Grangegorman
Development Agency
Gníomhaireacht Forbartha
Ghráinseach Ghormáin

STRATEGIC ENVIRONMENTAL ASSESSMENT

SCOPING ISSUES PAPERS

PREPARATION OF GRANGEGORMAN STRATEGIC PLAN

June 2008

TABLE OF CONTENTS

STRATEGIC ENVIRONMENTAL ASSESSMENT

SCOPING ISSUES PAPERS

PREPARATION OF *GRANGEGORMAN STRATEGIC PLAN*

1.0 INTRODUCTION

1.1 Purpose of this Scoping Issues Papers

The EU Strategic Environmental Assessment (SEA) Directive (2001/42/EC) has a stated objective

> *"to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment".*

The Grangegorman Development Agency[1] (Agency) intends to prepare a Strategic Plan for the Grangegorman Development Area as required in terms of section 12 of the *Grangegorman Development Agency Act 2005.* A decision was taken by the Agency that Strategic Environmental Assessment of this plan is required following a Screening process in accordance with the statutory requirements under *Article 9 of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations, 2004*.

1.2 Legislative Context for Scoping

This Strategic Environmental Assessment of the Grangegorman Strategic Plan is being prepared in accordance with the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations, 2004. *Article 11* of these regulations sets out the requirements for scoping of the Environmental Report. The purpose of this scoping is to ensure that the relevant environmental issues are identified so that they can be addressed appropriately in the Environmental Report.

The SEA Directive provides for considerable flexibility concerning the scope and level of detail to be included in the environmental report. Only the information listed in Annex I of the Directive that is reasonably required should be included, taking into account:

- Current knowledge and methods of assessment
- The contents and level of detail in the plan
- The stage of the plan in the decision-making process; and

[1] The Grangegorman Development Agency, St. Brendan's Hospital, Former Nurses Education Centre, Grangegorman, Dublin 7

- The extent to which certain matters are more appropriately assessed at different levels in the decision making process.

The Grangegorman Strategic Plan forms part of a hierarchy of land use plans and as such the level of detail to be contained in the environmental report will vary from that of other land use plans in accordance with this hierarchy. Consequently and in order to avoid duplication of assessment a decision needs to be made as to what level of detail is appropriate for an SEA of this level of land use plan.

1.3 Consultation with Environmental Authorities

As part of this process the Agency is now engaged in statutorily and additional non-statutorily required consultation. *Article 11* of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 requires that the Grangegorman Development Agency give notice to prescribed Environmental Authorities as specified in *Article 9(5)* prior to making a decision in relation to the requirements for Strategic Environmental Assessment of the *Grangegorman Strategic Plan*. In addition to these prescribed Environmental Authorities a number of other non-statutory agencies have been included in this consultation and these are outlined below.

1.3.1 Statutory Environmental Authorities

The following Environmental Authorities have been circulated with these Scoping Issues Papers and submissions invited in respect of the scope and extent of the environmental report:

Department of the Environment, Heritage and Local Government

- John Gormley, T.D., Minister for the Environment, Heritage and Local Government; and
- The Manager, Development Applications Unit, Department of the Environment, Heritage and Local Government

Environmental Protection Agency

- Mary Kelly, Director General, Environmental Protection Agency
- Tadhg O'Mahony, Regional Inspectorate, Environmental Protection Agency

While Dublin City Council are not listed as a statutory Environmental Authority it was considered appropriate that they should be consulted as such, in light of the location of Grangegorman within the jurisdiction of Dublin City Council and the implications for the Dublin City Council Development Plan 2005 - 2011. As a result a copy of the consultation documents were circulated to the following.

Dublin City Council

- John Tierney, Dublin City Manager, Dublin City Council
- John O'Hara / Clair Caffrey, Dublin City Council, Planning Department

1.3.2 Non-Statutory Consultees

The following Non-Statutory Consultees were also circulated these Scoping Issues Papers and submissions sought:

- An Bord Pleanála
- Dublin Regional Authority
- Forfás
- Mary Hanafin, T.D., Minister for Education and Science
- Eamon Ryan, T.D., Minister for Communications, Energy and Natural Resources
- Noel Dempsey, T.D., Minister for Transport
- Éamon Ó Cuív, T.D., Minister of Community, Rural and Gaeltacht Affairs
- The Heritage Council
- An Taisce
- An Chomhairle Ealaíon, (The Arts Council)
- Fáilte Ireland
- Health and Safety Authority
- Central Fisheries Board
- Eastern Regional Fisheries Board
- Údarás na Gaeltachta
- Railway Safety Commission
- Railway Procurement Agency
- Dublin Transportation Office
- ESB Head Office
- Health Service Executive
- The National Roads Authority
- Dublin Institute of Technology

Submissions or observations in relation to the scope and extent of the Environmental Report to be prepared as part of the SEA of the Grangegorman Strategic Plan may be made to the Grangegorman Development Agency by Friday 11th July 2008.

1.4 Strategic Environmental Assessment Study Team

Tom Phillips + Associates have been appointed by the Grangegorman Development Agency to carry out the Strategic Environmental Assessment of the Grangegorman Strategic Plan. A number of additional specialist consultants have also been appointed to provide additional specialist knowledge within key specific environmental areas as detailed in Table 1.1 below.

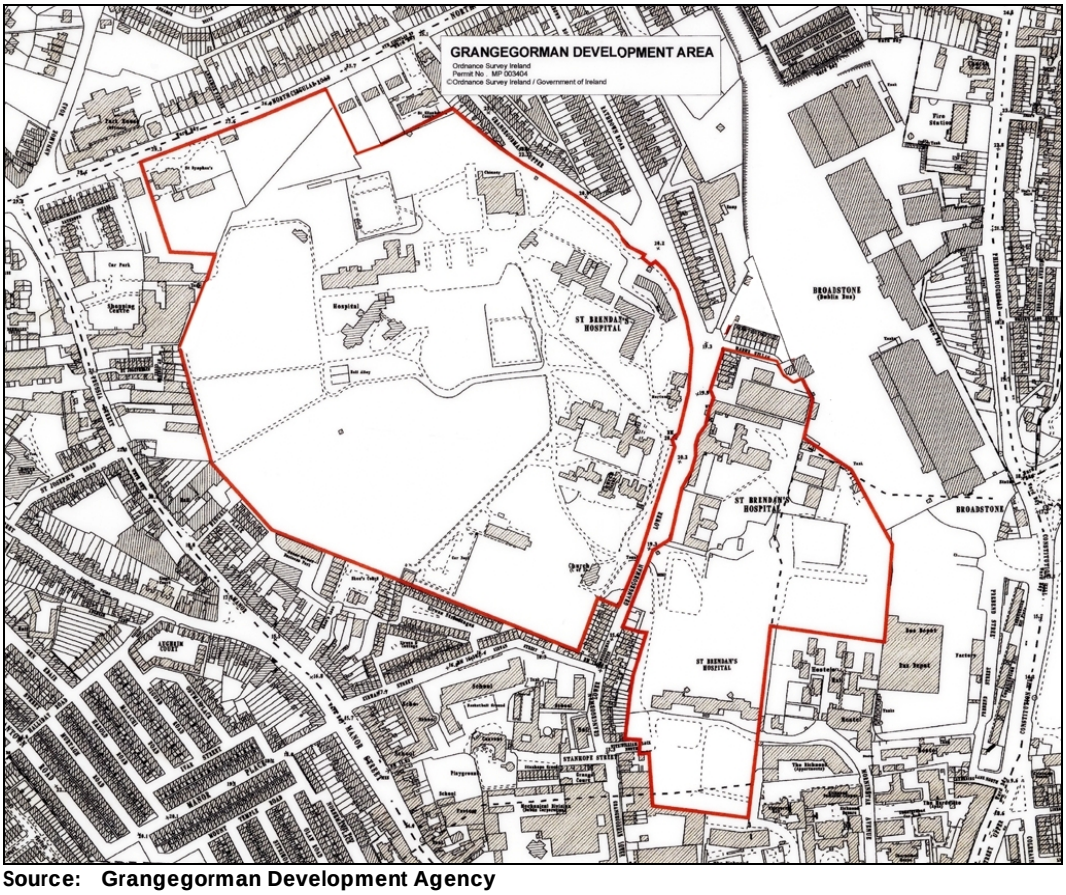
Table 1.1 Additional Specialists Providing Input to SEA

Company	Specialist Input
Natura Environmental Consultants	Biodiversity, Flora & Fauna Assessment
AWN Consulting	Air Quality Baseline Assessment
Margaret Gowan	Archaeological Assessment
Howley Hayes	Architectural Heritage Assessment
Horgan Lynch	Soils; Water (Hydrology & Hydrogeology); Material Assets
Faber Maunsell	Traffic and Transportation
Mitchell & Associates	Landscape Assessment
Tom Phillips + Associates	Population & Human Health Assessment

2.0 GRANGEGORMAN STRATEGIC PLAN

The Grangegorman Development Agency is a statutory agency established in terms of the *Grangegorman Development Agency Act, 2005* to redevelop the former St. Brendan's Hospital grounds in Dublin City Centre as a new centre for the Dublin Institute of Technology (DIT), to provide community health facilities on behalf of the Health Services Executive (HSE) and other facilities e.g. recreational and community facilities. The Agency has initiated the preparation of a Strategic Plan (in terms of section 12 of the *Grangegorman Development Agency Act, 2005*) for lands at Grangegorman. The extent of the subject lands is as described in *Schedule 1* of the *Grangegorman Development Agency Act, 2005* and indicated in Figure 2.1 below. This Strategic Plan is to be prepared by the Agency in consultation with a wide range of bodies and with the local community. The Grangegorman Development Agency's website provides further information on its operation, duties and activities and can be accessed at www.gda.ie.

Figure 2.1 Site Location - Grangegorman Development Area



Source: Grangegorman Development Agency

2.1 Purpose of the *Grangegorman Strategic Plan*

The *Grangegorman Development Agency Act, 2005* (the Act) provides the statutory framework for the preparation of the *Grangegorman Strategic Plan*. This legislation was enacted by the Oireachtas in July 2005 with the purpose of providing for the development of an area in Grangegorman, Dublin, as a location for education, health and other facilities. The Act also provides for the establishment of the *Grangegorman Development Agency* and defines the functions of this Agency.

2.2 Description of Grangegorman Development Area

Grangegorman is an area of approximately 29.4 hectares located in the Arran Quay Ward of Dublin in the district of Grangegorman, north of the River Liffey and south of the Grand Canal, approximately 1 kilometre from Dublin's City Centre. It comprises the site of St. Brendan's Hospital, a Psychiatric Hospital owned and run by the Health Services Executive. The site is split by the roadway known as Grangegorman Lower and Upper thus forming distinct plots of land approx. 21.3 hectares to the west and 8.1 hectares to the east. The Grangegorman site is bounded by North Circular Road to the north, Prussia Street and Stoneybatter to the west, and Brunswick Street to the south.

The site is divided into two precincts known as St. Brendan's West (21.66 hectares) and St. Brendan's East (7.77 Hectares) on either side of Grangegorman Upper. The northern perimeter of the site adjoins the North Circular Road. The eastern edge of the site is beside the Broadstone and Phibsboro bus depots, property used by Dublin Bus and Bus Éireann under the auspice of Córas Iompair Éireann (CIE).

Much of the site is undeveloped and can be considered brownfield with approximately one third of St. Brendan's West currently used as active recreational playing fields. These lands contain many mature trees together with fourteen protected buildings under the current *Dublin City Development Plan, 2005-2011*, all of which date from the nineteenth century, or before. There is a high boundary wall which surrounds most of the site which means access to the lands is restricted. The development site currently has one operational entrance and one closed entrance. The lands are elevated on the north eastern part sloping gently down towards the south west.

The Grangegorman site has a diverse architectural, historical, and land use character, however the area is fragmented and cut off from surrounding residential neighbourhoods. These factors have served to limit expansion and to discourage the coherent development of the area. The site is located in the north Dublin inner-city in close proximity to the City Centre.

2.2.1 Historical Context and Relationship to the City

The Grangegorman site lies just north of the Smithfield Market and across the River Liffey from the historic medieval core and the expanding Digital HUB in the Liberties section of Dublin. Dublin City Council, the city's statutory planning authority,

envisions building on the rich historic identity of Grangegorman by creating a high quality character area/urban district with strong physical linkage to surrounding areas. The site is located within 5 minutes walk of Stoneybatter and Kings Inns, within 10 minutes walk of Smithfield and Phibsborough, and within 20 minutes walk of Phoenix Park and the City Centre.

Plate 2.1 Arial Photograph of Grangegorman Development Area

Source: Grangegorman Development Agency

2.2.2 Grangegorman: A Brief History

The Grangegorman site has a long history in serving the people of Dublin since the establishment of the Houses of Industry for the poor in the 1770's. In 1810, the Governors of the House decided to build a separate institution to house mentally ill patients. The Richmond Asylum was opened to patients in 1814 and was designed by Francis Johnston, the foremost architect of the day. This building, now known as the Lower House, was built as a large quadrangle but only its southern section remains standing today.

Throughout the 19th century the Grangegorman site evolved and grew to become a large regional mental hospital occupying over 30 hectares of land. Additional buildings were constructed stretching to the west of the original establishment. At its peak, the hospital served over 2000 patients. In the 20th century changes in care of the mentally ill have moved away from large institutions, to the current situation where there are less than 100 patients on-site.

2.3 Planning Context

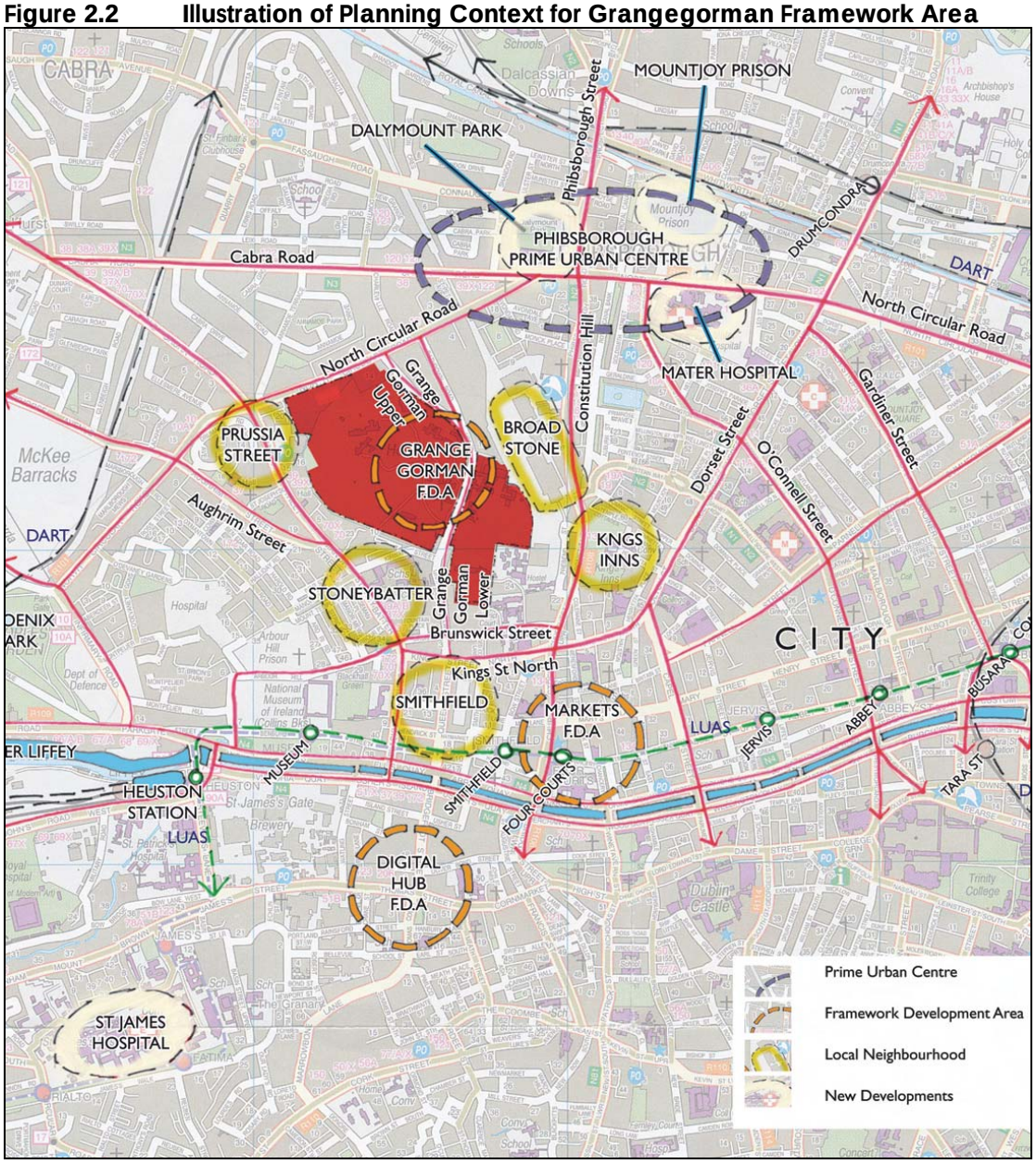
Dublin City Council has designated the Grangegorman site as a framework development area within the Dublin City Development Plan. The plans for the development of the Grangegorman site must take account of, and be integrated with, other plans for the social, economic, and physical renewal of the North West Inner City. It is intended that the development would provide a major stimulus to the regeneration of the Grangegorman area and create strong linkages to Smithfield, Stoneybatter, Broadstone, and King's Inn.

The Framework Development Area (FDA) of Grangegorman identified in the *Dublin City Development Plan 2005-2011* sets out the following objectives:

- to ensure that the development framework for Grangegorman/Broadstone provides for a high quality character area/urban district with strong physical linkage to the H.A.R.P. Area/Smithfield, Phibsborough, Manor Street and to the City Centre through Henrietta Street;
- to create a highly sustainable urban campus at Grangegorman as a new home for DIT with the capacity to develop strong links with other knowledge sector engines located elsewhere in the inner city;
- to develop a legible, attractive spatial and urban character which marries the provision of new urban space with high quality contemporary architecture and with the integration and re-use of protected historic structures and other buildings of architectural/artistic merit;
- to ensure that the existing open space is developed both for the benefit of the new campus and for adjacent existing communities;
- to co-operate with existing stakeholders in Broadstone to promote the development of a new range of higher value economic uses that would be complementary to the uses at the Grangegorman site;
- to provide for the physical integration of Grangegorman and Broadstone with each other and the city centre through the development of a series of physical connections, including pedestrian and cycle linkages and new transport infrastructure;

- to ensure that the requirements of the North Area Health Board (Health Services Executive) in the provision of healthcare facilities shall be accommodated in any future development of Grangegorman;
- to examine in conjunction with the relevant educational agencies including Educate Together the primary and secondary education uses to support this third level campus.

Figure 2.2 Illustration of Planning Context for Grangegorman Framework Area

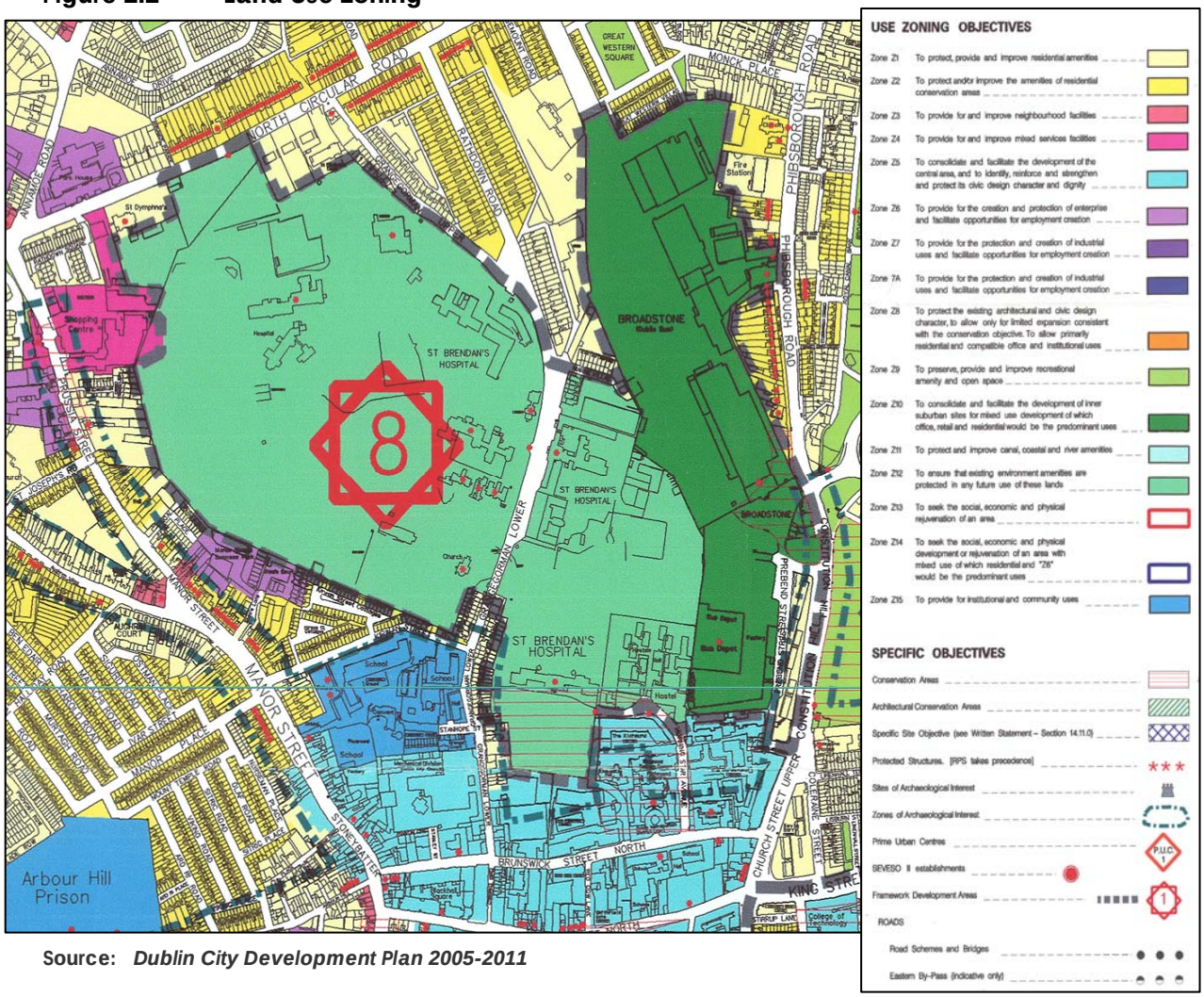


Source: Grangegorman Development Agency, *Masterplan Design Brief*, January 2008

2.3.1 Land Use Zoning

The Grangegorman Development Area has been zoned Z12 "*To ensure the existing environment amenities are protected in any future use of these lands*" under the current *Dublin City Development Plan 2005-2011*.

Figure 2.2 Land Use Zoning



Source: ***Dublin City Development Plan 2005-2011***

The land use zoning policies and objectives, relating to the Z12 zoning of the site, are set out in section 14.4.12 of the Development Plan Written Statement and are extracted below for information.

> ***"Institutional Land (Future Development Potential) – Zone Z12***
> ***Land Use Zoning Objective Z12:***
>
> ***To ensure the existing environmental amenities are protected in any future use of these lands.***
> *These are lands the majority of which are in institutional use, which could possibly be developed for other uses such as residential.*

These areas include community and recreation related development including schools and colleges, residential health care institutions (e.g. hospitals) and development for other community uses (e.g. club meeting facilities such as scout and guide halls). Often significant ancillary facilities such as staff accommodation and dedicated open space or sports and recreational facilities are included.

Where lands zoned Z12 are to be developed, a minimum of 20% of the site, incorporating landscape features and the essential open character of the site, will be required to be retained as accessible public open space.

In considering any proposal for development on lands subject to zoning Objective Z12, other than development directly related to the existing community and institutional uses, Dublin City Council will require the preparation and submission of a master plan setting out a clear vision for the future for the development of the entire land holding. In particular, the master plan will need to identify the strategy for the provision of the 20% public open space requirements associated with any residential development, to ensure a coordinated approach to the creation of high quality new public open space facilities on these lands.

And, for the avoidance of doubt, at least 20% social and affordable housing requirement, as set out in the Housing Strategy in this Plan, will apply in the development of lands subject to the Z12 zoning objective.

Zoning Objective Z12:

Permissible Uses
ATM, Bed and breakfast, Buildings for the health, safety and welfare of the public, Caravan park/Camp site (holiday), Childcare facility, Community facility, Conference centre, Cultural/recreational building and uses, Education (excluding night time uses) Embassy, Enterprise centre, Garden centre, Golf course and clubhouse, Guest house, Halting site, Hostel, Hotel, Media recording and general media associated uses, Medical and related consultants, Open space, Place of public worship, Public service installation, Residential institution, Residential, Restaurant, Science and technology-based industry, Training centre.

Open for Consideration Uses
Boarding kennel, Car park, Civic and amenity/recycling centre, Funeral home, Industry (light), Municipal Golf Course, Nightclub, Office, Outdoor poster advertising, Shop (Neighbourhood)."

3.0 RELEVANT PLANS AND PROGRAMMES

The Grangegorman Strategic Plan will be affected by, and will affect a wide range of other relevant plans and programmes and environmental objectives. The SEA Team has reviewed the relevant plans and programmes that will be given due consideration as part of the Strategic Environmental Assessment. These plans are detailed in the tables below.

Table 3.1 International Level Plans and Programmes

International Plans and Programmes	
Document Name	**Main Policy direction for the Plan**
Agenda 21	Local Agenda 21 is a process which facilitates sustainable development at community level. It is an approach, based on participation which respects the social, cultural, economic and environmental needs of the present and future citizens of a community in all its diversity and which relates that community and its future to the regional, national and international community of which it is a part.
COMAH (Seveso II) Directive – European Communities (Control of Major Accident Hazards involving Dangerous Substances) Regulations (2000)	The Seveso II Directive, sometimes referred to as COMAH, stipulates certain requirements for storage of relatively large quantities of substances classified as dangerous.
Directive 2001/42/EC of the European Parliament and Council of 27th June 2001 on the assessment of the effects of certain plans and programmes on the environment.	This Directive requires plan-makers to carry out an assessment of the likely significant environmental effects of implementing a plan or programme before the plan or programme is adopted. There are two statutory instruments which transposed the SEA Directive into Irish Law: ▪ European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004, S.I. No. 435 of 2004 ▪ Planning and Development (Strategic Environmental Assessment) Regulations 2004, S.I. No. 436 of 2004
EU 6th Environmental Action Programme (1998)	The Environment Action Programme takes a broad look at the challenges of environmental policy and provides a strategic framework for the Commission's environmental policy up to 2012. It identifies four environmental areas for priority actions: ▪ Climate Change ▪ Nature and Biodiversity ▪ Environment and Health and Quality of Life ▪ Natural Resources and Waste
European Biodiversity Strategy (1998)	This strategy aims to anticipate, prevent and attack the causes of significant reduction or loss of biodiversity at the source. This will help both to reverse present trends in biodiversity decline and to place species and ecosystems, including agro-ecosystems, at a satisfactory conservation status, both within and beyond the territory of the European Union (EU).
European Spatial Development Perspective (1999)	The main aim of the ESDP is to maintain the individual characteristics of the various countries within the EU while simultaneously increasing integration between the member states, socially and economically with the protection of the environment as a core element. The ESDP has three underlying objectives: 1. Economic and Social Cohesion across the Community. 2. Conservation of natural resources and cultural heritage 3. Balanced competitiveness across the EU
E.U. Water Framework Directive	The Directive rationalises and updates existing water legislations and provides for water management on the basis of River Basin Districts (RBD's).
Urban Waste Water Treatment Directive	The objective of the Directive is to protect the environment from the adverse effects of discharges of urban waste water and of waste water from industrial sectors of agro-food industry.

Other International Directives/ Conventions and Papers include:

- EU Urban Waste Water Treatment Directive
- EU Major Accidents Directive
- Energy Performance in Buildings Directive, 2005
- Groundwater Directive
- Surface Water Directive
- Dangerous Substances Directive
- Environmental Impact Assessment Directive
- Bathing Water Directive
- Habitats Directive
- Birds Directive
- EU White Paper on Renewable Energy (1997)
- Integrated Pollution Prevention Control Licensing
- UN Convention of Biological Diversity
- European Landscape Convention 2000
- European Convention on the Protection of the Archaeological Heritage (Valletta Convention)
- Granada Convention for the Protection of the Architectural Heritage of Europe 1985

Many of these documents listed above are referred to in the Environmental Issues section of these Scoping Issues Papers.

Table 3.2 National and Regional Level Plans and Programmes

National and Regional Level	
	Main Policy direction for the Plan
National Spatial Strategy (2002)	The National Spatial Strategy published in November 2002 is a twenty year planning framework designed to achieve a better balance of social, economic, physical development and population growth between regions. Its focus is on people, on places and on building communities. (The NSS is based upon the European Spatial Development Perspective).
National Development Plan 2007-2013	The National Development Plan (NDP) involves an investment of public, EU and private funds over the period 2000 - 2006. The funding is to provide for economic and social infrastructure, employment and human resources, productive sector as well as the Peace Programme. The Plan will involve significant investment in health services, social housing, education, roads, public transport, rural development, industry, and water and waste services.
Sustainable Development – A Strategy for Ireland (1997)	"Sustainable Development - A Strategy for Ireland" was published in 1997 by the Department of the Environment. The Strategy recognises the need for good spatial planning and the inclusion of sustainability concerns in urban and built environment policies. The Strategy recognises that the pattern and density of urban development has a major influence on travel patterns. The Strategy encourages high movement activities to locate in areas of maximum accessibility to public transport so as to reduce growth in transport demand. As a general principle, the minimisation of potential growth in transport demand will be incorporated as a leading consideration in land use planning. The Strategy also aims to ensure a clear demarcation between urban and rural land use, to help prevent urban sprawl and to encourage more sustainable development patterns in settlements.
National Anti-Poverty Strategy (NAPS)	The National Anti-Poverty Strategy (NAPS) is the government strategic initiative to place the needs of the poor and the socially excluded at the top of the national policy agenda. The NAPS recognises the unacceptable scale of poverty and its impact on those directly affected and on the wider society and it particularly

	notes the distinct spatial aspects of poverty in urban and rural areas. The strategy emphasises the importance of a cross-departmental policy response in dealing with the problem.
Transport 21	*Transport 21* is a strategy which will see €34.4 billion invested over the next 10 years in Irish transport. Connecting communities and promoting prosperity is the core aim of this strategy. The programme seeks to meet the transport needs of the country's citizens and also underpin our competitiveness into the future. A comprehensive and efficient transport network is essential if we are to continue to improve our living standards while remaining competitive in the global market place. Transport 21 recognises that quality, integrated transport is critical for competitiveness, return on investment and regional development.
Regional Planning Guidelines for the Greater Dublin Area (2004 - 2016)	Part B of the Regional Planning Guidelines provides a robust sustainable planning framework for the Greater Dublin Area within the context of the Planning and Development Act, 2000 and the National Spatial Strategy 2002-2020. It provides a long-term strategic planning framework for the development of Greater Dublin Area in the 12 year period up to 2016 within the NSS vision for 2020. The Regional Planning Guidelines have been devised and prepared having regard not only to the recommendations of the NSS for the Dublin and Mid-East Regions (the Greater Dublin Area), but also, and importantly, for the regions surrounding the GDA
National Biodiversity Plan (2002)	This Plan was published in 2002. It aims to secure the conservation, including where possible the enhancement and sustainable use, of biological diversity in Ireland and to contribute to conservation and sustainable use of biodiversity globally.
National Climate Change Strategy (2007)	The strategy was published in 2007. Under Kyoto Protocol, Ireland agreed to a target of limiting its greenhouse gas emissions to 13% above 1990 levels by the first commitment period 2008 – 2012 as part of its contribution to the overall EU target. Ireland ratified the Kyoto Protocol on the 31st May, 2002, along with the EU and all other Member States, and is internationally legally bound to meet the challenging greenhouse gas emissions reduction target. To ensure Ireland reaches its target under the Kyoto Protocol and, building on measures put in place following the publication of the first National Climate Change Strategy in 2000, the Government has published the new National Climate Change Strategy 2007 – 2012.
Making Ireland's Development Sustainable (2002)	This document identifies focuses mainly on the link between economic activity and pressures on the environment. Sustainable development emerged as an idea in the late 1980s and led to the Earth Summit in Rio de Janeiro in 1992. At the Summit, world leaders agreed to implement an action programme for sustainable development called, *Agenda 21*. The Irish Government published *Sustainable Development: A Strategy for Ireland* in 1997 which applies *Agenda 21* in Irish circumstances. *Making Ireland's Development Sustainable* reviews progress with sustainable development in Ireland since Rio, assesses the challenge we now face and sets out policies and actions to meet that challenge.

Other Relevant Guidance	
Retail Planning Guidelines (2005)	The Retail Planning Guidelines provide a comprehensive framework to guide Planning Authorities in preparing development plans, assessing applications for planning permission, and guide retailers and developers in formulating development proposals. Retail functions reflect four broad tiers of urban development.
Architectural Heritage Protection Guidelines (2005)	The guidelines include the criteria to be applied when selecting proposed protected structures for inclusion in the Record of Protected Structures (RPS), guidance to Planning Authorities on declarations and determining planning applications in relation to a protected structure, a proposed protected structure or the exterior of a building within an Architectural Conservation Area (ACA). It also contains supplementary detailed guidance to support Planning Authorities in their role to protect the architectural heritage when a protected structure, a proposed protected structure or the exterior of a building within an ACA is the subject of development proposals and when a declaration is sought in relation to a protected structure.
OPW Guidelines on Flood Risk (2005)	The OPW provide guidance on Planning Policy in relation to flooding. The policy which the Planning Authority should adopt is 'Development should not itself be subject to an inappropriate risk of flooding nor should it cause or exacerbate such a risk at other locations'. This provides for run-off areas and the provision of

	appropriate drains. There should be set-back zones from the edge of watercourses. Minimum design standards should be applied, flood impact assessments to be required in certain developments and certification from a competent person that a development will not contribute to flooding within the relevant catchment.
Landscape and Landscape Assessment Guidelines (2000)	These Guidelines recommend the assessment method known as Landscape Character Assessment which favours a method of characterisation i.e. the discernment of the character of the landscape based initially on landcover – trees, vegetation, settlements, water etc. and landform which results from geological and geomorphological history. Added to this first level of assessment is a second layer described in the Guidelines as values, takes historical, cultural, religious and other understandings of the landscape into account. This method of assessment allows for a proactive approach to landscape so that it is viewed for its ability to accommodate developments, gives indicators as to which developments might be most suited, under what conditions and using what design criteria.
Natioinal Inventory of Architectural Heritage (NIAH)	The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of the Environment, Heritage and Local Government. The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister for the Environment, Heritage and Local Government to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS).
Delivering A Sustainable Energy Future For Ireland - The Energy Policy Framework 2007 – 2020 (White Paper)	This White Paper sets out the Government's Energy Policy Framework 2007-2020 to deliver a sustainable energy future for Ireland. It is set firmly in the global and European context which has put energy security and climate change among the most urgent international challenges. The White Paper sets out the actions to be taken in response to the energy challenges facing Ireland. The objective is to deliver a sustainable energy future, starting now, with a time horizon of 2020 but also looking beyond that.
National Parks and Wildlife Service (NPWS)	The role of National Parks and Wildlife Service (NPWS) is: ▪ To secure the conservation of a representative range of ecosystems and maintain and enhance populations of flora and fauna in Ireland, ▪ To implement the Wildlife Act, 1976, the Wildlife (Amendment) Act, 2000 and the EU Habitats and Birds Directives, ▪ To designate and advise on the protection of Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Natural Heritage Areas (NHAs) having particular regard to the need to consult with interested parties, ▪ To make the necessary arrangements for the implementation of National and EU legislation and policies and for the ratification and implementation of the range of international Conventions and Agreements relating to the natural heritage, ▪ To manage, maintain and develop State-owned National Parks and Nature Reserves.

4.0 ENVIRONMENTAL RECEPTORS AND KEY ENVIRONMENTAL ISSUES RELATING TO THE GRANGEGORMAN STRATEGIC PLAN

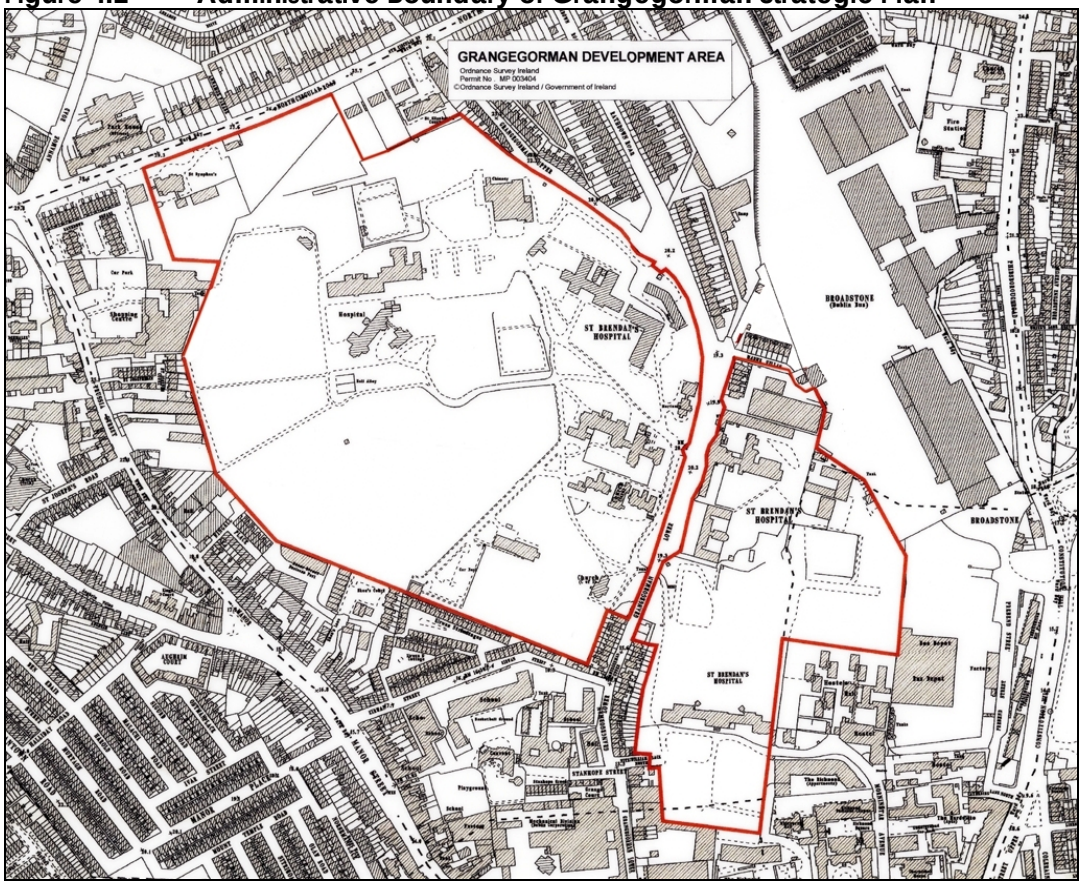
The Grangegorman Strategic Plan is currently being prepared by the Grangegorman Development Agency in cooperation with various stakeholders. This plan will provide for the provision of education and health facilities, services, public transport, recreational uses, residential and commercial uses on the Grangegorman site in accordance with Section 12 of *the Grangegorman Development Agency Act, 2005*.

The following are the environmental receptors and key environmental issues which the SEA Team have identified as likely to experience impact as a result of the Grangegorman Strategic Plan and its implementation. This list is not exhaustive and has been provided to the relevant statutory and non-statutory Environmental Authorities for the purposes of eliciting discussion in relation to the scope and extent of the Environmental Report to be prepared as part of the SEA process.

4.1 SEA Study Area

The study area for the SEA of the Grangegorman Strategic Plan is that depicted in Figure 4.1 below.

Figure 4.1 Administrative Boundary of Grangegorman Strategic Plan



Source: Grangegorman Development Agency, 2008

4.2 Environmental Characteristics/Receptors

We are currently at the 'Scoping' stage of the SEA process. This sets the 'scope' and 'level of detail' which is to be contained in the Environmental Report.

This Scoping Issues Paper has been undertaken in accordance with '*Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment - Guidelines for Regional Authorities and Planning Authorities'* (DoEHLG, November 2004).

In accordance with these *Guidelines* An 'Environmental Assessment' of a Land Use Plan must examine the significant effects of the proposed Plan on the environment including short, medium and long-term effects; permanent and temporary effects; positive and negative effects; and secondary, cumulative and synergistic effects on issues including:

- Biodiversity, Flora and Fauna
- Population and Human Health
- Soil and Landscape
- Water
- Air Quality and Climatic Factors
- Material Assets
- Cultural Heritage (architectural and archaeological)

The baseline data establishes the current existing state of the environment and is the basis to assess and predict potential impacts. The headings used in the following section (i.e. Biodiversity, Water etc.) will correlate with the environmental objectives which will form part of the Environmental Report. The baseline data provides details of sources used in collection of data as well as identifying gaps where present in that information.

4.2.1 Biodiversity, Flora and Fauna

This element of the *Scoping Issues Papers* was prepared by Natura Environmental Consultants, on behalf of Grangegorman Development Agency and seeks to inform the ecology element of the Strategic Environmental Assessment of the *Grangegorman Strategic Plan*.

Current Situation

Biodiversity, or biological diversity, is the term used to describe the wide variety of natural life on Earth. It encompasses all flora and fauna, as well as the very many habitats in which all the species exist. Within the context of the grounds of St. Brendan's Hospital, Grangegorman, biodiversity refers to both semi-natural habitats and habitats created or extensively modified by human influence, as well as the wide range of plant and animal species that can be found there.

St. Brendan's Hospital is located in Grangegorman, Dublin 7, approximately 1km north of the River Liffey. It is divided into two lots – St. Brendan's West and St. Brendan's East. These sites are separated by Rathdown Road. St. Brendan's West is the larger of the two lots, at approximately 21.66ha, while St. Brendan's East is approximately 7.77ha in size. Overall the site consists of a mix of sports pitches and amenity grassland, buildings and other hard surfaces, scattered trees and shrubs, treelines, and disturbed ground. No watercourses are present within the site.

Habitats in Grangegorman

The main habitats on the site are described as follows:

St. Brendan's West

The northern and eastern parts of St. Brendan's West comprises a mix of buildings and artificial surfaces, dry grassland and amenity grassland, which includes a variety of scattered trees and parkland and a mix of ornamental and non-native shrubs.

Occasional flower beds and borders are present. For the most part the shrubs are dense and mature, with very little herbaceous vegetation underneath, due to heavy shading. There is an area of semi natural woodland present along the eastern boundary and around the disused Church of Ireland church in the south east of the site.

In the centre of the site, between the playing pitches to the south and the buildings to the north, is an area of broadleaved woodland consisting of holm oak (*Quercus ilex*). In this area there is almost no shrub layer or ground flora, other than ivy (*Hedera helix*), bramble (*Rubus fruticosus* Agg.) and elder (*Sambucus nigra*) due to the heavy canopy.

In the north western part of St. Brendan's West is an area of disturbed ground that has been used to dump spoil in the past. This area has been very extensively colonised by alien species, mainly giant hogweed (*Heracleum mantegazzium*), with

Japanese knotweed (*Reynoutria japonica*) also present. These plants are also to be found occasionally along the western boundary of the site. A small abandoned garden/nursery is to be found in the south eastern corner of St. Brendan's West.

Immediately adjacent to the north western part of the site is an area known as St. Dymphna's. This is separated from the main study area by a 3m high stone wall. St. Dymphna's includes buildings and a garden with scattered trees. The area of disturbed ground colonized by Japanese knotweed and giant hogweed is also present to the north of the wall.

The southern and western parts of St. Brendan's West comprise large areas of amenity grassland. These include several playing pitches. Treelines, consisting mainly of horse chestnut (*Aesculus hippocastanum*) are present. In some areas larger groups of trees are found, with the understorey vegetation limited to bramble, ivy, and patches of nettles (*Urtica dioica*). Sycamore (*Acer pseudoplatanus*) saplings, as well as hawthorn (*Crataegus monogyna*) and elder form the shrub layer in this part of the site.

St. Brendan's East

The northern part of St. Brendan's East comprises a mix of amenity grassland, buildings and hard surfaces.

The major part of the site, in the centre, consists of a mix of hard surfaces and derelict buildings, with large areas of Buddleia (*Buddleia davidii*) scrub and areas of spoil. Scattered trees (sycamore, ash (*Fraxinus excelsior*), rowan (*Sorbus aucuparia*), horse chestnut), treelines (primarily Lombardy poplar (*Populus nigra*)) and various shrubs are to be found along the perimeter of the site.

To the south of the remaining wing of the St. Brendan's Hospital building is a small area of amenity grassland and dry meadow grassland as well as some disturbed ground.

No watercourses flow through the site. The nearest watercourses of note are the River Liffey, approximately 1km to the south and the Royal Canal, approximately 1km to the north.

Rare and Protected Flora in Grangegorman

There are no records of rare or protected flora in St. Brendan's. Due to the types of habitats present it is unlikely that any rare species listed on the Irish Red Data Book: Volume 1 – Vascular Plants (Curtis & McGough 1988) or species protected under the Flora Protection Order (1999) are present within the site.

Fauna in Grangegorman

Mammals
Grey squirrel and fox are present on the site. Rodents, such as brown rat and field mouse are likely to be present and hedgehog may also occur. Hedgehogs are protected under the Wildlife Act, 1976 and the Wildlife (Amendment) Act, 2000.

Several of the mature trees within the site have an extensive covering of ivy, and are potential bat roosts (PBRs). Many of the buildings on the site may also be potential bat roosts. All Irish bats are listed under Annex IV of the Habitats Directive and Appendix II of the Bern convention as species requiring strict protection.

Birds
A good range of common bird species is present on the site. Species include magpie, rook, jackdaw, hooded crow, blackbird, song thrush, mistle thrush, wood pigeon, pied wagtail, robin, blue tit, great tit, house sparrow, starling and wren. These species are typical of urban open spaces, parks and gardens.

Conservation Sites in the General Area

The site is not covered by any nature conservation designations. Two sites proposed as Natural Heritage Areas (pNHAs) are situated within a 3km radius of St. Brendan's. The term Natural Heritage Area is a statutory designation under the Wildlife (Amendment) Act 2000. The nearest European designated site is Dublin Bay (approximately 5km east of the site), which is subject to a range of nature conservation designations, namely pNHA, candidate Special Area of Conservation (cSAC) and Special Protection Area (SPA).

Sites that are designated as either SPA or SAC form part of a Europe-wide network of sites designated for nature conservation known as the 'Natura 2000' network. This is a network of a wide range of habitats that is important for the conservation of nature at a European level. SPAs are designated under the EU Birds Directive (79/409/EEC) and SACs are designated under the EU Habitats Directive (92/43/EEC), as transposed into Irish law in the European Union (Natural Habitats) Regulations of 1997.

These sites, identified and designated by the National Parks and Wildlife Service, are considered to be of national or international importance for nature conservation (Table 4.1).

Table 4.1 Designated Conservation Areas within 3km of the site

Site Code	Site Name	Designation	Distance from site
002103	Royal Canal	pNHA	1 km north
002104	Grand Canal	pNHA	2.5 km south
000210	South Dublin Bay	CSAC/pNHA	5km East
000206	North Dublin Bay	CSAC/pNHA	5km East
004024	Sandymount Strand/Tolka Estuary	SPA	5km East
004006	North Bull Island	SPA	5km East

Opportunities Identified

Although there are no nationally or internationally designated areas for nature conservation located on or within the vicinity of St. Brendan's, there are some habitats of local ecological significance, including areas of dry grassland, trees and shrubs. As part of any redevelopment of the lands at Grangegorman there is the opportunity to create a new and varied ecological environment. This could include, for example, wildflower gardens and wetland habitats as well as green roofs and green walls. These features, combined with strategies including Sustainable Urban Drainage Systems (SuDS) can enhance not only the ecology of St. Brendan's, but can also enhance the sustainability of the whole development. The Dublin City Council Biodiversity Action Plan (2008) should be referred to when planning the redevelopment of the site.

The buildings on site, particularly older, stone buildings have the potential to hold roosting bats. Although buildings may be demolished or renovated as part of the development, bat boxes can be incorporated into new buildings. The need for bat boxes will need to be assessed following an appropriately targeted bat survey.

Apart from the opportunities to retain or recreate habitats, an additional benefit of any redevelopment of Grangegorman will be the removal of an extensive area of invasive alien species including giant hogweed and Japanese knotweed, in the northwestern part of the site.

Summary of Key Opportunities

- There is an opportunity to enhance and augment the existing habitats through the use of SuDS and by setting aside areas within the site for the specific purpose of creating suitable new ecological habitats;
- There is an opportunity to eradicate invasive alien plant species from the site;
- There are potential roosting sites for bats (in trees and buildings) throughout the site. These can be enhanced as part of the proposed redevelopment.

Information Gaps and Limitations Identified

A baseline survey of habitats, flora and fauna was conducted in March 2007. A resurvey will be undertaken in order to ensure that an up to date record of the ecological environment is maintained.

A full bat survey, including with bat detectors if necessary will be carried out between the months of May to September.

Key Significant Environmental Issues Identified – Biodiversity, Flora and Fauna

The playing pitches, buildings and areas of artificial surfaces and *Buddleia* scrub are of low ecological importance. The dry grassland, hedgerows, treelines, trees, shrubs and broadleaved woodland present on the site are of moderate local ecological value.

The north western part of the site has been colonised by giant hogweed and Japanese knotweed. These highly invasive alien species are of no ecological value and will have to be removed as part of any redevelopment of the site.

Overall the site is of low to moderate local ecological value. However, it is an important site for urban wildlife, particularly birds. Given the close proximity of the site to the centre of Dublin City, the local value of remaining semi-natural habitats is greater than would otherwise be the case. The site is not covered by any nature conservation designation.

Key References

- British Standard BS 3998:1989 Recommendations for Tree Work
- British Standard BS 5837:2005 Trees in Relation to Construction
- EirEco (2007). *Tree Survey of St. Brendan's Hospital, Grangegorman, Dublin*. Report prepared for Arup Consulting Engineers.
- Curtis, T. G. F. and McGough, H. N. (1988). *The Irish Red Data Book 1: Vascular Plants.* The Stationery Office, Dublin.
- Dublin City Council (2008). *Biodiversity Action Plan 2008-2012.*
- EPA, (2002). *Guidelines on the Information to be contained in Environmental Impact Statements.* Environmental Protection Agency.
- Fossitt, J.A. (2000). *A Guide to Habitats in Ireland*. The Heritage Council, Kilkenny.
- Moriarty, C. (1997). *Exploring Dublin. Wildlife, Parks, Waterways*. Wolfhound Press.
- Natura (2007). *St. Brendan's Hospital Grangegorman Ecological Appraisal.* Report prepared for Arup Consulting EngineersScannell, M.J.P. *and Synnott, D.M., (1987). Census Catalogue of the Flora of Ireland*. Stationery Office, Dublin.
- Webb, D.A., Parnell, J. and Doogue, D. (1996) *An Irish Flora. Dundalgan Press Ltd., Dunda*lk.
- Whilde, A. (1993). *Threatened Mammals, Birds, Amphibians and Fish in Ireland. Irish Red Data Book 2: Vertebrates.* HMSO, Belfast.
- Internet link: www.ciria/org/suds
- Wyse Jackson, P. and Sheehy Skeffington, M. (1984). *Flora of Inner Dublin.* Royal Dublin Society

Relevant Legislation

- European Communities (Natural Habitats) Regulations, 1997.
- European Union Birds Directive (1979). *Council Directive 79/209/EEC of 2 April 1979 on the conservation of wild birds*.

- European Union Habitats Directive (1992). *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.*
- Flora (Protection) Order (1999). Statutory Instrument, S. I. No. 94 of 1999. Published by the Stationary Office, Dublin.
- Wildlife Act (1976). Wildlife Act, Ireland, 22 December 1976, No. 39 of 1976
- Wildlife Amendment Act (2000). Wildlife Amendment Act, Ireland, 18 December 2000, No. 38 of 2000.

4.2.2 Population and Human Health

This element of the *Scoping Issues Papers* was prepared by Tom Phillips + Associates economics division on behalf of Grangegorman Development Agency and seeks to inform the Population and Human Health element of the Strategic Environmental Assessment of the *Grangegorman Strategic Plan*.

The purpose of this Report is to identify the principal component elements of the *Population and Human Health* Section to be expanded upon within the Environmental Report. These principle components are identified as follows:

i. The current socio economic profile of the defined Study Area (as provided by the Grangegorman Development Agency);

ii. Analysis of the key issues arising from the socio economic profile;

iii. Consideration of other issues and recognition of possible information gaps.

Current Situation

Socio Economic Profile – Baseline

The development of the current socio economic profile of the defined Study Area will include, but will not be limited to, a consideration of the following key indicators:

- Historic Population Trends 1996 – 2006;
- Future population projections 2008 – 2024;
- Average Household Size 2006;
- Social Class 2006;
- Highest level of education attainment 2006; and
- Mode of Transport 2006.

The key comparators of **Dublin City** and the **State** will be used to provide a comparative context for the socio economic profile.

Key Significant Environmental Issues Identified – Population and Human Health

The above components of the socio economic profile are considered to be related. Depending on the details of the Strategic Plan proposed, there are potentially major positive impacts for the local population (including, but not limited to, provision of additional employment, social and leisure facilities). The development of lands such as those under the remit of the Grangegorman Development Agency can raise the overall quality of life of existing and potential residents and users. The manner in which the development is phased can alleviate nuisance and provide required infrastructure earlier.

A key consideration of the *Population and Human Health* Section is to bring an awareness of the planned public transportation investment in the wider Grangegorman/Broadstone Area into the assessment of potential impacts on population and human health issues.

Possible Information Gaps

Although impossible to accurately assess at this stage potential information gaps include:

i. Access rates to public transport;

ii. Proximity to primary and secondary medical care facilities;

iii. Provision of schools. access to third and fourth level education and continuing professional development education; and

iv. Disposable income levels in the defined Study Area.

4.2.3 Soil

This element of the *Scoping Issues Papers* was prepared by Horgan Lynch, Consulting Engineers on behalf of Grangegorman Development Agency and seeks to inform the Soils element of the Strategic Environmental Assessment of the *Grangegorman Strategic Plan*.

Current Situation

The site of Grangegorman is located just over 1km from the city centre on the north side of the river Liffey broadly lying between Phibsboro and the Phoenix Park. The site extends over some 30 hectares with the topography on the site ranging between 16.8mOD and 27.3mOD. The site is surrounded predominantly by residential dwellings and some light industrial units, but there is also a large bus depot, convent and schools in the immediate environs of the site. It has frontage to the North Circular Road to the north west of the site, and frontage onto Constitution Hill to the east of the site. The Grangegorman Road bounds the site to the north and then runs through the site from north to south splitting the site into two distinct areas. Prussia Street lies to the west of the site with Manor Street and Brunswick Street lying to the south. The site is largely a green-field site but also houses a number of protected structures some of which are still in use as a secure hospital facility for the mental health sector.

There is evidence of the presence of a river, the Bradogue, on the site from old maps and books on the area (Duncan 1821; Sweeney - Rivers of Dublin). The river has now been culverted up for public drainage with a branch running down the Grangegorman Road and a second branch running through the hospital.

Geology

The geology of the area is generally glacial deposits over Carboniferous limestone bedrock, with the glacial deposits ranging from lodgement tills to glacial sands and gravels to clays formed during the ice age.

Overburden Geology
The glacial period strongly influences the overburden geology of Dublin and results in a significantly deep layer of glacial tills overlying the bedrock. These glacial tills formed at the bottom of the ice sheet generally consist of intermittent layers of stiff brown black silty sandy gravely clay (boulder clay) and dense sandy sometimes silty gravels.

In 'Soils of Dublin' by Farrell & Wall (1970) it is noted that the boulder clays are generally found close to the surface and are underlain by glacial and post glacial gravels. However it must be noted that there are locations where the clay layers occur within the gravels and similarly there are locations where gravels occur within boulder clay. The glacial deposits in the Dublin area are on the whole boulder clays, brown and black, with the brown boulder clay generally being firm or stiff, sometimes soft and the black boulder clay generally being very stiff, sometimes stiff.

Brown boulder clay is generally considered to be the result of the weathering of Black boulder clay (Farrell & Wall, 1970).

It should be noted that isolated pockets of soft material can be found in boulder clay areas and these soft pockets often arise due to the presence or past presence of streams, ponds etc. In brown boulder clay where soft material is found, the strength and compressibility of the clay can vary, however the black boulder clay is generally consistent as a stiff material.

Bedrock Geology
Dublin overlies the Calp formation, which ranges in age from Chadian to Brigantian. It is a formation of dark grey to black limestone and shale, with the thickness of the limestone bed, grain size, colour and proportion of shale varying considerably across the extent of the formation. From the GSI national generalised bedrock map Dublin is shown to lie on Dinantian upper impure limestones.

For the site at Grangegorman the indication from information available from the GSI is that bedrock dips from -15mOD to -30mOD from the west section of the site going eastwards and then rises steeply from -30m to approximately -20mOD. In their publication Farrell & Wall (1970) indicate bedrock at approximately 20m below ground level (BGL) for the Grangegorman site.

Key Significant Environmental Issues Identified – Soil

Evidence of possible contamination of the soil in certain areas was identified in the course of previous site investigations. A more comprehensive testing schedule for contamination is proposed under the impending site investigation works to be carried out as part of the *Grangegorman Strategic Plan*. All contaminated soil will be disposed of in an appropriate manner during development of the site.

The possible presence of graves on the site, associated with the hospital, requires further investigation. Slit trenches are proposed under the impending site investigation work in the areas where anomalies in the ground conditions were identified in the geophysical survey. If confirmed the graves will need to be removed and relocated.

The development will impact on soil conditions in so far as existing ground will be removed in the course of the development and therefore the existing soil structure will be altered. In addition an associated issue for development on the site is the use of non renewable sand, gravel and rock deposits. It should be an objective of the development to minimise the consumption of same.

It is also worth noting that the preservation of habitats and biodiversity should be an objective in the development as these provide visible tangible indicators of the health of the soil.

4.2.4 Water

This element of the *Scoping Issues Papers* was prepared by Horgan Lynch, Consulting Engineers on behalf of Grangegorman Development Agency and seeks to inform the Waterelement of the Strategic Environmental Assessment of the *Grangegorman Strategic Plan*.

Current Situation

As noted in Section 4.2.3 above, it is likely that the soil type at the Grangegorman site is likely to be brown boulder clay over black boulder clay over bedrock. Boulder clays generally have low permeability and therefore would represent a poor aquifer. The underlying bedrock however is a potential aquifer, and this is particularly significant if there is a highly weathered zone at the interface between the bedrock and overlying soils.

Groundwater
On the aquifer classification map for Ireland Dublin is shown to lie on a poor to minor aquifer which is locally productive. The GSI National draft bedrock aquifer map concurs with this and describes the bedrock aquifer in Dublin as a locally important aquifer which is generally moderately productive in local areas.

An interim study of groundwater vulnerability for Dublin city centre found the vulnerability to range from high to low, with a number of small areas of extreme vulnerability to the south resulting from shallow rock to Karst features.

Key Significant Environmental Issues Identified – Water

The re usage, recycling and conservation of water should be a key objective in the development strategy, with the existing water quality on the site being maintained or improved where possible.

The implementation of SUDS (sustainable urban drainage systems), grey water recycling, infiltration and filtration systems, retention ponds and swales (which can be incorporated into the landscaping of the development) should be considered for implementation in the development for the management strategy for surface water runoff which will be increased by the development of the site.

Key References in Respect of Soil and Water

Ground Investigation Factual Report (Arups, May 2007)
Opportunities and Constraints Study (Arups May 2007)
Soils of Dublin (Farrell and Wall, 1997)
Geological Survey of Ireland (1994)
Geological Survey of Ireland (Groundwater Database)
The Rivers of Dublin (Claire L Sweeney)

4.2.5 Landscape

This element of the *Scoping Issues Papers* was prepared by Mitchell & Associates, Landscape Architects, on behalf of Grangegorman Development Agency and seeks to inform the Landscape element of the Strategic Environmental Assessment of the *Grangegorman Strategic Plan*.

Landscape can be described as all the visible features of an area of land and the character is the distinctive nature of these elements. Landscape therefore includes a broad range of natural resources and includes areas, sites, vistas and features of significant scenic, archaeological, historical, ecological or scientific interest. The landscape of Grangegorman has been forged by its past, which has left a legacy of buildings and other features on site, many of which are protected structures which contribute to the unique character of the area.

Current Situation

Site Context

The site is located in the Arran Quay Ward of Dublin in the district of Grangegorman, approximately 1km north of the River Liffey and the city centre, and south of the Grand Canal. The site comprises 29.4 hectares encompassing St. Brendan's Hospital and its grounds. The site is divided into two precincts, St. Brendan's East (7.77 hectares) and St. Brendan's West (21.66 hectares). St. Brendan's is the oldest psychiatric hospital in Ireland, given that St. Patrick's is the oldest private hospital.

Various prime urban centres are located in the vicinity of Grangegorman, including Smithfield to the south and Phibsborough to the north, as well as Phoenix Park which is located the west of the site. The site is bounded along its north-western edge by the North-Circular Road, to the north-east by the Grangegorman Road Upper, to the east by the Broadstone site and Bus Depot (CIE), to the south by Manor Street and along its western edge by residential and commercial properties along Prussia Street.

The site is considered a brownfield site due to the current nature of the landscape, the disused buildings on site and the location of the site in proximity to the city centre. However the site can also be described as one of the few remaining large green open spaces between the canals in Dublin City. Other than the Phoenix Park, it's the largest open space on the north side of the inner city, making it an important site for wildlife in an urban area and acting as a green lung for the city. Approximately one third of St. Brendan's West is currently used as active recreational playing fields. There are currently no watercourses present within the site and no designated areas of conservation, i.e. no Special Protection Areas (SPA's) or Special Areas of Conservation (SAC's). There are two proposed NHA's nearby within a 3km radius. The site contains many mature trees, particularly on the more elevated ground towards the north-eastern portion of the site. The lands slope gently down towards the south-west. Until now, the grounds have been subject to a low-intensity management regime.

Site Description

The landscape of Grangegorman is consistent throughout the site, associated with the historic buildings and landscape elements which date back to the 19th century or before. There are currently fourteen protected structures scattered throughout the site. A high wall bounds the site for the most part, which is shared with boundary properties at sections along the wall. The wall has a historical significance within the area and adds to the character of the landscape. The high wall also restricts access into the site as a result. A low wall with railing fronts the Grangegorman Road Upper along the north-eastern boundary of the site. There is currently one operational entrance into the site and one closed entrance.

The overall site presents as a combination of sports pitches, amenity grassland, buildings and other hard surfaces, scattered trees and shrubs, tree lines and disturbed ground. The open space within the site mainly consists of areas of grassland / sports pitches to the south-west. However the scale and nature of this open space is not fully utilised in terms of public accessibility and awareness. Much of the existing open space and sports pitches are contained within the precinct of St. Brendan's West, and are proposed to be allocated to the Dublin Institute of technology (DIT). Therefore the enhancement and utilisation of this open space could benefit the proposed student population of Grangegorman as well as the surrounding community and city-wide users. The link to existing green spaces, including Phoenix Park, will further enhance this open space asset.

Views

The site is strategically located in close proximity to Dublin City and thus enjoys a high quality geographic position and orientation within its urban setting. The topography of the landscape at places forms a natural viewing platform giving rise to various views out of the site which are enhanced and utilised within the masterplan. There are views towards neighbouring properties sharing a boundary with the site, separated by the boundary stone wall. There are occasional long distant views south to the buildings and cranes which make up the city skyline. Views into the site are generally restricted to views from neighbouring properties which overlook the site. Views into the site, particularly in relation to the eastern precinct, are also visible from the Broadstone area. The plan enhances this larger sense of place and takes advantage of the topographic character of the site to frame southerly views to the city skyline and Dublin Mountains.

Landscape Character:

The landscape assets of Grangegorman, the mature trees on site, the open nature of the lands, the historical buildings and landscaped pathways together form an integral part of the existing landscape image and character of the area, which dates back to the establishment of the House of Industry for the poor in the 1770's. The Richmond Asylum, a separate institution to house the mentally ill, followed in 1810, which today is known as the Lower House, of which only the southern portion remains. The Richmond General Penitentiary, completed in 1816, was built nearby which over time became part of the Asylum, of which only the front range of the

central spine remains today. Throughout the 19th century the site evolved to become a large mental hospital facility on 30 hectares of land, with additional structures built to the west.

Today, the Upper House and Lower House are well known to locals and play a large part in shaping the landscape character of the site. The site was originally bounded by two ancient roadways into Dublin, which probably followed the line of Constitution Hill and Stoneybatter.

The history and heritage of the area is highly valued by the local community. The current streetscape is rich and varied, with new and modern buildings set alongside historic architecture, complemented by street tree plantings.

Dublin City Development Plan:

The City Development plan sets out a vision and planning context for the future development of the city. To guide strategic development the city identified a small number of key areas, known as Framework Development Areas (FDA), that were earmarked for redevelopment in the near future and established clear objectives for each area. Grangegorman, along with the neighbouring lands of the former Broadstone train depot are designated as area 8.

The following are some of the objectives for the development of the FDA 8, with specific relevance to those related to the landscape aspect of the site:

- To ensure that the development framework for Grangegorman / Broadstone provides for a high quality character area / urban district with strong physical linkage to the H.A.R.P. Area / Smithfield, Phibsborough, Manor Street and to the City Centre through Henrietta Street.
- To develop a legible, attractive spatial and urban character which marries the provision of new urban space with high quality contemporary architecture and with the integration and re-use of protected historic structures and other buildings of architectural/artistic merit.
- To ensure that the existing open space is developed both for the benefit of the new campus and for adjacent existing communities.
- To provide for the physical integration of Grangegorman and Broadstone with each other and the City Centre through the development of a series of physical connections including pedestrian and cycle linkages and new transport infrastructure.

The site is zoned under the current City Development Plan 2005-2011 as Z12 "Institutional Land (Future Development Potential)" in order "to ensure the existing environment amenities are protected in any future use of these lands". This zoning requires that a minimum of 20% of the site be retained as accessible public open space incorporating landscape features and retaining the essential open character of the site.

Opportunities Identified

The following opportunities exist for the development of the Grangegorman site in relation to the landscape:

- Incorporate existing protected structures into the design;
- Protect the visual amenity of the site;
- Exploit key vistas, landscape features and protected structures along main routes;
- Exploit southerly views out to the City skyline and Dublin mountains;
- Develop strong physical linkages to the surrounding areas and communities;
- Develop pedestrian and cycle linkages;
- Increase overall permeability through the site;
- Create new entrances into the site;
- Removal of highly invasive giant hogweed and Japanese knotweed and failing trees;
- Retain existing trees and landscape features of value which contribute to the unique character of the site;
- Maximise potential and existing landscape features to extend and create quality open spaces;
- Implement a high quality coherent landscaping scheme to act as a unifying feature throughout the site;
- Exploit key views to and from the site;
- Ensure a high quality public realm is developed in tandem with the buildings;
- Minimise overshadowing; relevant height restrictions;
- Develop the site as an urban character area;

The Strategic Plan for the site will outline some of the key opportunities available in terms of the landscape of Grangegorman, these include the development of:

- Green linkages
- Health gardens
- Playgrounds
- Courtyards
- Squares / terraces
- Public gardens
- Pedestrian precinct
- Lawn / sports pitches
- Roof gardens
- Playgrounds / play stations / exercise trails, etc.
- Woodland
- Attenuation basin
- Water features
- Habitats

Key Significant Environmental Issues Identified – Landscape

Threats to the landscape include those associated with any development, such as the visual impact, overshadowing, loss of character, impact on scenic amenity value of the site, etc. Loss of existing structures on site and loss of large portions of the boundary wall could pose a threat to the landscape character of the site if not dealt with appropriately. The loss of mature trees on site also poses a large threat to the landscape. The trees to be retained should be earmarked for retention and appropriately protected during construction.

The Screening Report for Grangegorman highlights some of the areas likely to be affected by the strategic plan including the natural characteristics of the site such as the mature urban trees as well as the cultural heritage in light of the protected structures on site. Also the intensity of the uses proposed for the Grangegorman site is likely to have significant environmental effects.

Key References in Respect of Landscape

Ecological Appraisal (Arups, May 2007)
Dublin City Council (www.dublincity.ie)
Dublin City Development Plan 2005-2011
Grangegorman SEA Screening Report
Grangegorman development Agency (www.ggda.ie)
Environmental protection Agency (www.epa.ie)

4.2.6 Air Quality and Climatic Factors

AWN Consulting have been commissioned by Grangegorman Development Agency to provide inputs in relation to air quality and climate for the Strategic Environmental Assessment (SEA) of the Grangegorman Strategic Plan. The purpose of this element of the scoping issues paper is to outline the main topics regarding air quality and climate that will be addressed in the SEA Environmental Report, the current air quality standards and climate agreements applicable to Ireland, and the available baseline air monitoring data for the region.

Current Situation

National Standards and Limits

Air Quality Standards
In order to reduce the risk to health from poor air quality, national and European statutory bodies have set limit values in ambient air for a range of air pollutants. The applicable limit values or "Air Quality Standards" in Ireland include the Air Quality Standards Regulations 2002, which incorporate EU Directives 1999/30/EC and 2000/69/EC (see Table 4.2). Although the EU Air Quality Limit Values are the basis of legislation, other thresholds outlined by the EU Directives are used which are triggers for particular actions.

Proposed Directive COM(2005) 447 on Ambient Air Quality and Cleaner Air for Europe (21/09/2005) has outlined proposals to revise and combine several existing Ambient Air Quality Standards including Council Directives 96/62/EC, 1999/30/EC and 2000/69/EC. Common Position COM(2007) 320 final (29/06/07) has been adopted by the EU Council with a view to adoption of this Directive which will be published in May 2008. In regards to existing ambient air quality standards, it is not proposed to modify the standards but to strengthen existing provisions to ensure that non-compliances are removed. In addition, new ambient standards for $PM_{2.5}$ are included in the new Directive.

Climate Agreements
Ireland ratified the United Nations Framework Convention on Climate Change (UNFCCC) in April 1994 and the Kyoto Protocol in principle in 1997 and formally in May 2002. For the purposes of the EU burden sharing agreement under Article 4 of the Kyoto Protocol, in June 1998, Ireland agreed to limit the net growth of the six GHGs under the Kyoto Protocol to 13% above the 1990 level over the period 2008 to 2012. The UNFCCC is continuing detailed negotiations in relation to GHGs reductions and in relation to technical issues such as Emissions Trading and burden sharing. The most recent Conference of the Parties (COP13) to the agreement was convened in Bali, Indonesia in December 2007.

Baseline Data

Air Quality
In terms of air monitoring and assessment, Ireland is divided into four zones, as defined in the Air Quality Standards Regulations 2002. The region of Grangegorman is within Zone A. The EPA website details the range and scope of monitoring undertaken throughout Ireland and provides both monitoring data and the results of previous air quality assessments. The most recent annual report on air quality in Ireland is the "*Air Quality Monitoring Report 2006*". This report contains monitoring data for Dublin city centre locations close to Grangegorman, as detailed below.

With regard to NO_2, continuous monitoring data from Dublin City Council at city centre locations in Wood Quay (Winetavern Street) and Coleraine Street show that current levels of NO_2 are below both the annual and 1-hour limit values (see Table 4.3), with average levels at each monitoring location of 35 and 31 µg/m^3 respectively in 2006. Sufficient data is available to observe long-term trends over the period 2000 - 2006 (see Table 4.3), with average NO_2 concentrations at Coleraine Street showing an overall downward trend over the 7-year period.

Continuous PM_{10} monitoring carried out at Wood Quay and Coleraine Street showed average levels of 20 and 21 µg/m^3 respectively in 2006, with 10 and 17 exceedences respectively of the 24-hour limit value of 50 µg/m^3 (36 exceedences are permitted per year) (see Table 4.4). In addition, the average PM_{10} level at the urban background monitoring location in the Phoenix Park in 2006 was 14 µg/m^3, with only two exceedences of 50 µg/m^3. $PM_{2.5}$ monitoring is not carried out by Dublin City Council but data is available for Cork City. The annual average level measured at Old Station Road in 2006 was 9 µg/m^3.

In terms of benzene, Table 4.5 outlines measurements carried out in Wood Quay (Winetavern Street) over the period 2002 - 2005. The average concentration levels measured over the period 2003 – 2005 range from 1.3 µg/m^3 to 3.8 µg/m^3, which is below the limit value of 5 µg/m^3.

In terms of CO, results at the city centre locations of Wood Quay and Coleraine Street are low, peaking at 62% of the maximum 8-hour limit value (10 mg/m^3) in 2006 (see Table 4.6). Similarly low levels were measured in 2003 - 2005, with average concentrations at the Wood Quay / Winetavern site remaining consistent, while a more variable trend emerges from examination of average values at the Coleraine Street site.

Based on the Dublin City Council and Cork County Council data, it is expected that typical NO_2, PM_{10}, $PM_{2.5}$, benzene and CO concentrations at the Grangegorman site are generally below the limit value.

Site specific baseline air quality monitoring is required in order to provide more information on the current pollutant levels at the Grangegorman site. This will be carried out as part of the strategic assessment.

Climate
The effects of greenhouse gas emissions are experienced on a regional scale, and thus site specific baseline data is not applicable at a local level. Current

greenhouse gas emissions in a national context will be addressed in the strategic assessment.

Key Significant Environmental Issues Identified – Air Quality and Climate

Air Quality

Road traffic is expected to be the dominant source of emissions (with the possible exception of PM_{10}) in the region of and resulting from the Grangegorman development.

Road traffic emissions do not contribute significantly to SO_2 and lead concentrations, and therefore levels of these pollutants in Dublin city centre are currently well below the limit value. Since the proposed Grangegorman development will not contribute significantly to SO_2 and lead concentrations in the region, impacts on these pollutants have been scoped out of the strategic assessment.

The strategic assessment in terms of local air quality will therefore focus on the traffic derived pollutants NO_2, benzene, PM_{10}, $PM_{2.5}$ and CO.

Climate

Vehicle emissions associated with the proposed development will give rise to CO_2 and N_2O emissions in the region.

Furthermore, emissions from energy generation and space heating in commercial and residential units will also contribute to national emissions of greenhouse gases.

The strategic assessment in terms of climate will therefore focus on greenhouse gas emissions derived from road traffic and also space heating and energy generation.

The use of renewable energy sources will be investigated and compared to emissions resulting from natural gas. The Building Energy Rating of the proposed residential units will be considered as part of the assessment.

Key References in Respect of Air Quality and Climate

- Framework Convention on Climate Change (1999) Ireland - Report on the in-depth review of the second national communication of Ireland
- Framework Convention on Climate Change (1997) Kyoto Protocol To The United Nations Framework Convention On Climate Change
- EPA (2006) Environment in Focus 2006 - Environmental Indicators for Ireland
- ERM (1998) Limitation and Reduction of CO_2 and Other Greenhouse Gas Emissions in Ireland
- EPA (2008) Website: http://www.epa.ie/whatwedo/monitoring/air
- Environmental Protection Agency (2007) Air Quality Monitoring Report 2006 (& previous annual reports 1997-2005)
- Cork City Council (2006) Air Pollution in Cork City - 2006 Report
- Sustainable Energy Ireland (2008) Website: www.sei.ie

Table 4.2 Air Quality Standards Regulations 2002 (based on EU Council Directives 1999/30/EC, 2000/69/EC and Proposed EU Directive COM (2005) 447

Pollutant	Regulation	Limit Type	Margin of Tolerance	Value
Nitrogen Dioxide	AQSR (2002) & 1999/30/EC	Hourly limit for protection of human health - not to be exceeded more than 18 times/year	40% until 2003 reducing linearly to 0% by 2010	200 µg/m^3 NO_2
		Annual limit for protection of human health	40% until 2003 reducing linearly to 0% by 2010	40 µg/m^3 NO_2
		Annual limit for protection of vegetation	None	30 µg/m^3 NO + NO_2
Lead	AQSR (2002) & 1999/30/EC	Annual limit for protection of human health	60% until 2003 reducing linearly to 0% by 2005	0.5 µg/m^3
Sulphur Dioxide	AQSR (2002) & 1999/30/EC	Hourly limit for protection of human health - not to be exceeded more than 24 times/year	90 µg/m^3 until 2003, reducing linearly to 0 µg/m^3 by 2005	350 µg/m^3
		Daily limit for protection of human health - not to be exceeded more than 3 times/year	None	125 µg/m^3
		Annual & Winter limit for the protection of ecosystems	None	20 µg/m^3
Benzene	AQSR (2002) & 2000/69/EC	Annual limit for protection of human health	100% until 2006 reducing linearly to 0% by 2010	5 µg/m^3
Carbon Monoxide	AQSR (2002) & 2000/69/EC	8-hour limit (on a rolling basis) for protection of human health	60% until 2003 reducing linearly to 0% by 2005	10 mg/m^3 (8.6 ppm)

Table 4.2(contd.) Air Quality Standards Regulations 2002 (based on EU Council Directives 1999/30/EC, 2000/69/EC and Proposed EU Directive COM (2005) 447

Pollutant	Regulation	Limit Type	Margin of Tolerance	Value
Particulate Matter (as PM_{10}) Stage 1	AQSR (2002) & 1999/30/EC	24-hour limit for protection of human health - not to be exceeded more than 35 times/year	30% until 2003 reducing linearly to 0% by 2005	50 µg/m^3 PM_{10}
		Annual limit for protection of human health	12% until 2003 reducing linearly to 0% by 2005	40 µg/m^3 PM_{10}
Particulate Matter (as PM_{10}) Stage 2[Note 1]	AQSR (2002) & 1999/30/EC	24-hour limit for protection of human health - not to be exceeded more than 7 times/year	Not to be exceeded more than 28 times until 2006, 21 times until 2007, 14 times until 2008, 7 times until 2009 and zero times by 2010.	50 µg/m^3 PM_{10}
		Annual limit for protection of human health	50% from 2005 reducing linearly to 0% by 2010	20 µg/m^3 PM_{10}
$PM_{2.5}$	COM (2005) 447	Annual target value designed to limit unduly high risks to the population	None. Limit value applicable in 2010	25 µg/m^3 $PM_{2.5}$

Note 1 EU 1999/30/EC states "Indicative limit values to be reviewed in the light of further information on health and environmental effects, technical feasibility and experience in the application of Stage 1 limit values in the Member States". Proposed EU Directive COM (2005) 447 will "*replace the indicative limit values for PM_{10} for the year 2010 by a legally binding "cap" for the annual average concentrations of $PM_{2.5}$ of 25 µg/m^3 to be attained by 2010*".

Table 4.3 Trends in Dublin City Air Quality - Nitrogen Dioxide (µg/m³)

Station	Station Classification	Averaging Period	Year						
			2000	2001	2002	2003	2004	2005	2006
Coleraine Street	Urban Traffic	Annual average NO_2	41	39	38	37	32	28	31
	Distance From Road = 3 m	Maximum 1-hr NO_2	208 (101)	193 (92)	-	[117]	[110]	[135]	[126]
Wood Quay / Winetavern Street	Urban Traffic	Annual average NO_2	≈32	33	35	38	30	33	35
	Distance From Road = 7 m	Maximum 1-hr NO_2	≈155-	1235 (214)	-	[150]	[100]	[120]	[134]

( ): represent the 98th%ile of maximum 1-hour concentrations.
[ ]: represents the 99.8th%ile of maximum 1-hour concentrations
≈: Indicates approximate value from a graph reproduced in the EPA report "Preliminary Assessment Under Article 5 of Council Directive 96/62/EC – Ireland".

Table 4.4 Trends in Dublin City Air Quality - PM_{10} (µg/m³)

Station	Station Classification	Averaging Period	Year						
			2000	2001	2002	2003	2004	2005	2006
Wood Quay / Winetavern St	Urban Traffic	Annual average PM_{10}	N.A.	28	23	26	20	19	20
	Distance From Road = 7 m	24-hr PM_{10} > 50 µg/m³	N.A.	28	14	24	14	8	10
Phoenix Park	Suburban Background	Annual average PM_{10}	16	18	15	14	12	12	14
	Distance From Road = 250 m	24-hr PM_{10} > 50 µg/m³	4	12	8	5	2	2	2
Coleraine Street	Urban Traffic	Annual average PM_{10}	19	27	21	28	20	20	21
	Distance From Road = 3 m	24-hr PM_{10} > 50 µg/m³	5	26	10	33	16	10	17

N.A. Not Available

Table 4.5 Trends in Dublin City Air Quality - Benzene (µg/m³)

Station	Station Classification	Averaging Period	Year 2002	Year 2003	Year 2004	Year 2005
Wood Quay / Winetavern Street	Zone A Urban Traffic Distance From Road = 7 m	Annual	3.8	1.6	1.3	1.4

Table 4.6 Trends In Dublin City Air Quality - Carbon Monoxide (mg/m³)

Station	Station Classification	Averaging Period	Year 2003	Year 2004	Year 2005	Year 2006
Wood Quay / Winetavern Street	Zone A Urban Traffic Distance From Road = 7 m	8-Hour Maximum	2.5	4.1	3.0	5.2
		Annual Average	0.2	0.3	0.2	0.3
Coleraine Street	Zone A Urban Traffic Distance From Road = 3 m	8-Hour Maximum	4.7	6.0	4.3	6.2
		Annual Average	0.6	0.9	1.1	0.7

4.2.7 Material Assets

The site of Grangegorman has a variety of material assets typical of city centre brownfield sites of this scale. The Material Assets identified by the SEA Team include the following:

- Traffic and Transportation;
- Drainage;
- Water Supply;
- Surface Water;
- Gas;
- Electrical Services;
- Lighting;
- Fire Hydrants; and
- Ventilation.

It was the consideration of the SEA Team that the significant material assets that merit detailed investigation as part of the Strategic Environmental Assessment are Traffic and Transportation and the Services Infrastructure for the Grangegorman Site. Services Infrastructure for the purposes of this SEA includes foul sewerage, surface water sewerage and the watermains. The main considerations in respect of these issues have been detailed in the remainder of this section of the Scoping Issues Papers.

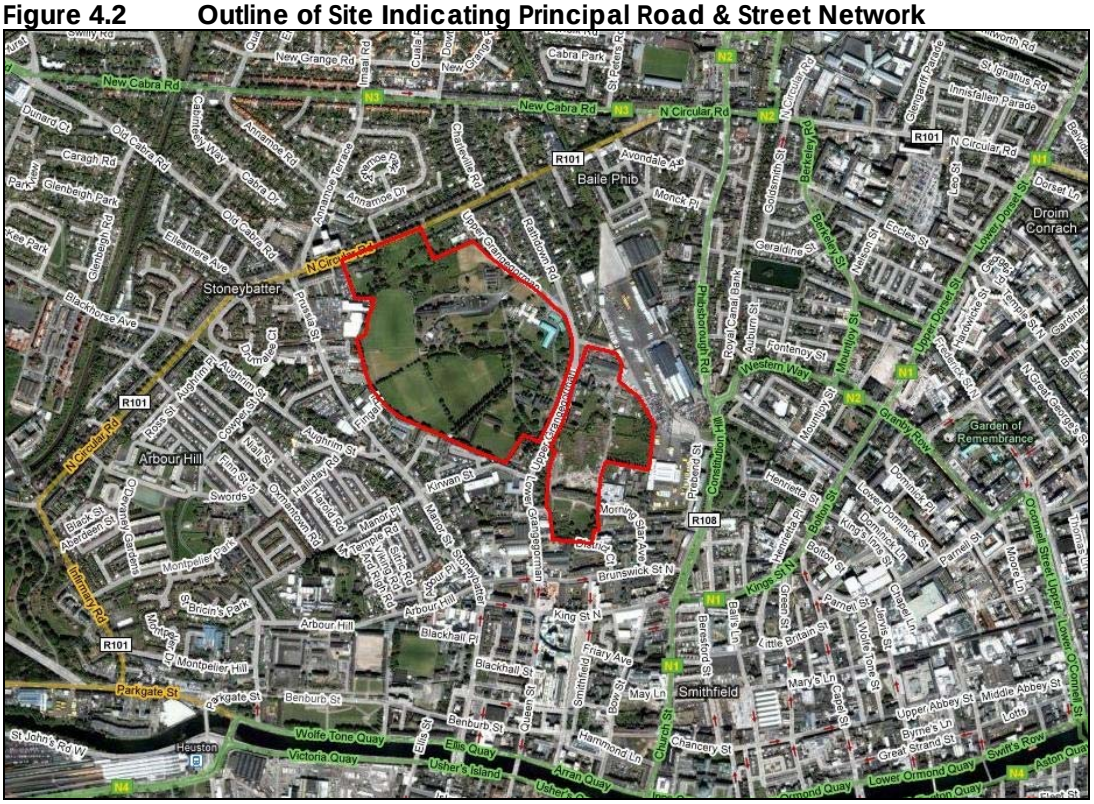
The Traffic and Transportation section provided below has been prepared by Faber Maunsell, Consultant Traffic Engineers, on behalf of Grangegorman Development Agency and seeks to inform the Material Assets element of the Strategic Environmental Assessment of the *Grangegorman Strategic Plan*. The Services Infrastructure section also provided below has been prepared by Horgan Lynch, Consultant Engineers, on behalf of Grangegorman Development Agency and seeks to inform the Material Assets element of the Strategic Environmental Assessment of the *Grangegorman Strategic Plan*.

4.2.7.1 Traffic and Transportation

Current Situation

The Grangorman lands are located within approximately 2km of Dublin City Centre. The surrounding roads include the North Circular Road to the North, Prussia Street to the west, Phibsborough Road and Consitution Hill to the East. These roads provide local movement functions. The N2 and N3 are also located in close proximity to the site and provide more strategic movement functions. Vehicular access is currently provided from Grangegorman Road which bisects the site. The figure below identifies the development lands in the context of the surrounding area and road network.

Figure 4.2 Outline of Site Indicating Principal Road & Street Network



Source: Faber Maunsell, Consultant Traffic Engineers, May 2008

The Grangegorman development lands are surrounded by a road network which is congested during peak periods. This congestion suppresses the demand for travel by all modes and particularly vehicular traffic during peak periods. The vehicular trips undertaken on the surrounding network are caused by such factors as the spatial separation between trip ends including land use issues, public transport availability and the changing demographics which have evolved both in Dublin City Centre and the surrounding suburbs.

The existing public transport provision serving the development site is focused primarily on bus. The majority of these services are destined for the City Centre via the Quays or Parnell Square and O' Connell Street. Good frequency of service is provided on the western side of the site along Prussia Street and Stoneybatter. To the east of the site services are provided along Phibsborough Road and Constitution Hill.

While adequate pedestrian facilities are generally provided within the surrounding road network, the development site currently suffers from a lack of permeability caused by limited access, boundary walls, and the Broadstone site to the east.

Opportunities

The sustainable development of the Grangegorman lands requires the provision of good public transport penetration and connectivity from the subject site to surrounding areas. In addition the consideration and provision for walking and

cycling trips will contribute to the overall sustainability of the subject lands. Influencing the modal split that arises from the development lands will include such issues as the quantum of car parking provided, the access arrangements for all modes, the connectivity of footways and cycleways, and the quality of the public realm and the streetscape.

The development offers the opportunity to provide a complementing mix of land uses to capture the synergies which exist between trip generating origins and destinations. In this manner the spatial separation between trip ends can be reduced to facilitate the demand for travel to be undertaken by walking, cycling and public transport. The facilitation of additional population within Dublin City Centre creates the potential for the development of critical mass to facilitate the provision of additional public transport services.

The focus of the Transportation provision associated with the Grangegorman lands should therefore be one of sustainability and environmental sensitivity. The development should take the opportunity to develop a network of cycle and pedestrian routes to re-establish connectivity with the surrounding areas. This will not only facilitate access by foot or bicycle but will support the overall variety of services provided in the area. Access to the site should be built on the provision of strong public transport links to surrounding areas. The provision of residential accommodation on site will mitigate a significant amount of the transport demand.

Key Significant Environmental Issues Identified – Traffic and Transportation

From a transportation perspective the primary significant environmental impact of the development of the Grangegorman site involves the number of vehicular trips which will be generated. The design elements which can influence the number of vehicular trips generated by the development include the following;

- Land Use Mix;
- Quality of public realm and streetscape;
- Quantum of car parking;
- Access, availability, reliability, comfort and quality of Public transport;
- Pedestrian connectivity with surrounding areas;
- Cyclist connectivity including permeability through the development site; and
- Provision of on-site residential accommodation.

Transport and traffic issues will also have impacts on environmental factors such as air, noise, mirco-climate, socio-economic socio-economic issues, population, visual impact and others.

4.2.7.2 Services Infrastructure

Horgan Lynch, Consultant Engineers have provided the following study of the Services Infrastructure associated with the Grangegorman Strategic Plan. A desktop study was previously undertaken by Arup Consulting in May 2007 to identify the foul and surface water sewerage systems in the area of the site and surrounding areas including the watermain system. Engineering constraints were previously identified in the course of this study in relation to the proposed redevelopment of the site. The key points of this relevant to the Strategic Environmental Assessment have been highlighted below.

Current Situation

Existing Foul Sewerage

The following Dublin City Council combined sewers are in the vicinity of the Grangegorman site.

- A 450mm sewer runs eastwards along the North Circular Road into a 1010 x 610mm sewer at the junction of Annamoe Parade. This sewers turns southwards down Grangegorman Road Upper.

- A 1010 x 810mm sewer on Grangegorman Road Upper is part of the Bradoge River Culvert system. This sewer splits in two at Marne Villas with a 600mm pipe discharging through the eastern section of St Brendan's Hospital before connecting to the 1500mm sewer on Brunswick Street North.

- A 375mm sewer splits from the 1010 x 810mm sewer at Grangegorman Road Upper and discharges southwards down Grangegorman Road Lower before connecting into a 1010 x 600mm sewer at the Stanhope Street junction.

- A 300mm sewer on Kirwin Street which drains both westwards to the 1350mm sewer on Manor Street and eastwards to the 300mm sewer on Grangegorman Road Lower.

- A 1030 x 610mm sewer on Prussia Street which drains southwards to the 1350mm sewer on Manor Street.

Drainage from St Brendan's, Grangegorman is divided into two areas. St Brendan's West discharges eastwards to the Dublin City Council combined sewers on Grangegorman Road Upper and St Brendan's East discharges both eastwards to the 600mm diameter Dublin City Council foul sewer (Bradoge River Culvert) traversing the site to the eastern boundary with the Broadstone Depot and westwards to a 1010 x 600mm brick sewer on Grangegorman Road Lower.

Drainage from St Brendan's West is drained on a combined system with 5 outfall points to the Dublin City Council sewer on Grangegorman Road Upper. Four of these outfalls discharge to a 1150 x 770mm brick sewer and the fifth to the 375mm diameter sewer on Grangegorman Road Lower.

The 1150 x 770mm sewer divides at Marne Villas into a 600mm diameter sewer (Bradoge River Culvert) draining through St Brendan's East and a 375mm diameter sewer draining southwards down Grangegorman Road Lower.

Drainage from St Brendan's East is drained on a combined system with 6 outfall points to the City Council sewers. Four of these outfalls discharge to the 600mm diameter sewer (Bradoge River Culvert) traversing the site while the remaining two discharge to the 375mm diameter sewer on Grangegorman Road Lower.

Drainage on the site is mainly constructed of glazed earthenware with brickwork manholes.

Existing Surface Water Sewerage

There are no Dublin City Council surface water sewers in the vicinity of the Grangegorman site.

However the Bradoge River runs southwards to the River Liffey through Grangegorman. According to the "Rivers of Dublin" by Clare Sweeney the Bradoge River originates in Cabra, where it took a course eastwards through Cabra West and East, south easterly through Grangegorman to the ford at Broadstone. At this point the watercourse appears to split in two. The main course turns eastwards at the railway terminus and crosses under Constitution Hill/Broadstone Road into Kings Inn and down into Bolton Street where it now travels in a 2400 x 900mm brick sewer past Chapel Street into Kings Street, Halston Street, Cuckoo Lane and Chancery Street before discharge into the River Liffey.

The smaller course at the rear of Broadstone branches off due south through St Brendan's before separating into two at the west end of the old Richmond Hospital on Brunswick Street North and rejoins again to run southwards on Red Cow Lane and across Kings Street North. It then flows south down Aaron Street North and entering the River Liffey on Aaron Quay downstream of Queens Street Bridge.

The Bradoge river system has been incorporated into the Dublin City Council sewerage system. The total length of the main lines of the network is 5½ kilometres.

Existing Watermains

The following Dublin City Council Watermains are in the vicinity of the Grangegorman site (Figure 3.2 and 3.3).

- A 450mm and 175mm main on the North Circular Road.
- A 125mm main on Grangegorman Road Upper which changes to a 150mm main on Grangegorman Road Lower. The 125mm main connects into both the 175mm and 450mm mains on the North Circular Road.
- A 100mm and 225mm main on Prussia Street continuing down into Manor Street.

- A 150mm main on Kirwin Street connecting to the 150mm main on Grangegorman Road and the 225mm on Manor Street with a connection to a larger 300mm also on Manor Street.

- A 250mm and 800mm main on Brunswick Street North.

- A 225mm main on Phibsborough Street running into Constitution Hill.

- A 800mm on Constitution Hill which is a continuation of the main on Burnswick Street North.

- A 300mm main on Constitution Hill.

Both St Brendan's East and West are served off the existing Dublin City Council 150mm watermain on Grangegorman Road Upper. There are 2 existing metered connections to St Brendan's West and 2 metered connections to St Brendan's East, with the Nurses Residences connection the only one in use on the east side.

Pressure and flow tests were carried out on the existing 150mm main on Grangegorman Road Upper back in June 1998 with a pressure of 37 PSI and a flow of 160 gallons/minute being achieved. A test was also carried out in St Brendan's West and the results achieved were 31 PSI and a flow of 130 gallons/minute.

There are no ring main systems in St Brendan's East with fire hydrants fed from the existing 150mm main on Grangegorman Road Upper.

There are 2 ring main systems in operation in St Brendan's West and vary from 100mm to 150mm diameter mains.

Opportunities

The following provides detailed recommendations and opportunities for the management of the Services Infrastructure currently on site which may facilitate the development of the Grangegorman Site and will maximise the potential of the existing infrastructure.

Recommended Foul Drainage

Drainage from any proposed redevelopment shall be completely separate, with separate foul and surface water drains before connection to separate foul and surface water sewers in the existing or new public access roads throughout the redevelopment.

Due to design issues in the redevelopment it is unlikely that any of the existing combined drains on the site will be retained. However in the event that sections of existing drains could be utilised depending on their structural integrity and capacity being verified, these drains shall be utilised as foul drains only. It is expected that the existing 375mm diameter combined outfall sewer on Grangegorman Road Lower will be utilised as the proposed foul sewerage outfall from the redevelopment to the 1500mm foul sewer on Brunswick Street North.

However any existing drains being utilised will require the following:

(i) Condition survey including CCTV survey and report to WRC Standards.

(ii) Capacity check.

(iii) Agreement with Dublin City Council Drainage Division regarding items (i) and (ii) above.

It is proposed that foul drains will be provided in the main primary access routes throughout the development.

It will be the intention of Dublin City Council Drainage Division to take any new foul sewers constructed in the public roadways "in charge". As such the following requirements of the Drainage Division will be required:

(i) Proposed foul sewers shall be a minimum of 225mm diameter.

(ii) Sewers shall comply with Dublin City Council Drainage Divisions "Code of Practice".

(iii) Sewers and manholes shall be constructed to the details and specification of the Drainage Division.

Dublin City Council Drainage Division have confirmed that due to the removal of surface water run-off from the existing Grangegorman development from the combined sewers in Grangegorman Road, there will be spare capacity for the increased foul discharge coming from the redevelopment to this sewer.

Foul drainage from the proposed redevelopment either side of Grangegorman Road shall be collected separately in a private drainage system before discharge by gravity to the public sewerage system in Grangegorman Road Lower.

A disconnecting manhole shall be provided at each site boundary with a channel interceptor (broads trap) and fresh air inlet, constructed in the manhole, to prevent noxious smells and gases entering into the redevelopment from the public sewers.

All disconnecting manholes shall be constructed to Dublin City Council Drainage Divisions requirements.

All private foul drains shall be constructed to Part H of the Building Regulations 1997.

<u>Recommended Surface Water Drainage</u>
Drainage from the proposed redevelopment of Grangegorman should be drained on a completely separate system with separate foul and surface water drains before connection to separate foul and surface water sewers in the existing or new public access roads throughout the redevelopment.

In keeping with the Greater Dublin Strategic Drainage Study published in March 2005 Sustainable Urban Drainage Systems (SUDS) techniques will be incorporated into the redevelopment.

Drainage designs can combine various techniques through a storm water management or treatment train approach to ensure that both runoff quantity and quality are addressed.

The following drainage design SUDS measures shall, where feasible, be incorporated into the redevelopment in line with the Greater Dublin Strategic Drainage Study:

- Infiltration systems including infiltration trenches, infiltration basins, permeable paving, soakways and green roofs (roof gardens).
- Filtration systems including swales, bioretention systems and filter strips.
- Constructed wetlands including large ponds and stormwater wetlands.
- Retention systems including retention ponds.
- Detention systems including underground tanks, underground attenuation, detention basins and filter drains.
- In addition extreme storm events can be accommodated by designing landscaped areas or playing pitches to temporarily flood and thus control the rate of outflow from the site.

It is proposed that surface water drains will be provided on the main primary access routes throughout the redevelopment. As such the following requirements will be met:

(i) Proposed surface water sewers to be a minimum of 225mm diameter.

(ii) Sewers shall comply with Dublin City Council Drainage Division "Code of Practice".

(iii) Sewers and manholes shall be constructed to the details and specifications of the Drainage Division.

Surface water attenuation facilities shall be sized for a 1 in 30 year storm event with an overflow for a 1 in 100 year event in line with the Greater Dublin Strategic Drainage Study.

Surface water drainage from the proposed redevelopment either side of Grangegorman Road shall be collected separately in a private drainage system before a restricted discharge by gravity to a new public surface water sewerage system in Grangegorman Road Lower.

Further discussions with Dublin City Council Drainage Division (DCCDD) will confirm the requirements of any new surface water sewers required to facilitate the proposed redevelopment. Dublin City Council Drainage Division have confirmed that the Brodage River system has been incorporated with the public sewerage system and as such would not be suitable for opening up as a water feature within

the redevelopment. However DCCDD will confirm whether there are long term plans for separation of the foul discharges from this sewer.

Recommended Management of Watermains

Dublin City Council Water Division (DCCWD) have confirmed that the 450 mm high pressure main on the North Circular Road is near to capacity.

There is an 800mm high pressure main on Brunswick Street North which runs up to Constitution Hill. DCCWD have suggested that linking the 450 mm and 800mm mains would be beneficial for the redevelopment in providing an additional supply for any future redevelopment.

However DCCWD have confirmed that capacity checks on their network on linking the two mains would be required to ensure sufficiency of any future supply to meet the increased demand of the new redevelopment.

The preferred location for the connection of the two mains would be through the Broadstone Depot. New watermains will also be required to replace the existing mains on Grangegorman Road.

Dublin City Council Water Division will be looking for any sustainable proposals for reducing water consumption for the redevelopment.

New 150mm diameter connections will be made to the existing public mains to supply the new redevelopment.

The size of the new watermains along the main primary access routes within the redevelopment will be 150mm diameter. New building blocks will be served by 100mm diameter ring mains with sluice valves and fire hydrants located to the requirements of Part B of the Building Regulations 1997.

Watermains shall be constructed with MOPVC (blue) pipework and the watermains shall comply with the "Specification for the Laying of New Watermains in Private Property" issued by Dublin City Council Water Division.

Pressure and flow tests shall be carried out, in consultation with the Water Division, to confirm the (a) suitability of the existing mains system to meet Dublin City Council's Fire Officer's requirements for the area and (b) to assess whether boosting will be required to serve the high level storage tanks.

Key Significant Environmental Issues Identified – Services Infrastructure

Foul
Foul drainage will be collected in a separate system for the development before being discharged into the existing public drainage system. Assessment of the existing public system is required to confirm adequate capacity is available in the existing system to cater for the increased foul discharge that will be generated from the proposed development.

Surface water
The establishment of an appropriate surface water drainage system for the development which maximises the re-usage and re-cycling of the surface water run off generated from the development.

The establishment of a system which does not create a surcharge downstream in the watercourses it discharges to.

The implementation of SUDS (sustainable urban drainage systems) in the development for the management strategy for surface water run off which will be increased by the development of the site.

Water Supply
The key objective in relation to water supply lies in the general conservation and management of the natural resource that is water.

Key References in Respect of Surface Water, Foul and Water Supply

Opportunities and Constraints Study (Arups May 2007)
Greater Dublin Strategic Drainage Study (2005)

4.2.8 Cultural Heritage (Architectural and Archaeological)

The Cultural Heritage element of this Strategic Environmental Assessment will focus on two key areas, Archaeological Heritage and Architectural Heritage. Other aspects of heritage will be investigated within other sections of this assessment, for example Natural Heritage will be explored within the Biodiversity, Flora and Fauna section. The archaeological heritage element of these *Scoping Issues Papers* was prepared by Margaret Gowan & Co., Archaeological Consultants, on behalf of Grangegorman Development Agency and seeks to inform the Archaeological Heritage element of the Strategic Environmental Assessment of the *Grangegorman Strategic Plan*. The architectural heritage element of these *Scoping Issues Papers* was prepared by Howley Hayes Conservation Architects, on behalf of Grangegorman Development Agency and seeks to inform the Architectural Heritage element of the Strategic Environmental Assessment of the *Grangegorman Strategic Plan*.

4.2.8.1 Archaeological Heritage

Current Situation

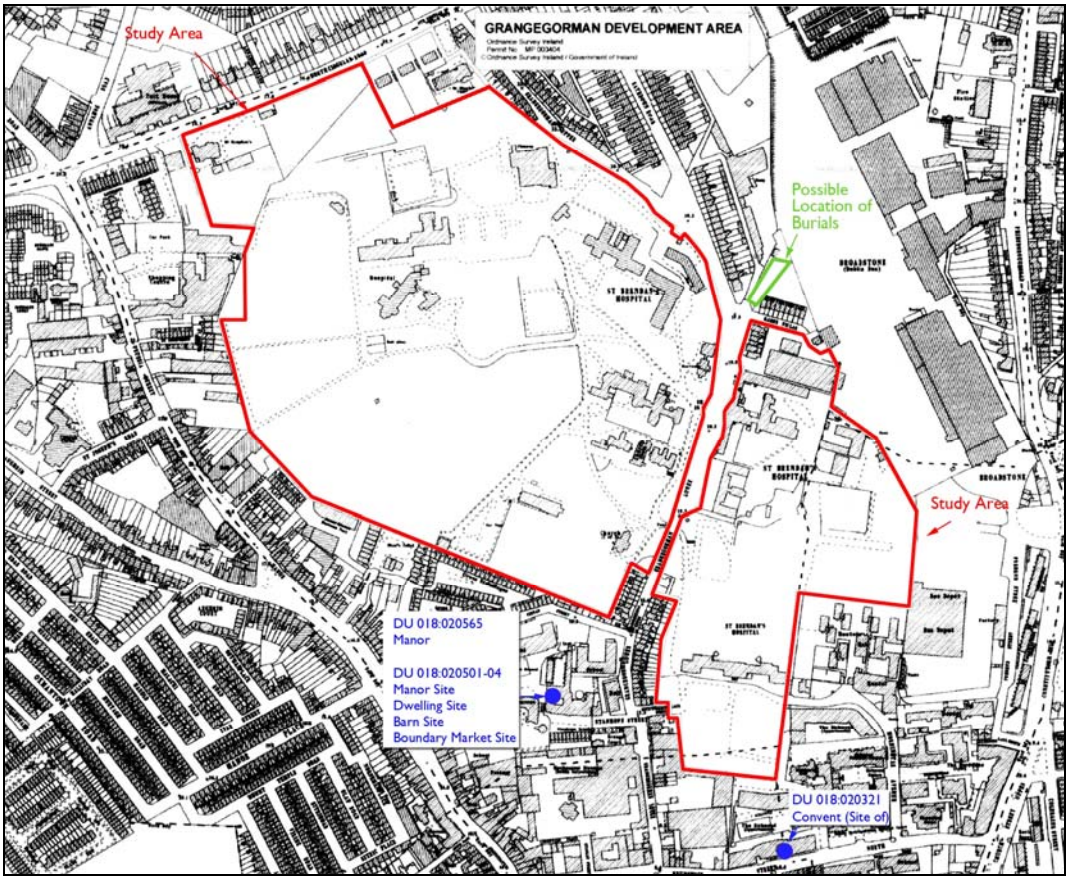
The National Monuments Acts 1930-2004 provide for the protection of the archaeological heritage. The Record of Monuments and Places (RMP) was established under Section 12 of the National Monuments (Amendment) Act 1994 and structures, features, objects or sites listed in this Record are known as Recorded Monuments. Monuments protected under the Act include prehistoric monuments and any monuments and places associated with commercial, cultural, economic, industrial, military, religious or social history.

The Grangegorman facility and its associated structures which are the subject of this study occupy an area of 29.5 hectares in Dublin 7 (Figure 4.3 below).

The subject lands are located within the district of Grangegorman in St Brendan's Hospital on the upper reaches of the first south-facing slope on the north side of the River Liffey in the inner city (Arran Quay Ward). The northern boundary is defined by the North Circular Road and Grangegorman Upper, while property plots, belonging to Prussia Street and Manor Street, form the boundary to the west. Kirwan Street Cottages are located to the south of the study area and Grangegorman Lower bisects the site; the lands to the east of this thoroughfare are bound by Broadstone bus depot while the study area extends as far south towards Brunswick Street North (Figure 4.1). The site is located outside the designated zone of archaeological potential for historic Dublin City (DU018:020).

There are no stray finds from the topographical files of the National Museum of Ireland recorded from the locality and no recorded archaeological monuments are located within the study area.

Figure 4.3 Site Location Indicating Recorded Monuments



Source: Grangegorman Development Agency Annotated by Margaret Gowan & Co. May 2008

The Historical Development of the Site

The site contains several listed buildings all belonging to institutional complexes designed by Francis Johnston and William G. Murray in the early 19th century. These are described in detail in the architectural conservation section of the report.

The historical development of the lands at Grangegorman has been responsible for its continued existence as a cultivated landscape. The extent of actual building within the site is small, the development of the landscape being related to the mid 19th century building. An analysis of historical mapping (de Gomme 1673 and Rocque 1756) shows that the area was free from any development and bounded by two of the ancient roadways into Dublin. The area was probably used as agricultural land associated with the Grange Manor (RMP DU018:02501). Archaeological soils, features and/or deposits are often revealed with developments of this size and nature in areas of relatively undisturbed land.

Main Issues in Relation to Archaeology Element of Cultural Heritage

Grangegorman is located immediately north of the known limits of the historic town of Dublin (DU 018:020). There is evidence for Viking and later Hiberno-Norse settlement north of the Liffey in this general area. Two sites are located along the southern

boundary. The site (DU018:020565) was probably the Manor House (it gives its name to Manor Street) and the Grange belonging to the Priory of the Holy Trinity (Christ Church) (which gives its name to Grangegorman Upper). It is possible that the lands surrounding this particular site could have been used for agricultural purposes. The site (DU018:020321), which is located on Brunswick Street, to the southeast of the study area, was the site of the Benedictine convent. In 1811 the building was incorporated into the Richmond Surgical Hospital and in the 1990s it was demolished. The study area was bounded by two of the ancient roadways of Dublin which probably follow the line of Constitutional Hill and Stoneybatter Road.

Key Significant Environmental Issues Identified – Archaeology

The main archaeological concerns regarding the proposed development are as follows:

- *General*
  As this is a large proposed development site, relatively undisturbed in places, there is considerable potential for revealing subsurface remains of archaeological material.

- *The possibility of burials within the proposed development area*
  Consultation in 1998 with the then Eastern Health Board confirmed that according to their records from the 1820s onwards no patients were buried within the confines of the grounds (Courtney 1998). However it is our experience that within institutional grounds, burials were sometimes unrecorded and therefore it is possible that burials are located within the proposed development site. Through anecdotal evidence from Fr Pearse O'Dowell, Chaplain at St Brendan's Hospital, documentary evidence (Dr. O'Shea & Dr. Falvey) and research of sources relating to Bully's Acre in Kilmainham it has been established that there is a significant possibility of unmarked cholera graves from the 1830s outbreak in the vicinity of the Annex Building, east of Grangegorman Lower. This is probably within the walled lands to the north of the Annex, east of HJ Nolan Builders and west of Marne Villas (Figure 1) i.e. outside the area of the Grangegorman Development.

- *The playing fields located on the west site*
  These fields have only been minimally landscaped and therefore the land is relatively undisturbed and possesses potential for archaeological features to remain intact below the surface due to the aspect of the site, which is situated on the upper reaches of the first south-facing slope of the River Liffey Valley with the River Bradogue running along the north eastern boundary. The study area also commands a view of the city and is in the vicinity of the known settlement of Oxmantown.

- *Early building illustrated on Rocque's map*
  In 1756 John Rocque's map depicts a lane from the present day Grangegorman Upper leading westward into the proposed development area where a structure is located amongst the fields. The exact location cannot be discerned due to the imprecise nature of the early map.

Key References in Respect of Archaeological Element of Cultural Heritage

Bedford W. 2008 *Archaeological Appraisal, Grangegorman Masterplan* Margaret Gowen & Co Ltd. Unpublished report.
Bennett D. 1991, *Encyclopaedia of Dublin*, Dublin.
Bennett, I. (Ed.), *Excavations: Summary Accounts of Archaeological Excavations in Ireland,* Wordwell Ltd., Bray.
Childers, E. S. E. & Stewart, R. 1921 *Story of the Royal Hospital Kilmainham*
Clarke H. (ed) 1990, *Medieval Dublin*, 2 vols., Dublin
Courtney, L 1998 *St Brendan's Hospital Grangegorman* Margaret Gowen & Co. Ltd. Unpublished report.
Craig M. 1992, *Dublin 1660-1860* Penguin Group England.
Dalton, 1838, *History of the County Dublin*
De Courcy J.W. 1996, *The Liffey in Dublin*
Delany R. 1992, *Ireland's Inland Waterways,* Appletree Press, Belfast
Gilbert 1870 J.T. Gilbert (ed.), *Historic and Municipal Documents of Ireland, AD 1172-1320*. London.
Gilbert 1884-6 J.T. Gilbert (ed.), *Chartularies of St Mary's Abbey, Dublin*. 2 vols. London.
Gilbert 1889, J.T. Gilbert (ed.), *Register of the Abbey of St Thomas, Dublin*. London.
Gilbert 1889-1922, J.T. Gilbert (ed.), *Calendar of the Ancient Records of Dublin*., 19 vols., Dublin.
Gilbert, J.T. (ed.) *Chartularies of St Mary's Abbey*, (London, 1884-6), vol. 1
Gwynn A. & Hadcock R.N., *Medieval Religious Houses Ireland*, London, 1970, 171.
Haliday 1884, Charles Haliday, *The Scandinavian Kingdom of Dublin*. 2nd edn. Dublin.
Harris 1766, Walter Harris, *History and Antiquities of the City of Dublin*. Dublin.
Little 1956 George Little, *Dublin before the Vikings.* Dublin.
Mc Cullough N. 1989, *Dublin: An Urban History Dublin* pages. 117-119.
Mc Cullough N. and Mulvin V. 1987, *A Lost Tradition-The Nature of Architecture in Ireland*. Dublin pages 98-116.
McNeill 1950, Charles McNeill (ed.), *Calendar of Archbishop Alen's Register*. Dublin.
National Museum of Ireland, Topographical Files
O'Shea, B. & Falvey, J. *A History of St. Brendan's Hospital* (received as copy from Fr Pearse O'Dowell, Capelin St Brendan's).
O'Sullivan 1990, Benedict O'Sullivan, 'The Dominicans in medieval Dublin' in *Clarke* 1990, pages 83-99
O'Brien E., Browne L., O'Malley K (eds.) *The house of Industry Hospitals 1772-1987 the Richmond, Whitworth and Hardwicke (St. Laurence's Hospital), a closing memoir,* (Dublin, 1989)
O'Conbhui C. *Then lands of St. Mary's Abbey, Dublin*, *P.R.I.A.* no. 62, (1961-3), pages 21-67
Office of Public Works, *The Record of Monuments and Places* 51 St Stephens Green
Somerville-Large P. 1979, *The Coming of the Normans: 1170-1300* in *Dublin,* page 59.
Trinity College Dublin, *Trinity Map Library*: *John Speed, 1610; Bernard de Gomme, 1673; John Rocque, 1756; Thomas Campbell, 1811; William Duncan, 1821; the first edition Ordnance Survey map, 1837; the revised edition Ordnance Survey maps dated 1876-1936*.

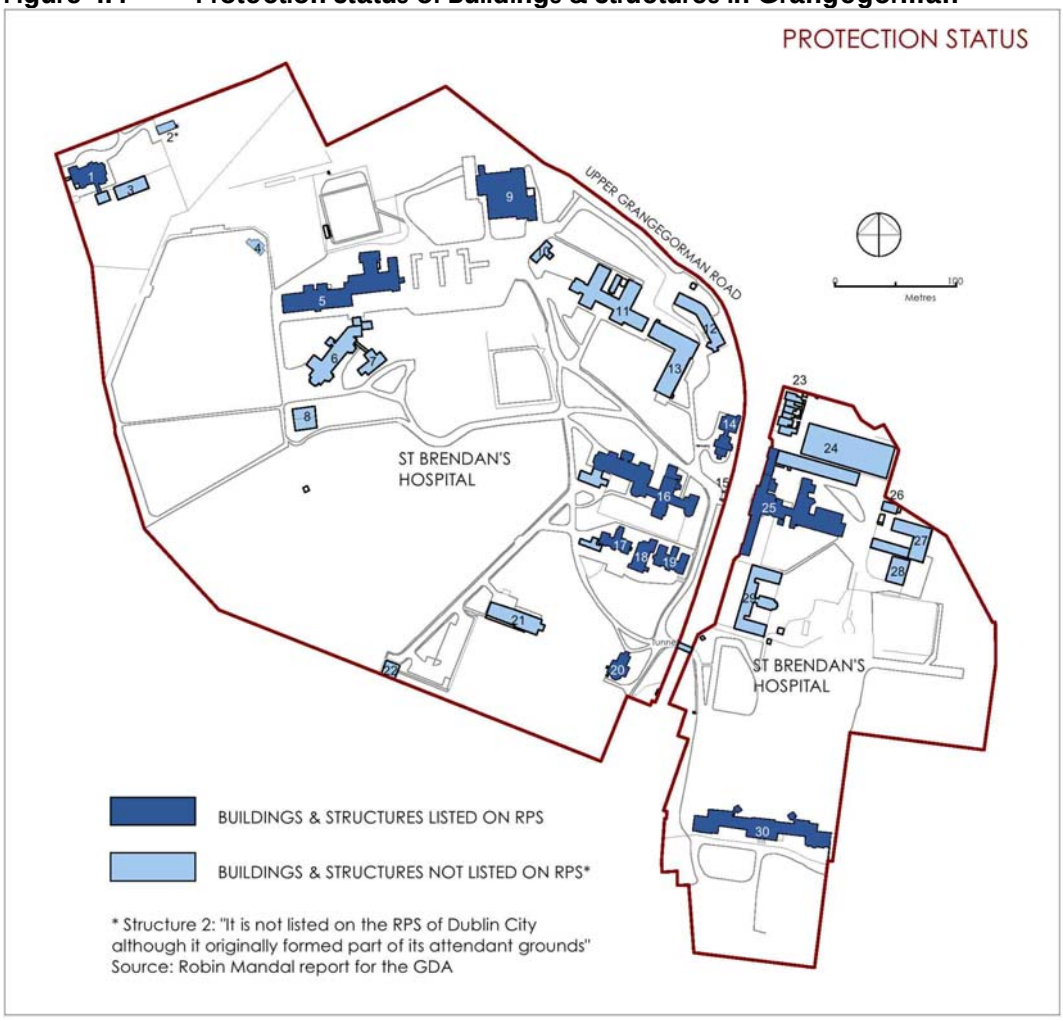
4.2.8.2 Architectural Heritage

4.2.8.2 Architectural Heritage

Current Situation

The lands are currently occupied by St. Brendan's Hospital, which represents the continous use of the area for hospitals from 1773. The oldest existing buildings date from 1815, and the site was developed in several phases by recognised architects. Many of the structures are listed on the Record of Protected Structures. The site is characterised by imposing nineteenth-century and early twentieth-century institutional buildings, both grouped in clusters and in isolation with extensive landscaped surroundings, all enclosed within high masonry walls.

Figure 4.4 Protection Status of Buildings & Structures in Grangegorman

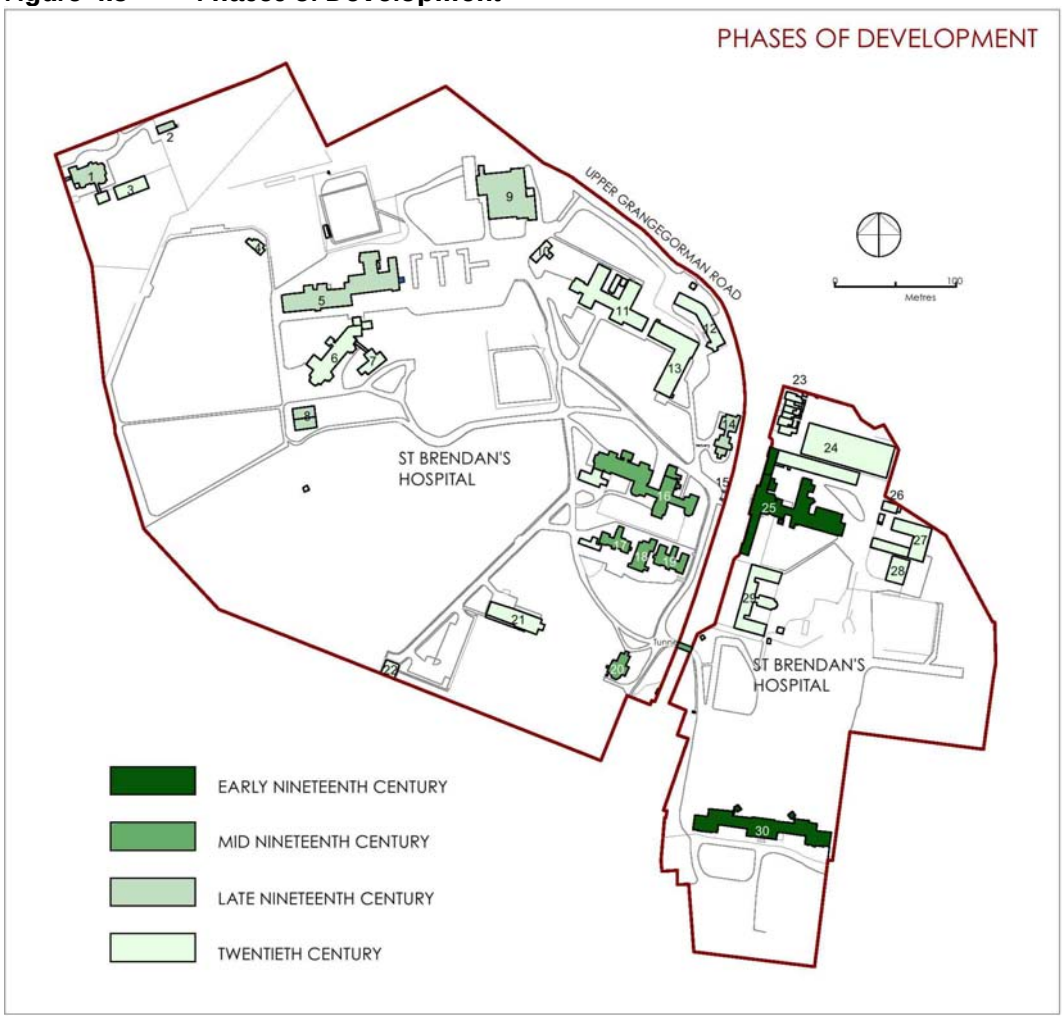


Source: Howley Hayes Architects

Significance of Protected Structures & Clusters

Francis Johnston (1761-1829) was the architect for two of the oldest surviving structures that form the most substantial cluster of buildings on the site. These include the former Richmond Penitentiary (Structure 25) and the former Richmond Asylum (Structure 30), which are located as a cluster to the east side of Grangegorman Road. These structures, although not outstanding examples of this reknowned architect's work, are particularly important from a social historical perspective as evidence of the early development of mental health care. Francis Johnston was a prolific architect, having built asylums in other locations around the country together with major public buildings such as the General Post Office and St. George's Church in Dublin. Both of the structures on this site have been substantially altered since their construction in the early part of the nineteenth century. However, the Penitentiary is in a more stable condition as it has remained in use. The Asylum is derelict with its east, west and north ranges demolished as recently as the late 1980's and a portion of the remaining south range is no longer roofed. This is the historic building most under threat on the site, and arguably among the most significant.

Figure 4.5 Phases of Development



Source: Howley Hayes Architects

A second group of buildings is located to the west of Grangegorman Road and date from the middle decades of the nineteenth century and mark a significant change in approach to the care of the mentally infirm. These include the Female House (Structure 16), two chapels (Structure 18 & 20) and a male and a female infirmary (Structures 17 & 19). With the exception of the Church of Ireland chapel, all were built to the designs of the firm Murray & Denny. The Chuch of Ireland chapel (Structure 20) was designed by George Wilkinson. Murray & Denny was established by William Murray, who worked in partnership with Johnston on the asylums. Instead of the severe classical style of the earlier structures, these buildings are in a neo-Elizabethan style and are generally in a reasonable condition and most remain intact and in use. The original Male House was located some distance away from the cluster of the Female House, chapels and infirmaries, which are located closest to the main entrance, and was removed after 1936. There are two substantial existing structures on the Male House site that were built as extensions to it. The building known as the Top House (Structure 5) dates from the 1870's and was an extension to the north-west of the Male House. This is a protected structure and was in use until relatively recently. The second surviving wing now contains the Grangegorman Development Agency offices (Structure 6). It dates from the early twentieth century and was an extension for residential use to the western flank of the Male House. This structure is not protected and its replacement might be considered, as part of an overall conservation gain. Its interest derives mainly from it being an extension to the now demolished nineteenth century building. Its original pitched roof has been replaced with a flat roof.

A third group of buildings date from the late nineteenth century and were built to the design's of W.H. Byrne, a prolific and well regarded architect of the late nineteenth and early twentieth centuries. They consist of the Mortuary (Structure 14), the former Laundry (Structure 9) and the Conolly Norman House and its mews house (Structures 1 & 2). The rest of these structures are listed on the Record of Protected Structures and are still in use. They were purpose-built for their respective functions but have been adapted for reuse without being significantly altered.

The former Nurse's Home (Structure 29), dating from 1938, is not a protected structure, and its replacement might be considered. The Robin Mandal report prepared for the GDA states "This structure is a detached, seventeen bay, five storey structure, c.1938, designed by Vincent Kelly, in red brick, with a stone base and a stone string course at third floor level."

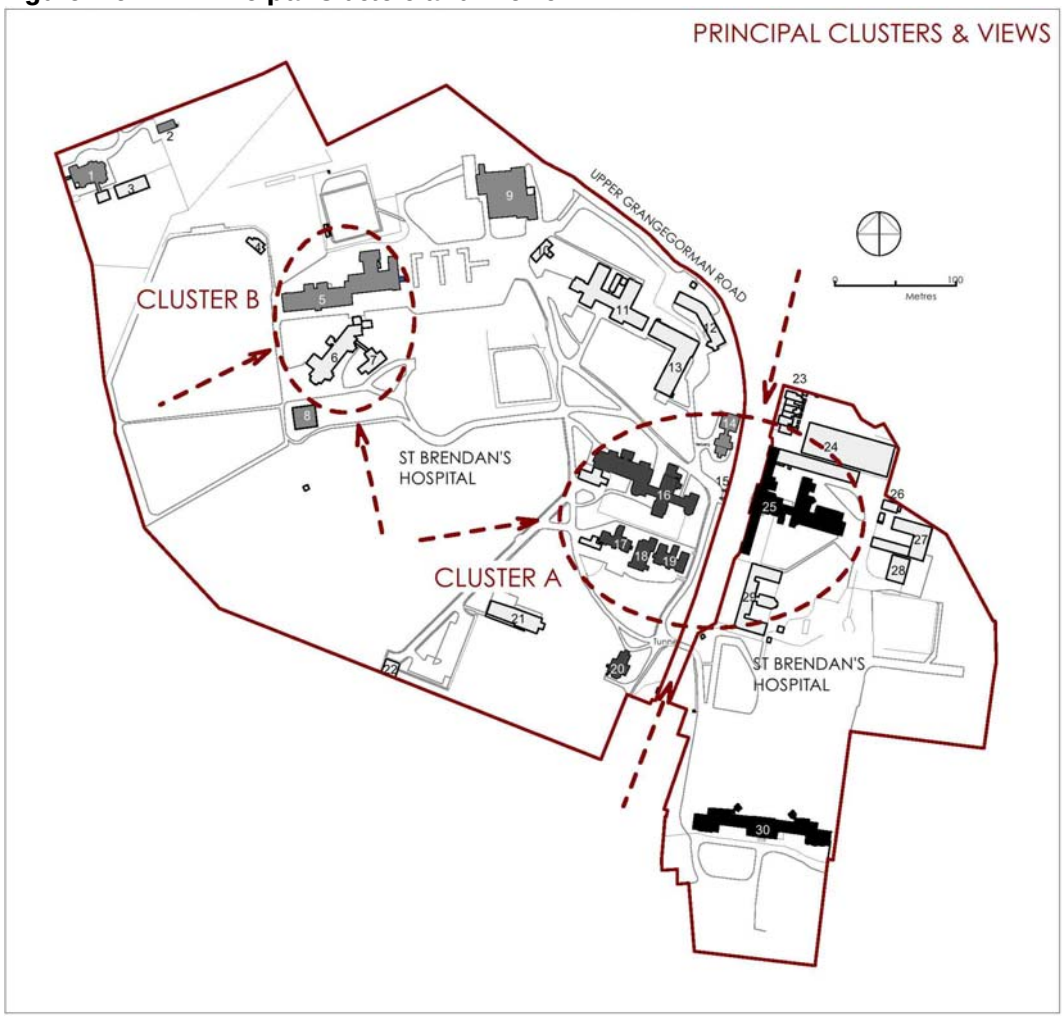
Two handball alleys, dating from the turn of the century and constructed from concrete, are not on the Record of Protected Structures of Dublin City Council. Their replacement might be considered.

The remaing buildings on the site date from the latter half of the twentieth century and are of little architectural merit or historical interest.

Aside from the buildings, other structures of interest include the main entrance gateway (Structure 15), the tunnel and the site boundary wall. The entrance gateway was moved from Santry Court in the 1940's, and is likely to be over 200 years old. It is a protected structure. The tunnel predates the development of the major buildings on the west side of the site and enabled the secure passage of

patients across Upper Grangegorman Road. This does not seem to be a protected structure and is of local importance. The boundary wall dates from the middle of the nineteenth century, but is likely to have been built in several phases and has been much altered in a number of sections. This includes the lowering of the wall along Upper Grangegorman Road some time in the latter half of the twentieth century, when railings were introduced marking a change in approach to mental health care. It has also been altered along North Circular Road to the front of some houses. This wall is also a protected structure.

Figure 4.6 Principal Clusters and Views



Source: Howley Hayes Architects

Status of Existing Structures

There are approximately thirty existing structures on the site. Twelve of the buildings, the entrance gates and the boundary walls are protected structures listed on the Record of Protected Structures in the Dublin City Development Plan 2005-2011.

Key Significant Environmental Issues Identified – Architecture

The existing structures, building clusters and landscape will be profoundly affected by the development. The impact of the proposed structures, urban form and landscaping on the existing historic fabric will need to be examined and assessed carefully.

The significance of each structure needs to be considered in relation to the other buildings on the site and to the complex as a whole.

There are proposals for both the re-use and removal of protected structures. For each individual structure, the appropriateness of the proposed alterations and removals will need to be demonstrated. The spaces around and between the historic buildings are also significant and should be included in the detailed appraisal of the site.

Information Gaps and Limitations

A conservation plan for the entire site area should be prepared that will set out strategies for the retention, repair and re-use of each of the protected structures and their curtilages.

A detailed condition survey has yet to be undertaken for each of the structures on the site. This is necessary to establish conservation strategies for the conservation, alteration, re-use or removal of each structure, including the protected boundary wall.

Some of the buildings on the site are currently unsafe to access, and temporary measures will be necessary to enable surveys to be carried out in safety.

Key References used in Architectural Heritage

Dublin City Development Plan 2005-2011
Architectural Heritage Guidelines for Local Authorities
Architectural Appraisal of St. Brendan's Hospital Grangegorman Dublin 7
for Dublin City Council prepared by Paul Arnold Architects February 2006
Framework Architectural Conservation Strategy for the Existing Buildings on the Lands of Grangegorman Dublin 7 for the Grangegorman Development Agency prepared by Robin Mandal Architect May 2007

Plate 4.1: View towards part of the Richmond Asylum (Structure 30) from Morning Star Avenue

Plate 4.2 View along Upper Grangegorman Road towards Richmond Penitentiary (Structure 25) and Nurse's Home (Structure 29)

Plate 4.3 View of main entrance gates (Structure 15)

Plate 4.4 View from south towards catholic chapel (Structure 18) and female infirmary (Structure 19)

Plate 4.5 View from east towards Top House (Structure 5) with later additions

Plate 4.6 View from south west towards GDA offices (Structure 6)

Plate 4.7 View from east towards Nurse's Home (Structure 29) and Penitentiary (Structure 25)

Plate 4.8 View from south towards former laundry (Structure 9)

5.0 NEXT STEPS IN THE SEA PROCESS

These Scoping Issues Papers were prepared in order to identify the main environmental issues which will be included in the Environmental Report and which will contribute to the policy formation for the Grangegorman Strategic Plan. This report will now be circulated with the statutory and non-statutory consultees as detailed in Section 1.3 above and submissions sought in relation to the scope and content of the Environmental Report.

5.1 Objectives Targets & Indicators

The next step for the SEA Team in this SEA process is the identification of appropriate Environmental Objectives (EO) for the Grangegorman site. This will be used to assess the draft Development Objectives (DO) proposed to be contained in the Grangegorman Strategic Plan.

Further to this, in order to assess these Environmental Objectives, it is proposed to draw up a number of indicator and targets (both direct and indirect) in order to aid the monitoring process. During the Review of the Plan proposed policies will be assessed according to their potential impacts on the environment and it is expected that there will be many changes in order to mitigate potential adverse effects.

Although many of the EO will be distinct from the DO there will be overlap and this will make the Strategic Plan more robust. The EOs will be developed from a range of European, national and regional plans and programmes. The SEA Directive requires that the evaluation of the Development Plan is focused upon the relevant aspects of the environmental characteristics of areas likely to be significantly affected.

5.2 Mitigation Measures

Mitigation measures will be identified in the Environmental Report to prevent, reduce and as fully as possible, offset any significant adverse impacts on the environment of implementing the Grangegorman Strategic Plan.

5.3 Monitoring Measures

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored and the Environmental Report will detail proposals for this. Monitoring will be based around the indicators and targets which will be selected in accordance with the environmental objectives. They will allow measures of trends and progress over time.

Monitoring at an early stage may identify unforeseen adverse effects and the undertaking of appropriate remedial action. Monitoring measures over the Strategic Plan period can be geared towards addressing any gaps (where practicable) which are identified in the Environmental Report. It will also enable an

assessment of whether the Strategic Plan is achieving its environmental objectives and targets. It may also show up the policies which should be re-examined.

5.4 Submissions or Observations

Submissions or observations in relation to the scope and content of the Environmental Report for the SEA of the *Grangegorman Strategic Plan* are sought from the Environmental Authorities. These submissions should be provided on or before **Monday, 12th July 2008** and should be forward to:

The Grangegorman Development Agency
St. Brendan's Hospital
Former Nurses Education Centre
Grangegorman
Dublin 7

Alternatively these submissions can be e-mailed to ceo@ggda.ie or barbara@tpa.ie on or before this date.