espoused in the Strategy are found in national policies and legislation today, including the recently passes Planning Development (Amendment) Act 2010.

Towards Sustainable Local Communities: Guidelines on Local Agenda 21 (2001).

The principles of Local Agenda 21 are based on the 'Rio Declaration on Environment and Development', which formed part of the Earth Summit in Rio in 1992. This document is an agreement for meeting the challenges of the environment and development into the next century. As a result of signing the document, the government is committed to ensuring that the relationship between socio-economic growth and the environment is not negative. In effect, this implies that development should not exceed the carrying capacity of its local environment.

Local Agenda 21 also encourages consultative processes which involve the whole community, its local elected members and other community and representative groups through means of information awareness, public consultation and feedback, partnerships between authorities, businesses and communities, and a continuous monitoring of progress towards sustainability.

The Planning and Development Acts, 2000-2010 provide for an enhanced focus on sustainable development. Given the close relationship between the principles of Local Agenda 21 and development plan preparation, Plan makers have regard to Local Agenda 21 principles whilst preparing the Plans.

Some of the principles of Agenda 21 relating to Planning and Development include: -

- Reducing the demand for additional transport infrastructure by reducing the need to travel.
- Resisting scattered settlement patterns which are costly to service.
- Promoting higher residential densities, particularly in redeveloping brown field sites, and in proximity to town centres, public transport nodes and access points.
- Increasing emphasis on adequate open space for out-door recreation and on planting and landscaping.
- Encouraging design flexibility so that buildings are designed or adapted in ways which allow for as many uses and as much flexibility of use as practicable.

The principles of Agenda 21 are being met through the process of Strategic Environmental Assessment and the preparation of the Barrysparks Local Area Plan.

National Climate Change Strategy, 2007-2012.

The Strategy is Ireland's method of implementation of the Kyoto Protocol at national level. It provides a co-ordinated approach to the overall objective of reducing Ireland's greenhouse gases by 13% above 1990 levels as required under an agreement made by the United Nations Framework Convention on Climate Change in 1997 and follows on from the 2000 Strategy.

The strategy aims to reduce emissions through the use of economic instruments (including taxation and emissions trading), a broad range of policies and measures tailored specifically to relevant sectors, a vigorous and appropriate pursuit of common and co-ordinated policies and measures implemented at EU and at a wider

international forum and participation in international emissions trading.

Key new measures introduced in the 2007 Strategy include:-

- Increase in electricity from renewables to 15% by 2010
- Alignment of transport investment with spatial planning
- Greener Homes
- Buildings Regulations 2008

The strategy also notes that 'The provision of infrastructure through the continued implementation of Transport 21 (including Metro North), a €34.3 billion capital investment framework for the transport system for 2006 to 2015, will result in a switch from private to public forms of transport'. This will help reduce annual greenhouse gas emissions for the country.

The Strategy goes on to state that 'Decisions by local authorities on the location, design and construction of domestic and commercial developments and of related economic and social activity can have a significant affect on greenhouse gas emissions.

The policies of the National Climate Change Strategy, 2007-2012 are inherent in the Strategic Environmental Assessment and in the policies and objectives of the Local Area Plan.

Ireland's Pathway to Kyoto Compliance

A comprehensive report on the implementation of the National Climate Change Strategy was published by the Minister for the Environment, Heritage and Local Government, in July 2006. 'Ireland's Pathway to Kyoto Compliance' sets out Ireland's overall approach to meeting its Kyoto targets, assesses Ireland's progress

since 2000 and identifies options for further measures to reduce greenhouse gas emissions.

The Green paper 'Towards a Sustainable Energy Future for Ireland' (2006)

The Government's Green Paper on Sustainable Energy identifies three pillars for achieving sustainable energy policy: security of supply, environmental sustainability and competitiveness. The role of fuel diversity together with the use of clean technology is outlined as key in securing security of supply and in expanding renewable energy production. The Green Paper sets an ambitious target for 30% of electricity to be produced by renewable energy by 2020.

National Heritage Plan (2002)

This Plan aims to set out a clear and coherent strategy and framework for the protection and enhancement of our heritage. Every action in this Plan is founded on the principle of sustainable development, which states that the needs of the present generation must be met without compromising the ability of future generations to meet their own needs. The Plan seeks to ensure the protection of Ireland's heritage and to promote its enjoyment by all.

The lands at Barrysparks have been subject to a cultural heritage assessment as part of this SEA process. The policies of the National Heritage Plan are inherent in the Strategic Environmental Appraisal of the Local Area Plan.

National Biodiversity Plan (2002)

This National Biodiversity Plan was developed in parallel with the National Heritage Plan, which sets out the framework for the protection and enhancement of all aspects of Ireland's biodiversity

on the principle of sustainability, the precautionary principle, the polluter pays principle and the principle of shared responsibility.,

Amongst the most important means of providing for the conservation and sustainable use of biodiversity in the wider countryside is the planning system. A number of recent developments in planning legislation, in particular the Planning and Development (Amendment) Act, 2010, provide significantly improved measures for the conservation of biodiversity. The Planning and Development Act 2000-2010 provides that: -

Development Plans must have mandatory objectives for the conservation of European and nationally important sites and for the conservation of biodiversity in general.

The new Amendment Act 2010 has introduced for the first time, the requirement to carry out Appropriate Assessment for individual development proposals. A Stage 1 (Appropriate Assessment) Screening Report has been carried out as part of the preparation of the Local Area Plan.

Planning and Environmental Guidelines

Strategic Environmental Assessment Guidelines - Implementation of SEA Directive (2001/42/EC)

Implementation of SEA Directive (2001/42/EC) - Assessment of the Effects of Certain Plans and Programmes on the Environment. (November 2004)

The SEA Guidelines set out the various SEA stages in chronological order, i.e. as they correspond to the relevant stages in the plan making process and help integrate the two processes. The guidance

is based on best practice, and whilst the Directive sets some specific performance objectives that must be met, it allows individual plan making authorities a considerable degree of flexibility in how those objectives are met.

The guidelines have been consulted extensively in the preparation of this environmental report.

Development Plan Guidelines (2007)

The aim of these guidelines is to:

- Improve the quality and consistency of development plans, and thereby improve the quality and consistency of decisions on planning applications,
- Strengthen the strategic content of development plans, in the context of the hierarchy of plans envisaged under the 2000 Act, and
- Encourage consensus-building in the preparation, implementation and review of development plans.

A Development Plan should establish a policy framework within which more detailed plans (such as local area plans) can be drawn up for specific parts of the planning authority's area.

The DOEHLG intends to prepare guidance for planning authorities on Local Area Plans, which will complete the suite of guidance for each layer in the planning framework.

The Fingal Development Plan is the 'parent' document, which sets out the strategic framework within which the zoning and other objectives of the local area plan must be formulated.

Development plans should indicate those areas for which a local area plan will be prepared, should set out a clear context for their preparation and give an indication of particular policies or objectives, which may need to be included therein such that there is a clear and unambiguous link between the county development plan and the local area plan.

The principle policies and objectives of the County Development Plan relevant to the Barrysparks Local Area Plan are addressed below in Section 4.5.

Appropriate Assessment of Plans and Projects in Ireland – Guidance for Local Authorities (Dec 2009)

The Appropriate Assessment (AA) guidelines set out and explain the background to the Birds and Habitats Directives and the Natura 2000 network in Ireland. The guidelines illustrate how the Directive should be applied in the case of land use plans. The obligation to carry out AA lies with the competent Authority (Fingal County Council). The level of detail required for Local Area Plan's is more defined and focused than at County Development Plan level and should contain appropriate policies and objectives for the conservation and protection of European sites to ensure their integrity is not adversely affected by development. An AA Screening Report has been carried out as part of the Local Area Plan making process.

The Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)

The Guidelines, which must be implemented by planning authorities ensure that flood risk is a key consideration in preparing development and Local Area Plans and in the assessment of planning applications.

The core objectives as they apply to the Barrysparks Local Area Plan are to: -

- Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off;
- Improve the understanding of flood risk among relevant stakeholders;
- Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management.

The key objective for the planning authority is to avoid the risk of flooding. A Strategic Flood Risk Assessment is required as part of the preparation of the LAP. There are no known flooding events associated with the Local Area Plan lands.

Draft Landscape and Landscape Assessment, 2000

The Draft Guidelines encourage a proactive approach to landscape in terms of its ability to accommodate development and to provide indicators as to which developments might be most suited, under what conditions and using particular design criteria. "Landscape Character Assessment" should be applied in all aspects of physical planning, to provide guidance to planners and others as to how landscape considerations should be dealt with and to indicate specific requirements for Plans and for development management.

The policies and objectives of the draft Barrysparks Local Area Plan have taken into consideration the nature and form of the landscape and of the established and proposed built form of the area. The plan includes a building heights strategy.

Draft Spatial Planning and National Roads Guidelines

The guidelines set out planning policy considerations relating to development affecting national roads outside the 50-kph speed limit zones for towns, including Swords. The R132 Regional Road passes in front of the Local Area Plan lands and has a speed limit of 80kmph. The on road traffic demands generated by the development of Barrysparks has been taken into consideration in the preparation of the Local Area Plan. The plan promotes the use of sustainable forms of transport including transport in order to reduce the demand for travel by private transport and thereby consequent demand of the local and consequently national road network.

Retail Planning Guidelines for Planning Authorities (2005)

These Guidelines update and replace the Retail Planning Guidelines published in January 2001. The Guidelines provide a retail hierarchy for the State and provide a framework to guide local authorities in preparing development plans and assessing applications for permission and to guide retailers and developers in formulating development proposals.

The major change introduced in the 2005 Guidelines relates to the retail warehouse cap. The Guidelines now permit the 6,000 sq.m. retail warehouse cap to be lifted within the functional areas of the four Dublin local authorities and in the other National Spatial Strategy Gateways, including Swords

The retail strategy proposed in the Local Area Plan is consistent with these guidelines.

Sustainable Residential Development Urban Areas – Guidelines for Planning Authorities (May 2009)

The Guidelines have replaced the 1999 Residential Density Guidelines, with a view to assisting planning authorities, developers, architects and designers in delivering quality residential development into the future.

The guidelines state that ‘the advantage of using the LAP approach is that as a statutory plan it will have been through the planning process, will have involved local consultation and the engagement of elected members, and when approved will give a degree of certainty to those involved in the development of the area. In-depth consideration can be given to the planning issues specifically relating to the residential area within the context of the wider strategic objectives’.

The Barrysparks Local Area Plan should progressively move from the role that it plays within the larger geographic context of Swords to designing at the detailed level. The first criteria to be considered is the vision statement, which will outline the guiding principles for the sustainable development of the area. This overarching statement will indicate the degree to which the residential component of the development will be sustainable.

The guidelines also recommend that the wider context of the LAP area in relation to access, transport provision, design context as well as physical and social infrastructure should be examined to ensure the integration of the LAP with that context. This will influence the subsequent planning within the LAP area which will relate to detailing of design such as layout, a range of appropriate densities, diversity of uses, housing mix etc.

The Guidelines recommend that if a Local Area Plan is to be developed over a long period of time it is important that a phasing programme is put in place. The purpose of phasing is to ensure that the physical and social infrastructure required is provided in tandem with the residential element of the development. The phasing programme will indicate the number of phases proposed and the enabling works that are required in each phase before being able to move onto the next phase. The programme will also specify the amount of residential development that should take place in each phase, integrated with the provision of the appropriate social facilities (such as schools, childcare and health facilities), transport access etc.

Where it is felt that the existing physical and social infrastructural services will be inadequate to serve the proposed development lands, the LAP should indicate, along with the sequencing and phasing parameters, the minimum services that are required for the development of the zoned land, and when these are likely to be provided. This highlights for service providers, developers, future residents, what services are readily available and what is required and when they are likely to be provided. On approval of the plan, the planning authority should take a proactive approach by informing the service providers of the situation, giving clarity to all involved of the role they play in the quality development of the lands. The service providers will then have the planning information required to enable them to include the necessary proposals in their work programmes.

Planning authorities are urged to ensure that an adopted plan is the only effective policy framework within which to consider major development proposals.

Urban Design Manual A Best Practice Guide (2009)

This manual is intended to act as a companion document to the guidelines for planning authorities on Sustainable Residential Development in Urban Areas. Published in December 2008, it is intended to provide best practice advice on how the policies contained in the guidelines should be implemented. It focuses not only on the key issues affecting housing schemes in the 30-50 units per hectare density range, but also on the relevant considerations relating to higher and lower density schemes in urban areas.

Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities DOEHLG (2007)

The primary aim of the Guidelines is to promote sustainable urban housing by ensuring that the design and layout of new apartments provide satisfactory accommodation for a variety of household types and sizes and including families with children. The Guidelines provide recommended minimum standards in the following areas:

- Floor areas for different types of apartments
- Storage spaces
- Sizes for apartment balconies/patios and
- Room dimensions for certain rooms.

The Guidelines indicate that planning authorities should consider the feasibility of specifying either in development plans or a local area plans, the target average floor area to be achieved in apartment developments.

The Barrysparks Local Area Plan has indicated a range of floor areas for apartments to be provided within the plan area.

The Provision of Schools and the Planning System (2008)

This Code of Practice was published in 2008. It is intended to ensure that the provision of educational establishments keeps pace with the expansion of residential development. It complements and expands upon earlier guidance on the making and content of development plans.

All planning application submitted for residential development will be required to be accompanied by an assessment of existing local schools capacity and projected demand from the development.

Childcare Facilities-Guidelines for Planning Authorities (2001)

The Guidelines require that objectives be included in Local Area Plans to promote childcare facilities as a key element in the provision of sustainable communities, in locations such as:-

- Residential areas;
- Places of employment;
- City and town centres;
- Convenient to public transport nodes.

And that Plans identify locations appropriate for the provision of the full range of childcare facilities.

The guidelines also guide planning authorities in assessing applications for permission and childcare providers and developers in preparing proposals for childcare facilities.

The guidelines require that for every 75 dwellings proposed as part of a planning application, 1 no. childcare facility with capacity for 20 children be provided. The policies of the Childcare Guidelines are incorporated into the Local Area Plan.

Development Management Guidelines

Development Management - Guidelines for Planning Authorities was published in June 2007. These Guidelines are of relevance to all types of planning application, being intended to assist both the technical and administrative staff of planning authorities, as well as applicants and their advisers, on the operation of the planning process. They are also intended to promote best practice within planning authorities. Unlike many of the other guidelines on development control, Development Management - Guidelines for Planning Authorities focuses on the planning process rather than planning policy.

The Guidelines are not directly relevant to the SEA process, however, applications submitted for permission subsequent to the adoption of the Local Area Plan will be considered in the context of the Guidelines.

3.2 Key European Legislation and Policy Documents

The following are just some of the key European documents which have influenced the LAP policies and objectives.

Environmental Liabilities Directive (2004/35/CE)

The Environmental Liabilities Directive (2004/35/CE) is the first Directive to enforce the polluter Pays Principle. It has been introduced with a view to preventing and remedying environmental damage to animals, plants, natural habitats and water resources, and damage affecting land. Environmental damage is defined as: -

- direct or indirect damage to the aquatic environment covered by Community water management legislation;

- direct or indirect damage to species and natural habitats protected at Community level by the 1979 " Birds " Directive or by the 1992 "Habitats " Directive;
- direct or indirect contamination of the land which creates a significant risk to human health.

The European Communities (Environmental Liability) Regulations 2008 transposed the Directive into Irish Law. The provision of the Regulations are reflected in the policies and objectives of the Local Area Plan.

Water Framework Directive (2000/60/EC)

The Directive came into effect in 2000 and requires that Member States must aim to achieve good status in all waters by 2015 and must ensure that status does not deteriorate in any waters. It applies to all inland and coastal waters within defined river basin districts. Inland water includes rivers, lakes, groundwater and estuaries. The Directive also protects the wildlife/habitats, which depend on the water sources. The other aims of the Directive are to involve the public and to streamline legislation.

The Fingal Development Plan incorporates policies to facilitate the provision of wastewater treatment systems for municipal and industrial sources in order to ensure compliance with the WFD. The upgrade of the Swords Wastewater Treatment Plant will play a key role in the sustainable servicing of the development of the lands. It also provides for the preparation of and implementation of the Eastern River Basin District Management system.

Groundwater Directive (2006/118/EC)

The Groundwater Directive is the key EU initiative aimed at improving water quality. They set underground water quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater. The new Directive responds to and complements the WFD. It requires: -

- groundwater quality standards to be established by the end of 2008;
- pollution trend studies to be carried out by using existing data and data which is mandatory by the Water Framework Directive (referred to as "baseline level" data obtained in 2007-2008);
- pollution trends to be reversed so that environmental objectives are achieved by 2015 by using the measures set out in the WFD;
- measures to prevent or limit inputs of pollutants into groundwater to be operational so that WFD environmental objectives can be achieved by 2015;
- reviews of technical provisions of the directive to be carried out in 2013 and every six years thereafter;
- compliance with good chemical status criteria (based on EU standards of nitrates and pesticides and on threshold values established by Member States).

The requirements of the Directive have influenced the policies and Objectives on the Barrysparks LAP.

Bathing Directive (2006/7/EC)

The purpose of the Directive is to preserve, protect and improve the quality of the environment and to protect human health by complementing the provisions of the WFD. It applies to any area of surface water where large numbers of people are expected to

gather to bathe and where bathing has not been prohibited. The objectives of the Directive are to: -

- Monitor and classify bathing water quality
- Manage bathing water quality
- Provide information to the public on bathing water quality.

The requirements of the Bathing Directive are reflected in the policies and objectives of the LAP.

European Communities (Energy Performance of Buildings Regulations 2006) S.I 666 of 2006

S.I. 666 requires that prior to the construction of any large new building (with a total useful floor area in excess of 1,000m²) that due consideration has been given to the technical, environmental and economic feasibility of installing alternative energy systems in the proposed building, and that the use of such systems has been taken into account as far as is practicable in the design of the building.

The alternative energy systems to be considered include decentralized energy supply systems based on renewable energy, combined heat and power systems, district or block heating or cooling and heat pumps. It is also required that a feasibility study shall be carried out by a suitably qualified person and shall include specific recommendations in relation to the utilization of alternative energy systems, including those specified in this Regulation, to serve the large building in question.

The Local Area Plan contains policies and objectives, which are consistent with the provisions of S.I. 666.

3.3 Regional Planning Context

Regional Planning Guidelines for the Greater Dublin Area 2010-2022

The recently adopted Regional Planning Guidelines (RPGs) for the Greater Dublin Area 2010-2022 provide a strategic planning framework for the sustainable development of the region, within the context of the National Spatial Strategy 2002-2020. They provide a long-term strategic planning framework for the Greater Dublin Area in the 12-year period up to 2022. The Regional Planning Guidelines provide the clear policy link between the NDP, NSS, other national policy documents and guidance and Local Authority planning policies and decisions.

The settlement strategy identifies Swords as a Metropolitan Consolidation town, within the Metropolitan area and part of the Dublin City polycentric gateway.

The Guidelines further advise that the locations closest to Dublin City should continue to be developed to a relatively large scale as part of the consolidation of the Metropolitan Area. It is envisaged that development will be consolidated with a much-enhanced multi-modal transport system.

The public transport section states that *it is essential that critical mass is built up in suitable locations to the capacity requirements that make particular public transport investment feasible, sustainable and cost effective. This includes metropolitan consolidation areas such as Swords.*

In terms of infrastructure the Guidelines identify the provision of a "new watermain from Ballycoolin to Swords" as part of the – Water Supply - Critical Strategic Programme, subject to a habitats assessment being carried out in accordance with EU legislation.

The "identification of suitable servicing solution to allow for future growth of Swords" is identified as one of the critical wastewater projects to be invested in. In order to meet the needs of the anticipated population and employment growth and to comply with the EU Urban Wastewater Directive the existing Swords wastewater treatment infrastructure requires upgrading

The Swords Wastewater Treatment Plant is stated as having a capacity of 60,000 p.e.

The Barrysparks Local Area Plan has been prepared in accordance with the provisions of the Regional Planning Guidelines.

Retail Strategy for the Greater Dublin Area 2008-2016

The Retail Strategy for the Greater Dublin Area (2008) was prepared in accordance with the Retail Planning Guidelines for Planning Authorities, for the four Dublin Local Authorities and for Counties Kildare, Meath and Wicklow. The Retail Planning Strategy is a guide to the activities and policies for retail planning across the Greater Dublin Area, setting out a hierarchy of retail centres and floorspace need. The strategy gives guidance on where future retail should be provided and what issues need to be addressed.

The retail market in the Greater Dublin Area has undergone significant change since the previous strategy. Economic growth until 2007 was buoyant, but current indicators show a slowing growth in the Irish economy with a resulting impact on the projected rates of increase in retail sales. Taking the market conditions into account the strategy is designed to ensure that there is a sufficiency of retail

floorspace in the GDA and that it is provided in an efficient, equitable and sustainable manner.

Swords is designated as a Level 2 Major Town Centre. It is at the top of the Fingal County retail hierarchy and is one of only two centres at this level, Blanchardstown Town Centre being the other. Its position in the retail hierarchy is surpassed only by Dublin City Centre, which is the only Level 1 Retail Centre in the Greater Dublin Area. The strategy identified Swords Pavilions as being less competitive than other Major Town Centre's in the GDA because of its smaller size and tenant mix. There are plans for a third phase of the Pavilions adjoining the Main Street, which will strengthen its role as a major town centre into the future (currently in the planning system).

It is the policy of the strategy to continue the improvement of the major town centre of Swords, in line with its position in the retail hierarchy, through incorporating a variety of uses including civic, entertainment, office and residential uses, as well as a high quality range of convenience and comparison retail facilities, served by and supporting the provision of high quality public transport including new rail based public transport (Metro North) proposed under Transport 21.

Dublin Transportation Office – Platform for Change-Strategy 2000-2010

This document provides a comprehensive framework for addressing accessibility and connectivity within the Metropolitan area and connectivity between it and the main settlements of the hinterland.

The vision and objectives in Platform for Change are supported by the Regional Planning Guidelines. Platform for Change provides for the following major elements, which are relevant to Swords:

Completion of the Swords QBC

the METRO spur to Dublin Airport to extend to Swords to cater for the large developments proposed for this region.

A park and ride site at Swords with a capacity for 2000 trips.

The Strategy seeks to provide strategic but limited improvements to the road network which will be managed in a way, which does not encourage peak hour car commuting and provides guidance on complementary land use policies. The Local Area Plan is consistent with this Strategy.

Greater Dublin Strategic Drainage Study (GDSDS)

The Greater Dublin Strategic Drainage Study (GDSDA) was commissioned in 2001 to carry out a strategic analysis of the existing foul and surface water systems and to develop environmentally sustainable drainage policies and strategies for the Greater Dublin Region for a period of 30 years up to 2031.

3.4 Fingal Development Plan, Local Area and Masterplan Context

3.4.1 Fingal Development Plan 2011-2017

The Development Plan contains a Core Strategy, which sets out how the Settlement Strategy, the Housing Strategy and the Retail Strategy objectives within the Development Plan are consistent, in as far as practicable, with the development objectives of the National Spatial Strategy 2002-2020 (NSS) and the Regional Planning

Guidelines. The LAP is consistent with the Core Strategy as set out within the Development Plan.

The LAP lands are zoned MC, where the objective is to “*Protect, provide for and/or improve major town centre facilities*”.

The Development Plan map of Swords comprises 4 specific local objectives related to the LAP lands (see figure 2):

- 322** Prepare a Local Area Plan accommodating high-density high-quality mixed-use development, which ensures connectivity between Major Town Centre lands east and west of the R132 and facilitates a multi-modal interchange at Swords Metro Stop, via Swords Metro Plaza (Metro Plaza comprises a well-designed architectural bridge over the R132, connecting lands east and west of R132 to each other and to Swords Metro North Stop; and a vehicular connection under the R132).
- 323** Require a minimum 10% of the proposed development site area be designated for use as public open space. The Council has the discretion to allow provision of the remaining public open space requirement to be located outside of the development site area, or to accept a financial contribution in lieu, in order to provide or to upgrade small parks, local parks, urban parks, Swords Regional Park and/or recreational/amenity facilities, subject to the open space or facilities meeting the open space ‘accessibility from homes’ standards for each public open space type specified in Table OS1.

313 Promote the development of a multi-modal transport interchange, providing for strong vehicular and pedestrian links between the historic Town Centre, Pavilions development area and Barrysparks LAP area.

335 Develop a detailed road design for Airside-Feltrim Link Road within the corridor and ensure the delivery of this road in tandem with/prior to development of adjoining RS and HT lands.

Development Strategy

A long-term development strategy for Swords Your Swords An Emerging City Strategic Vision 2035 was published by the Council in 2009 in which the vision is:

‘To develop Swords as an ‘Emerging Green City’; to promote and facilitate the sustainable development of Swords as a vibrant consolidated major town with a thriving economy, an integrated public transport network, an attractive and highly accessible built environment, with the highest standards of housing, employment, services, recreational amenities and community facilities’.

The Fingal Development Plan 2011-2017 recognises the position of Swords as one of the county’s main urban centres and one of the main aims within the Strategic Policy section of the plan is to:

- Promote and facilitate the long-term consolidation and growth of the County town of Swords in accordance with the Swords Strategic Vision 2035.

Swords is recognised as a key town for population growth and economic and retail activity. Swords town and suburbs has a

population of just over 40,000 and the long term vision is for it to grow with the arrival of Metro to a town of 100,000.

The following main aims of the Strategic Policy section relating to Swords are set out hereunder:

- Promote enterprise and employment throughout the County, including the Metro North Economic Corridor and Blanchardstown, and work with the other Dublin Local Authorities to promote the Dublin City Region as an engine of economic recovery and growth for the Region and the country.
- Protect, maintain and enhance the natural and built heritage of the County.
- Seek the development of a high quality public transport system throughout and adjoining the County, including the development of Metro North and Metro West, improvements to the railway infrastructure and the facilitation of QBC's, together with enhanced facilities for walking and cycling and a roads infrastructure geared to the needs of the County.
- Secure the timely provision of the water supply and drainage infrastructure necessary to facilitate the sustainable development of the County.
- Secure the timely provision of other infrastructure essential to the sustainable development of the County, in particular in the areas of waste disposal, energy supply, renewable energy generation and ICT.
- Ensure the timely provision of schools, recreational facilities, roads, waste water treatment facilities and emergency services, commensurate with the number of housing units proposed for construction on lands zoned for residential development.

The Development Strategy is to promote the planned and sustainable development of Swords as follows:

- Consolidate existing and future development within well-defined town boundaries separated from the agricultural hinterland by designated greenbelt areas.
- Provide for a much-expanded employment, retail, commercial, civic and cultural base.
- Develop high quality public transport links to Dublin City, Dublin Airport and the Greater Dublin area, with a particular emphasis on Metro North.
- Target and facilitate the development of high tech and advanced manufacturing and other high intensity employment generating uses and service providing uses, in particular developments which include the provision of a hospital, 3rd/4th level educational facilities and major integrated sports facility.
- Promote the development of high quality living and working environments.
- Develop Swords, in the long term, in accordance with the 'Your Swords An Emerging City Strategic Vision 2035'. This Strategic Vision is contingent on Metro North coming to Swords.

Objective SWORDS 1

Encourage a range and quality of retail, commercial, civic, cultural, leisure and other services commensurate with the role of Swords Town Centre as a Metropolitan Consolidation Town.

Objective SWORDS 2

Promote the development of Swords as a multi-modal transport hub.

Objective SWORDS 3

Actively promote and support the early development of Metro North linking Swords with Dublin Airport and Dublin City Centre.

Objective SWORDS 4

Prepare and implement an Integrated Traffic Management Strategy in tandem with the development of a public realm strategy for Swords town centre.

Objective SWORDS 5

Maintain the operational capacity of Swords Bypass, the R132.

Objective SWORDS 6

Promote the early development of a town wide bus service within Swords linking residential areas to each other, to Metro stops, to the town centre and to the industrial/ employment areas.

Objective SWORDS 7

Promote the development of lands within Swords town centre in accordance with the principles and guidance laid down in the Swords Master Plan (January 2009).

Objective SWORDS 8

Retain the Main Street as the core of the town centre, protect and enhance its character and ensure that any future new commercial and retail development reinforces its role as the core area of the town centre, by promoting the development of active ground floor uses and limiting the expansion of certain non-retail and inactive street frontages including financial institutions, betting offices, public houses and take aways/fast food outlets.

Objective SWORDS 9

Protect and conserve the historic core of Swords including the Zone of Archaeological Potential in the centre of the town.

Objective SWORDS 10

Provide for a comprehensive network of pedestrian and cycle ways, linking housing to commercial areas, to the town centre and to the Metro stops and linking the three water bodies (the Ward River Valley, the Broadmeadow River Valley and the Estuary) to each other subject to Habitat's Directive Screening for Appropriate Assessment and full Appropriate Assessment if required.

Objective SWORDS 11

Develop a Regional Park (of circa 65 ha) immediately west of Oldtown, and adjoining and ultimately extending into the Broadmeadow River Valley Linear Park, to serve Swords and its hinterland, and to comprise active recreational and passive activities, commensurate with the Council's vision for the emerging city of Swords.

Objective SWORDS 12

Develop a 'green necklace' of open spaces which are linked to each other and to the existing town centre of Swords, as well as to new development areas; thus promoting enhanced physical and visual connections to the Ward River Valley Park and the Broadmeadow River Valley Park from within the development boundary of Swords.

Objective SWORDS 13

Facilitate the development of Swords Western Ring Road (SWRR) linking the R132 (east of M1 and north of Lissenhall interchange) to the N2 via the proposed 'Dublin Airport Box' road network.

Objective SWORDS 14

Develop an appropriate entrance to the Ward River Valley from the town of Swords so that access to the amenities of the valley is freely and conveniently available to the people of Swords.

Objective SWORDS 15

Promote and enhance the identity of the town centre through the identification of a Civic Quarter (at the junction of Main Street/North Street) and Cultural Quarter (located along Dublin Street, linked into Pavilions Development Area and Ward River Valley Park). These two key activity nodes/focal public spaces will build on the existing character areas within the Town Centre and link existing retail/commercial areas.

With regard to employment, the Development Plan recognises the need to provide for employment opportunities in sustainable locations. The Regional Planning Guidelines 2010-2022 identify Blanchardstown and Swords as Metropolitan Consolidation Towns and they will be the main growth areas within the Metropolitan Area of Fingal.

Metro North and Road Network Improvements

Three metro stops are provided for within Swords, at Fosterstown (adjacent to Airside Retail Park), Swords Town Centre (at Pavilions/Barrysparks) and Estuary (at Balheary Park). Local Park and Ride facilities are proposed at Fosterstown (circa 300 spaces).

A number of key transportation hubs will be created to facilitate interchange between the various modes of transport. These will include interchanges between Metro and buses, cars and Metro, cycles and buses, etc. These proposals will ensure good connectivity throughout the County. Such proposals will also promote use of sustainable modes of transport, while recognizing the ever-present demand for private car use.

Metro North is necessary for the development of Swords in future years and the Council will maximize the benefits of, and the efficient use of the Metro for the benefit of those living and working in the town. It is envisaged that Swords (Town Centre) Stop will be the most strategic public transport interchange, comprising the proposed Metro Quarter which will include the Metro plaza/podium and the vehicular conduit under the Stop, linking the existing Town Centre area with the proposed Town Centre expansion area.

Objective TO 28

Support and develop the Council's long-term vision contained within the document *Your Swords- An Emerging City – Strategic Vision 2035*.

Objective TO 29

Support the development of a new improved rail based transportation system including a Metro rail link from the City to Lissenhall via the Airport.

With regard to bus corridors, the Development Plan identifies one of the main QBC corridors to be implemented for Swords as the 'R132 Swords Northern QBC Extension'.

A number of key road improvements are required to facilitate the movement of goods and people throughout the County and to ensure ease of access. Any works undertaken will include as an aim enhanced provision for public transportation, cyclists and pedestrian and will be subject to environmental and conservation considerations.

Section 65 of the Dublin Transport Authority Act requires a Local Traffic Plan to be prepared. Following the publication of the National Transport Authority's *Transport Strategy for the Greater Dublin Area* the Council will prepare a Local Traffic Plan within which the following road network proposals relating to Barrysparks will be form a part:

- Swords Western Bypass
- Swords Industrial Estate Link
- Swords Relief Road at Lord Mayors
- R132 Swords Town Centre Car Park Access Scheme
- Swords Town Centre Access (Airside)
- Completion of Airside to Feltrim Road Link
- Swords Traffic Management Enhancement

Wastewater Treatment

It is envisaged that within the lifetime of the Fingal Development Plan 2011-2017, Swords Wastewater Treatment Plant will be initially expanded to serve a p.e. of 90,000 and then further expanded to serve a population of 140,000 p.e. This is required to cater for the existing flows from Swords and to allow for its planned growth.

3.4.2 Your Swords, An Emerging City, Strategic Vision 2035 (2008)

A long term development strategy for Swords was published in 2008, 'Your Swords An Emerging City Strategic Vision 2035' and will be implemented over the next 25 years or so. This document examines

how Swords, in conjunction with the delivery of the high quality public transport network of Metro North, will become a thriving, vibrant, consolidated major town – an emerging city – with a population of 100,000 and comparable increases in employment and services. This will be achieved in a proactive and sustainable manner with key services and infrastructure delivered in tandem with development.

Barrysparks is identified in the Strategic Vision document as a strategic development area within the metro economic corridor.

3.4.3 Swords Masterplan (2009)

The Swords Masterplan was prepared pursuant to local objective 8 in the Fingal Development Plan 2005-2011 and relates to MC (major town centre) zoned lands, including the Barrysparks lands. The Masterplan outlines a vision of a thriving sustainable town centre, with a high quality of life and an attractive public realm. It is the aim of the Masterplan to inspire confidence in and guide development proposals for Swords town centre and ensure the continued protection and development of a high quality town centre and urban environment. There are six strategic development areas and focal public spaces identified in the Masterplan: Main Street and North Street, proposed Civic Quarter, proposed Cultural Quarter, Pavilions town centre Expansion area, Barrysparks LAP area, and proposed Metro Quarter.

Relevant strategic objectives for the Barrysparks LAP include:

- Facilitate the growth and development of Swords town centre as a multifunctional highly accessible destination.
- Encourage the growth and expansion of the range and mix of town centre uses within the Pavilions development area and Barrysparks development area.

- Ensure the integration of the town centre expansion areas of the Pavilions and Barrysparks, with the Main Street area and activity nodes, through the creation of a permeable and legible street network with active 24 hour streets.
- Facilitate the development of a multi-modal transport interchange within the Metro Quarter, linking Metro North with local and regional bus networks and surrounding vehicular network.
- Provide for the integration of Swords Metro Stop with developments east and west of the R132 (Pavilions and Barrysparks) and with the town centre.
- Encourage the development of Landmark Buildings at the Swords Metro Stop location, which will be the gateway entrance to Swords.

Section 8 of the Masterplan outlines a framework for development of the Barrysparks lands, outlining guidelines on movement, density, mix of uses, heights and massing, urban form and open space. This LAP seeks to put this development framework into a statutory format.

3.4.3.1 Swords Masterplan – Retail Study

As background to the Swords Masterplan, a re-examination of the County Retail Strategy 2004 as it relates to Swords was undertaken. The assessment indicated that Swords currently underperforms as a designated Major Town Centre. Although the Pavilions Shopping Centre and the Pennys scheme have significantly enhanced the retail offer, there is limited representation of international comparison retailers and there is no opportunity to accommodate modern development within the existing retail core. An extension to the town centre to cater for demand was identified as necessary and those

areas most suitable to cater for growth are the Pavilions development area and the Barrysparks LAP lands.

The quantum of floor area delivered in any one scheme will need to have regard to:

- i) The capacity of the transportation system
- ii) An appropriate mix and quality of retail offer.

In accordance with the Swords Masterplan, permission was granted in mid 2009 for a significant expansion of the Pavilions site, catering for approximately 64,000sqm retail and 15,600sqm office, as well as a number of residential units. In terms of sequential development, Barrysparks is the next appropriate location for further expansion of the retail core to support the growth of Swords as a Level 2 centre within the Retail Strategy for the Greater Dublin Area (2008-2016).

3.4.4 Part XI - Metro North and associated Public Transport Interchange

The Swords Metro Stop will be located along the median of the R132, providing access to Pavilions and Swords town centre to the west, and to Barrysparks LAP lands east of R132.

One of the key challenges to be overcome in the successful integration of Metro North with the town centre zoned lands on either side of R132, is the resolution of vehicular, pedestrian and rail conflicts. To ensure that Metro North is fully integrated with Swords town centre, plans have been developed for 2 key infrastructural projects, namely 'Metro Plaza' and 'Metro Box', which will support development of a high quality multi-modal transport interchange at Swords Stop. Plans have been adopted by FCC (in accordance with

Part XI of the Planning and Development Act 2000) for the ‘Metro Plaza’ and ‘Metro Box’.

4.0 Draft Barrysparks Local Area Plan

The Barrysparks Local Area Plan lands (approx 10 ha in area) are zoned MC, where the objective is to “*Protect, provide for and/or improve major town centre facilities*”.

The Development Plan map of Swords comprises 4 specific local objectives related to the LAP lands (see figure 2):

- 322** Prepare a Local Area Plan accommodating high-density high-quality mixed-use development, which ensures connectivity between Major Town Centre lands east and west of the R132 and facilitates a multi-modal interchange at Swords Metro Stop, via Swords Metro Plaza (Metro Plaza comprises a well-designed architectural bridge over the R132, connecting lands east and west of R132 to each other and to Swords Metro North Stop; and a vehicular connection under the R132).
- 323** Require a minimum 10% of the proposed development site area be designated for use as public open space. The Council has the discretion to allow provision of the remaining public open space requirement to be located outside of the development site area, or to accept a financial contribution in lieu, in order to provide or to upgrade small parks, local parks, urban parks, Swords Regional Park and/or recreational/amenity facilities, subject to the open space or facilities meeting the open space ‘accessibility from homes’ standards for each public open space type specified in Table OS1.

- 313** Promote the development of a multi-modal transport interchange, providing for strong vehicular and pedestrian links between the historic Town Centre, Pavilions development area and Barrysparks LAP area.
- 335** Develop a detailed road design for Airside-Feltrim Link Road within the corridor and ensure the delivery of this road in tandem with/prior to development of adjoining RS and HT lands.

The development of Barrysparks LAP has a role to play in ensuring Swords’ development as a vibrant major town with a thriving economy, an excellent place to live and work, with appropriate amenity and community facilities. The Barrysparks LAP will support economic development through a mix of uses and will support self sustaining vibrant communities. This modern new quarter will exemplify the highest standards of civic and urban design, creating a unique sense of place, within an attractive public realm. The development will maximise accessibility afforded by Metro North, the bus network, and associated Metro Plaza public transport interchange, and will be supported by appropriate road, pedestrian/cyclist routes, with an emphasis on connections and integration with the existing town centre core.

Vision:

Create a coherent, sustainable and high-density mixed-use urban quarter at Barrysparks, which will form an extension to the existing Swords town centre, at a highly accessible location supported by planned high quality Metro North and bus public transport improvements. Development will maximise connectivity between

'Major Town Centre' zoned lands east and west of the R132, and facilitate development of a multi-modal interchange at Swords Metro Plaza. Barrysparks LAP will accommodate a range of mixed uses and services appropriate for a growing town centre, including retail, office, residential, and community facilities, with a focus on the development of a high density well-designed urban environment, to be developed in tandem with Metro North.

The overall vision for Barrysparks LAP is articulated through a number of strategic objectives. The concepts of sustainability underpin all objectives. These objectives are grouped under four themes, which will be examined later in this Report:

- Expansion and consolidation of Swords town centre;
- Accessibility and connectivity;
- Legible and attractive urban quarter;
- Green infrastructure and sustainable development.



Comhairle Contae Fhine Gall
Fingal County Council

Barrysparks LAP

Legend

- LAP Boundary
- Pavilions (including proposed Phase 3 expansion)
- Retail
- Offices
- Offices above Retail
- Residential
- Residential above Retail
- Public Square and Pedestrian / Cycle Route
- Urban Park and Open Green Spaces
- Existing Marsh and Woodland

- (1) A community / leisure facility shall be accommodated within this area
- (2) Protect existing residential amenity
- (3) A crèche shall be accommodated in this area
- (4) Cafes/Restaurants
- (B) SUDS Detention Basin
- (P) SUDS Retention Pond
- Public Transport link - 'The Rise'
- ↔ 'Metro Box' underpass

Director of Services: Gilbert Power

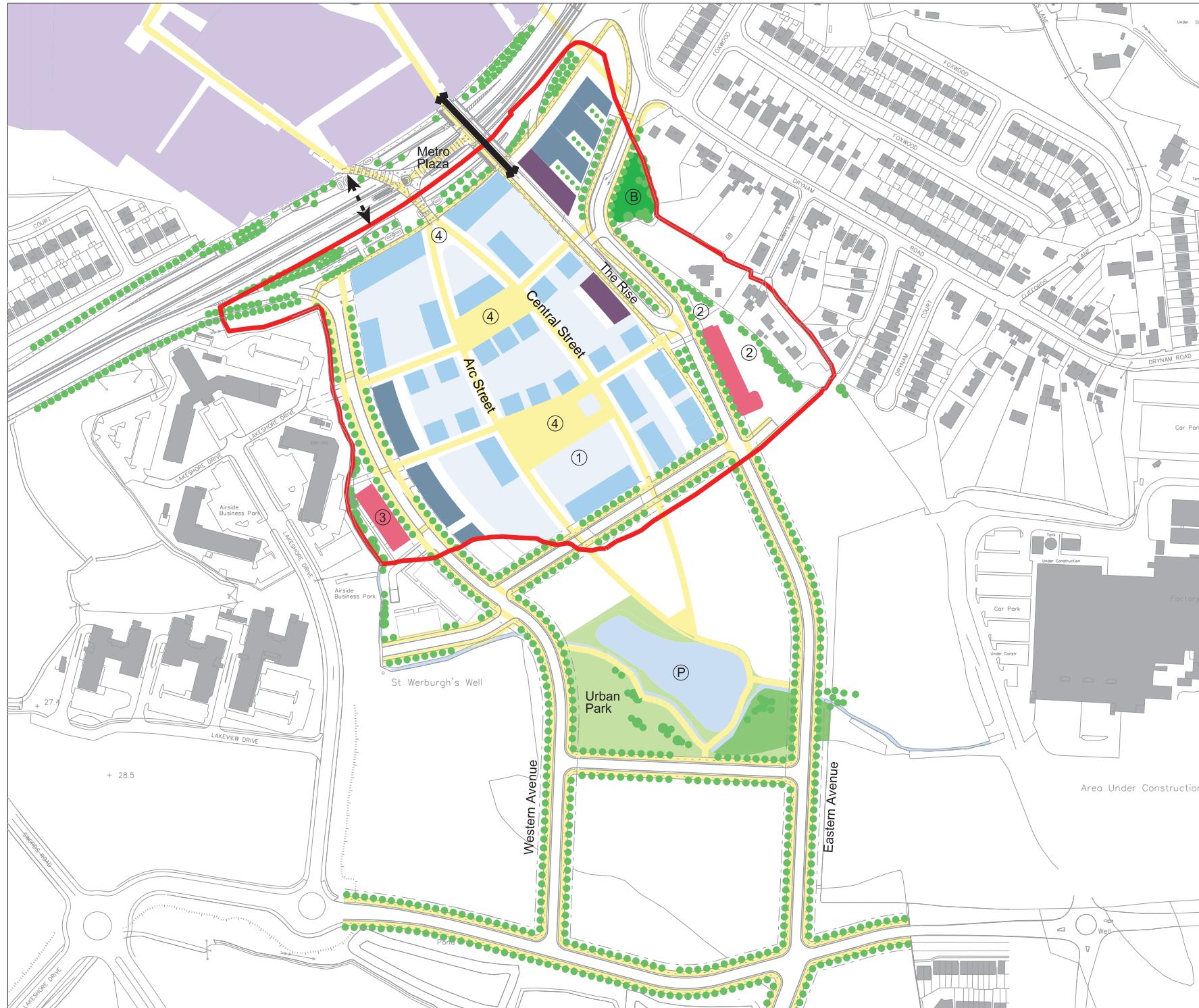
Senior Planner: Rachel Kenny

Executive Planner: Una O'Neill

Prepared by: Una O'Neill | Drawn By: BGA

Adopted July 2011 | NTS

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5.0 Consultations

Under the SEA Directive there is a very strong emphasis on consultation. The Directive clearly sets out who should be consulted with, how the results should be considered in environmental decision-making and how the process should be reported. In particular, environmental authorities and the public are to be given 'early and effective' opportunity within appropriate time frames to comment on the Plan and SEA. In addition, a statement is produced on LAP adoption detailing how their opinions have been addressed in the report.

In this SEA, consultation has played a strong role at all stages in the process including the scoping phase as well as during the preparation of this Environmental Report. The Environmental Report was made available to the elected members of Fingal County Council and the public in tandem with the draft LAP. After the statutory consultation period the Environmental Report will take all comments received into account and will be amended. As a final stage, an SEA Statement will be prepared outlining how the findings of the process have been taken into account and integrated into the Local Area Plan.

5.1 Scoping Consultation

Under Article 13D of the SEA Regulations 2004, there is a requirement on Fingal County Council to give notice to the environmental authorities and scope the Environmental Report. Section (c) of this article allows the environmental authorities to make a submission or observation on the information to be included in the Environmental Report. Fingal County Council has

used this stage to consult with the prescribed environmental authorities and other potentially interested bodies prior to preparing this Environmental Report.

The inclusion of the views and opinions of these various sections has been ongoing and central in the preparation of this Environmental Report.

In this SEA the prescribed bodies that have been consulted are: -

- The Environmental Protection Agency
- The Development Applications Unit, Department of Environment, Heritage and Local Government
- The Department of Communications, Marine and natural Resources

In addition to the above, the following interest bodies were also consulted: -

- National Roads Authority

A scoping letter was sent to a list of consultees (statutory and interest bodies) in September 2010. This letter is provided in Appendix 1.

5.2 Scoping Submissions and Responses

(i) NRA

A response was received from the National Road Authority dated 28th September 2010.

The NRA supports the preparation of the proposed Local Area Plan that proposes an integrated land use and transport framework with particular reference to the facilitation of Metro North.

(ii) Department of Environment, Heritage and Local Government

A response was received from The Department of Environment, Heritage and Local Government dated 29th September 2010.

The DOEHLG response relates to built heritage recommendations. It notes that a new Barrysparks Local Area Plan can be used to consolidate the built form of Swords, including the integration of the proposed Metro North into the urban fabric of the area. The DOEHLG further notes that there is a need to develop an architectural framework for the Barrysparks area, which will guide development within the immediate area.

(iii) Environmental Protection Agency

A response was received from The Environmental Protection Agency dated 12th October 2010.

An initial comment from the EPA stressed that although the LAP applied to the Barrysparks lands, the environmental assessment should be considered in the context of a wider Swords catchment. The main points of the submission are presented below.

In addition to the issues identified in the Council's correspondence, highlighted in the EPA Scoping Guidance and SEA Pack documentation, the EPA indicate that consideration should also be given to incorporating into the LAP, as appropriate, the following: -

- Climate Change - Mitigation Measures and Adaptation
- Energy Conservation
- Water Conservation
- County Waste Management Plan
- Recommendations of Shellfish Waters Pollution Reduction Programmes in the Louth-Fingal Region, (Skerries / Balbriggan and Malahide).
- FEM FRAMS Recommendations
- Cumulative Effects / In-Combination Effects other ongoing Plans / Programmes
- Eastern River Basin District River Basin Management Plan
- Biodiversity - Broadmeadow River, Broadmeadow Estuary, ecological linkages such as hedgerow networks & trees (both individual / groups).
- Water Quality (WFD & EPA classifications)
- Flood Risk Assessment
- Appropriate Assessment
- Traffic Management
- Groundwater Protection
- Loss of Agricultural Land / Soil Loss
- Infrastructure Requirements
- Predicted Population Targets
- Waste Water Treatment Capacity

(iv) Department of Communications, Marine and Natural Resources/Inland Fisheries Ireland

A response was received from the Department of Communications, Marine and Natural Resources dated 18th October 2010, highlighting the following issues:

- Inland Fisheries Board to be contacted in relation to all works that may have an impact on surface water
- Buffer zone required between development area and river bank.
- Riparian vegetation should be retained in as natural a state as possible at all times.
- Preparation of the LAP should facilitate the utmost priority for protection and conservation of salmonid systems in the area. IFI policy is to maintain watercourses in their natural state in order to prevent habitat loss; preserve and enhance biological diversity and aid in pollution detection. IFI would welcome the designation of lands adjacent to surface waters as areas of open preservation, allowing protection/enhancement of biological diversity while providing open space and recreational amenity for river users.
- Climate change.
- Water Framework Directive
- The guideline document "Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River sites" should be consulted by any stakeholder when planning to undertake river or riparian works in the ERBD area.
- Sufficient wastewater treatment, with a focus on water quality targets for the Broadmeadow Estuary and adjacent waters.

The planning authority's responses to the above submissions are set out in the table hereunder.

Summary of Issues raised by prescribed bodies in Scoping of SEA Environmental Report and FCC responses	
Environmental Protection Agency	
Issue	FCC Comment/Response
Fingal County Noise Action Plan	The lands at Barrysparks do not appear to experience "undesirable" levels of noise from traffic (Dublin Agglomeration Action Plan relating to the Assessment and Management of Environmental Noise). However the dominant noise levels in Fingal are due to traffic. An objective in relation to noise is included in the LAP as a mitigation measure.
Air Quality Monitoring Data	The EPA has only commenced air quality monitoring in Swords from the beginning of 2010. The SEA monitoring programme includes this data as a future indicator for ambient air quality.
Climate Change - Mitigation Measures and Adaptation	There is a requirement that new builds must show reduced energy consumption in their design and construction and where possible use alternate energy technologies. An objective in relation to energy efficiency and BER ratings will be included in the LAP as a mitigation measure.
Energy Conservation	There are three objectives included in the LAP to address mitigation measures in relation to Building Design, Energy Efficiency and Sustainability.
Water Conservation	A key Water Services objective has been included in the Plan for water conservation: <i>Ensure incorporation of water conservation measures into the design of proposed developments.</i>
Waste Management Plan	A specific objective is included in the LAP in relation to the requirement for a waste management strategy and a construction waste management strategy.
Recommendations of Shellfish Waters Pollution Reduction Programmes in the Louth-Fingal Region, (Skerries / Balbriggan and Malahide).	The LAP proposes the following objectives "Support the Water Framework Directive in implementing the Eastern River Basin District Management Plan and the program for measures for the Broadmeadow River"; "A 10 metre riparian corridor shall be maintained along both sides of the Gaybrook Stream in order to protect and manage this watercourse". These objectives ultimately relate to the protection of the Broadmeadow/Malahide Estuary as surface water quality from the site is assured.
FEM FRAMS Recommendations	The LAP is prepared with full regard to the FEMFRAMS recommendations. A local objectives is included in the LAP to ensure compliance with FEMFRAMS proposals.
Cumulative Effects / In-Combination	The Barrysparks LAP is derived from the Fingal Development Plan 2011-2017 and the transport

Effects other ongoing Plans / Programmes	and services proposals making up the LAP were initiated in the county plan. Since these objectives were derived from this plan, there should be no cumulative impacts.
Eastern River Basin District River Basin Management Plan	A key Water Services objective has been included in the Plan in assistance of the ERBD management plan: <i>Support the Water Framework Directive in implementing the Eastern River Basin District Management Plan and the Program of Measures for the Broadmeadow River.</i>
Biodiversity - Broadmeadow Estuary, ecological linkages such as hedgerow networks & trees (both individual / groups)	This LAP specifically proposes objectives relating to incorporation/strengthening existing trees/hedgerows; protection of woodland/marsh are to southeast and protection of Gaybrook Stream.
Water Quality (WFD & EPA classifications)	Water quality (WFD and EPA classifications) are considered as part of the SEA baseline assessment and are highlighted as water quality SEA indicators. A SUDS strategy has been undertaken as a background study to support the LAP, which mitigates potential impacts on water quality.
Flood Risk Assessment	A Strategic Flood Risk Assessment has been prepared as part of this Environmental Report.
Appropriate Assessment	An appropriate assessment screening of this LAP is prepared and is contained in Appendix 1 of this report. The LAP contains an objective to ensure compliance with the requirement of Article 6 of the Habitats Directive.
Traffic Management	A traffic management plan "Swords Integrated Traffic Model" was prepared for the document 'Your Swords, An Emerging City, Strategic Vision 2035'. The traffic management recommendations from this model are integrated and development as part of the transport study undertaken for the LAP.
Groundwater Protection	An objective is included in the LAP in relation to groundwater protection.
Loss of Agricultural Land / Soil Loss	The development of the LAP lands will lead to the loss of grassland (not in active use). Water quality will be protected during development on these lands through the specific Barrysparks SUDS design.
Infrastructure Requirements	A tiered and phased approach to infrastructural developments is being implemented in this LAP. The Plan requires that infrastructure and services are provided in tandem with/prior to development. Specifically, no development shall commence within the LAP lands until the Government approves

	the awarding of the main infrastructural contract by the RPA for the construction of Metro North to Swords.
Waste water treatment Capacity	The Swords WWTP is being upgraded to 90,000 p.e. and the Plan requires that utilities precede development in a phased approach.
Appropriate Assessment A determination for the requirement for an Appropriate Assessment of all Land Use Plans and related variations/amendments should be made in consultation with the Department of Environment, Heritage and Local Government - National Parks and Wildlife Service, and this should be highlighted in the Plan. The Plan, should promote the setting up of procedures to ensure compliance with the requirement of Article 6 of the Habitats Directive.	An appropriate assessment screening has been prepared concurrently with the Plan. The LAP contains a recommendation to ensure compliance with the requirement of Article 6 of the Habitats Directive.

5.3 SEA Public Consultations

The draft Barrysparks LAP is being released for public consultation at the beginning of March 2010, in accordance with Section 20 (3) (b) (ii) of the Planning and Development Act 2000 (as amended). This period allows consultees and the general public to provide their comments on the draft Plan and equally on the environmental assessments completed on the Plan, namely, the SEA, Appropriate Assessment Screening and the Strategic Flood Risk Assessment.

A review of the Environmental Report will be completed upon receipt of the submissions received following completion of the Managers Report, to consider whether the Plan will be adopted, rejected or amended.

6.0 Baseline Environment

6.1 Sources of Information

There is a large body of research and baseline data available from sources such as from statutory agencies, internal departments within Fingal County, local publications, planning applications and EIS relating to major developments in the area.

Additional studies have been carried out as part of the process including an Ecological Assessment of the lands, an Archaeological Assessment and a Transportation Study.

Following an analysis of the existing baseline data, and consultations with the E.P.A., DOEHLG, the Department of the Marine and the NRA, as well as holding consultations within Fingal County Council with the Heritage Officer, Biodiversity Officer, Conservation Officer, Environment Department, Transportation Department, Water Services Department, Community Recreation and Amenities Department the key environmental issues, which are of significance for the Barrysparks Local Area Plan, have been set out under each of the individual headings.

6.2 Content and level of detail in the Local Area Plan

The different components of the environment are identified below with the possible implications of implementing the Local Area Plan outlined. Each component will be investigated in greater detail, as deemed appropriate during the preparation of the Environment Report.

The broad categories of components in the environment, derived from paragraph (f) of Annex 1 of the Directive, are assessed as follows: -

- Biodiversity/Flora and Fauna
- Population and Human Health
- Soil
- Water
- Air & Climatic Factors
- Noise
- Material Assets/Cultural Heritage (including Architecture and Archaeological Heritage)
- Landscape
- Transport
- Interrelationship of the above factors.

6.3 Biodiversity / Flora and Fauna

An ecological assessment of the lands was carried out by Roger Goodwillie & Associates in September 2008 to assess its level of ecological value and describe any features of note. Habitats are classified according to the Heritage Council publication (Fossitt 2000).

As well as some remnant areas of improved agricultural grassland (GA1 in Fossitt 2000), the north-western section (MC Zone) contains much recolonising bare ground (EC3) with piles of topsoil and intervening scraped areas. At the northern point building material has been brought in from Drynam Road, along with distinctive weeds, but elsewhere the vegetation consists only of agricultural species.

The remaining grassland consists of a mixture of about seven species – Yorkshire fog *Holcus lanatus*, scutch *Elytrigia repens*, false

oat *Arrhenatherum elatius*, timothy *Phleum pratense*, meadowgrass *Poa trivialis* and creeping bent *Agrostis stolonifera* with occasional red fescue *Festuca rubra*, or next to hedges, tall fescue *F. arundinacea*. It is ungrazed and the broad-leaved species are characteristically few, for example

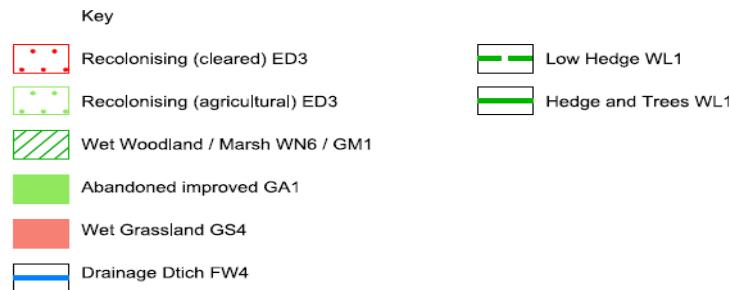
<i>Cirsium arvense</i>	creeping thistle
<i>Trifolium pratense</i>	red clover
<i>T. repens</i>	white clover
<i>Rumex obtusifolius</i>	broad-leaved dock
<i>Urtica dioica</i>	nettle
<i>Lathyrus pratensis</i>	meadow vetchling
<i>Ranunculus acris</i>	meadow buttercup
<i>Potentilla anserina</i>	silverweed

Where the soil has been scraped into banks and mounds the seed bank within it has produced dense stands of

<i>Brassica rapa</i>	wild turnip
<i>Persicaria maculosa</i>	redshank
<i>P. lapathifolia</i>	pale persicaria
<i>Rumex crispus</i>	curled dock
<i>Sonchus asper</i>	prickly sow thistle
<i>Atriplex patula</i>	orache
<i>Avena fatua</i>	wild oat
<i>Arrhenatherum elatius</i>	false oat

In between there is compacted ground on which rainwater collects. Rushes *Juncus inflexus*, *J. articulatus*, redshank *Persicaria maculosa* and glaucous





Ecological Assessment and indicative layout of proposed road network

sedge *Carex flacca* become established on these; there are many seedling willows *Salix cinerea* and, in the wettest places, water speedwell *Veronica anagallis-aquatica*.

The piles of building waste or other fill at the northern point add 'urban' weed species including several that are introduced fairly recently. The plants include: -

Polygonum aviculare	knotgrass
Mercurialis annua	annual mercury
Chenopodium album	white goosefoot
Cirsium vulgare	spear thistle
Fallopia convolvulus	black bindweed
Rapistrum rugosum	bastard cabbage
Conyza bilbaoana	Canadian fleabane
Melilotus altissimus	melilot
Diplotaxis muralis	wall rocket
Lactuca serriola	prickly lettuce
Echium vulgare	viper's bugloss

As regards large mammals there was evidence only of rabbit and fox on site though hares are likely to still visit at times. Smaller species would include hedgehog, wood mouse and pygmy shrew, especially along the edges of the SE part. Brown rats were seen along the stream channels but infrequently.

The south-eastern part of the site is considered to have potential as a bat feeding area though not to have importance for breeding. To be useful, a bat survey should be done as close as possible to the development phase since adjacent landuse, plant growth and roosting buildings over a considerable area are all of direct relevance to a local population. Home ranges of individual bat colonies (pipistrelles) have been shown to be up to 1500ha in extent (Nicholls & Racey 2006) and the most favoured feeding areas up to 3km from the roost so that what happens outside the site may be as important as what happens within it.

The most appropriate time to survey for bats will be in the spring or summer preceding construction work and not at the plan stage. In this way mitigation can be developed that is directly applicable to the populations at that time.

The birds seen on site were pheasant, woodpigeon, hooded crow, jackdaw, magpie, blackbird, song thrush, robin, wren, dunnock, greenfinch, goldfinch, chaffinch and willow warbler and all of these would nest. Meadow pipit and snipe would occur widely in the fields in winter but the tall vegetation does not suit other species of wader that are in the general area because of the nearby Malahide estuary. Sporadic visits by sparrowhawk, kestrel, stock dove, collared dove and moorhen would be expected.

The stream channel is culverted downstream of this site and there is no likelihood of it being used by migratory fish. However a few sticklebacks could survive within it, as well as the more nutrient-tolerant invertebrates such as water louse *Asellus*, Chironomid larvae etc.

The butterflies seen were meadow brown, speckled wood and small tortoiseshell and the lack of variety in the vegetation makes the occurrence of other resident species such as common or holly blue, unlikely.

The site consists mostly of the typical communities of abandoned, damp agricultural land where some clearance work has already been done. However it has one feature that deserves notice. The valley woodland and marsh at the eastern end (outside the LAP lands), which has considerable biodiversity, includes many of the species, which are more widely distributed along the ditches. It is bordered by one of the dry banks described, which also have species of interest.

The overall layout of the lands will be required to take cognisance of the features described above. Retention of existing trees and hedgerows will be supported and the introduction of new open spaces within the area will improve the biodiversity of the area. A landscaping plan will be required as part of any future development.

6.3.1 Key environmental issue of relevance to the LAP

None of the species present are rare in the Dublin or National context, though with the continued development of north Dublin they are becoming more isolated in their remaining sites.

The key ecological features in the immediate area are located outside of the Local Area Plan lands but form part of the same overall landholding on which supporting infrastructure will be developed. The overall roads layout will impact on the marsh/woodland identified on the adjoining ST1 lands. The road layout has been modified as part of the LAP process to minimise any impact on these features. Retention of existing trees and hedgerows will be supported where feasible and the introduction of new open spaces and attenuation ponds will contribute toward the improvement of biodiversity in the area. Requirements for a landscaping strategy and plan will be included in the LAP.

6.4 Natura 2000 Sites and the Gaybrook Stream

Natura 2000 is the European Union-wide network of protected areas, recognised under the EC Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora). These sites consist of Special Areas of Conservation (SACs) for habitats and species, Special Protection Areas (SPAs) for birds and Ramsar wetland sites.

The purpose of SEA Assessment and Habitats Directive Assessment of land use plans is to ensure that protection of the integrity of European sites is a part of the planning process at a regional and local level.

The following SAC's and SPA's are located within a 10km zone of influence to the proposed development.

SAC's and SPA's in Swords Area:

Special Areas of Conservation SACs	Special Protection Areas (SPA's)
---------------------------------------	-------------------------------------

000199 - Baldoyle Bay SAC	004006 - North Bull Island SPA
000202 - Howth Head SAC	004015 - Rogerstown Estuary SPA
000204 - Lambay Island SAC	004016 - Baldoyle Bay SPA
000205 - Malahide Estuary SAC	004025 - Broadmeadow/Swords Estuary SPA
000206 - North Dublin Bay SAC	004069 - Lambay Island SPA
000208 - Rogerstown Estuary SAC	004113 - Howth Head Coast SPA
002193 - Ireland's Eye SAC	004117 - Ireland's Eye SPA
	004122 - Skerries Islands SPA

Broadmeadow/Malahide Estuary is the closest Natura 2000 site to the Barrysparks LAP area, located 1.5km north-east. It is covered by two Conservation Designations: Broadmeadow/Swords Estuary SPA for the bird species it contains, and Malahide Estuary cSAC primarily for the habitats it contains. The estuary is traversed by a viaduct which divides the outer (Malahide) estuary from the inner (Broadmeadow) estuary.

The whole estuary is of high importance for wintering waterfowl. It has an internationally important population of Brent Goose and nationally important populations of 12 other bird species. The habitats of the estuary provide roosting and feeding areas. Water quality is critical to maintaining favourable habitat for the birds.

Special Areas of Conservation

The SAC, which is closest and most relevant to the Barrysparks Local Area Plan is the Malahide Estuary SAC which is located 1.5km to the north/north east of the plan area. A detailed site synopsis is

provided below and an aerial image of the estuary relative to the Barrysparks lands is also provided below.

Malahide Estuary SAC 000205

Malahide Estuary is situated immediately north of Malahide and east of Swords. It is the estuary of the River Broadmeadow. The site is divided by a railway viaduct built in the 1800s.

The outer part of the estuary is mostly cut off from the sea by a large sand spit, known as "the island". The outer estuary drains almost completely at low tide, exposing sand and mud flats. There is a large bed of Eelgrass (*Zostera noltii* and *Z. angustifolium*) in the north section of the outer estuary, along with Tassel Weed (*Ruppia maritima*) and extensive mats of green algae (*Enteromorpha* spp., *Ulva lactuca*). Cordgrass (*Spartina anglica*) is also widespread in this sheltered part of the estuary.

The dune spit has a well developed outer dune ridge dominated by Marram Grass (*Ammophila arenaria*). The dry areas of the stabilised dunes have a dense covering of Burnet Rose (*Rosa pimpinellifolia*), Red Fescue (*Festuca rubra*) and species such as Yellow Wort (*Blackstonia perfoliata*), Field Gentian (*Gentianella amarella*), Hound's Tongue (*Cynoglossum officinale*), Carline Thistle (*Carlina vulgaris*) and Pyramidal Orchid (*Anacamptis pyramidalis*). Much of the interior of the spit is taken up by a golf course. The inner stony shore has frequent Sea holly (*Eryngium maritimum*). Well-developed saltmarshes occur at the tip of the spit. Atlantic salt meadow is the principle type and is characterised by species such as Sea Purslane (*Halimoine portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Arrowgrass (*Triglochin maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*). Elsewhere in the outer

estuary, a small area of Mediterranean salt meadow occurs which is characterised by the presence of Sea Rush (*Juncus maritimus*). Below the salt marshes there are good examples of pioneering Glasswort swards and other annual species, typified by *Salicornia dolichostachya* and Annual Sea-blite (*Suaeda maritima*).

The inner estuary does not drain at low tide apart from the extreme inner part. Here, patches of saltmarsh and salt meadows occur, with Sea Aster, Sea Plantain (*Plantago maritima*) and Sea Clubrush (*Scirpus maritimus*). Tassel Weed (*Ruppia maritima*) occurs in one of the channels.

The site includes a fine area of rocky shore south-east of Malahide and extending towards Portmarnock. This represents the only continuous section through the fossiliferous Lower Carboniferous rocks in the Dublin Basin, and is the type locality for several species of fossil coral.

The estuary is an important wintering bird site and holds an internationally important population of Brent Geese and nationally important populations of a further 15 species. Average maximum counts during the 1995/96-1997/98 period were Brent Geese 1217; Great Crested Grebe 52; Mute Swan 106; Shelduck 471; Pochard 200; Goldeneye 333; Red-breasted Merganser 116; Oystercatcher 1228; Golden Plover 2123; Grey Plover 190; Redshank 454; Wigeon 50; Teal 78; Ringed Plover 106; Knot 858; Dunlin 1474; Greenshank 38; Pintail 53; Black-tailed Godwit 345; Bar-tailed Godwit 99. The high numbers of diving birds reflects the lagoon-type nature of the inner estuary.

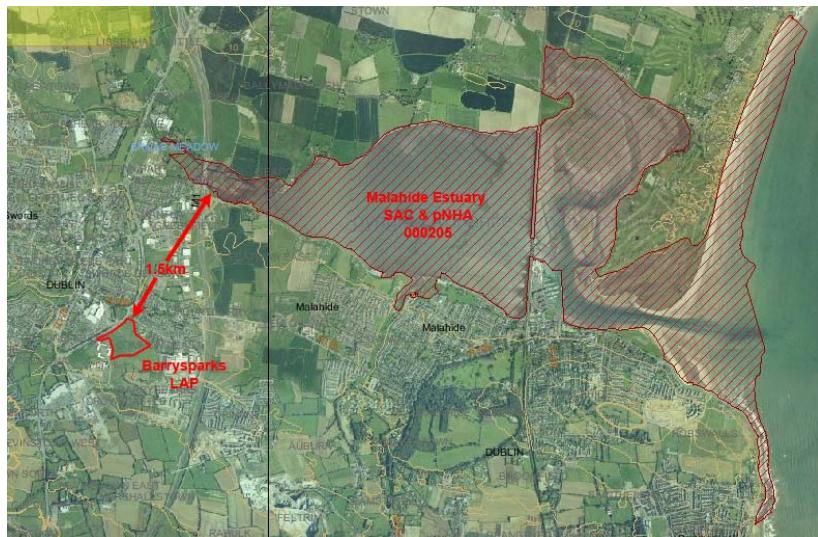
The estuary also attracts migrant species such as Ruff, Curlew Sandpiper, Spotted Redshank and Little Stint. Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of the island and the habitat remains suitable for these birds.

The inner part of the estuary is heavily used for water sports. A section of the outer estuary has recently been infilled for a marina and housing development.

This site is a fine example of an estuarine system with all the main habitats represented. The site is important ornithologically, with a population of Brent Geese of international significance.

Special Protection Areas

The Broadmeadow/Swords Estuary Special Protection Areas covers the same physical areas the Malahide Estuary SAC and PNHA, with the exception that it ends at the mouth of the estuary.



Malahide Estuary SAC and Malahide Estuary pNHA (same geographical area)

Broadmeadow/Swords Estuary Special Protection Areas

This site is situated in north Co. Dublin, between the towns of Malahide and Swords. It is the estuary of the River Broadmeadow, a substantial river which drains a mainly agricultural though increasingly urbanised, catchment. A railway viaduct, built in the 1800s, crosses the site and has led to the inner estuary becoming lagoonal in character and only partly tidal. Much of the outer part of the estuary is well-sheltered from the sea by a large sand spit, known as "The Island". This spit is now mostly converted to golf-course. The outer part empties almost completely at low tide and there are extensive intertidal flats exposed. The site extends eastwards to the rocky shore at Robswalls.

Substantial stands of eelgrass (both *Zostera noltii* and *Z. angustifolia*) occur in the sheltered part of the outer estuary, along with Tasselweed (*Ruppia maritima*). Green algae, mostly *Enteromorpha* spp. and *Ulva lactuca*, are frequent on the sheltered flats. Common Cord-grass (*Spartina anglica*) is well established in the outer estuary and also in the innermost part of the site. The intertidal flats support a typical macroinvertebrate fauna, with polychaete worms (*Arenicola marina* and *Hediste diversicolor*), bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*, the small gastropod *Hydrobia ulvae* and the crustacean *Corophium volutator*.

Salt marshes, which provide important roosts during high tide, occur in parts of the outer estuary and in the extreme inner part of the inner estuary. These are characterised by such species as Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Arrowgrass (*Triglochin maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*).

This site is of high importance for wintering waterfowl and supports a particularly good diversity of species. It has an internationally important population of Brent Goose (956) or 4.8% of the national total (figures given here and below are average maximum counts for the five winters 1995/96-1999/00) and nationally important populations of a further 12 species as follows: Shelduck (439), Pintail (58), Goldeneye (215), Red-breasted Merganser (105), Oystercatcher (1,493), Golden Plover (1,843), Grey Plover (201), Knot (915), Dunlin (1,594), Black-tailed Godwit (409), Redshank (581) and Greenshank (38). A range of other species occur in numbers of regional importance, including Great Crested Grebe, Mute Swan, Pochard, Ringed Plover, Lapwing, Bar-tailed Godwit,

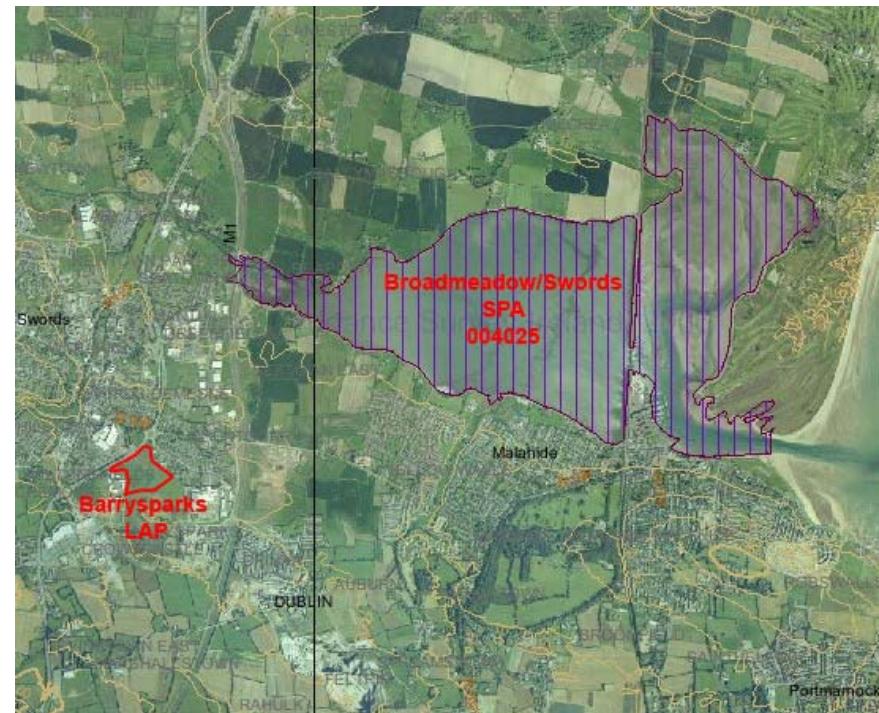
Curlew and Turnstone. The high numbers of diving ducks reflects the lagoon-type nature of the inner estuary, and this is one of the few sites in eastern Ireland where substantial numbers of Goldeneye can be found.

The estuary also attracts on a regular basis migrant wader species such as Ruff, Curlew Sandpiper, Spotted Redshank, Green Sandpiper and Little Stint. These occur mainly in autumn, though occasionally in spring and winter.

Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of Malahide Island. Grey Herons breed nearby and feed regularly within the site.

The inner part of the estuary is heavily used for water sports, which causes disturbance to the bird populations. A section of the outer estuary has recently been in-filled for a marina and housing development.

Broadmeadow/Swords Estuary SPA is a fine example of an estuarine system, providing both feeding and roosting areas for a range of wintering waterfowl. The lagoonal nature of the inner estuary is of particular value as it increases the diversity of birds which occur. The site is of high conservation importance, with an internationally important population of Brent Goose and nationally important populations of a further 12 species. Three of the species which occur regularly (Golden Plover, Bar-tailed Godwit and Ruff) are listed on Annex I of the E.U. Birds Directive.



Malahide Estuary SAC and Malahide Estuary pNHA (same geographical area)

Gaybrook Stream

There is an open stream, the Gaybrook Stream at the boundary of the Barrysparks LAP lands with the ST1 zoned lands. The distance the watercourse travels from the Barrysparks lands to the Estuary is approximately 3.5km.



Route of stream from Barrysparks lands to Broadmeadow Estuary

Other Natura sites

There are four other Natura sites (see table above) within 10km of the LAP area. They are all coastal sites. Each is designated both as a cSAC and SPA. They are all important for birds in particular wintering waterfowl. Like Broadmeadow/Malahide Estuary, three of them are characterised by extensive intertidal mudflats. They include; Rogerstown Estuary, Baldoyle Estuary, North Dublin Bay. Brent Goose is a qualifying interest of each of these sites. The geese regularly move between these sites.

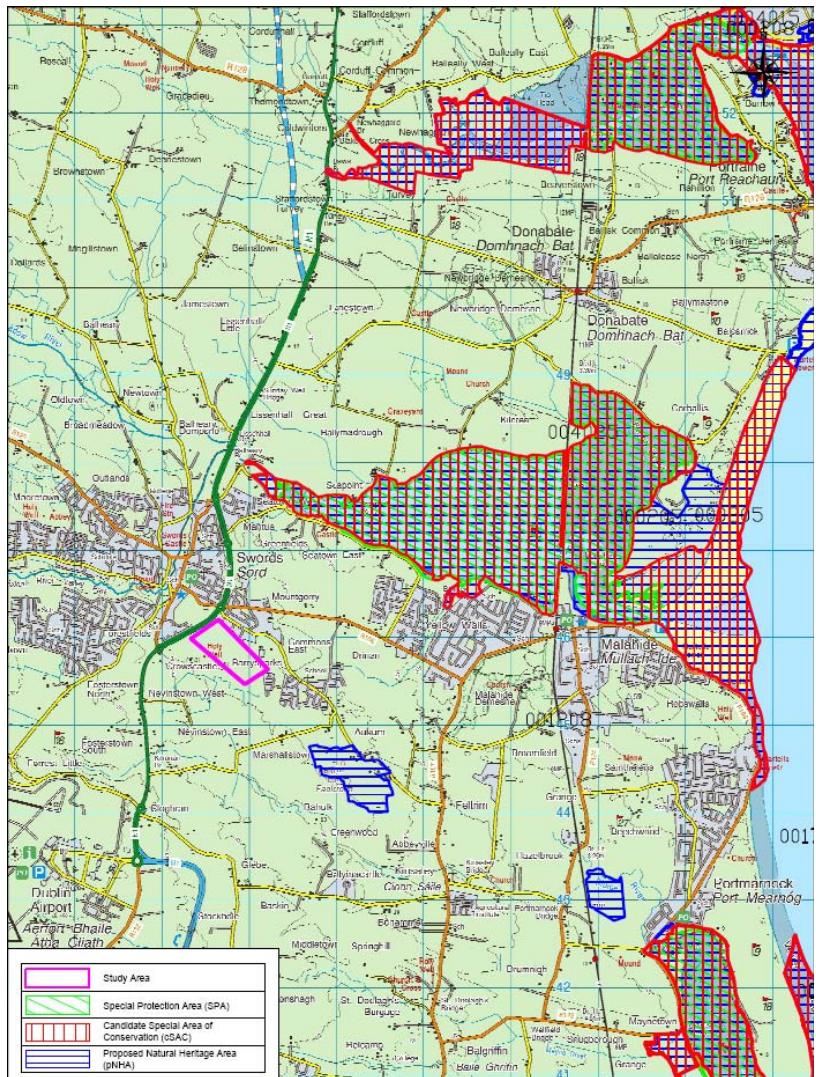
6.4.1 Key environmental issue of relevance to the LAP

The protection of the integrity of Natura sites is the primary issue of relevance. It is important that the Gaybrook Stream is protected alongside the development of the LAP lands. A SUDS strategy is to be implemented as part of the LAP.

A Habitats Directive Assessment (Appropriate Assessment) Screening Report has been completed by Natura Environmental Consultants in August 2010, in conjunction with the preparation of

this Environmental Report for the SEA, to determine whether or not development would have significant adverse direct, indirect or secondary impacts on the integrity of the Natura 2000 sites.

The conclusion of the report is that the Barrysparks Local Area Plan is not likely to have significant adverse impacts on the integrity of the Natura 2000 site, which includes Broadmeadow/Swords SPA and Malahide SAC.



6.5 Population and Human Health

Population Trends

The 2006 Census indicated that Swords Town has a population of 33,998, an increase of 6,823 (25.1%) since 2002. These figures compare with the Fingal county population figures, which increased from 196,413 in 2002 to 239,992 in 2006, an increase of 43,579 or 22.2%. Nationally, the population grew by 322,654 (8.24%) over the 4-year intercensal period, to exceed 4 million people for the first time since 1871.

For the purposes of the Census Kinsale-Drinan and Donabate DED's are not counted as being part of Swords Town. However, for the purposes of this study Kinsale-Drinan is included, as it is within the CDP development boundary for Swords.

The Barrysparks Local Area Plan lands are located in the Swords-Seatown DED. The entire DED of Swords village is located in the plan area while parts of Swords-Lissenhall, Swords-Glasmore, Swords-Forrest, Kinsale and Donabate DEDs are also within the geographical area of Swords town.

Population of Swords and Kinsale 2002-2006:

Swords Town	2002	2006
Swords-Forrest (part)	8,894	12,376 (+39.1%)
Swords-Lissenhall (part)	5,581	8,462 (+51.6%)
Swords-Glasmore (part)	7,569	7,590 (+0.3%)
Swords-Seatown (part)	2,559	3,056 (+19.4%)
Swords Village	2,572	2,514 (-2.3%)

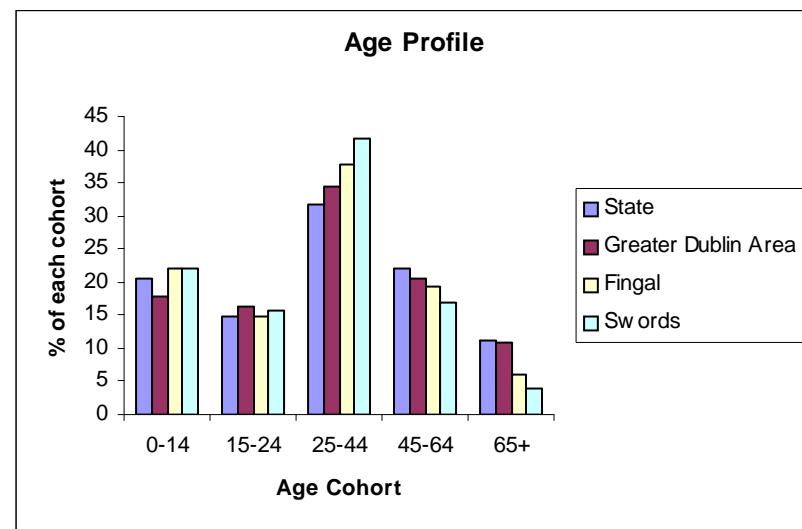
Kinsaley (Part)	2,110	3,651 (+73%)
Total	29,285	37,649 (+28.56%)

(Source: Census of Population 2002 & 2006).

The census figures show that the more established areas of the town Swords Village and Swords-Glasmore have actually lost population or grown by a small amount. The newer residential areas on the edges of the town have experienced significant growth with the completion of new development in the period to 2006. The Swords Town part of the Seatown DED experienced an increase in population from 2,559 persons to 3,056 persons (19.4%), while Swords-Lissenhall expanded by 51.6% between 2002 and 2006. The population of these DED's is likely to have grown further in the intervening 3 years.

Demographic Profile

The Population Structure and Demographic Profile shows that Swords has a high proportion of persons in the 25-44 age cohort. This indicates that a relatively large work force exists in the town, reflective of its role as the county town. In contrast, the town has a lower than average proportion of persons in the 45-64 age cohort while it has a very small percentage of persons over 65. These figures indicate a relatively young population in Swords. Swords share of the 25-44 age cohort in Fingal has increased from 33.8% in 2002 to 37.7% in 2006. It is likely that the next census will see a rise in the 0-4 years category, thereby providing for a natural population increase over time.



Age profile of the State, Region, County and Town (Census 2006)

Due to its status as the county town and the plans to develop Swords into a City of over 100,000 by 2035, in accordance with the RPGs for GDA, it is likely the town's share of overall population growth will increase over time in line with changing spatial settlement structures in the County.

The Barrysparks LAP land, adjoining the proposed Swords Metro North Stop, is a strategic landbank suitable for sustainable high density mixed use development, supported by a high-quality public transport network. The development of 450-550 units at Barrysparks will contribute to the population growth and to the residential stock of the town centre. There will be an estimated population of 935, with a large employment population resident during working hours.

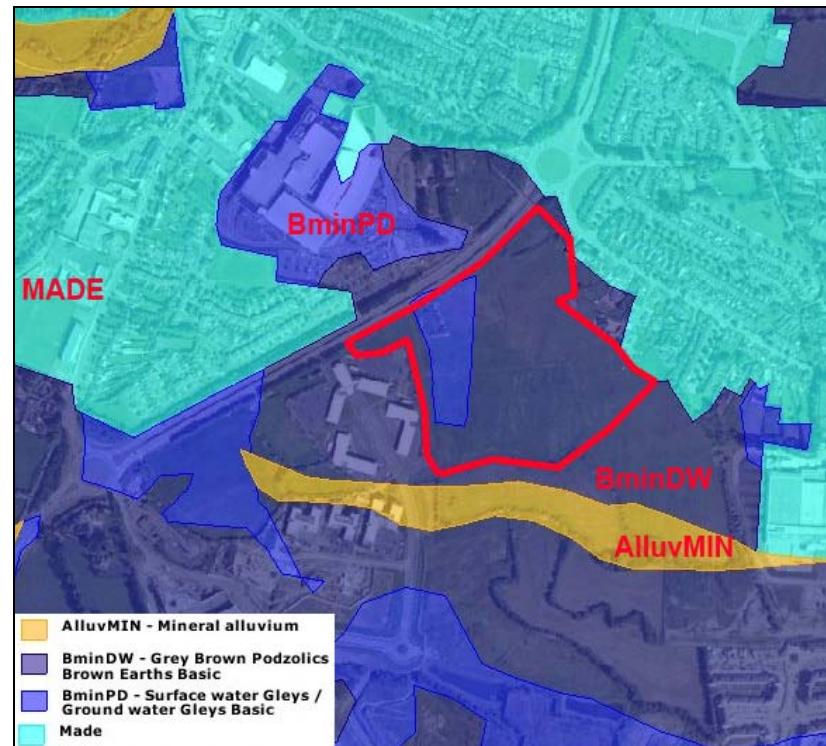
6.5.1 Key environmental issue of relevance to the LAP

The LAP process will be required to include an assessment of the needs of the future population, as well as additional augmentation of services and infrastructure for both the existing and future population, and ensure co-ordinated delivery of services in tandem with development.

6.6 Soil

The lands of the Local Area Plan contain several soil and subsoil types (www.epa.ie). The dominant soil type is *Grey Brown Podzolics, Brown Earths* which covers most of the LAP area and are deep well drained mineral soils derived from mainly calcareous parent materials. A small area in the north-western corner contains *Surface water Gleys* and *Ground water Gleys*. A narrow band of *Mineral alluvium* runs from northwest to southeast along the southern edge of the lands. The dominant subsoil in the plan area is Limestone till (Carboniferous).

A site investigation was carried out by Ground Investigations Ireland for the Barrysparks lands between May and July 2008. A preliminary ground investigation boreholes report was prepared in September 2008. The investigations included subsurface exploration consisting of cable percussion boreholes drilled to depths of 3.00 to 12.30mBGL, rotary drilling at 6 no. borehole locations, soakway tests to determine the soil infiltration rate and laboratory testing.



Soils Map

Source:www.epa.ie

Subsurface ground conditions varied over the project area, the upper overburden consisting mostly of firm to stiff and stiff brown slightly sandy gravelly CLAY/SILT with occasional thin Gravel strata, while lower down was found very stiff grey sandy gravelly CLAY with cobbles and boulders. Dense grey claybound GRAVEL was also encountered in several areas.

The borehole tests revealed estimated bearing capacities in the upper 2.5m to 3.00m of overburden in the range 100 to 150 KN/mP², while being as low as 80KN/mP² at 1.5mBGL at one test location. Bearing capacities in the lower overburden vary from 200 KN/mP^{2P} up to 300 KN/mP².

The results of 3 no. soakpits revealed an extremely slow soil infiltration rate, and the area being unsuitable for soakway construction.

Geotechnical tests indicated that some material will be suitable for re-use as structural fill while some will not. Contamination testing at 2 boreholes show the material to be generally uncontaminated and classified as 'inert' according to BS EN 12457 meeting Landfill Waste Acceptance Criteria.

Policies in the LAP will ensure that the impacts on soil will be minimal within this urbanised area.

6.6.1 Key environmental issue of relevance to the LAP

The Barrysparks lands are greenfield lands which have been used for agriculture and the storage of topsoil. The development of the lands will remove them from further agricultural use. The soil is generally uncontaminated and most will be capable of being reused on site, subject to landscaping proposals. The development of greenfield lands may result in an increase in surface water runoff into local streams which may lead to surface and or groundwater pollution. All development proposals will be required to take into consideration the threat of pollution from surface water runoff and mitigate appropriately.

6.7 Water

The following water bodies are located in the Swords area: -

- Broadmeadow/Malahide Estuary
- Gaybrook Stream, which feeds into the Broadmeadow/Malahide Estuary.

The Water Framework Directive (WFD) 2000/60/EC establishes a framework for community action in the field of water policy and was transposed into Irish Law in 2003. The Directive aims to maintain and improve the aquatic environment in European Communities. The overall objective of the Directive is to prevent deterioration in the status of any waters and achieve at least 'good status' by 2015.

Swords is located in the Eastern River Basin District (ERBD), one of eight river basin districts established in Ireland arising out of the legal requirements of the Water Framework Directive. Barrysparks is located in the Broadmeadow catchment, close to the border of the Broadmeadow and Donabate River Catchment areas.

Surface Water Drainage

The majority of the LAP lands drain to the Gaybrook Stream, which flows from west to east south of the plan lands, combined with several drainage ditches running through the plan lands. The Gaybrook Stream eventually discharges to the Broadmeadow Estuary, which is designated as a Natura 2000 site under the EU Habitats Directive.

Fingal County Council is currently carrying out the Fingal East Meath Flood Risk Assessment and Management Study (FEM FRAMS), in conjunction with Meath County Council and Office of Public Works. This is a catchment-based flood risk assessment and management

study of rivers and streams within the county area. As part of FEM FRAMS, flood extent maps will be produced for the Gaybrook stream (drafts currently available) for the 1% (1 in 100) and 0.1%(1 in 1000) probability of flooding. There is no flood extent currently identified on the draft maps.

There is an existing 600mm diameter surface water drain running along the western verge of the R132 and a 375mm diameter surface water drain running along the central median of the R132, the western boundary of the subject site. There is also a 225mm diameter surface water drain running along the Drynam Road, which joins the above mentioned 375mm diameter surface water drain running along the central median of the R132, at the Malahide Road Roundabout.

A SuDS strategy has been undertaken for the LAP lands.

6.7.1 Key environmental issue of relevance to the LAP

The proposed development will result in increased impact on surface water runoff, which could potentially impact on the Gaybrook Stream and consequently the Broadmeadow/Malahide Estuary.

All development proposals will be required to take into consideration the threat of pollution from surface water runoff and mitigate appropriately. The LAP lands will be required to incorporate SuDS principles and a SuDS strategy has been undertaken as part of the LAP (see appendix 2).

The LAP will be required to achieve and maintain required standards for ecological, biological and chemical water quality of existing rivers and streams, particularly those entering the estuaries. It will be

important to ensure no pollution and contamination of water sources as a result of ground water run off.

6.8 Wastewater

The wastewater treatment works in Swords treats sewage effluent for the agglomeration of Swords. The main contribution to the treatment works is from domestic sources with additional contributions from commercial developments in the Swords area and a number of IPPC licensed industries. The treatment works discharges treated effluent to the Broadmeadow River at the top of the estuary just slightly upstream of the M1 Motorway Bridge.

At present, Swords WWTP is operating at its design capacity of 60,000 p.e. Fingal County Council intends to upgrade the plant to 90,000 p.e. in the medium term and to 140,000 in the long term. Works on the medium term upgrade to 90,000 p.e. are expected to be completed by end of 2013.

At present the WWTP does not have capacity to accommodate development of the LAP lands. Development will only be allowed where capacity is available.

There are substantial existing foul sewers in the public road along the R132 and in the adjacent Drynam Road. These sewers range in diameter between 375mm ø to 750mm ø. There is an existing foul sewer extended onto the site connecting into the Fingal Sewer network at the North East corner of the site, the location of which is to be confirmed. There are no "combined" sewers either within the proposed lands or outside the proposed development lands into which future development will connect.

6.8.1 Key environmental issue of relevance to the LAP

At present there is insufficient capacity in the Swords Wastewater Treatment Plant to accommodate the development of the lands. Swords WWTP is operating at its design capacity of 60,000 p.e. Works on the medium term upgrade to 90,000 p.e. are expected to be completed by end of 2013. Development can only take place where there is capacity in the WWTP.

6.9 Water Supply

The LAP lands are within the district served by the reservoir in Ballycoolin, with water derived from the Leixlip water treatment plant. Plans for a substantial upgrade to the Leixlip plant to increase output are well advanced and are expected to be complete by end of 2013.

There are no known existing watermains on the subject lands.

There are 2No.300mm ø Ductile Iron watermains in the public road to the North East of the site under Drynam Road. There is also another 300mm ø watermain to the south East of the lands at the existing roundabout in the Airside Business Park.

6.9.1 Key environmental issue of relevance to the LAP

The LAP lands are served by the reservoir in Ballycoolin, with water derived from the Leixlip water treatment plant. Plans for a substantial upgrade to the Leixlip plant are expected to be complete by end of 2013.

In order to limit unnecessary water usage, leaks and excessive consumption of the water supply a Water management and Conservation Plan detailing how best practice in water conservation shall be applied in respect of the proposed development to include

both mains water and internal plumbing. This plan should consider incorporating conservation measures such as rainwater harvesting and grey water recycling.

All water main layouts must be in accordance with Fingal County Council's Guidelines for Drinking Water Supply.

6.10 Air/Climatic Factors

The Air Framework Directive deals with each Member State in terms of Zones and Agglomerations. For Ireland, four zones, A, B, C and D are defined in the Air Quality Regulations. Barrysparks is located in Zone A: Dublin Conurbation.

Recent air quality tests carried out by AWN Consulting for the Pavilions Phase 3 development¹ adjacent to the site, directly west across the R132 provided the following baseline results.

The observed concentrations of NOB_{2B}, which was monitored over a 2-week period at 4 locations (1 immediately opposite Barrysparks western boundary), indicated that NO₂ levels were below the national and EU annual limit value of 40mg/mP³ NOB₂ in the region, with concentrations ranging from 63-83% of the limit value.

The average concentration of Benzene was also significantly below the EU annual limit value of 5mg/mP³ with concentrations reaching almost 20% of the limit value.

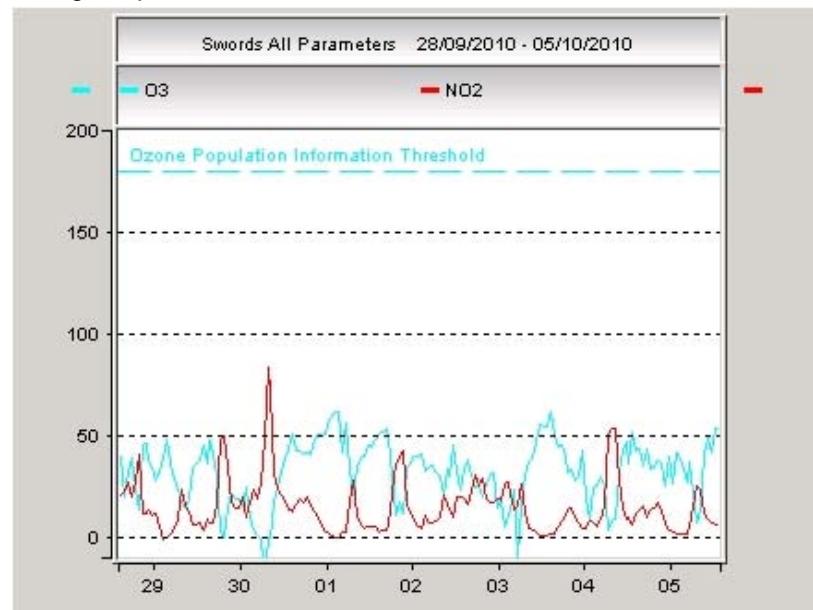
The 24-hour concentrations of PM₁₀ are below the National and EU 24-hour limit value of mg/mP³.

⁶ Information derived from Section 5.6.3.3 - The Pavilions, Phase 3, Swords, EIS (Stephen Little and Associates).

The baseline survey work as well as long term EPA data, indicate that the air quality in the Barrysparks area is presently below the ambient air quality standards for NOB₂, PMB₁₀, PMB_{2.5} and benzene.

The EPA conducts ongoing ambient air quality monitoring at the Fingal County Council depot, Watery Lane, Swords.

The air quality parameters, which are continually monitored in Swords are Nitrogen Dioxide NO₂ and Ozone O₃. The most recent results available indicate that the thresholds have not been breached during the period.



EPA Air Quality Monitoring Results for Swords (August – September 2010)

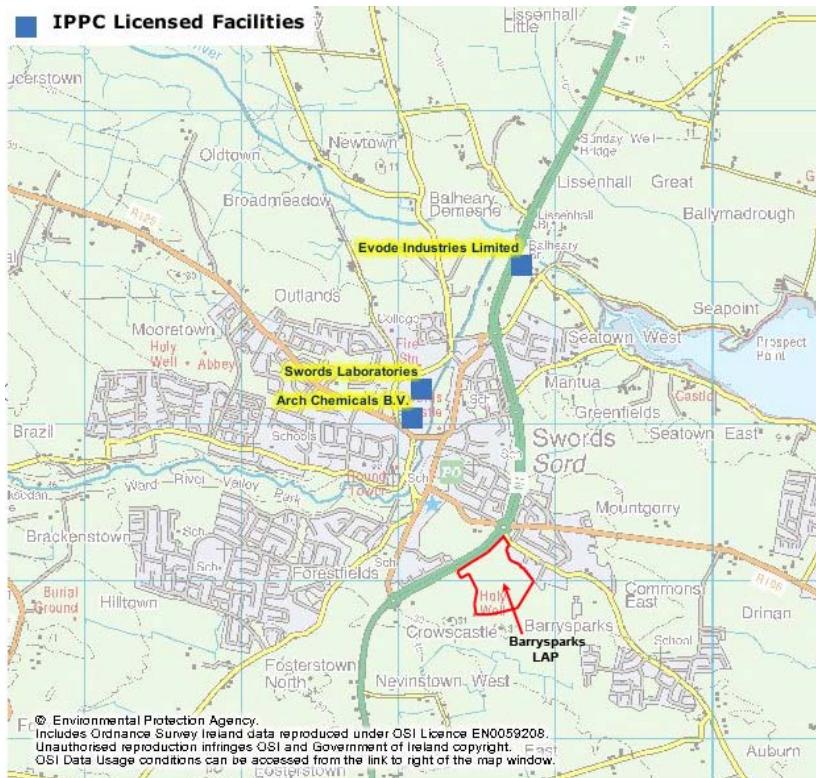
Point Sources for Licensed Emissions in Swords

Integrated Pollution Prevention and Control (IPPC) Licenses as issued by the Environmental Protection Agency are indicated on the Maps below.

There are three facilities, which hold IPPC Licenses in Swords: -

- Arch Chemicals B.V.
- Swords Laboratories.
- Evode Industries Ltd.

These facilities will not be impacted upon by the proposed development of the LAP lands.



IPPC License holders in Swords

6.10.1 Key environmental issue of relevance to the LAP

Air quality is good in the area and the limit thresholds have not been breached. It is envisaged that the implementation of the plan will not result in any significant long-term impacts on air quality in Swords.

There is need to minimise emissions of greenhouse gases associated with transport and buildings, and to reduce the demand and need for energy through the development of energy efficient

buildings and the use of public (Metro North) and green (cycling and walking) transport.

A sustainability framework will form a key part of the LAP, with a focus on integrating land use and transportation and promoting modal shift from car to the proposed high quality public transport system of Metro North, which will aid in the reduction of emissions. The proximity of the lands within 400m of Swords Metro Stop will reduce dependency on the private car in this area. The LAP will ensure that there are also objectives in place in relation to air and climatic factors.

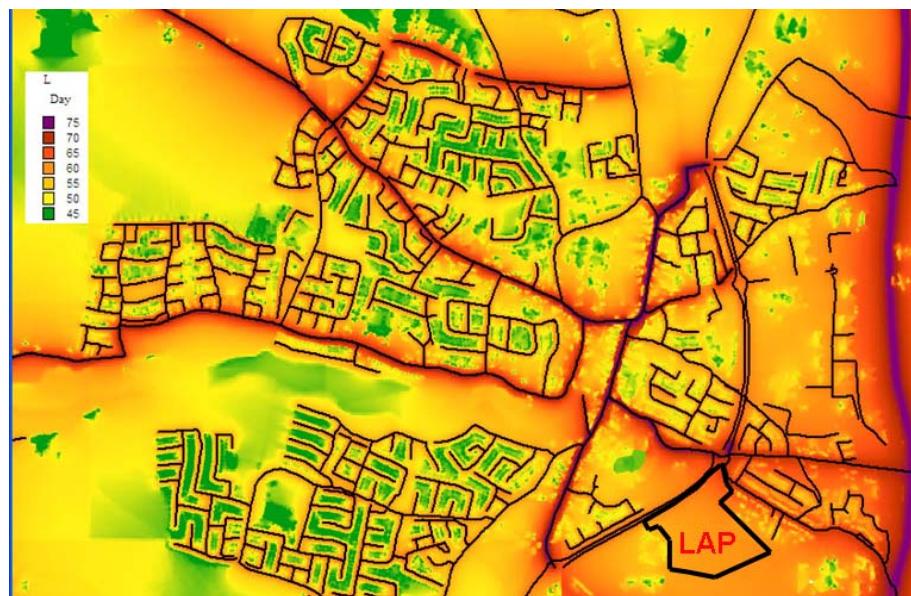
6.11 Noise

Under the Environmental Noise Regulations 2006 SI number 140 of 2006, the four local authorities, within Dublin (Dublin City Council, Fingal, Dun Laoghaire Rathdown and South Dublin County Councils), are required to produce 'Maps' for noise emanating from major Industry and transport. The following maps indicate the daytime and night-time noise levels for the Barrysparks Local Area Plan lands.

Maps below show the day-time and night-time noise level for the entire Local Area Plan. The higher noise levels are recorded along the adjoining roads including the R132 (former N1). During the day the majority of the site is in the 60dB range with some of the lands closest to the R132 reaching 65dB. The development of the nearby M1 motorway has resulted in a reduction in the traffic volumes in the area and a consequent reduction in the upper noise ranges (70dB+).

At night the noise levels across the entire site is in the 50-55dB range. It is evident that the further from the M1 that lands are situated the less noise infiltration that will occur. This is supported by

the fact that night time noise contours do not extend far from local roads to the west of Barrysparks and are further reduced by the presence of buildings. In order to reduce the impact of day and night-time noise on the lands it will be necessary to develop a landscape barrier on the eastern side of the Local Area Plan lands.



Daytime Noise level in Swords



Night-time Noise level in Swords

6.11.1 Key environmental issue of relevance to the LAP

During construction there will be a need to reduce the noise impact felt by existing adjoining neighbours.

6.12 Material Assets/Cultural Heritage (including architectural and archaeological heritage)

The material assets in the area include the road network and piped infrastructure. These issues are addressed in other sections of the report.

Swords. It is believed that St. Columcille founded the town in the sixth century.

A Historic Landscape Characterisation (HLC) study was undertaken for Swords town and surrounding hinterland in 2007, as part of the work of the Fingal Heritage Plan 2005-2010. The study area included the townland of Barrysparks and identified the LAP lands as an area where the predominant land use is 'Enclosure' (enclosed agricultural lands) and the lands are identified as part of a medieval landscape, given the discovery of wells in the area. It is noted that this area has been influenced by modern developments of large scale housing, particularly that of Holywell residential development.

The archaeological potential of the LAP lands and adjoining lands to the southeast was initially assessed in an Archaeological Heritage Appraisal (desk based study and walk over study) by Margaret Gowen and Co Ltd., with 2 areas of potential noted. A geophysical survey was subsequently undertaken by Archer Heritage Planning Ltd., with test trenching along the route of the proposed strategic road network and a further assessment of the 2 areas of potential identified in the study by Margaret Gowen & Co. Ltd (see Appendix 1).

6.12.1 Key environmental issue of relevance to the LAP

1 archaeological site, which is believed to be a circular ring ditch (or barrow), was recorded along the western route of the road. In consultation with the Department of the Environment, Heritage and Local Government, it is intended to excavate and preserve by record the remains of this circular ring ditch. The route of the road as otherwise proposed is considered acceptable from an archaeological perspective, with no significant archaeological discoveries.

There are two holy wells, which are recorded monuments, just outside the Barrysparks LAP boundary. One is on the ST1 zoned

lands to the southwest, St. Werburgh's holy well (RMP-DU011-045) and one off Drynam Road (RMP-DU012-22). St. Werburgh's holy well is located outside the LAP area, however part of the archaeological constraints area of this monument is within the study area and a suitable buffer will be required to be maintained during works.

Additional archaeological monitoring of topsoil stripping at site clearance stage of development will be required by the National Monuments Section of the Department of Environment Heritage and Local Government. This will have to be carried out by a suitably qualified archaeologist under licence to the Department and the National Museum of Ireland.

6.13 Landscape

Historic

It is believed that Swords was founded by St. Colmcille in 512AD. The most ubiquitous landscape indicators of Early Christian Settlement are the ecclesiastical enclosures. In Swords case the street pattern has been influenced by the circular alignment of the settlement. The medieval town developed in a linear pattern along the Main Street in a north – south direction. Swords, has one of the best examples of this settlement pattern in the Dublin region. The round tower, 26m in height, is also an indicator of early Christian settlement.

At the northern end of the street stands Swords Castle, 200m northeast of the ecclesiastical site, which was built in the early 13th century. A short distance north of the Castle is an elevation known as Spittal Hill, where a hospital once stood.

Modern

Despite the fact that Swords is c.1500 years old its population stood at only 500 persons as recently as the 1960's. Since then rapid growth in the form of large housing developments has seen the town expand, primarily to the west of the Main Street/Dublin Road to the north and south of the Ward River Valley Park. The expansion was heavily influenced by its proximity to Dublin Airport. Recent development have seen the town expand to the south-west in the direction of Barrysparks through the development of industrial and retail development. The town centre has been redeveloped with Fingal County Hall, 4 storey in height, located on the northeastern end of Main Street and the Pavilions Shopping Centre located at the southern end.

As an expansion to the existing Swords Town Centre, the Barrysparks Local Area Plan lands will be connected to the town centre through the development of new road and pedestrian links. The Barrysparks lands and Pavilions Phase 3 (permitted) will both address the R132 road and Swords Metro stop, by the development of landmark buildings of up to 50m in height, creating a new focal point on the R132 and creating a strong gateway to Swords from its Southern approach.

Fingal Development Plan

The Landscape Character Assessment for Fingal divides the county into 7 Landscape Character Areas. Barrysparks is located in the Airport and Swords Character Area.

The proximity of the airport and the development of the M1 and M50 motorways have resulted in the expansion of light industrial and warehouse activities in the area. These developments have

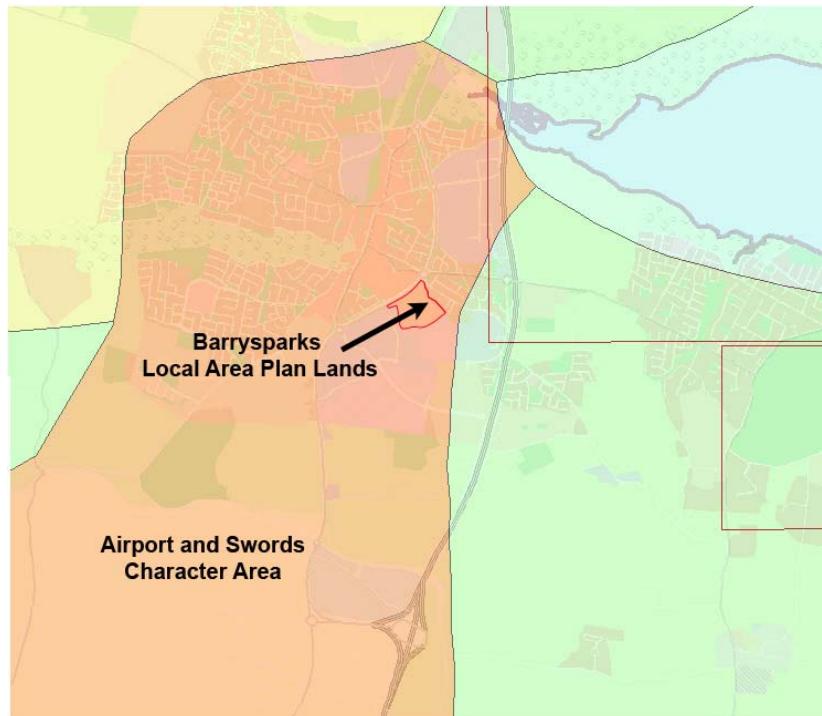
encroached into agricultural land especially in the area between the airport and Swords.

The development of tall buildings on the Barrysparks lands adjoining the Metro line and R132 will create a synergy with the expanded Pavilions and create a link to the expanded town centre. The Barrysparks lands will become a focal point on the southern approach to Swords and will become part of an integrated development area along with the Swords Metro North Station, Metro Plaza and Phase 3 at Pavilions, which will be built out to the edge of the R132.

Strategic Vision for Swords

The strategic vision for Swords seeks to create a town with well-defined town boundaries and a strong landscape setting; in particular respecting the established green belt areas to the south and east between Swords-Dublin Airport and Swords-Malahide. It also seeks a high quality landscape setting with a network of public open spaces and parks encompassing and traversing Swords.

The strategy states that the town will have well defined and defensible boundaries and be separated from the adjoining towns of Malahide, Kinsealy, Donabate, and the Airport.



Airport and Swords Landscape Character Area
Source <http://gis.fingalcoco.ie>

6.13.1 Key environmental issue of relevance to the LAP

The area around Barrysparks has been developed in recently years with a multitude of commercial and retail land uses. The Barrysparks lands will become a focal point on the southern approach to Swords and will become part of an integrated development area along with the Swords Metro North Stop, Metro Plaza and Pavilions development. The LAP will be required to ensure any issues in

relation to the historic setting of Swords and views are protected and valued as part of the development.

6.14 Transport

Swords Transportation Network Study (ROD, July 2009), and an associated traffic model, was prepared for Swords as part of the document 'Your Swords, An Emerging City, Strategic Vision 2035' (FCC, 2008). A fundamental objective of the transportation study is to ensure the success of Swords as a Metropolitan Consolidation Town through the integration of land use and transportation planning. In terms of outside connectivity, the delivery of the Metro North light rail system is important in this regard. A network of transportation infrastructure and service improvements are required to complement the Metro North proposal, support its patronage and reduce car dependency.

The Swords Transportation Network Study examines the existing transportation network in the context of Swords' land use strategy, identifies short term improvements to minimise existing traffic congestion and proposes new road links and public transport services to cater for the expanding population.

The main elements of the existing road network serving the plan are as follows: -

R132 - The section of the R132 adjoining the Barrysparks lands consists of two lanes in each direction with additional northbound and southbound bus lanes and a wide central median. The R132 is generally 30m wide and has a speed limit of 80km/hr. The existing Pavilions Shopping Centre, opposite the lands, is accessed from this road via a left in left out system.

A pedestrian overbridge located immediately south of the Malahide roundabout junction with Malahide Road caters for pedestrian movements across the R132. An additional footbridge is located approximately 200m north of the Malahide roundabout.

Malahide Roundabout - Malahide roundabout is a crucial junction due to its location in close proximity of the Local Area Plan site. Malahide roundabout is a partially signalised five-arm roundabout and is located on the east of Swords Town Centre and north of Barrysparks. Malahide roundabout links to Malahide Road, R132 and Drynam Road. There is local access to the LAP lands from Malahide Road.

M1 Motorway – The M1 motorway travels in a north-south direction to the east of the plan lands, bypassing Swords, providing strategic connections to M50, Dublin City, and north to Belfast.

From the south, there is a link from the M1 at the Drynam Interchange, which travels southeast of the plan lands and connects to the R132. However, this junction with the M1 does not allow movements from the R132 to the M1 northbound or from the M1 southbound to the R132. Movements from the north to the site are possible from Lissenhall Interchange.



Road Network relevant to Barrysparks Local Area Plan

Proposed Linkages

Objective T01 of the Fingal County Development Plan is: To implement the road construction and improvement measures set out in Table 6.1 (of the County Development Plan) as resources allow. The Airside to Feltrim Interchange Link is one of the measures set out in Table 6.1. The road network being developed as part of the

Barryspark LAP will connect to this interchange link to the south east of the lands.

Metro North

The anticipated arrival of the Metro North in Swords will facilitate the economic growth and expansion of Swords to 100,000 persons in line with the projections of the Regional Planning Guidelines and the Vision for Swords. Key to the future success of Swords as a multi-functional high quality Major Town Centre is the expansion of the traditional Town Centre in a compact manner to the south and south west, within the Pavilions and Barrysparks development areas respectively, integrated fully with Metro North.

Metro North will connect the Fingal County town of Swords and the townland of Belinstown to Dublin's City centre. The selected route for the proposed scheme serves a number of key destinations including Dublin Airport, hospitals and universities.

Swords Multi-Modal Interchange

Two key infrastructural projects will be developed to support the proposed Swords Metro Stop, Metro Plaza and Metro Box. These projects are necessary to deliver a high quality multi-modal interchange to serve town centre lands at this location:

- Metro Plaza

Metro Plaza comprises a bridge structure connecting over the R132 linking into an internal street network within Pavilions and Barrysparks developments, east and west of R132. The Plaza has two crossing points over the R132 catering for a mix of pedestrians, cyclists, bus and taxi connections. Both connections are joined by a central plaza area directly over the R132 for individuals connecting

down to the Metro platform level or wishing to cross from one area of the Plaza to another in order to access buses, taxis, town centre, etc. The northern most bridge element, referred to here as The Rise, is the key public transport route connecting to the Metro Plaza. The second crossing point will be for pedestrian/cyclists only with connectivity to adjoining lands facilitating seamless movement to ground level within the development areas on either side of R132.

Metro Plaza will also be a key 'identifier'/gateway for the town centre offering an appropriate sense of place/arrival for a modern thriving city via a high quality architectural structure. Plans for the Metro Plaza, in accordance with Part XI of the Planning and Development Act 2000, were adopted by Fingal County Council in March 2009.

- Metro Box

Metro Box is a movement network provided for below the R132 and Swords Metro Stop, connecting vehicular traffic east and west of R132, via the proposed below ground car park levels of developments at Pavilions and Barrysparks. This infrastructural project will eliminate conflict between the Metro and cars entering and leaving the town centre in the future, leading to a more efficient management of traffic in the area. Plans for the Metro Box, in accordance with Part XI of the Planning and Development Act 2000, were adopted by Fingal County Council in April 2008.



Swords Metro Plaza from Swords Stop Platform, looking north

Existing Bus Service

Public transport services in Swords are currently bus based. In recent years significant progress has have been made in constructing QBC's. The main QBC's accessing the area is along the R132. Bus routes connect Swords to Balbriggan, Dublin City Centre, Swords, Portrane, Rolestown, Belfield and Portmarnock.

Cycle and Pedestrian Facilities

Pedestrian and cycle facilities are quite satisfactory in isolated sections within Swords. Cycle lanes, bicycle racks, and pedestrian crossings are abundant within the town centre area, however, these are curtailed and eventually non-existent. Considered as a continuous network, serving desire lines, the overall pedestrian and cycle provision is poor.

There are pedestrian crossings at various intervals along the Main Street, and along some of the adjoining streets.

A pedestrian overbridge located immediately south of the Malahide roundabout junction with Malahide Road caters for pedestrian movements across the R132. An additional footbridge is located approximately 200m to the north of Malahide roundabout.

The cycle network in Swords mainly exists in the Town Centre with limited cycle lanes in the remainder of the area. The Fingal Development Plan contains proposals to increase the number of cycle lanes in the vicinity of Swords. The realisation of each objective will increase the safety of cyclists and promote the use of alternative forms of transport.

There is currently no continuous cycle path/footpath along the R132 or along the Malahide Road. With the construction of Metro North, footpaths will be provided along both sides of R132. Cycle paths will be accommodated in bus lanes, and travel speeds along the R132 will be limited to 50kph.

An additional pedestrian/cycle footpath will be provided as part of the Metro Plaza.

6.14.1 Key environmental issue of relevance to the LAP

The existing road network experiences congestion at peak times. The proposed LAP must not add to this congestion by utilising modal split including the Metro, bus, cycling and walking as alternative modes of transport to the private car.

Taking cognisance of the Swords Transportation Network Study (July 2009), Roughan & O'Donovan have undertaken a specific transportation study of the impact of the proposed Barrysparks development and associated traffic volumes on the road network in the area and detailed the infrastructure required to support the development. A tiered and phased approach to the improvement of the road network and creation of an internal movement strategy is required.

6.15 Gaps in Information

Additional studies were carried out in the areas of: -

- Biodiversity/Flora & Fauna
- Bat Assessment
- SUDS
- Archaeology/Cultural Heritage
- Transportation

There were no additional significant gaps in information.

6.16 Evolution of Environment without implementation of Local Area Plan

Development cannot take place within the Barrysparks Local Area Plan lands prior to the adoption of a Local Area Plan by Fingal County Council. As the L.A.P is required by the provision of the Development Plan, no development would take place with the exception of agricultural uses and the environment would not be affected to any significant extent.

7.0 Monitoring: Strategic Environmental Objectives, Targets, Indicators

The purpose of the Local Area Plan is to provide the optimal future Development Strategy for the Barrysparks lands in order to ensure the proper planning and sustainable development of this area, having regard specifically to its town centre status and the arrival of Metro North adjacent to the site. The LAP will clearly establish the parameters for future development within the plan area.

The SEA objectives are specifically designed to test the performance of the LAP against commonly used environmental and sustainability criteria derived from International, European and national environmental policies. Guidance issued by the DoEHLG provides

an indicative list of objectives for use in SEA and this has been used as a starting point for establishing a realistic and appropriate range of criteria for use in the appraisal of the Barrysparks Local Area Plan.

Having regard to the issues arising from the scoping process and the assessment of the existing environmental baselines, the following environmental protection objectives, targets and indicators have been identified.

SEA Objectives	Targets	Indicators
Biodiversity, Flora and Fauna		
B1 Conserve and enhance the diversity of habitats and species.	<p>No development approved that would have a significant impact on protected habitats, species, or their sustaining resources by development within or adjacent to the LAP lands.</p> <p>Incorporate biodiversity into design of buildings and overall development of LAP lands.</p> <p>Improvement or at least no deterioration in</p>	<p>Percentage of unique habitats and species lost in designated sites.</p> <p>Landscaping and biodiversity proposals contained in Masterplans and planning applications.</p> <p>Water quality status of Gaybrook Stream.</p>

	quality of Gaybrook Stream.	
Population and Human Health		
P1 Improve people's quality of life based on high quality residential, working and recreational environments and on sustainable travel patterns.	<p>Urban Design and Landscape Masterplans to be developed, in compliance with parameters established in LAP.</p> <p>Provide a range of residential units of appropriate sizes and types, as well as tenure.</p> <p>Provide high quality private open space for residential units.</p> <p>Provide high quality public open space/recreational facilities for residents, workers and visitors to the area, in accordance with Urban Design and Landscape Masterplans.</p> <p>Provide and distribute Social and Affordable housing in accordance with Fingal Housing Strategy.</p> <p>Provide in advance of demand high quality public transport and walking/cycling facilities.</p>	<p>Submission of masterplans for each phase of development, subject to written agreement of Fingal County Council, prior to/in support of submission of planning applications for that phase.</p> <p>Individual planning applications.</p> <p>Individual planning applications.</p> <p>Provision of adequate open space/recreational facilities to cater for residential and working demand in each Phase of development.</p> <p>Individual planning applications.</p> <p>Early delivery of Metro North, Metro Plaza, and linkages to town centre and other areas, in accordance with phasing programme established in LAP.</p>

	Provision of local employment opportunities, in proximity to high quality public transport service.	Provision of retail/office development adjoining Swords Metro Stop and Swords Metro Plaza.
Soil	Targets	Indicators
S1 Minimise the amount of waste soil sent to landfill and reuse on site if possible.	No contamination incidents. Reuse as much existing soil as possible for landscaping of site.	Recorded on site incidents of contamination. Quantity of contaminated soil removed from site. Quantity of soil retained on site for landscaping and other uses.
Water	Targets	Indicators
W1 Achieve and maintain good ecological and water quality status for all surface water, groundwater, existing rivers and streams, particularly those entering the estuaries.	Improvement or at least no deterioration in surface water quality by 2015, particularly within Gaybrook Stream. Improvement or at least no deterioration in ground water quality by 2015. SUDS to form a major part of all surface water proposals.	Changes in water quality of Gaybrook Stream as identified during water quality monitoring for the WFD. Biotic quality rating of river waters at EPA monitoring locations. Changes in groundwater quality as identified in monitoring programmes. % of planning applications that incorporate SUDS.

W2 Promote sustainable use of water and water resources	Planning applications to include minimum water use efficiency measures	% of planning applications which include minimum water use efficiency measures.
W3 Ensure that new development is adequately serviced by foul drainage infrastructure	No new development to commence within the Plan area until such time as capacity is available within Swords Wastewater Treatment Pant.	Prior to development of each phase/any application being made, written confirmation from Fingal Water Services Department shall be required to state that capacity is available and extent of that capacity.
Air/Climatic Factors	Targets	Indicators
A1 Protect and enhance ambient air quality and contribute to national climate change policy.	No limit values exceeded. Increase usage of public transport, cycling and walking. Reduce use of private transport. High energy efficiency of new buildings.	EPA air quality indicators from Swords air monitoring station. Increase in number of cycle/pedestrian routes and links in the area. Modal Split using public transport, new cycle and pedestrian paths. Car parking demand. Number of new buildings with A1-B3 BER Rating.
Noise	Targets	Indicators
N1 Minimise environmental and transport related noise.	Maintain daytime noise levels to less than 70 dB. Maintain night-time noise levels to 55dB.	Number of complaints from householders. Incorporation of noise reduction measures (for

		buildings as well as roads) and increased levels of insulation in construction of buildings, as part of planning application process.
Cultural Heritage	Targets	Indicators
C1 Protect all recorded and previously unidentified archaeological sites from inappropriate development that would adversely affect the site or setting.	<p>No developments permitted over the lifespan of the Plan which result in full or partial loss of:</p> <ul style="list-style-type: none"> • archaeological sites listed on the Record of Monuments and Places; • areas identified as being of archaeological potential and significance; • the context of the above within the surrounding landscape where relevant. <p>Refer all planning applications, which may impact on heritage to the DOEHLG.</p> <p>Supervision of all site clearance works, particularly addressing areas identified in the earlier geophysical surveys or in areas unable to be surveyed due to condition of terrain to ensure no loss of sites or artefacts, without proper recording.</p>	<p>Number of developments permitted over the lifetime of the plan which result in full or partial loss of:</p> <ul style="list-style-type: none"> • archaeology listed on the Record of Monuments and Places; • areas identified as being of archaeological potential and significance; • the context of the above within the surrounding landscape where relevant. <p>Number of planning applications referred to DOEHLG.</p> <p>Monitoring of planning conditions attached to grants of planning permission.</p>
Landscape	Targets	Indicators
L1 Develop a new urban landscape, while respecting the existing landscape character of	Retain as much of existing vegetation on site as possible. Particularly perimeter vegetation	Proportion of existing vegetation retained in new development.

the area and existing development in the area.	and woodland/marsh area on adjoining lands to southeast. Assimilation of development of LAP lands into existing landscape and creation of new landscape.	Submission of Landscape Masterplan(s).
Transport	Targets	Indicators
T1 Facilitate sustainable movement, through greater use of public transport and other sustainable modes such as walking and cycling.	<p>High % of persons using Metro, bus, cycling and walking as modes of transport, in accordance with projected modal split, established within LAP.</p> <p>Ease of movement through site for pedestrians and cyclists.</p> <p>Ease of access from Metro/bus to LAP lands/expanded town centre</p>	<p>Modal Split using public transport, new cycle and walking paths.</p> <p>% of persons arriving at Barrysparks by bike/on foot.</p> <p>% use of bicycle shelters provided.</p> <p>% of persons arriving at Barrysparks by Metro/bus.</p>

8.0 Consideration of Alternatives

The establishment of development options relates to the proposed optimum development strategy, as opposed to the appropriateness of these lands for development, which has been previously decided upon as part of the County Development Plan process.

In drawing up the long-term development options, cognisance has been taken of SEA guidance, and in particular good practice requirement for the assessment of alternatives.

8.1 Planning Constraints

The development of strategic options are limited by the policies and objectives contained in the Fingal Development Plan. Development options must be considered within the context of the zoning which applies to the land, 'MC', the objective of which is to 'protect, provide for and/or improve Major Town Centre facilities'. This has influenced the extent to which alternative scenarios were considered as part of the LAP.

8.2 Local Constraints

Constraints exist in terms of proposed and existing transportation infrastructure, existing environmental features (streams, woodland, wetland), natural heritage (relationship to archaeological discoveries), and context of existing surrounding developments.

Proposed Transportation Infrastructure

The LAP is bound by the R132, with provision for new road links southeast of the plan lands as part of the Fingal Development Plan to complete the road network in the area of Airside and Holywell. The internal street network has been aligned to ensure connection to this

future road link and thereby ensure permeability across this area of Swords.

The alignment of Metro North has been approved by An Bord Pleanala. Metro North is proposed to run along the median of R132 with Swords Metro Stop adjoining the plan lands. The alignment of the rail line and Swords Stop are fixed and the proposed extent of development within the LAP reflects this.

The proposed Metro Box infrastructure project will have access ramps into the Barrysparks LAP lands from the R132. The location of these ramps is reflected in the extent of development proposed at Barrysparks.

Existing Environmental Features

A stream runs to the south of the LAP lands, the Gaybrook Stream. This stream leads to the Broadmeadow/Malahide Estuary, which is a Natura 2000 site. A number of trees and a wetland exist within the lands and on adjoining ST1 lands. The strategic internal street, Eastern Avenue, has been aligned to ensure minimal impact on these features. A SUDS strategy is also proposed, which will have additional benefit of creating new habitats, while also enhancing and linking in with existing habitats where feasible.

Natural Heritage

An archaeological assessment was undertaken for the LAP lands. A number of discoveries were made, which are suitable for excavation as part of the development. These discoveries have not had a significant impact on the layout of the development area.

Surrounding Developments

Land adjoining existing residential properties will support lower density residential development in order to ensure protection of existing amenities in the area.

8.3 Alternatives and Assessment of Alternatives

The detailed options for the future development of Barrysparks were derived following consultations in house with relevant departments of Fingal County Council.

The proposed **constants** will be: -

- Integration of Metro Stop with adjoining land uses.
- Incorporation of Metro Plaza and The Rise Street, which are key public transport routes/interchange points.
- Accommodation of Metro Plaza and Metro Box infrastructural projects.
- Alignment of internal street, referred to as Eastern Avenue, to avoid a large area of wetland/woodland on adjoining lands.
- Available capacity within Swords Waste Water Treatment Plant and sufficient water supply.
- No development shall commence within the LAP lands until the Government approves the awarding of the main infrastructural contract by the RPA for the construction of Metro North to Swords.

The proposed **variables** will be: -

1. Metro

- Development is not linked to the delivery of Metro.
- Metro operational before Phase 1 is completed.
- Metro operational after Phase 1 is completed.

2. Landuse Mix

- Retail and Commercial core to be located adjoining R132, with residential on remaining portion of land.
- Retail, commercial and residential uses mixed throughout, with focus of residential overlooking key internal streets and R132, and adjoining existing residential development.

4 options have been developed, based upon a combination of public transport scenarios and alternative mixes of uses, in accordance with the terms of Article 5 of the SEA Directive

Option 1: Do Nothing Scenario

In the Fingal Development Plan 2011-2017 the Barrysparks Local Area Plan lands are zoned 'MC' the objective of which is to 'protect, provide for and/or improve Major Town Centre facilities'.

Assessment

The do-nothing option could be considered a more preferable environmental option than developing the land for mixed-use purposes. The development of this land causes the loss of greenfield land (although of a low ecological value), potential greater pressure on the local river (due to greater run-off) and an increase in ambient noise level (due to the significant transformation from agricultural lands to mixed-use lands). However, this development is necessary for the future consolidation and growth of Swords and to provide for sustainable growth of employment and residential opportunities adjoining a high quality, planned, public transport system of Metro North.

In addition, Fingal County Council is legally required to prepare a Local Area Plan for the Barrysparks lands, in accordance with the

requirements of sections 18-20 of the Planning and Development Act 2000-2010. Development cannot take place within these areas prior to the adoption of a LAP by Fingal County Council. As a LAP is required by the provision of the Development Plan, a 'Do Nothing' scenario is not a reasonable alternative and would not be in keeping with the principle of the proper planning and sustainable development of the area.

The alternatives are limited to how the lands could be developed. Local constraints on development options, including existing and proposed transport infrastructure and the protection of the local stream (which terminates in Broadmeadow/Malahide Estuary), have been considered.

Option 2: Low-Medium Density Mixed-Use development, delivered prior to delivery of Metro North, with a residential zone and commercial zone

This option considers the implications of developing the Barrysparks lands independent of the timing of Metro North delivery and in addition the development would not be linked to the sequential development of Swords.

In terms of mix of uses, retail and commercial development will be located adjoining the R132/proposed Swords Metro Stop and residential development will be located on remainder of lands and adjoining the existing residential development.

The key aspects of this option are as follows: -

Phasing	Development of low-medium density development. Retail and commercial development permitted adjoining the R132, with low rise residential
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	development permitted on remainder of lands.
Transport	The development of the entire landholding could be carried out in the absence of Metro North, Metro Box and Metro Plaza. The public transport interchange at Metro Plaza, including Rail and Bus transfer facilities, would therefore not be delivered immediately. Development would be designed to ensure integration with Metro North and Metro Plaza Interchange at a future unknown stage.
Roads	Left in/left out vehicular access to R132. Provision of full internal road network.
Linkages	The development would be carried out independent of the timing of Pavilions extension (phase 3)/sequential expansion of Swords town centre. Connection from LAP lands through adjoining lands to be provided as part of development of adjoining lands and not in advance.
Parking	Surface or undercroft parking.
Wastewater	If there is inadequate capacity in Swords Waste Water Treatment Plant at time of construction, a temporary on-site system could be developed.
SUDS	Attenuation Pond at north of site and retention pond to south of lands.
Retail	Retail development at c 20,000m ² .
Commercial	Commercial development at c 15,000m ² .
Residential	c. 200 residential units.
Urban Design	Development limited to 3/4 storey in height, reducing to 2 storey adjoining existing residential development.

Utilities	SUDS system to be delivered in tandem with development.
Open Space	A Local Urban Park to be developed in conjunction with SUDS provision, south of plan lands. 2 main urban squares and environmental open space to be provided in tandem with development.
Community	A community facility and work/retail childcare facility to be provided in tandem with development.

Assessment

Barrysparks LAP lands are strategically located adjoining the existing town centre and are zoned MC to support growth in town centre facilitates, including employment/residential services, supportive of a growing urban centre.

Low-medium density development at this strategic location within Swords town centre and adjoining Metro North, would be an unsustainable use of land, which is a finite resource, and would undermine the potential patronage of Metro North and benefits associated with access to this high quality public transport system.

Retail and commercial uses are proposed adjoining R132/proposed Metro Stop, with residential development provided adjoining this area and existing residential development. However, the lands are zoned Major Town Centre, to cater for a mix of uses. In order to consolidate and support the growth/attractiveness of Swords, in accordance with its role as a Metropolitan Consolidation Town, it is important that a mix of uses are supported across the LAP lands, with development of an interconnected network of active streets. Limiting the location

of uses to definitive blocks will stifle the growth and development of the area. A mix of uses across the lands, designed sensitively to protect existing residential and business interests is the preferred approach to the expansion and growth of Swords Town Centre, maximising upon its strategic location.

The potential development of the entire Barrysparks LAP in the absence of Metro North would result initially in a car-dependant development, with associated increase in greenhouse gas emissions. In order to support a positive modal split toward public transport, it is important that public transport is front loaded and good habits are encouraged from the out-set of the development.

Development of entire LAP lands prior to the permitted Pavilions extension would result in a 'leapfrogging' of town centre expansion and would be contrary to sustainable and sequential expansion of the retail core, in accordance with the Retail Planning Guidelines.

A temporary on site wastewater treatment plant for Phase 1 could potentially be constructed in a manner which would ensure protection of water courses in the area and minimise risk to Broadmeadow/Malahide Estuary. However, this would be a short term solution and is not a sustainable option.

Option 3: Medium-Higher Density Mixed-Use development, with mix of uses throughout development area, and Metro North delivered prior to occupation of Phase 2

This option considers the implications of developing the Barrysparks lands with the Metro North being under construction at the time of delivery of Phase 1/Phase 2 and requirement for an upgrade of the

wastewater treatment plant to 90,000 pe, with capacity available to support development. Pavilions extension will be delivered prior to the commencement of Phase 3 of Barrysparks as part of this option.

In terms of location of land uses, it is proposed that residential would be mixed throughout the development, with particular focus on overlooking the R132, internal streets, and adjoining existing residential areas. The quantum of retail development will be approx 55,000m², commercial development at c 30,000m² and 550 residential units.

The key aspects of this option are as follows: -

Phasing	Medium-Higher density development across the development lands, with a focus of higher density adjoining R132. Mix of uses throughout the site, including residential, retail and commercial, with a medium density residential zone adjoining existing residential development. Pavilions permitted extension will be operational prior to the commencement of Barrysparks Phase 1. This allows for the bridge to be supported by developments alongside.
Transport	Metro North, Metro Plaza and Metro Box to be completed prior to the occupation of Phase 1. The Rise public transport link under construction prior to occupation of Phase 1 and operational prior to occupation of Phase 2.
Roads	Left in/left out on R132.

	Full internal road network and strategic road link through ST1 zoned lands (avoiding wetland/woodland as much as possible) to Holywell/Dynam.
Linkages	Link to town centre via pedestrian/cyclist and bus bridges over R132 (via Metro Plaza – prior to occupation of phase 2). Linkages to other local road network including: - Holywell to Lakeshore Drive Link. Dynam Road Link.
Parking	Multi level parking close to R132.
Wastewater	Availability within Swords WWTP.
SUDS	Attenuation Pond at north of site and retention pond to south of lands.
Retail	Retail development at c 55,000m ²
Commercial	Commercial development at c 30,000m ²
Residential	c. 550 residential units.
Urban Design	High-rise development at entrance to Swords to create focal point envisaged in Swords Masterplan with density decreasing at a distance from the R132/Metro edge and to respect adjoining residential development.
Utilities	Attenuation Pond at north of site to be delivered in Phase 1 in conjunction with SUDS system and park on adjoining lands. Appropriate scale of utilities to facilitate development.
Open Space	Park developed in conjunction with SUDS provision south of plan lands.

	2 main urban squares and environmental open space.
Community	Work/retail childcare facility.

Assessment

It is proposed that phase 1 of the Barrysparks lands would be developed with Metro North under construction, which would enable the Swords Stop to be developed within an appropriate context, with development supporting patronage of Metro North in a timely manner and within a supportive architectural context.

Pavilions extension, where it relates to the delivery of The Rise bridge, must be complete prior to the occupation of Phase 2 of development. This is necessary to ensure access to an improved public transport system is supported at the outset of the development of this area, whilst being developed in an appropriate development setting. The development of a public transport interchange in conjunction with Metro North would be of significant benefit to the sustainable development of this area.

The wastewater treatment plant being upgraded prior to occupation of development is considered best practice and is the preferred option to a temporary on-site waste water treatment system.

Option 4: Medium-Higher Density Mixed-Use development, with operation of Metro North prior to occupation of Phase 1

This option is a slight variation on option 3 above where Metro North is operational prior to the occupation of Phase 1, instead of Phase 2. In addition the Pavilions extension must be completed prior to the occupation of Phase 1.

The key aspects of this option are as follows: -

Phasing	Medium-Higher density development across the development lands, with a focus of higher density adjoining R132. Mix of uses throughout the site, including residential, retail and commercial, with a lower density residential zone adjoining existing residential development. Pavilions extension will be delivered in its entirety prior to occupation of Phase 1 Barrysparks.
Transport	Metro North, Metro Plaza and Metro Box to be operational prior to the occupation of Phase 1. The Rise public transport link operational prior to occupation of Phase 1.
Roads	Left in/left out on R132. Full internal road network and strategic road link through ST1 zoned lands (avoiding wetland/woodland as much as possible) to Holywell/Drynam. Site linked to town centre via Metro Box in Phase 2.
Linkages	Link to town Centre via pedestrian/cyclist and bus bridges over R132 (via Metro Plaza – prior to occupation of phase 2). Linkages to other local road network including: - Holywell to Lakeshore Drive Link. Drynam Road Link.
Parking	Multi level parking close to R132. Parking built on a phased basis. Less parking required than in option 4

	as metro operational prior to opening of Phase 1.
Wastewater	Availability within Swords WWTP.
SUDS	Attenuation Pond at north of site to be delivered in Phase 1 with retention pond to south.
Retail	Medium density of retail development at c 45,000m ²
Commercial	Medium density of commercial development at c 30,000m ²
Residential	Residential c. 550 units.
Urban Design	High-rise development at entrance to Swords to create focal point envisaged in Masterplan with density decreasing at a distance from the R132/Metro edge.
Utilities	Attenuation Pond at north of site to be delivered in Phase 1 in conjunction with SUDS system and park on ST1 zoned lands. Appropriate scale of utilities to facilitate development.
Open Space	Park developed in conjunction with SUDS provision south of plan lands. 2 main urban squares and environmental open space.
Community	Work/retail childcare facility.

Assessment

This option is a slight variation on option 3 above where Metro North is operational prior to the first occupation of Phase 1 and the entire Pavilions expansion must all be delivered prior to occupation of Phase 1. All other elements are the same as option 3.

This option ensures that development is fully supported by Metro North and public transport interchange at Metro Plaza no later than at the end of Phase 1, with requirement also for complete development of town centre activities at Pavilions at this stage also.

This option does not allow for overlap of construction times, for the two development areas on either side of the R132 where Swords Metro Stop is to be located. It is necessary to focus development in close proximity to Swords Metro Stop and enable patronage from both sides of R132 as early as possible. Facilitating development on both sides of R132 would also be beneficial in developing the area within a more complete architectural context, thereby supporting the vision for a gateway entrance to Swords town centre from this Metro Stop. This option does not offer as much scope in supporting development on both sides of the Metro Stop as option 3.

Option Evaluation and Selection of Preferred Option

Each option was evaluated against a set of environmental objectives.

Options 3 and 4 emerge as the strongest options at a strategic level, with option 3 from a planning perspective being the preferred option.

Under option 3, development is dependent on the delivery of the Metro prior to occupation of Phase 2 development. Development is permitted on both sides of Swords Metro Stop provided metro construction has commenced. The principle difference between options 3 and 4 is that development on either side of Swords Metro Stop is facilitated before the metro line is operational, thereby the area is developing, providing a context to the Stop, and allowing for overlap in the delivery of the Metro and the delivery of a patronage for Metro immediately adjoining the Stop. It is important to prioritise

the availability of an improved public transport network at an early stage, allowing for provision of metro prior to completion of development, while ensuring a supporting population is allowed to develop in tandem. Provision at an early stage of a quality public transport system will ensure that those residents/employees/visitors to the area establish a sustainable travel pattern from the outset, something which is difficult to achieve when public transport is provided last/at a late stage in development of an area.

There must be availability within the Swords WWTP to support the development as part of option 3. It also envisages that Pavilions Phase 3 will be delivered, in so far as it relates to delivery of The Rise bridge, prior to the occupation of Phase 2. This will ensure development of The Rise is set within a development area and not isolated in terms of its context.

The performance of each option against Environmental Objectives is depicted in matrix format, using a set of symbolic ratings. The appraisal outlines a scale of impacts using symbols/colours, to highlight the most favourable options.

8.4 Environmental Assessment of Preferred Option

Following selection, Development Option 3 was advanced through the formulation of Local Area Plan Objectives and Policies. Further assessment was considered necessary: -

- (a) To ensure that the Environmental Objectives derived are compatible with each other,
- (b) To test the Local Area Plan strategic objectives for compatibility with the Environmental Objectives, and
- (c) To test detailed policies of the Local Area Plan for compatibility with the Environmental Objectives.

As a result of the findings detailed above a detailed set of mitigation measures have been set out in Section 11 of the Environment Report.

Symbol	Likely Impact
√	Long term / permanent positive impact
✓	Short term positive impact
0	Neutral or uncertain
X	Short term negative impact
XX	Long term / permanent negative impact

Evaluation of Development Options for Barrysparks Local Area Plan:

Environmental Objective	Evaluation of Alternatives			
	1	2	3	4
Biodiversity, Flora & Fauna				
B1 Conserve and enhance the diversity of protected habitats and species.	0	0	0	0
Population and Human Health				

P1 Improve people's quality of life based on high quality residential, working and recreational environments and on sustainable travel patterns.	0	XX	✓/✓	✓/✓	<p>Option 2 will have a negative impact due to the potential/option for delivery of Metro North post development. A lower density of development will also not deliver the level of employment and other services supportive of the town centre population, as envisaged.</p> <p>Options 3 and 4 will have long term positive impacts, with the premise for development being the integration of land use and transportation adjoining a high quality planned rail corridor, adjoining an existing town centre.</p>
Soil					
S1 Minimise the amount of waste soil sent to landfill and reuse on site if possible.	0	0	0	0	All of the options would be equally capable of achieving a high level of reuse of soil on site.
Water					
W1 Achieve and maintain good ecological and water quality status for all surface water, groundwater, existing rivers and streams, particularly those entering the estuaries.	0	✓/✓	✓/✓	✓/✓	Development comes with a level of risk, with potential for runoff to impact negatively on the surrounding water services network. However, SuDS is a key element of the future development of this area. Development will not be permitted where maintenance of good quality water status is in doubt.
W2 Promote sustainable use of water and water resources.	0	✓/✓	✓/✓	✓/✓	All of the development options are capable of achieving sustainable water use and this is provided for within the LAP.
W3 Reduce Flood Risk.	0	0	0	0	FEMFRAMS has indicated to date no flood risk in this area. All of the development options are capable of being designed to eliminate/reduce flood risk.
Air/Climatic Factors					

A1 Protect and enhance ambient air quality and contribute to national climate change policy.	0	X	X	X	While options 2, 3, and 4 will all have some short term impacts during construction, options 3 and 4 are the most favourable under this category as they will have the benefit of the Metro operating in the medium term and will have a higher density of development, thereby reducing the growth in private vehicles and result in a reduction in emissions. With all options adhering to and exceeding modern building standards requirements, options 3 and 4 would be predicted to perform better in the long term and would more sustainably use the finite resource of land available.
Noise					
N1 Minimise environmental and transport related noise.	0	0	0	0	<p>There will be some short-term noise impacts on existing adjoining residential development during construction. However, the principal noise impact on the LAP lands has been identified as local road noise, in particular the M1 motorway. This may prove a difficulty for residential units located at height above the surface where the measurements were conducted. In designing the development cognisance will have to be taken of this fact in the design of buildings. In addition local streets/roads will be designed to reduce noise impact from traffic as much as possible.</p> <p>Once operational there it is not anticipated that there will be any noise impact generated by the development of the lands in excess of the existing noise experienced. Through careful design and landscaping it should be possible to reduce noise impact within the LAP area and on surrounding lands.</p>
Cultural Heritage					

C1 Protect all recorded archaeological sites from inappropriate development that would adversely affect the site or setting.	0	✓✓	✓✓	✓✓	All of the options seek to protect and conserve the cultural heritage of the lands and their environs by recording in accordance with DOEHLG requirements.
C2 Promote the protection and conservation of cultural, including architectural and archaeological, heritage sites and landscape, including previously unidentified sites within the Local Area Plan area.	0	✓✓	✓✓	✓✓	All of the options seek to protect and conserve the cultural heritage of the lands and their environs. By following DOEHLG protocol and being supervised by archaeologists any previously unknown sites will be afforded the best protection available.
Landscape					
L1 Develop a new urban landscape, while respecting the existing landscape character of the area and existing development in the area.	0	XX	XX	XX	All options will result in a significant change to the existing landscape, changing it from a greenfield to an urban landscape.
Transport					
T1 Facilitate sustainable movement, through greater use of public transport and other sustainable modes such as walking and cycling.	0	XX	✓✓	✓✓	Options 3 and 4 are the best options as the Metro will be operating in the short-medium term. This will help build the culture of using public transport from the beginning, thereby establishing positive travel patterns/behaviour and reducing use of private cars.

9.0 Environmental Assessment of Preferred Alternative

Following selection, Development Option 3 was advanced through the formulation of Local Area Plan objectives. The objectives were derived from the selected option and were informed by the provisions of the Fingal Development Plan, other plans referred to in Section 4, and the outcome of the pre-plan consultation process.

Further assessment was considered necessary to ensure that:

- (a) The Environmental Objectives derived are compatible with each other,
- (b) The LAP strategic objectives are compatible with the Environmental Objectives, and
- (c) The detailed local objectives of the LAP are compatible with the Environmental Objectives.

9.1 Compatibility of Environmental Objectives

The methodology involves the use of a matrix assessing the environmental objectives against each other to determine whether or not they are compatible. This process enables an overview of where potential conflicts may result and allows the objectives to be revised where necessary. Where difficulties occur mitigation measures will be put in place and monitoring during and post construction will ensure there is no deterioration in environmental quality.

Compatibility of Environmental Objectives:

As part of the SEA, the Environmental Objectives were tested for compatibility with each other. This is illustrated in the matrix below.

✓	Likely to have a positive impact on the environment	X	Likely to have a negative impact on the environment	0	No impact or neutral. Impact on the environment is neither Significantly Positive nor Significantly Negative.	?	Likely impact on the environment is uncertain, due to limited or insufficient information.
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Environmental Objectives		B1	P1	S1	W1	W2	W3	A1	N1	C1	L1	T1	Comment
B1 Conserve and enhance the diversity of protected habitats and species.	B1		X	✓	✓	✓	✓	✓	✓	0	✓	✓	The Environmental Objectives were tested for compatibility with each other and were found to be largely compatible, with the exception that the development of the lands will have a negative impact on biodiversity within the site, though replacement biodiversity and strengthening of existing features will negate this to an extent.
P1 Improve people's quality of life based on high quality residential, working and recreational environments and on sustainable travel patterns.	P1	X		✓	✓	✓	✓	✓	✓	✓	✓	✓	
S1 Minimise the amount of waste soil sent to landfill and reuse on site if possible.	S1	✓	X		✓	✓	✓	✓	✓	✓	✓	✓	
W1 Achieve and maintain good ecological and water quality status for all surface water, groundwater, existing rivers and streams, particularly those entering the estuaries.	W1	✓	✓	✓		✓	✓	0	0	0	✓	✓	
W2 Promote sustainable use of water and water resources.	W2	✓	✓	✓	✓		✓	0	0	0	✓	✓	
W3 Ensure that any new development is adequately serviced by foul drainage infrastructure.	W3	✓	✓	✓	✓			✓	0	0	✓	✓	

A1 Protect and enhance ambient air quality and contribute to national climate change policy.	A1	✓	✓	✓	0	0	0		✓	0	✓	✓	All other Objectives were found to be compatible or to have no obvious relationship
N1 Minimise environmental and transport related noise.	N1	✓	✓	✓	0	0	0	0		0	✓	✓	
C1 Protect all recorded and previously unidentified archaeological sites from inappropriate development that would adversely affect the site or setting.	C1	✓	0	✓	0	0	✓	0	0		✓	✓	
L1 Develop a new urban landscape, while respecting the existing landscape character of the area and existing development in the area.	L1	X	✓	X	✓	✓	✓	✓	✓	✓		✓	
T1 Facilitate sustainable movement, through greater use of public transport and other sustainable modes such as walking and cycling.	T1	✓	✓	0	✓	0	0	✓	✓	✓			

9.2 Compatibility of Local Area Plan Strategic Objectives and Environmental Objectives

As part of the SEA, the Strategic Objectives of the Local Area Plan were tested for compatibility against the Environmental Objectives. This is illustrated in the matrix below. The impact of objectives and policies, if any, was recorded in matrix format, indicating positive, negative, neutral and uncertain impacts. This process was undertaken so that it could inform the LAP process in terms of local objectives required and mitigation measures to be undertaken.

✓ Impact on the Environment.	X Impact on the Environment.	0	No impact or neutral. Impact on the environment is neither Significantly Positive nor Significantly Negative.						?	The likely impact on the environment is uncertain, due to limited or insufficient information.		
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Local Area Plan Strategic Objectives – Compatibility with Environmental Objectives:

	Consolidating Swords	B 1	P1	S1	W 1	W 2	W 3	A 1	N 1	C1	L1	T1
1	Contribute to the consolidated development and expansion of Swords town centre, through the creation of a new high-density urban quarter, maximising upon the LAP's town centre location and proximity to proposed Swords Metro Stop.	X	✓	0	0	0	0	0	0	0	✓	✓
2	Support a mix of uses and services within this new urban quarter, which will support the day and evening economy, within a vibrant street environment.	X	✓	0	0	0	0	0	0	0	✓	✓
3	Facilitate the long term development of Swords as a Level 2 Major Town Centre and ensure the location of comparison retail anchors in Barrysparks complements the existing retail areas of Main Street and Pavilions development area and consolidates Swords retailing function.	X	✓	0	0	0	0	0	0	0	✓	✓
4	Promote a mix of employment opportunities, including those in offices, retailing, enterprise, recreational and community sectors. Barrysparks will strive to provide a sustainable level of employment in terms of the number and quality of jobs available in Swords town centre.	X	✓	0	0	0	0	0	0	0	✓	✓

5	Contribute towards the future housing needs of Swords and the wider Fingal area, accommodating a range of high quality residential options, proximate to a high quality public transport corridor.	X	√	0	0	0	0	0	0	0	√	√
6	Ensure full integration of the LAP lands with existing town centre, proposed Swords Metro Stop, improved bus network, and public transport interchange at Swords Plaza, thereby reducing car dependency and supporting sustainable modes of transport/smarter travel.	0	√	0	0	0	0	√	√	0	√	√
7	Ensure development of LAP lands provides for improvements/connections to surrounding road infrastructure as well as development of new permeable and legible internal street network.	X	√	0	0	0	0	X	X	0	√	?
8	Promote the development of well-designed, safe, direct and attractive pedestrian and cycle routes linking the LAP lands to the Swords Metro Stop, Pavilions development area and Swords Main Street, as well as areas southeast of the LAP lands, which will be connected via the proposed Airside-Feltrim Link Roads.	√	√	0	0	0	0	√	√	0	√	√
9	Develop a parking and vehicular access strategy which will support the objective of maximising connectivity to the site, while promoting use of public transport.	X	√	0	0	0	0	X	X	0	0	?
10	Create a sense of place having regard to the incorporation of natural environmental features, context, layout, scale, and quality urban design.	√	√	0	0	0	0	0	0	0	?	0
11	Promote development of a strong urban form within a network of streets and attractive public spaces, with a focus on high quality architectural design and finishes to the development, with particular focus on those buildings fronting onto the R132 and Swords Metro Plaza.	0	√	0	0	0	0	0	?	0	√	√

12	Develop a high quality public realm that adds value to public places and is supportive of public life and encourages walking.	0	√	0	0	0	0	√	√	0	√	√
13	Implement an urban design framework which provides an appropriate height and massing framework for the LAP area and provides guidance to direct and support development.	0	√	0	√	0						
14	Develop and enhance existing green infrastructure, create new habitat areas where any are lost, and develop a new high quality well landscaped public realm, connecting into the wider green network in Swords.	√	√	0	0	0	0	√	√	√	√	√
15	Contribute to the creation of a 'green city' at Swords through the formation of a sustainable urban quarter which makes efficient use of existing resources and promotes sustainable design.	0	√	0	√	√	0	0	0	0	√	√
16	Ensure a development framework which has due regard to environmental and micro-climate conditions.	√	0	0	0	0	0	√	0	0	√	0
17	Phase development in line with the availability of supporting infrastructure, including foul sewerage treatment.	0	√	0	√	√	√	0	0	0	√	√

As a result of the findings detailed above a detailed set of mitigation measures are set out in this Environmental Report, which has in turn impacted on the development of local objectives in the LAP.

9.3 Compatibility of LAP Local Objectives and Environmental Objectives

It was also considered necessary to test the detailed local objectives contained in the Barrysparks Local Area Plan against the devised Environmental Objectives by means of matrices. The findings of this exercise are illustrated below.

√	Likely to have a Positive Impact on the Environment.	X	Likely to have Negative Impact on the Environment.	0	No impact or neutral. Impact on the environment is neither Significantly Positive nor Significantly Negative.	?	The likely impact on the environment is uncertain, due to limited or insufficient information.
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Local Area Plan Objectives Appraisal:

	LAND USE STRATEGY & MIX OF USES	B1	P1	S1	W1	W2	W3	A1	N1	C1	L1	T1
1	Secure the phased and sequential expansion of Swords town centre at Barrysparks and position land uses so as to maximise proximity of people intensive uses to transport and services, in particular Metro North and improved bus network.	X	√	0	0	0	0	0	√	0	√	√
2	Develop a high density mixed use quarter comprising retail, office, residential, social and community uses, complying with highest standards of design and the development of a quality living and working environment, with provision of supporting community/leisure facilities for those living and working in the area.	X	√	0	0	0	0	0	0	0	√	√
3	Ensure the location and scale of retail development supports the existing core retail areas within Swords town centre. Anchor stores (no more than 2) shall be located in proximity to R132/Metro Plaza area, with direct linkages to the Pavilions development area and Swords Main Street. Retail units shall be designed to address the street and avoid creation of large blank frontages. A mid-term review of retail impact shall be undertaken prior to receipt of applications for phase 3 to ensure continued vitality and viability of town centre is being achieved.	X	√	0	0	0	0	0	0	0	√	√

4	Ensure all office development is designed in a flexible manner, to allow future subdivision of floor space in response to market changes. Offices shall address the street and avoid creation of large blank frontages. A finer grain of use shall be required where office buildings have a ground floor presence to maximise the number of entrances and maintain an active streetscape.	X	✓	0	0	0	0	0	0	0	✓	✓
5	Promote the development of high density attractive residential development, comprising units of varying size, type and tenure.	X	✓	0	0	0	0	0	0	0	✓	✓
6	Ensure residential uses within the LAP lands are located to address and overlook key streets and have prominent entrances from the street, thereby providing activity, surveillance and security both during the day and in the evening outside of standard retail/office hours.	0	0	0	0	0	0	0	?	0	✓	0
7	Ensure the protection of residential amenities of existing dwellings within/bounding the development in terms of overlooking, overshadowing, and distance from boundaries.	0	✓	0	0	0	0	0	✓	0	✓	0
8	Support the location of active retailing, cafes and civic use frontages around public squares and open space to support vibrancy around these spaces and ensure the provision of active frontages onto the R132/Metro Plaza.	X	✓	0	0	0	0	0	0	0	✓	✓
	TRANSPORT	B1	P1	S1	W1	W2	W3	A1	N1	C1	L1	T1

1	Facilitate and ensure integration of development with Metro Stop, Metro Plaza/Public Transport Interchange and Metro Box infrastructure, as well as improved local and regional bus routes, in particular The Rise, and pedestrian/cyclist routes.	X	√	0	0	√	0	√	0	0	√	√
2	Ensure connection of LAP lands to the surrounding road network through new street and pedestrian/cyclist links, in particular from Western Avenue and Eastern Avenue to Airside-Feltrim Link Road, thereby improving the capacity of the road network, reducing overall car dependency, and increasing accessibility to support public transport routes.	X	√	0	0	0	0	√	0	0	√	√
3	Ensure all streets within the Barrysparks development area facilitate 24 hour public access, are not enclosed and are landscaped, in particular Western and Eastern Avenues, which will be tree-lined boulevards.	X	√	0	0	0	0	√	√	0	√	√
4	Ensure the provision of active frontages at ground level and residential units at upper levels onto public spaces/nodes within the development area, key pedestrian streets, and onto Metro Plaza.	X	√	0	0	0	0	0	0	0	√	0
5	Require a Mobility Management Plan/Smarter Travel Plan to be submitted with planning applications for proposed trip intensive developments, including retail and commercial proposals.	X	√	0	0	0	0	√	√	0	√	√
6	Ensure that transport infrastructure is appropriately phased and implemented in tandem with development of LAP lands, in accordance with section 9.	X	√	0	0	0	0	0	√	0	√	√

7	A mid-term review shall be undertaken prior to receipt of applications for phase 3 to ensure assumptions applied to the traffic modelling and analysis undertaken as part of the Transport Network Study by Roughan O'Donovan are valid and remain appropriate.	X	√	0	0	0	0	√	0	0	√	√
	URBAN DESIGN											
1	Prior to the commencement/in support of planning applications for each phase of development (see section 9), a detailed Urban Design Masterplan for that phase (and incorporating previous phases) shall be submitted to the Planning Authority for agreement.	0	√	0	0	0	0	0	0	0	√	√
2	The design of new streets shall generally comply with the sections illustrated in figures 22-26 and accord with the criteria outlined in section 5.3.2. New streets shall remain permeable to the general public 24 hours a day and all routes will where possible have alternative access points so cul-de-sacs are avoided.	X	√	0	0	0	0	0	0	0	√	√
3	Create a network of 3 high quality public spaces as identified on the LAP map and ensure connectivity to the wider network in Swords.	X	√	0	0	0	0	0	0	0	√	√
4	Provide a number of land mark buildings to reinforce a sense of place in the LAP area.	X	√	0	0	0	0	0	0	0	√	0
5	Arrange uses to ensure activity throughout the day and into the evening in the LAP area.	X	√	0	0	0	0	0	0	0	0	√

6	Ensure a high quality and variety of architectural design and finishes for buildings, ground finishes, street furniture, landscaping and signs.	X	√	0	0	0	0	0	0	0	√	0
7	Planning applications for significant elements of development within the area shall be accompanied by a detailed design appraisal (in accordance with Fingal Development Plan), to ensure a high architectural quality in design and a coherence to the heights strategy and location of landmark structures.	X	√	0	0	0	0	0	0	0	√	0
8	Planning applications shall be accompanied by an assessment of the daylight, sunlight, overshadowing, privacy, and amenity impacts of new development upon existing as well as new development areas, in addition to details of noise mitigation measures to protect existing as well as new residences.	0	√	0	0	0	0	0	√	0	√	0
9	Applications for substantial building elements shall be accompanied by a sustainability report addressing sustainability in building design and building energy ratings, in addition to energy efficiency, water conservation and waste management measures.	X	√	0	0	0	0	0	0	0	√	0
10	Require details of the requirements for alternative renewable energy systems, for buildings greater than 1000sq m or residential schemes above 30 units, under SI 666 of 2006 European Communities (Energy performance of buildings) to be submitted at pre planning stage for consideration. These should take the form of an Energy Statement or Feasibility Study carried out by qualified and accredited experts.	X	√	0	0	√	0	0	0	0	√	0
11	A waste management strategy and a construction waste management plan shall be submitted with all applications for substantial development.	0	0	√	√	0	0	0	0	0	√	0

	GREEN INFRASTRUCTURE	B1	P1	S1	W 1	W 2	W 3	A1	N1	C1	L1	T1
1	Develop a Landscape Masterplan for each phase of development to provide a coherent 'green' structure throughout the LAP area, including hard and soft landscaping, providing a range of open space types, with their function and facilities identified. These shall be submitted to the planning authority for agreement prior to each phase of development.	√	√	0	0	0	0	0	0	0	√	0
2	All development proposals shall maximise opportunities for enhancement of existing ecology and biodiversity, through incorporation of existing trees/hedgerows (particularly along boundary with existing housing); protection of woodland and marsh southeast of plan lands; protection of Gaybrook stream, which links to the Broadmeadow/Malahide Estuary (Natura 2000 site); and bat survey in accordance with Bat Assessment Study (see SEA).	√	√	0	√	0	0	0	0	0	√	0
3	Develop a sufficient number of local playgrounds/amenity spaces to serve the area in accordance with Fingal Development Plan standards.	0	√	0	0	0	0	0	0	0	√	0
4	Develop a Landscape and Recreational Masterplan for the Local Urban Park, which shall be designed to fulfil a dual role in terms of its function as a high quality amenity space and sustainable water management resource.	√	√	0	√	0	0	0	0	0	√	0
5	Ensure that the public realm is characterised by coordinated and integrated elements of high standard design, planting, finishes and treatments. 2 high quality urban squares shall be developed and shall be designed with adjoining buildings to ensure passive supervision and active frontages.	0	√	0	0	0	0	0	0	0	√	0

6	Encourage the provision of high quality, innovative, works of art within the public realm and park areas.	0	✓	0	0	0	0	0	0	0	✓	0
7	Seek to preserve and/or record, as appropriate, the archaeological and cultural heritage of the area, including the ring ditch along the route of Western Avenue and inclusion of a protection buffer in vicinity of St Werburgh's Well.	0	0	0	0	0	0	0	0	✓	✓	0
8	Archaeological monitoring of topsoil stripping at site clearance stage of development shall be carried out by a suitably qualified archaeologist under licence to DoEHLG and the National Museum of Ireland.	0	0	0	0	0	0	0	0	✓	✓	0
9	Promote and implement the SuDS strategy for the LAP lands and ensure no impact on the Gaybrook Stream and consequently the Malahide/Broadmeadow Estuary (Natura 2000 site).	✓	0	0	✓	✓	✓	0	0	0	0	0
	WATER SERVICES INFRASTRUCTURE	B1	P1	S1	W 1	W 2	W 3	A1	N1	C1	L1	T1
1	Ensure the implementation of a stormwater management system in the detailed design of the plan lands, following the principles of Sustainable Urban Drainage Systems (SUDS) undertaken for the LAP.	0	✓	0	✓	✓	✓	0	0	0	✓	0
2	Ensure surface water attenuation ponds and dry detention basins are well designed and incorporated as a design feature within open space areas, particularly within the local urban park.	0	✓	0	✓	✓	✓	0	0	0	✓	0

3	Support the Water Framework Directive in implementing the Eastern River Basin District Management Plan 2009-2015, the Program of Measures for the Broadmeadow River, and the Fingal Ground Water Protection Scheme.	0	√	0	√	√	√	0	0	0	√	0
4	Ensure there is an adequate water supply network to cater for the proposed development within the LAP lands.	0	√	0	√	√	√	0	0	0	0	0
5	Ensure that strategic telecommunications including fibre optic broadband links and utilities (gas and electricity) infrastructure is provided for within the LAP area.	0	√	0	0	0	0	0	0	0	0	0
6	Require, prior to the commencement of all development, that a Sediment and Water Pollution Control Plan be submitted, in accordance with the Fingal Development Plan.	0	√	0	√	√	√	0	0	0	0	0
7	Require the development and submission of a water management and conservation plan, in accordance with the Fingal Development Plan.	0	√	0	√	√	√	0	0	0	0	0
8	Ensure incorporation of water conservation measures in the design of proposed developments.	0	√	0	√	√	√	0	0	0	0	0
9	The Eastern Regional Fisheries Board shall be consulted in relation to any works in relation to the diverting or crossing of a river/stream.	0	√	0	√	√	√	0	0	0	0	0

10	A Trade Effluent Discharge Licence under the 1977 & 1990 Water Pollution Acts shall be obtained by all companies involved in development from Fingal Water Services Department to ensure all discharges to surface waters do not compromise water quality in the Gaybrook Stream or any tributaries or drainage ditches discharging to the Gaybrook Stream and subsequently the Broadmeadow Estuary.	0	√	0	√	√	√	0	0	0	0	0
11	A 10 metre riparian corridor shall be maintained along both sides of the Gaybrook Stream in order to protect and manage this existing watercourse.	√	√	0	√	√	√	0	0	0	0	0

10.0 Strategic Flood Risk Assessment

10.1 Introduction

In accordance with the recent introduction of the Planning System and Flood Risk Management guidelines, a review has been carried out to determine if there is a necessity to carry out a site-specific Flood Risk Assessment (FRA) for the MC zoned LAP lands at Barrysparks.

This document seeks to identify and assess all sources of flood risk and the impact of drainage from the proposal. This report will form the basis on which a conclusion can be made regarding the requirement of a FRA.

10.2 Scope

This review is confined to the existing greenfield lands at Barrysparks for which the LAP is prepared.

In researching for this document we have consulted with the Water Services Department, Roads Department, Planning Department and Environmental Department of Fingal Council. We have reviewed all available drainage records drawings, Ordnance Survey maps and OPW maps. We have consulted with the FCC appointed Fingal East Meath Flood Risk Management Study (FEM FRAMS) consultants, Halcrow Barry. Both a topographical survey and site visits have been carried out over an extended period of time. A preliminary site investigation has been carried out and report of same drafted.

10.3 Site Location

The zoned LAP land is currently a non-developed, greenfield site. The lands are bounded between the R132 dual carriageway at the north end of the site, by the Drynham residential estates to the east, by the Airside Business Park to the west and by green fields to the south (refer to Dwg.No.9715/500 and Photo 1 in the appendix of this report).

In the context of surface water drainage, as the County Development Plan zoning objective boundary lines do not necessarily follow the

natural topographical features of lands, we shall consider the appropriate drainage catchment in this report. That catchment extends primarily into the green field ST1 zoned land immediately south of the LAP MC zoned lands under consideration.

10.4 Existing Site Topography

The site is essentially a flat field with some topographical undulations therein. There is a slight fall in the ground levels sloping away from the R132 at the northern end of the site, towards a site drainage ditch (South Ditch) along the southern boundary of the LAP lands.

A small portion of the land is slightly sloped towards the NE of the site, towards the Malahide Road roundabout.

10.5 Existing Site Drainage Catchment

The drainage catchment of the LAP lands is defined on three sides by the existing developments bounding the LAP lands. The remaining southern catchment boundary is undeveloped and is defined by the nearby Gaybrook Stream.

To the **northern** end of the site, the R132 Swords By-Pass, the Carlton Court housing estate and Pavillions Shopping Centre, have intercepted the historical natural drainage path that would have existed prior to their development. All those lands are now drained via an underground piped network beneath the R132, draining in a north easterly direction away from the subject lands towards the Malahide Road roundabout and continues in a northerly direction until it eventually discharges to the Malahide Estuary. There are no surface waters north of the LAP lands that are discharging onto the Barrysparks lands. Essentially the R132 has intercepted and drained any waters away from the LAP lands along the northern boundary.

On site examination of the now defunct and isolated historical ditches (North Ditch A and North Ditch B) have confirmed that there is no in-flow to the old ditches. Please refer to Photos 2 and 3 in the appendix of this report for further clarification.

To the **west** of the LAP lands lies the Airside Business Park which was developed in the late 1990's. This development has a piped drainage system that discharges through on-site (Airside) retention ponds, remote from the LAP lands, before discharging via a piped drainage system beneath the Holywell housing development to the south east of the LAP lands. These ponds are located on the lower opposite side of the 6m high hill separating the south of the Barrysparks lands and Airside. There are no known surface water outfalls from the Airside Business Park discharging into the LAP lands.

There is an old site drainage ditch (West Ditch) which bounds the existing business park and the subject lands along the western boundary of the site. This ditch has no catchment other than the subject lands as the Airside Business Park does not drain to this location. Similar to paragraph 5.2 above, the R132 essentially cut-off any in-flow into this historical ditch (refer to Photos 4 & 5).

On the **eastern** boundary of the LAP lands lies the Willows/Barry's Park/Drynam Court/Drynham Road housing estates. These developments back-onto the subject lands and their underground piped drainage is under the Drynham Road draining in a South-Easterly direction. There are no known drainage connections between the LAP lands and these developments.

To the **south** of the LAP lands lies the Gaybrook Stream which is a low flow, flat gradient water course (Photos 6&7). This stream has been the subject of in-depth study by Fingal County Council and their appointed consultants Halcrow Barry as part of the Fingal East Meath Flood Risk Assessment Management Study (FEM FRAMS). To date, parts of this study have been published in draft format and the Gaybrook Stream results have been made available. The results of the FEM FRAMS for the Gaybrook Stream conclude that there is no flooding issue associated with either the LAP lands or the Barrysparks lands. Refer to the FEM FRAMS map in the appendix of this report.

10.6 Existing Site S/W Drainage

There are no known underground piped drainage services crossing the Barrysparks LAP lands. As noted in paragraph 5.6 above, there is an existing open course stream, the Gaybrook Stream, which crosses Barrysparks south of the LAP MC zoned lands.

The local site drainage ditch bounding the **west** of the LAP area is overgrown with thick vegetation (Photo 4) and has little or no flowing water within. The only catchment for this ditch is the LAP land itself. This ditch does fall in a southerly direction and drains part the existing LAP land surface water into the Gaybrook Stream at the point marked A on Dwg.No.500 contained in the appendix of this report.

There is a local site drainage ditch to the immediate **south** of the LAP lands. This ditch is heavily overgrown with vegetation and falls in an easterly direction before discharging to the Gaybrook Stream 150m south of the LAP land. As this localised site ditch drains only the immediate surrounding lands and has no in-flow from outside the

site, it is primarily a dry ditch (Photo 8) which becomes progressively wetter as it approaches its connection with the overgrown/blocked Gaybrook Stream(Photo 9). This ditch serves as a localised drain for part of the Barrysparks land, the catchment for which will be substantially developed in accordance with the LAP objectives.

10.7 Available OPW Mapping

The OPW *floodmaps.ie* website was used to research for any flooding history on the LAP lands and there is no record of any flooding on the LAP lands recorded. The flood report generated by the OPW national flood hazard mapping service does record flooding occurring in locations within 2.5km of the LAP lands (see OPW report in appendix). Those reported flooding incidents are not connected to or form part of the catchment of the LAP lands under consideration and therefore are not relevant to this flood risk assessment.

10.8 Memos of FCC Meetings

As part of the research process in preparation for the LAP, several meetings were held with the Water Services Department of Fingal County Council to discuss all aspects of site drainage and available drainage services. As part of those discussions it was concluded that there were no known underground piped drainage services on the LAP lands and nor was there any record of flooding on the LAP lands.

The drainage records drawings for both the LAP lands and the surrounding area were studied and there was no indication thereon of any piped drainage on the Barrysparks lands.

The engineers (Halcrow Barry) currently working on behalf of Fingal County Council as part of the FEM FRAMS study were consulted during the preparation of this document. A meeting was also conducted on the LAP site to discuss the Gaybrook Stream which lies to the south of the LAP MC lands. As a result of those discussions it was concluded that the FEM FRAMS has indicated that there is no current or predicted flooding of the Gaybrook Stream as it traverses the Barrysparks lands to the south of the MC zoned area. See appendix for FEM FRAMS map.

10.9 Proposed Drainage

In accordance with the **SuDS** philosophy, the surface water drainage for the LAP lands will consist of a series of measures to reduce, remove pollutants, treat, filter, attenuate, store and control the discharge from the development. Refer to Dwg.No.9715/501 in the appendix.

Such measures will include the use of green roof technology, permeable paving techniques, rainwater harvesting, roadside swales, under ground piping, dry/wet basin storage, petrol interceptors and flow control devices.

There are two proposed surface water drainage outfall locations. The first outfall is to be into the existing public S/W 375Ø mm sewer just south-west of the Malahide Road roundabout on the R132. The catchment serving this outfall is limited by the specific site design of the ground levels and available outfall invert level. It has been estimated in the design process that approximately 3Ha of development will outfall to this location.

It is proposed to discharge the surface water from the majority of the MC development lands by gravity to the Gaybrook stream at the south of the site.

The S/W run-off from the development lands will be designed in accordance with the Greater Dublin Strategic Drainage Study (GDSDS) requirements. The S/W run-off will be limited to the equipollent existing agricultural run-off rate.

The development of the LAP lands will include a surface water drainage system that will collect, filter, treat and attenuate in advance of discharging to the chosen outfall locations.

In accordance with the SuDS philosophy, a **Surface Water Treatment Train** approach will be applied to the design of the surface water drainage on LAP lands. The techniques that will apply will be designed to suit this sites topography, ground conditions and receiving environment.

The treatment train approach assures that both runoff quantity and quality are addressed, through the overall techniques of:

Pollution prevention: spill prevention, recycling, public awareness and participation;

Source control: conveyance and infiltration of runoff;

Site control: reduction in volume and rate of surface runoff, with some treatment provided;

Regional control: interception of runoff downstream from all source and site controls, to provide follow-up flow management and water quality treatment.

10.10 Pollution Prevention

Pollution prevention is essentially good housekeeping, since minimising or preventing pollution in the first place is more practical and cost effective than having to treat it afterwards. Thus the best approach to urban runoff pollution is to prevent chemicals, and other pollutants from coming into contact with rainfall runoff through appropriate storage and management, and through public education. In this respect, a tenant/occupier owners manual will provide information to the residents of the proposed development regarding the appropriate usage of the proposed drainage systems.

10.11 Source Control - Proposed SUDS Measures

The principles of SUDS are to be adopted as part of this development in accordance with the GDSDS. The storm flows from the proposed development will be retained in overground/exposed flood attenuation retention basins. These basins will be located in the green landscaped open space areas.

The use of **infiltration** techniques is not possible on this site due to the poor permeability of the underlying sub-soils. A site investigation percolation test report was carried out to determine if there was a possibility of percolating some of the surface water to the ground but the results of the infiltration tests indicated that the sub-soil is unsuitable to use infiltration techniques (see site investigation report in the appendix).

It is intended that the use of "**green roofs**" be used as a primary source of reducing the S/W run-off from the site, the area of which will be subject to Architectural layout and design.

Within the internal street layout, it is proposed to use a lined **permeable paving** system. This allows for the rainfall to percolate through open joints in the pavement and be strained through the unwoven geo-textile membrane beneath the paved surface. This method of surface water collection will improve water quality and prevent excessive sedimentation. There is a natural attenuation and storage of surface waters flowing through the permeable paving system and an outfall pipe is provided to drain the filtered/attenuated flows into the main drainage system.

The storm flows from the proposed development will be retained in overground/exposed flood **attenuation** retention basins. These basins will be located in the green landscaped open space areas to the north-east and south of the LAP land.

All the S/W outfall locations will have the appropriate **silt trap**, debris removal and petrol interceptors incorporated into the pipelines upstream of the discharge points.

Harvesting of rainwater not only captures run-off before it enters the drainage system but also reduces consumption of treated water from the main supply. It is proposed to incorporate rain water harvesting systems and link same to the supply system of selected buildings, providing water for the flushing of toilets, although it can also be used for the landscape irrigation if adequate supply exists.

10.12 Site Control

Site control comprises runoff and treatment installations to serve individual developments (or combinations of developments on adjacent sites), using elements such as swales and detention basins. On this development it is proposed to use a combination of the

above source control mechanisms in conjunction with a landscaped retention pond in the proposed public park south of the MC zoned lands.

In accordance with the Greater Dublin Strategic Drainage Study (GDSDS) development sites are to discharge surface water at either the greenfield/pre- development run-off rate. Therefore the S/W outfalls to both the Gaybrook Stream and the R132 375mm sewer will be limited to the appropriate allowable discharge rate, known as the Qbar rate.

It is proposed to provide a flow-control device in the form of a Hydrobrake to limit the surface water outfall rate to the appropriate Qbar rate.

It is also proposed to provide a Light Liquid Petrol Interceptor to ensure that all relevant contaminants/pollutants are removed from the outfall prior to discharge to the public drainage system.

10.13 Regional Control

Regional control comprises of treatment facilities to reduce pollutants from contaminated runoff, with the potential to provide biological treatment on a catchment scale. These installations deal with runoff on a catchment scale rather than at source level, typically controlling areas of 2 hectares or larger. They are often end-of-pipe facilities. The retention pond to the south of the lands and detention basin to the north-east of the land will serve at the regional control.

There are two proposed surface water drainage outfalls. The first outfall is to be into the existing public S/W 375mm sewer just southwest of the Malahide Road roundabout on the R132. The catchment

serving this outfall is limited by the specific site design of the ground levels and available outfall invert level. It has been estimated in the design process that approximately 3Ha of development will outfall to this location.

It is proposed to discharge the surface water from the development lands by gravity to the stream at the south of the site and drain some of the site to the existing piped surface water sewer network near the MRR. The S/W run-off from the development lands will be designed in accordance with the Greater Dublin Strategic Drainage Study (GDSDS) requirements. The S/W run-off will be limited to the equipollent existing agricultural run-off rate.

10.14 Modification of existing watercourses

As noted in the above paragraphs, there are two existing localized site drainage ditches on the subject lands and there is one flowing watercourse (Gaybrook Stream) passing to the south of the LAP lands.

Neither of the two existing site ditches will be used as part of the drainage system proposed for the development at Barrysparks as the S/W drainage system is to be piped via retention pond/detention basins without connection to either of the two existing ditches. Furthermore, the existing ditches will no longer have a catchment to drain as the hard surfacing will be drained to the piped network and therefore the ditches will become redundant.

The ditch to the south of the LAP land is to be absorbed into the development and the ditch to the west of the LAP land could have a land drain placed into same and filled in without impacting the drainage infrastructure.

The development proposed requires two road crossing locations over the Gaybrook Stream, one at Western Avenue and one at Eastern Avenue. It is proposed that the stream be culverted just at these locations and limiting the culvert length to the carriageway/path width. This principle of utilising and minimizing the culvert length has been agreed with the Water Services Department of FCC. The size of the culverts to be used will be designed in accordance with the Institute of Hydrology Report No.124 and in consultation with the final recommendations of the FEM FRAMS when published.

10.15 Summary

The Planning System and Flood Risk Management – Guidelines for Planning Authorities set out how the issue of flood risk should be integrated into the planning policy. An FRA should be carried out for statutory development plans. An FRA, *The Fingal and East Meath Flood Risk Management Study* (FEM FRAMS), is being undertaken as part of the Fingal County Development Plan review.

The Guidelines also consider whether FRA's are required for local area plans. Paragraph 4.28 of the Guidelines states:

"The preparation of a development plan in accordance with these Guidelines should identify the key flooding issues that need to be addressed at the local area plan (LAP) level. The local area plan is now an important part of the planning process allowing for more detailed and area-based planning. Many LAP's are equivalent in size to smaller development plans. Where flood risk may be an important issue as flagged in the relevant development plan, they must follow the methodology and staged approach including SEA, as outlined above. However, resolving flood risk issues and its impact on

deliverability of zoned land should be addressed in the development plan primarily."

Paragraph 4.29 further states:

"....planning authorities should use their discretion in addressing the issue of flood risk in a manner more appropriate to small-scale LAPs"

It is evident therefore that the assessment of flood risk should be primarily addressed at the development plan level, and only if the development plan flags a flood issue for an LAP area, should a full FRA be undertaken for an LAP. The planning authority must use its discretion in considering whether an FRA for an LAP is required. In the case of Barrysparks, the FEM FRAMS does not highlight that the area is prone to flood risk and the foregoing sections of this report illustrate that the development will be designed to ensure that runoff will be limited to existing agricultural run-off, thereby not posing any increase in the risk of flooding downstream on the Gaybrook Stream.

This report set out to assess the existing drainage of the LAP lands, determine if flooding was an issue and assess if there is a flood risk impact due to the development of the subject site.

In accessing same, extensive consultations were held with many different departments of FCC and reference made to both the Local Authority and the OPW record drawings/reports. Consultations were held with the FEM FRAMS team and reference made to the interim published data from those studies. Several site visits were made and both topographical surveys and sub-surface site investigations were carried out.

There is no recorded or anecdotal evidence that flooding is or has been an issue on the subject lands according to both FCC Water Services Department or the OPW.

The only significant watercourse near the lands is the Gaybrook Stream which passes near the site, south of the LAP lands. This stream has been the subject of an in-depth study as part of the FEM FRAMS and the interim conclusions of that study have determined that there is no flood risk from this watercourse to the Barrysparks lands.

On review of all of the above there has been no indication that there is a flood risk to the existing Barrysparks LAP lands from areas external to the site. There is no record of flooding having been generated on the LAP lands. Any development of the LAP lands will include designed and managed SuDS features to reduce, clean and attenuate the discharge to the above noted outfall locations.

10.16 Conclusion

As there is no flooding history of the lands and mitigation measures are to be employed in the development of the lands, it is therefore concluded that a Site Specific Flood Risk Assessment as defined by the *Planning System and Flood Risk Management* guidelines is not required.

11.0 Mitigation Measures

Mitigation measures are measures envisaged to prevent, reduce and as fully as possible, offset any significant adverse impacts on the environment of implementing the proposed Local Area Plan.

Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration is given in the first instance to preventing such effects or, where this is not possible for stated reasons, to lessening or offsetting those effects. Mitigation measures can be roughly divided into those that: *avoid* effects; *reduce* the magnitude or extent, probability and/or severity of effect; *repair* effects after they have occurred, and; *compensate* for effects, balancing out negative impacts with other positive ones.

11.1 Biodiversity / Flora & Fauna

The land use plan for the development of Barrysparks may conflict with the conservation of non-designated species located within the Local Area Plan lands and on adjoining lands. The strategic road link of Eastern Avenue, which traverses adjoining lands, has been aligned so as to avoid significant impacts on the marsh/woodland area, therefore the LAP has mitigated this potential threat.

The development of a SUDS pond for the attenuation of surface water will create a significant new waterbody to complement the existing wetland area and will provide additional habitat for the range of species that currently are found in the wetland/woodland area.

The landscaping plans will be required to take into account the existing vegetation types present on site and where possible existing vegetation will be retained, in particular boundary vegetation.

A bat survey will be carried out, as part of the first planning application for development on the site. If bats are identified on site bat boxes will be required to be installed at an appropriate location, to encourage the bats to roost at an alternative location, while protecting their presence in the area.

Specifically, the following objectives are incorporated within the LAP:

GI:

2. *All development proposals shall maximise opportunities for enhancement of existing ecology and biodiversity, through incorporation of existing trees/hedgerows (particularly along boundary with existing housing); protection of woodland and marsh southeast of plan lands; protection of Gaybrook stream, which links to the Broadmeadow/Malahide Estuary (Natura 2000 site); and bat survey in accordance with Bat Study undertaken as part of SEA.*
4. *Develop a Landscape and Recreational Masterplan for the local urban park, which shall be designed to fulfil a dual role in terms of its function as a high quality amenity space and sustainable water management resource.*

11.2 Soil

The soils have been determined to be generally uncontaminated. As much soil as possible will be reused on site for landscaping purposes. The construction management plan will address issue of re-use of soil, including storage. The LAP contains the following objective:

UD

12. A waste management strategy and a construction waste management strategy shall be submitted with all applications for substantial development.

11.3 Water

All planning applications will be required to formulate a comprehensive SuDS strategy, which will address water quantity, quality, amenity and habitat enhancement aspects of natural drainage, and to ensure that no threat is posed to the water quality status of the Broadmeadow estuary as a result of the development of the lands.

In order to prevent pollution of the Broadmeadow estuary from foul effluent, no development will be permitted on site until the Swords wastewater treatment plant has been upgraded sufficiently accommodate the projected development floor-space.

In order to limit unnecessary water usage, leaks and excessive consumption of the water supply a Water Management and Conservation Plan detailing how best practice in water conservation shall be applied will be required in all planning applications.

The LAP contains the following objectives to ensure mitigation of the above issues:

GI:

9. Promote and implement the SuDS strategy undertaken for the LAP lands and ensure no impact on the Gaybrook Stream and consequently the Broadmeadow/Malahide Estuary Natura 2000 site.

WS

1. Ensure the implementation of a stormwater management system in the detailed design of the plan lands, following the principles of Sustainable Urban Drainage Systems (SuDS) undertaken for the LAP.
2. Ensure surface water attenuation ponds and dry detention basins are well designed and incorporated as a design feature within open space areas, particularly within the local urban park.
3. Support the Water Framework Directive in implementing the Eastern River Basin District Management Plan 2009-2015, the Program of Measures for the Broadmeadow River, and the Fingal Ground Water Protection Scheme.
4. Ensure adequate water supply network to cater for the proposed development of the LAP lands.
5.
6. Require, prior to the commencement of all development, that a Sediment and Water Pollution Control Plan be submitted, in accordance with the Fingal Development Plan.
7. Require the development and submission of a water management and conservation plan, in accordance with the Fingal Development Plan.
8. Ensure incorporation of water conservation measures in the design of proposed developments.
9. The Eastern Regional Fisheries Board shall be consulted in relation to any works in relation to the diverting or crossing of a river/stream.
10. A Trade Effluent Discharge Licence under the 1977 & 1990 Water Pollution Acts shall be obtained by all companies involved in development from Fingal Water Services

- Department to ensure all discharges to surface waters do not compromise water quality in the Gaybrook Stream or any tributaries or drainage ditches discharging to the Gaybrook Stream and subsequently the Broadmeadow Estuary.*
11. A 10 metre riparian corridor shall be maintained along both sides of the Gaybrook Stream in order to protect and manage this existing watercourse.
- 11.4 Sustainable Energy**
- Effective mitigation measures in terms of air quality will involve active mobility management to encourage high usage of public transport through good traffic management plans.
- In addition, improvements in air quality are likely over the next few years as a result of the on-going comprehensive vehicle inspection and maintenance program, fiscal measures to encourage the use of alternatively fuelled vehicles and the introduction of cleaner fuels. Recent EU legislation, based on the EU sponsored Auto-Oil programmes, has imposed stringent emission standards for key pollutants for passenger cars to be complied with in 2006 (Euro IV) and for diesel HGVs introduced in 2006 and 2008 (Euro IV and V). In relation to fuel quality, EU Fuel Directive (98/70/EC) has introduced significant reductions in both sulphur and benzene content of fuels. All of these measures should ensure improved air quality in future years.
- All buildings will be required to achieve the highest possible BER Rating possible, which will result in low output in CO₂ emissions.
- The LAP incorporates the following mitigation objectives:
- UD:*
10. Applications for substantial building elements shall be accompanied by a sustainability report addressing sustainability in building design and building energy ratings, in addition to energy efficiency, water conservation and waste management measures.
11. Require details of the requirements for alternative renewable energy systems, for buildings greater than 1000sq m or residential schemes above 30 units, under SI 666 of 2006 European Communities (Energy performance of buildings) to be submitted at pre planning stage for consideration. These should take the form of an Energy Statement or Feasibility Study carried out by qualified and accredited experts.

TR:

10. Require a Mobility Management Plan/Smarter Travel Plan to be submitted with planning applications for proposed trip intensive developments, including retail and commercial proposals.
11. Ensure that transport infrastructure is appropriately phased and implemented in tandem with development of LAP lands, in accordance with section 9.
12. A mid-term review shall be undertaken prior to receipt of applications for phase 3 to ensure assumptions applied to the traffic modelling and analysis undertaken as part of the Transport Network Study by Roughan O'Donovan are valid and remain appropriate.

11.5 Noise

The noise baseline has identified that noise emanating from the M1 will have the greatest impact on the site. This is particularly relevant for residential units, which will be developed at the upper levels of

the town centre buildings. The designers of the buildings will be required to design noise mitigation measures that will reduce the impact of road noise on the quality of life of the occupants of the residential units both internally and externally.

All future developments must ensure that residential amenity is given high priority when considering design and noise mitigation.

UD:

13. *Planning applications shall be accompanied by an assessment of the daylight, sunlight, overshadowing, privacy, and amenity impacts of new development upon existing as well as new development areas, in addition to details of noise mitigation measures to protect existing as well as new residences.*

11.6 Archaeology

All planning applications which will have an impact or potential impact on a Recorded Monument will be required to have an archaeological test carried out on site prior to the commencement of construction. The results will be recorded and kept on record.

The LAP incorporates the following mitigation objectives:

GI:

7. *Seek to preserve and/or record, as appropriate, the archaeological and cultural heritage of the area, including recording by excavation of the ring ditch along the route of Western Avenue and inclusion of a protection buffer in vicinity of St Werburgh's Well during construction.*

8. *Archaeological monitoring of topsoil stripping at site clearance stage of development shall be carried out by a suitably qualified archaeologist under licence to DoEHLG and the National Museum of Ireland.*

11.7 Transportation

The provision of additional roads will generate additional private car trips in area. To mitigate against this, several objectives in the Local Area Plan, encourage the use of public transport (Metro – Bus), walking and cycling. The LAP includes a phasing programme to ensure infrastructure is provided in tandem/prior to development. In particular, the LAP states that ‘no development shall commence within the LAP lands until the Government approves the awarding of the main infrastructural contract by the RPA for the construction of Metro North to Swords’.

The following objectives are incorporated within the LAP:

TR:

1. *Facilitate and ensure integration of development with Metro Stop, Metro Plaza/Public Transport Interchange and Metro Box infrastructure, as well as improved local and regional bus routes, in particular The Rise, and pedestrian/cyclist routes.*
-
6. *Require a Mobility Management Plan/Smarter Travel Plan to be submitted with planning applications for proposed trip intensive developments, including retail and commercial proposals.*

7. *Ensure that transport infrastructure is appropriately phased and implemented in tandem with development of LAP lands, in accordance with section 9.*
8. *A mid-term review shall be undertaken prior to receipt of applications for phase 3 to ensure assumptions applied to the traffic modelling and analysis undertaken as part of the Transport Network Study by Roughan O'Donovan are valid and remain appropriate.*

Appendix 1: Maps from Archaeological Assessments



archer heritage planning

Unit 8 BEAT Centre
Stephenstown
Balbriggan
Co. Dublin



Job/Site: Barrysparks LAP
Test Trenching

Client: Mac Cabe Durney Barnes

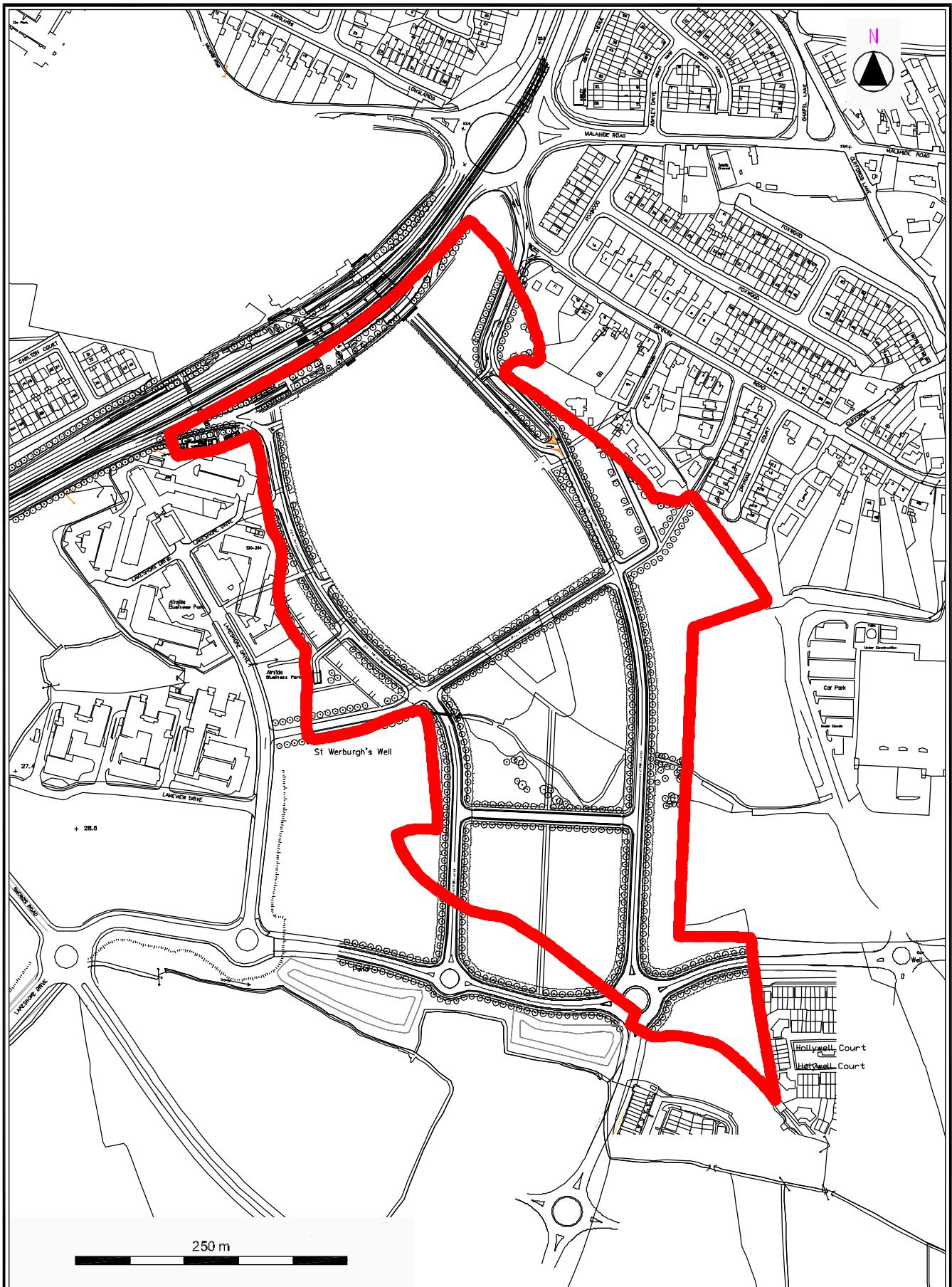
Scale: 1:15,000 A4

Date: Aug '10

Origin: OSi

Drawing no.: 2009_09_C2001

Figure 1: Site Location



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Job/Site: Barrysparks LAP
Test Trenching

Client: Mac Cabe Durney Barnes

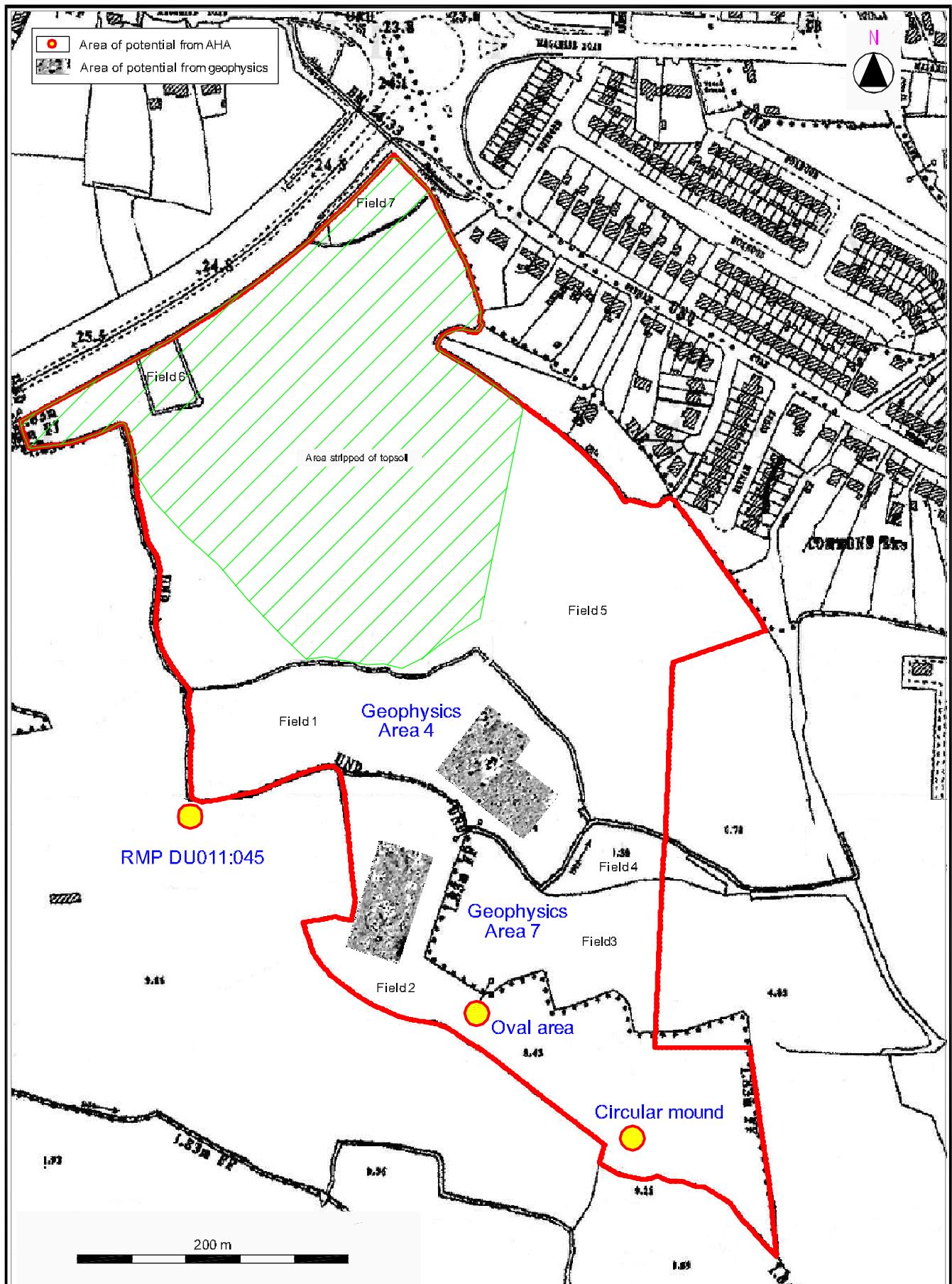
Scale: 1:5,000 A4

Date: Feb '10

Origin: OSi/ client

Drawing no.: 2009_09_C2002

Figure 2: Proposed road network



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Co. Dublin



Job/Site: Barrysparks LAP
Test Trenching

Client: Mac Cabe Durney Barnes

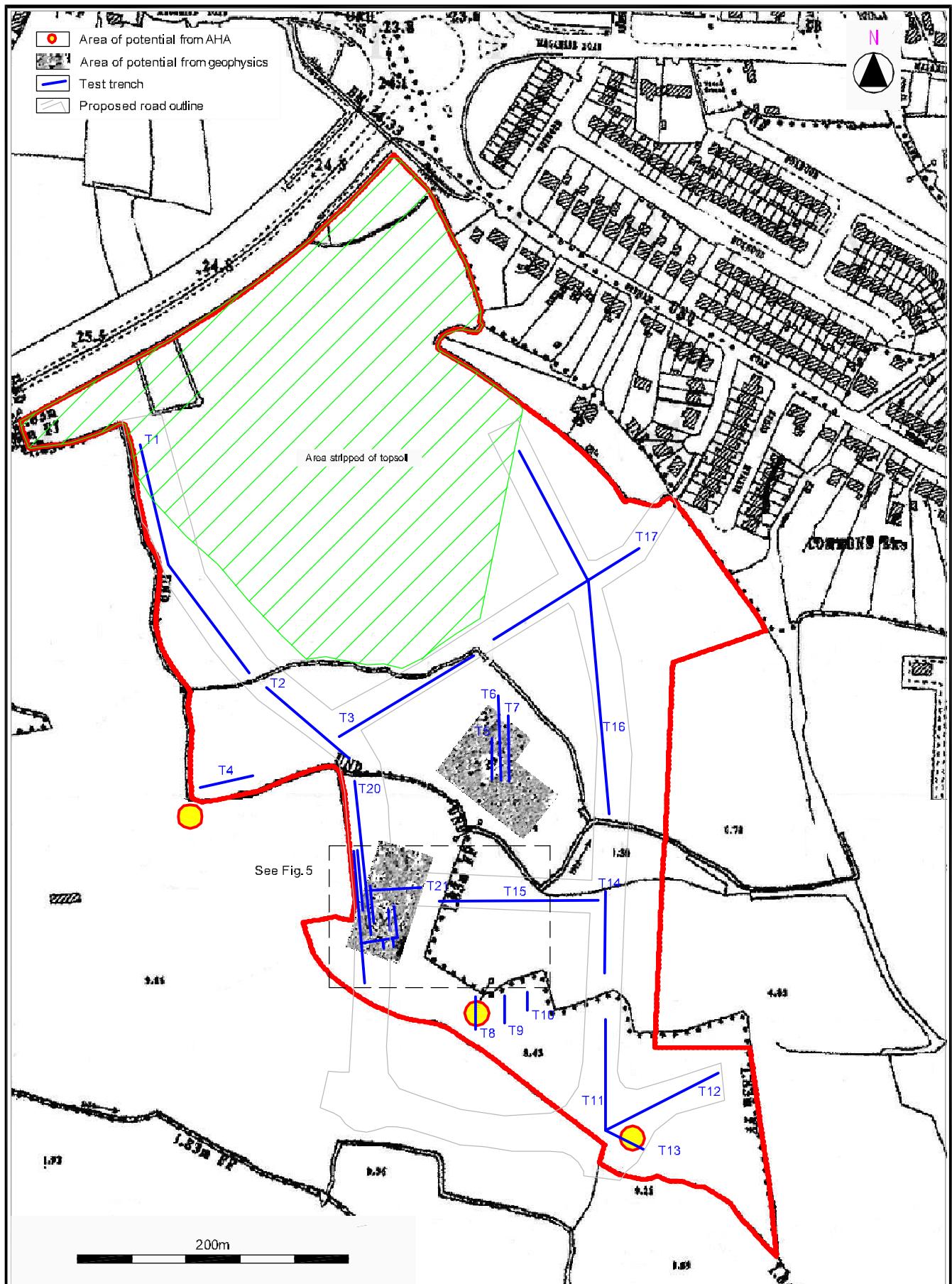
Scale: 1:4000 A4

Date: May '10

Origin: OSi/RMP 1998

Drawing no.: 2009_09_C2003

Figure 3: Location of potential archaeological sites from previous surveys



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Job/Site: Barrysparks LAP
Test Trenching

Client: Mac Cabe Durney Barnes

Scale: 1:4000 A4

Date: May '10

Origin: OSi/RMP 1998

Drawing no.: 2009_09_C2004

Figure 4: Trench Layout (Phase 1 Feb 2010)

*Reproduced from RMP constraints map (Dublin sheet 2994)

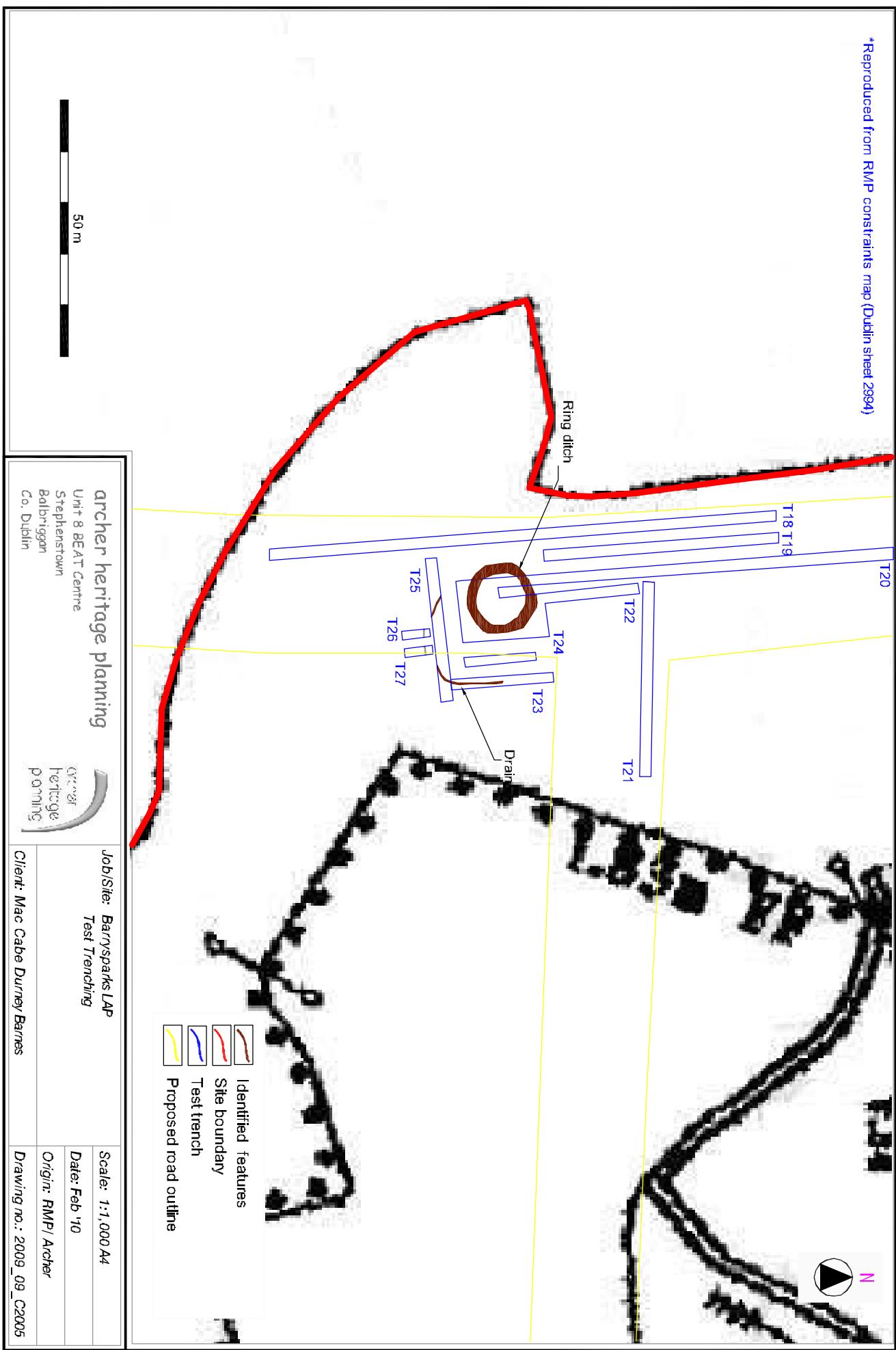
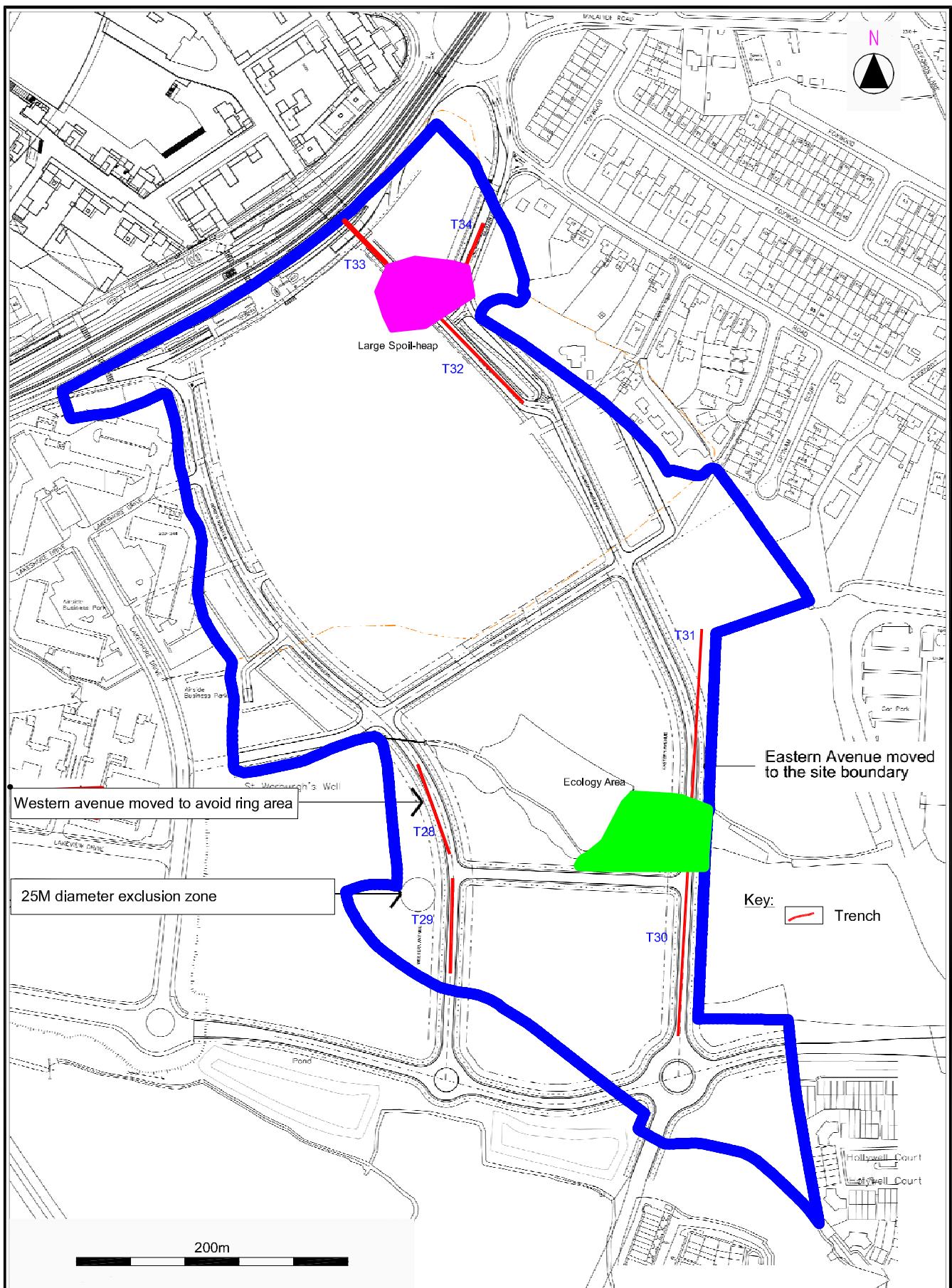


Figure 5: Detail of archaeological features



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Unit 8 BEAT Centre
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Balbriggan
Co. Dublin



Job/Site: Barrysparks LAP
Test Trenching

Client: Mac Cabe Durney Barnes

Scale: 1:4,000 A4

Date: Aug '10

Origin: OSi/ client

Drawing no.: 2009_09_C3002

Figure 6: Revised Road Layout and Additional Phase II Test-Trenches

Appendix 2: SUDS Strategy

Pat O'Gorman & Associates

Consulting Structural and Civil Engineers

Date: July 2009

By: Roger Mullarkey

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Summary of Surface Water Services

The majority of the existing site slopes away from the R132 towards an existing open course stream towards the south end of the site. A portion of the site slopes towards the R132/Malahide Road Roundabout (MRR).

It is proposed to discharge the surface water from the development lands by gravity to the stream at the south of the site and drain some of the site to the existing piped surface water sewer network near the MRR. The S/W run-off from the development lands will be designed in accordance with the Greater Dublin Strategic Drainage Study (GDSDS) requirements. The S/W run-off will be limited to the equipollent existing agricultural runoff rate.

The principles of SUDS are to be adopted as part of this development in accordance with the GDSDS. The storm flows from the proposed development will be retained in overground/exposed flood attenuation retention basins. These basins will be located in the green landscaped open space areas.

It is intended that the use of "green roofs" be used as a primary source of reducing the S/W run-off from the site, the area of which will be subject to Architectural layout and design. Recent site ground investigation testing has determined that that percolation/infiltration of S/W is not feasible due to the existing sub-soil type. It is proposed that a rainwater harvesting system will be incorporated into the scheme design which will reduce the overall potable water demand into the development. Typical details of such a system are shown in the appendix of this document. It is proposed that a tanked permeable paving system will be used to collect, clean, attenuate and store rainwater before discharging same into the developments' S/W system.

It is intended that the open streets and podium levels will use this method of paving. All the S/W outfall locations will have the appropriate silt trap, debris removal and petrol interceptors incorporated into the pipelines upstream of the discharge points.

Summary of Potable Water Services

There are 2No.300mm ø Ductile Iron water mains in the public road to the North East of the site under Drynam Road, one of which extends through the Holywell housing estate to the SE of the Barrysparks lands. There is also another 300mm ø DI watermain to the South West of the lands at the existing roundabout on Lakeshore Drive in the Airside Business Park.

This development will propose to interconnect these existing separate water mains to form a loop water main across the site. This is the favoured solution by the FCC Water & Drainage Department as such a routing would provide significant benefit to the overall flow characteristics in the pipelines.

Appendix

Dwg.No. 0719/040 Surface Water Strategy

Dwg.No. 0719/041 Watermain Strategy

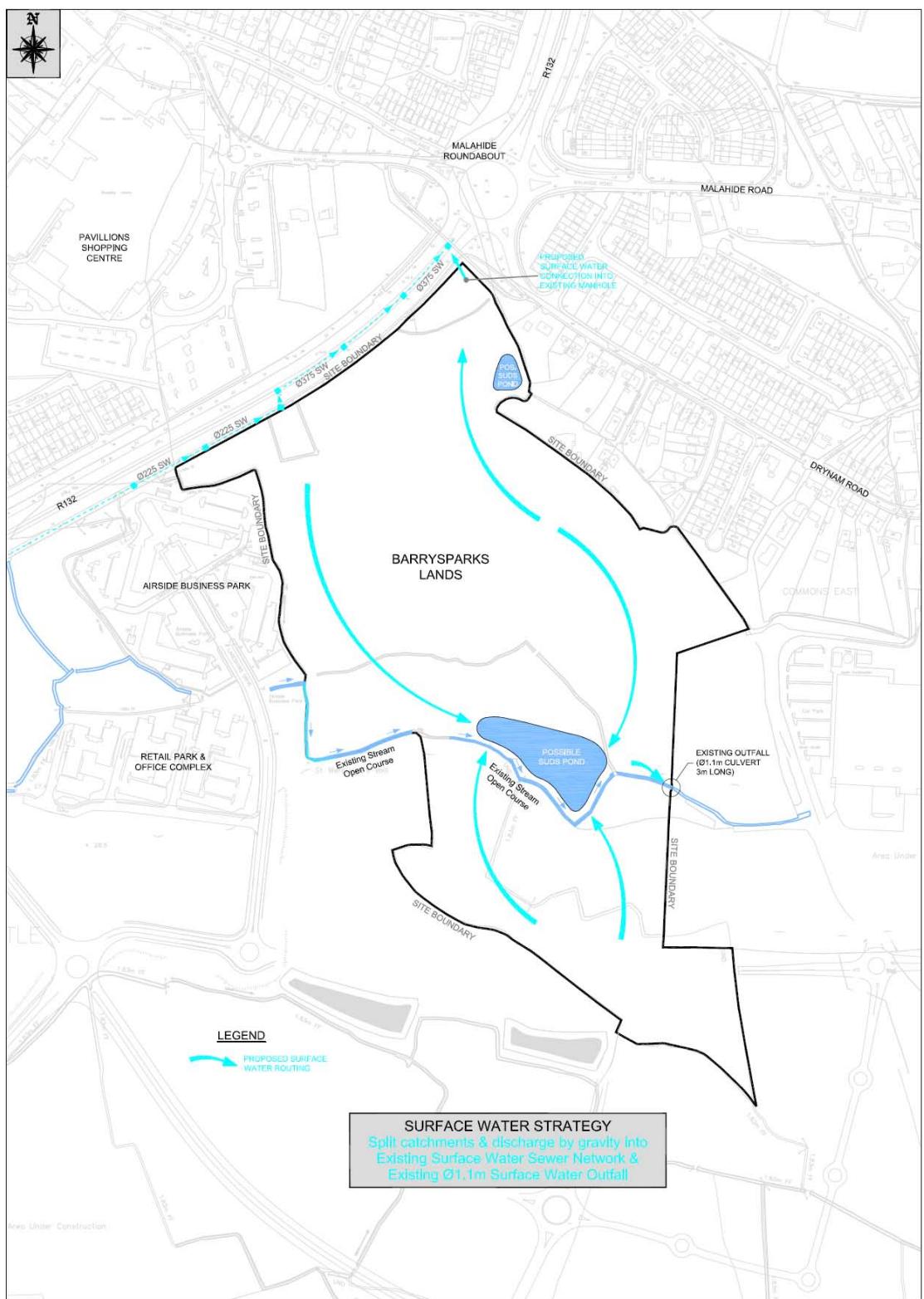
Dwg.No. 0719/042 Foul Water Strategy (A)

Dwg.No. 0719/SK1 Typical "Green Roof" System Details

Dwg.No. 0719/SK2 Typical Permeable Paving Design

Dwg.No. 0719/SK3 Example Attenuation Pond Design

Dwg.No. 0719/SK4 Rainwater Harvesting Schematic



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PROJECT
SWORDS CENTRE

DRAWING TITLE
SURFACE WATER STRATEGY

ARCHITECT

C BISLAND

STAGE

LAP SUBMISSION

JULY 2009

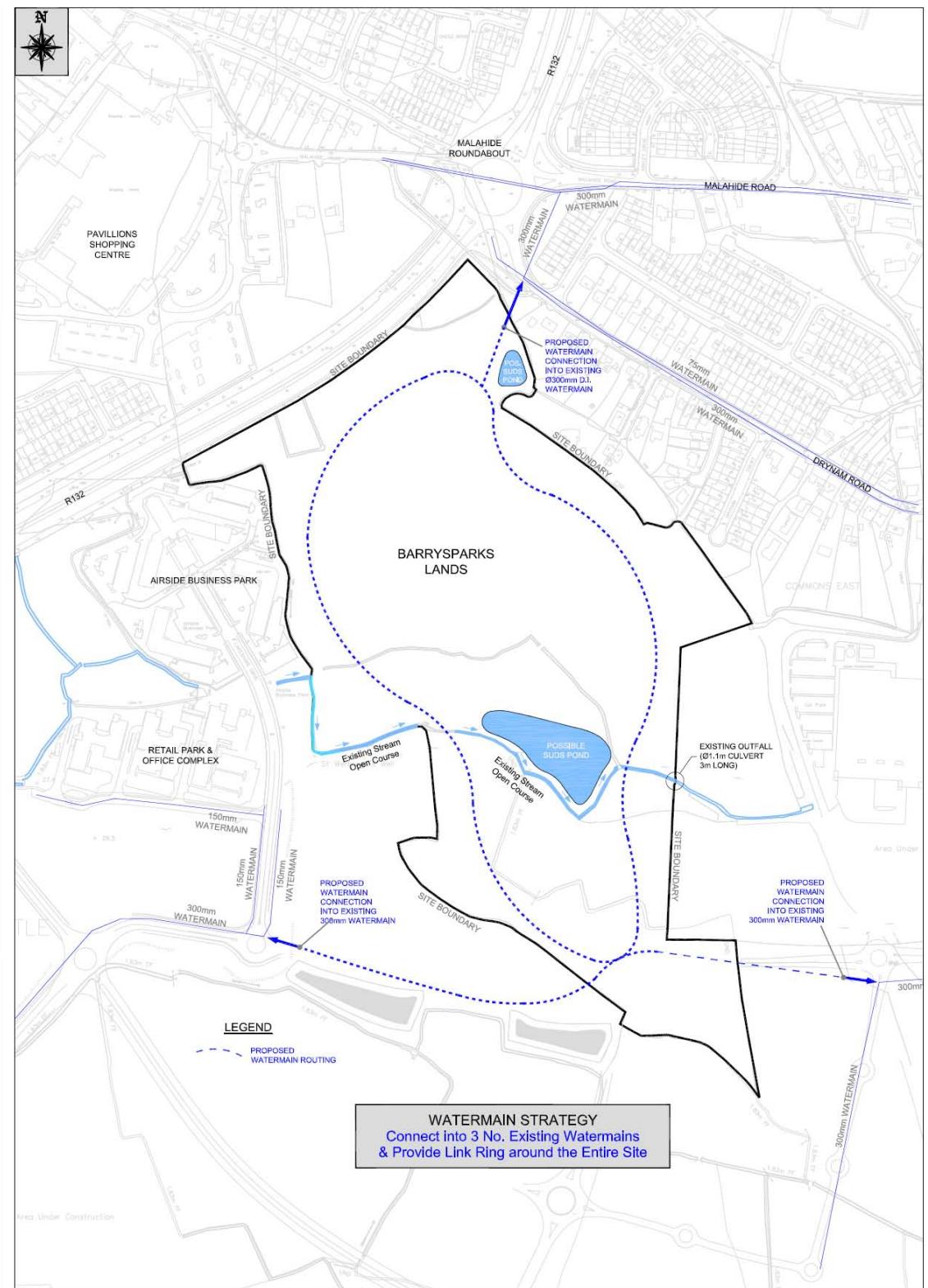
C BISLAND

SCALES

DWG NO.

0719/040

REV.



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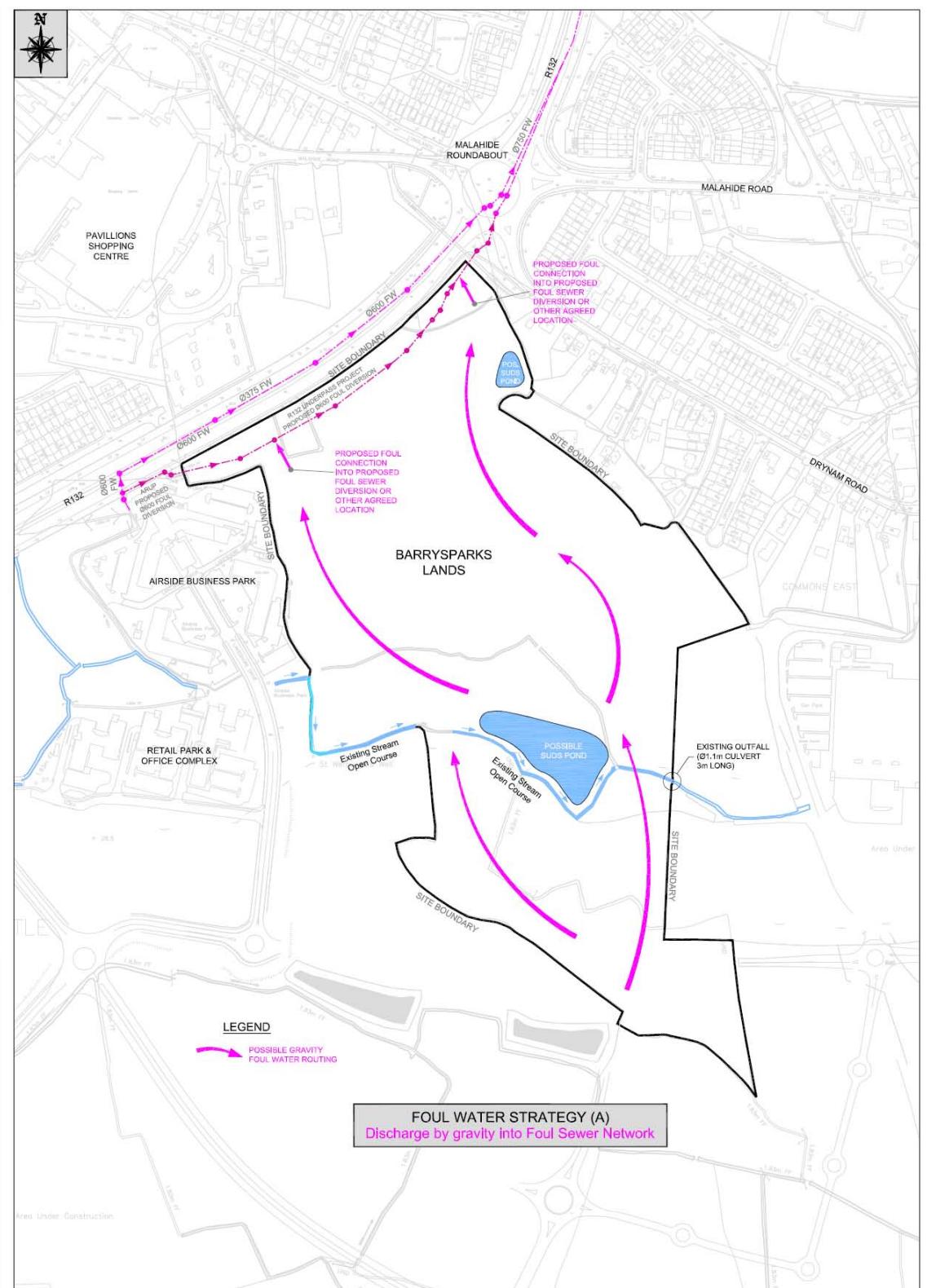
PROJECT
SWORDS CENTRE

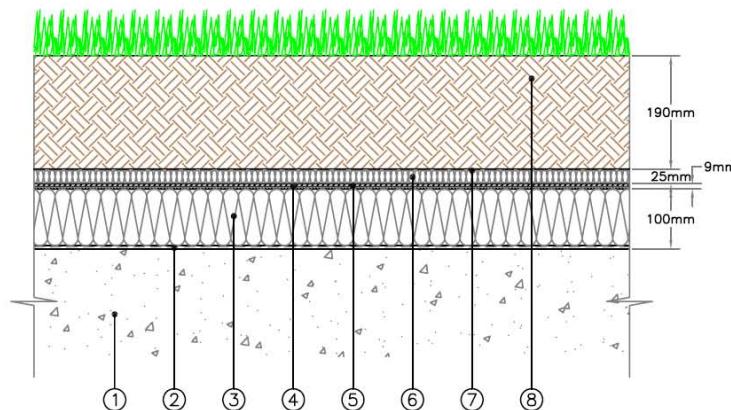
DRAWING TITLE
WATERMAIN STRATEGY

ARCHITECT

STAGE
LAP SUBMISSION

DATE	DRAWN	SCALES	DWG NO.	REV.
JULY 2009	C BISLAND		0719/041	-

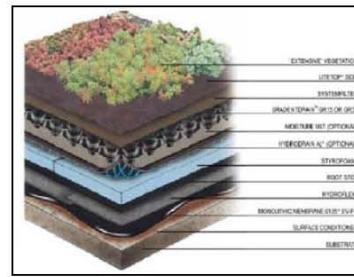




SECTION KEY:

1. Concrete surface primed with Alumasc bitumen primer and allowed to dry completely.
2. Vapour control layer, bonded in hot bitumen.
3. Derbifoam BGT Polyurethane insulation, depth as required to meet the 'U' value and dew points of the structure, bedded in hot bitumen.
4. Derbigum Anti-Root cap sheet, 4mm modified bitumen membrane, impregnated with Preventol B2 root repellent, fully bonded in Derbibond S.
5. Moisture Mat SSM 45, loose laid over the Derbigum cap sheet, with 100mm unsealed laps.
6. Floradrain FD25 2000 x 1000 x 25mm drainage sheets, but jointed and held together using plastic clip connectors in order to form a continuous drainage layer.
7. Filter sheet SF, loose laid over the drainage layer with 150mm unsealed laps.
8. Zinco Sedum Carpet Substrate / Sedum species.

Note: For the purpose of this section the roof build-up is to achieve a 0.25 W/m²k 'U' value.



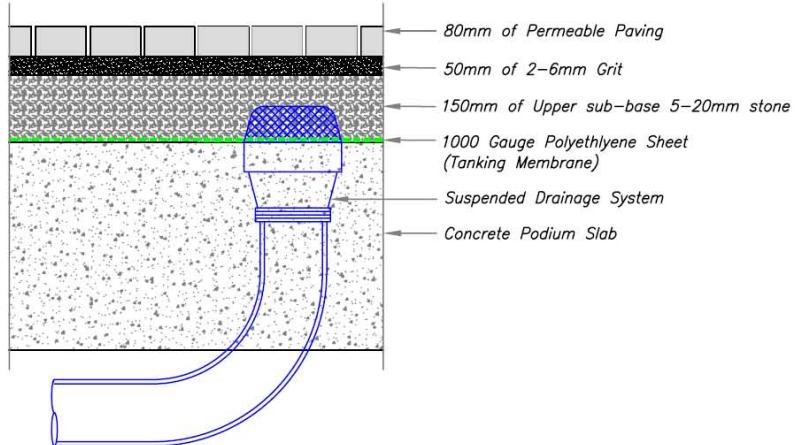
EXAMPLE "GREEN ROOF" SYSTEMS

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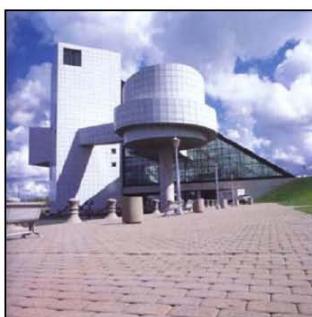
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PROJECT	ARCHITECT		STAGE	
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EXAMPLE "GREEN ROOF" SYSTEMS			NTS	-



Podium Streets



EXAMPLE "FULLY TANKED PERMEABLE PAVING" SYSTEMS

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PROJECT

DRAWING TITLE

EXAMPLE "PERMEABLE PAVING" SYSTEMS

ARCHITECT

STAGE

DATE

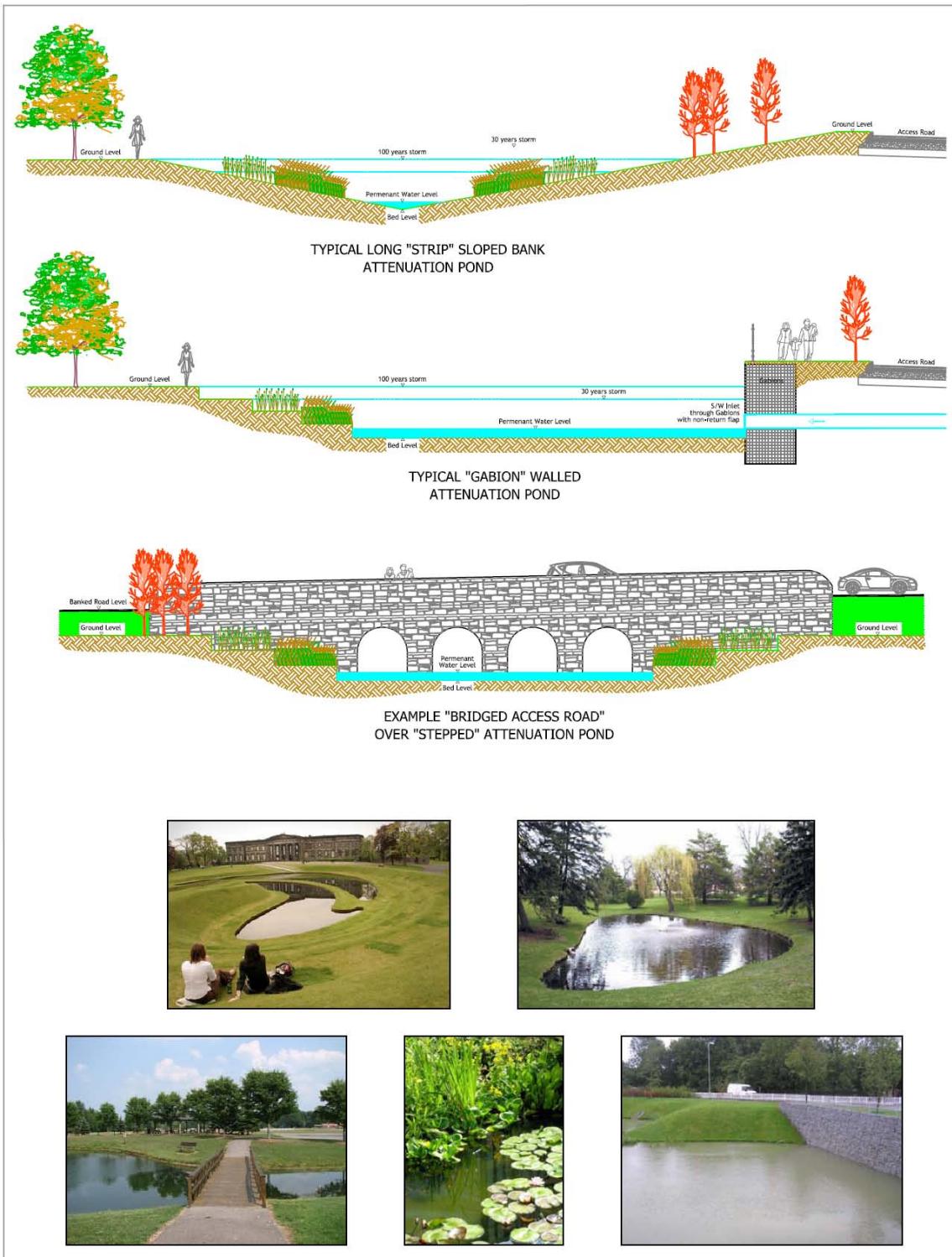
DRAWN

SCALES

NTS

DWG NO.

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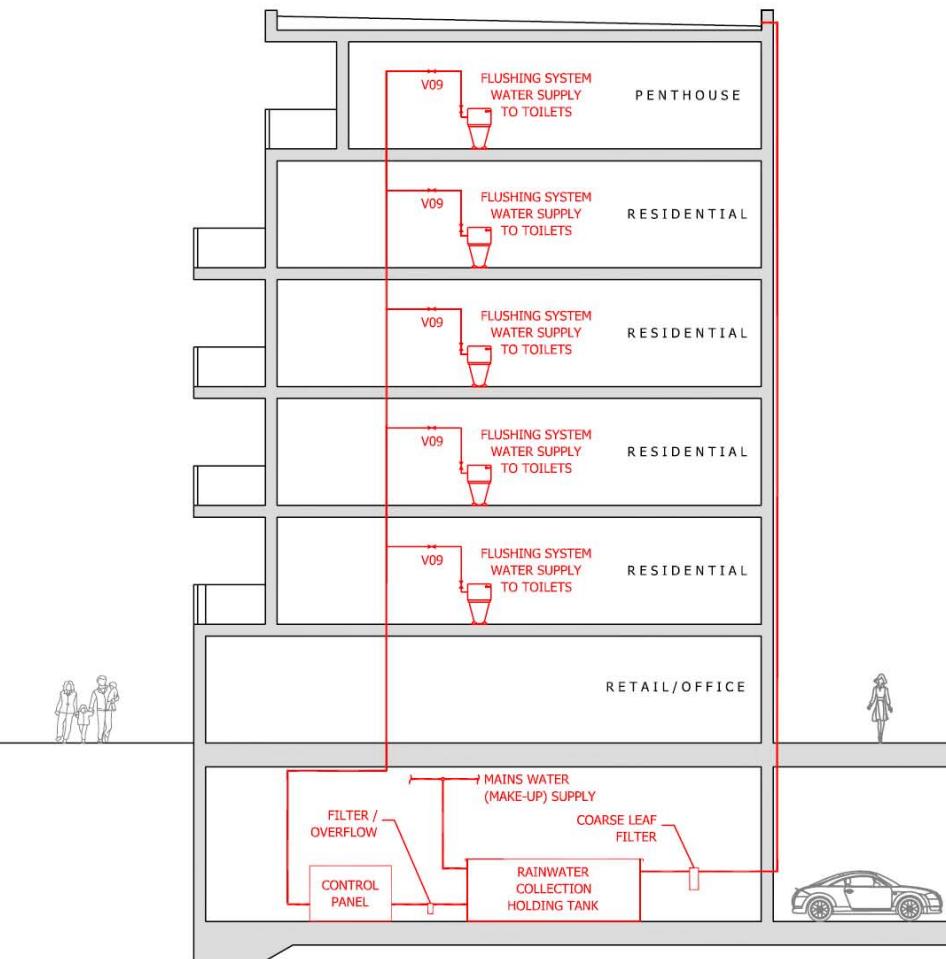
EXAMPLE "SuDS POND" DESIGNS

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PROJECT	ARCHITECT	STAGE
SWORDS CENTRE		
DRAWING TITLE	DATE	DRAWN
EXAMPLE "SuDS POND" DESIGNS	C BISLAND	NTS
	DWG NO.	REV.
	0719/SK3	



EXAMPLE "COMMERCIAL RAINWATER HARVESTING"

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PROJECT
SWORDS CENTRE

DRAWING TITLE
EXAMPLE "RAINWATER HARVESTING"

ARCHITECT

STAGE

DATE

DRAWN

SCALES

DWG NO.

REV.

C BISLAND

NTS

0719/SK4

APPENDIX 3

WATER SURVEY RESULTS FOR GAYBROOK STREAM

Custom Test List	Samplir Sampling Point Description	Sampled Date	Sample Number	Ammon B.O.D. mg/l as mg/l	C.O.D. mg/l	Conduc µS/cm	Dissolv % Sat.	Dissolv mg/l	E. coli MPN/10 ml	Nitrate mg/l as mg/l	Nitrite mg/l as pH	pH	Phosph mg/l as mg/l	Suspen °C	Temper TON	TON mg/l as MPN/100ml	Total Coliforms	
110_RIVER	45760 (45760) Gay Brook Stream,Belfast Road.	10/11/2010 09:10	471709	0.04	<2	11	668	93	10.4	148	2.48	0.039	8.2	0.06	<10	9.3	2.52	4611
110_RIVER	45775 (45775) Gay Brook Stream,Swords Road,I	10/11/2010 09:30	471710	0.04	<2	10	760	90	10.0	9804	3.06	0.010	7.9	0.04	<10	9.7	3.07	>24196
110_RIVER	45780 (45780) Gay Brook Stream,Barrack Bridge	10/11/2010 09:45	471711	<0.03	<2	11	753	82	9.1	1374	3.02	0.008	7.9	0.04	<10	9.4	3.03	12997

Report for Samples Taken During the Period: 01/08/2010 - 31/08/2010

Fingal County Council AUGUST 2010

Custom Test List	Samplir Sampling Point Description	Sampled Date	Sample Number	Ammon B.O.D. mg/l as mg/l	C.O.D. mg/l	Conduc µS/cm	Dissolv % Sat.	Dissolv mg/l	E. coli MPN/10 ml	Nitrate mg/l as mg/l	Nitrite mg/l as pH	pH	Phosph mg/l as mg/l	Suspen °C	Temper TON	TON mg/l as MPN/100ml	Total Coliforms	
110_RIVER	45760 (45760) Gay Brook Stream,Belfast Road.	05/08/2010 08:15	439630	0.03	<2	<10	563	94	9.4	583	1.47	0.005	8.2	0.03	<10	14.9	1.48	24196
110_RIVER	45775 (45775) Gay Brook Stream,Swords Road,I	05/08/2010 10:00	439631	0.03	<2	<10	725	88	8.8	7701	1.21	<0.005	8.1	0.04	<10	14.9	1.22	>24196
110_RIVER	45780 (45780) Gay Brook Stream,Barrack Bridge	05/08/2010 10:20	439632	<0.03	<2	<10	701	81	8.2	1081	1.33	<0.005	8.0	0.05	<10	14.8	1.34	19863

Report for Samples Taken During the Period: 01/04/2010 - 30/04/2010

Fingal County Council APRIL 2010

Custom Test List	Samplir Sampling Point Description	Sampled Date	Sample Number	Ammon B.O.D. mg/l as mg/l	C.O.D. mg/l	Conduc µS/cm	Dissolv % Sat.	Dissolv mg/l	E. coli MPN/10 ml	Nitrate mg/l as mg/l	Nitrite mg/l as pH	pH	Phosph mg/l as mg/l	Suspen °C	Temper TON	TON mg/l as MPN/100ml	Total Coliforms
110_RIVER	45760 (45760) Gay Brook Stream,Belfast Road.	01/04/2010 08:30	389565	<0.03	<2	<10	702	117	13.8	2.15	<0.005	8.2	<0.03	11	7.1	2.15	
110_RIVER	45775 (45775) Gay Brook Stream,Swords Road,I	01/04/2010 09:40	389566	0.05	<2	<10	754	113	13.7	2.16	0.013	8.1	0.03	14	6.5	2.17	
110_RIVER	45780 (45780) Gay Brook Stream,Barrack Bridge	01/04/2010 10:00	389567	0.08	<2	<10	766	110	13.3	2.31	0.013	8.2	0.04	17	6.7	2.32	

Report for Samples Taken During the Period: 01/12/2009 - 31/12/2009

Fingal County Council DECEMBER 2009

Test List	Source Sampling Location	Date & Time	Sample No	Ammon B.O.D. mg/l as mg/l	C.O.D. mg/l	Conductivity µS/cm	Dissolv % Sat.	Dissolv mg/l	E. coli MPN/10 ml	Nitrate mg/l as mg/l	Nitrite mg/l as pH	pH	Phosph mg/l as mg/l	Suspen °C	Temper TON	TON mg/l as MPN/100ml	Total C Total N Total Phosphorus	
110_RIVER	45760 (45760) Gay Brook Stream,Belfast Road.	10/12/2009 08:00	348393	<0.03	<2	<10	584	92	10.6	86	1.57	0.005	8.0	<0.03	<10	9.1	1.58	6867
110_RIVER	45775 (45775) Gay Brook Stream,Swords Road,I	10/12/2009 10:25	348394	0.03	<2	<10	682	108	12.6	2282	1.91	0.007	8.0	0.04	<10	8.6	1.91	19863
110_RIVER	45780 (45780) Gay Brook Stream,Barrack Bridge	10/12/2009 10:00	348395	0.03	<2	<10	684	107	12.5	3448	2.17	0.009	8.0	0.05	<10	8.5	2.18	24196

Report for Samples Taken During the Period: 01/08/2009 - 31/08/2009

Fingal County Council AUGUST 2009

Test List	Source Sampling Location	Date & Time	Sample No	Ammon B.O.D. mg/l as mg/l	C.O.D. mg/l	Conductivity µS/cm	Dissolv % Sat.	Dissolv mg/l	E. coli MPN/10 ml	Nitrate mg/l as mg/l	Nitrite mg/l as pH	pH	Phosph mg/l as mg/l	Suspen °C	Temper TON	TON mg/l as MPN/100ml	Total Coliforms
110_RIVER	45760 (45760) Gay Brook Stream,Belfast Road.	14/08/2009 08:15	295716	<0.03	<2	<10	523	96	9.6	1.16	<0.005	8.1	<0.03	<10	15.1	1.17	
110_RIVER	45775 (45775) Gay Brook Stream,Swords Road,I	14/08/2009 09:40	295717	<0.03	<2	<10	689	93	9.3	1.48	<0.005	8.2	0.05	<10	15.2	1.49	
110_RIVER	45780 (45780) Gay Brook Stream,Barrack Bridge	14/08/2009 09:20	295718	<0.03	<2	<10	693	87	8.7	1.59	0.005	8.4	0.06	<10	15.0	1.60	

Report for Samples Taken During the Period: 01/05/2009 - 31/05/2009

Fingal County Council MAY 2009

Test List	Source Sampling Location	Date & Time	Sample No	Ammon B.O.D. mg/l as mg/l	C.O.D. mg/l	Conductivity µS/cm	Dissolv % Sat.	Dissolv mg/l	E. coli MPN/10 ml	Nitrate mg/l as mg/l	Nitrite mg/l as pH	pH	Phosph mg/l as mg/l	Suspen °C	Temper TON	TON mg/l as MPN/100ml	Total Coliforms
110_RIVER	45760 (45760) Gay Brook Stream,Belfast Road.	22/05/2009 08:15	259947	0.04	<2	<10	621	96	10.4	2.34	0.007	8.1	<0.03	<10	11.5	2.35	
110_RIVER	45775 (45775) Gay Brook Stream,Swords Road,I	22/05/2009 09:45	259948	0.06	<2	<10	687	87	9.4	2.13	0.022	8.2	0.05	<10	11.5	2.15	
110_RIVER	45780 (45780) Gay Brook Stream,Barrack Bridge	22/05/2009 09:20	259949	0.06	<2	10	720	82	8.9	2.48	0.022	8.0	0.05				