Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

Grangegorman
Planning Scheme
2012

Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

This Strategic Development Zone Planning Scheme was adopted by the elected members of Dublin City Council on 25th July 2011 and approved by An Bord Pleanála on 9th July 2012 in accordance with Section 169 of the Planning and Development Acts 2000-2010.

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Introduction to Planning Scheme

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Purpose and Layout of this Chapter

The purpose of this Chapter is to briefly outline the background and statutory context of this Planning Scheme, to summarise the overall Vision for the project and to describe the structure of the Planning Scheme.

Contents

1.0 Background to Planning Scheme

The development of the St. Brendan's Hospital grounds at Grangegorman in Dublin's north inner city represents one of the largest urban design redevelopments undertaken within the city core for many decades. The Grangegorman site, will be entirely redeveloped to create 21st century facilities to meet the needs of the Health Service Executive (HSE), Dublin Institute of Technology (DIT), the City and surrounding communities. Dublin City and the immediate north inner city communities will benefit through the significant learning, research, industry related, arts and cultural, health, general office and sporting facilities being created in this location. The development will have a major impact on the economic, social and cultural life of the Greater Dublin Region and by extension will be of national importance.

St. Brendan's Hospital at Grangegorman is one of the oldest public institutions in Dublin, providing mental health services for over 200 years. The land within St. Brendan's is a largely undiscovered gem within Dublin's north inner city. The walled site has remained virtually untouched for decades and for the most part has been separated from the communities living around it. Those parts of this extraordinary site which are in use include a number of buildings which are architecturally important but which are no longer suitable for modern mental healthcare delivery models.

Dublin Institute of Technology is another Dublin landmark institution and one of Ireland's largest providers of higher education. Its origins date back to 1887 in Kevin Street, and the foundation of technical education in Ireland. In the 120 years since then, DIT has grown and developed, continually responding to the educational, social and economic needs not only of Dublin but of the country as a whole. Its unique place in Ireland's higher education spectrum lies in the diversity of what DIT offers and in the fusion of the academic with the application of knowledge. Programmes are career-focused and links with industry through programme development, research and technology transfer are a hallmark of the institution. More than 20,000 students are enrolled on full and part-time programmes that range from apprenticeship and craft education through to Ph.D. and post-doctoral research.

Aerial view of site from NW with Planning Scheme boundary

Having grown organically over such a long period of time, DIT currently occupies in the order of 40 individual buildings around Dublin city centre. Its potential to continue to develop, and to meet key strategic national objectives, is compromised by the limitations of this diverse infrastructure. Recognising the potential to enhance third level educational provision, Government took the decision in April 2002 that a new consolidated DIT campus would be developed at Grangegorman, in DIT's heartland of the inner city of Dublin. Complementary with this campus Government proposed new healthcare facilities, all to be integrated in a new city quarter.

The Grangegorman Development Agency (GDA) was established under the Grangegorman Development Agency Act 2005. The primary function of the Act is to facilitate the development of the Grangegorman site in Dublin as a modern campus for the Dublin Institute of Technology (DIT), to provide the Health Service Executive (HSE) with upgraded primary health and social care facilities and to provide other facilities, including those for the community.

The GDA considers that the best planning route to deliver this development is via a Strategic Development Zone[1] and this Planning Scheme is a statutory requirement of such an SDZ.

[1]Section 166 of the Planning and Development Acts 2000-2010 provides that an SDZ may be designated where: "in the opinion of the Government, specified development is of economic or social importance to the State."

1.1 Strategic Development Zone Area

The total area of the SDZ site is 28.69 hectares (70.89 acres). The SDZ site comprises primarily of the grounds of St. Brendan's Hospital but also includes Grangegorman Lower (a public road which bisects the site); HSE properties adjacent to St. Brendan's Hospital fronting onto North Circular Road; HSE properties fronting onto Grangegorman Lower (adjacent to Marne Villas) and the former DCC Cleansing Depot (in the ownership of DIT).

The land area included within the Planning Scheme is identified in Figure 1.1.

The SDZ Boundary differs slightly from the Grangegorman Lands as defined in the Grangegorman Development Agency Act 2005. For example, the HSE properties adjoining the North Circular Road have been included within the SDZ site in order to ensure a holistic and integrated approach to the redevelopment of this area.

Also, an area to the north-west of the site (centred on Connolly Norman House) has been excluded from the SDZ site. This area was excluded as the planning had already been advanced for the early provision of a component of the replacement mental health facilities. Planning permission for these facilities was granted in September 2009, in accordance with the principles of the Grangegorman Master Plan (contained within the Grangegorman Strategic Plan[2]).

There are currently three landowners within the SDZ boundary line (See Figure 1.2):

- The Health Service Executive – 27.71ha;
- Dublin City Council – 0.57 ha (road in charge of DCC); and
- Dublin Institute of Technology – 0.41 ha (DCC Cleansing Depot)

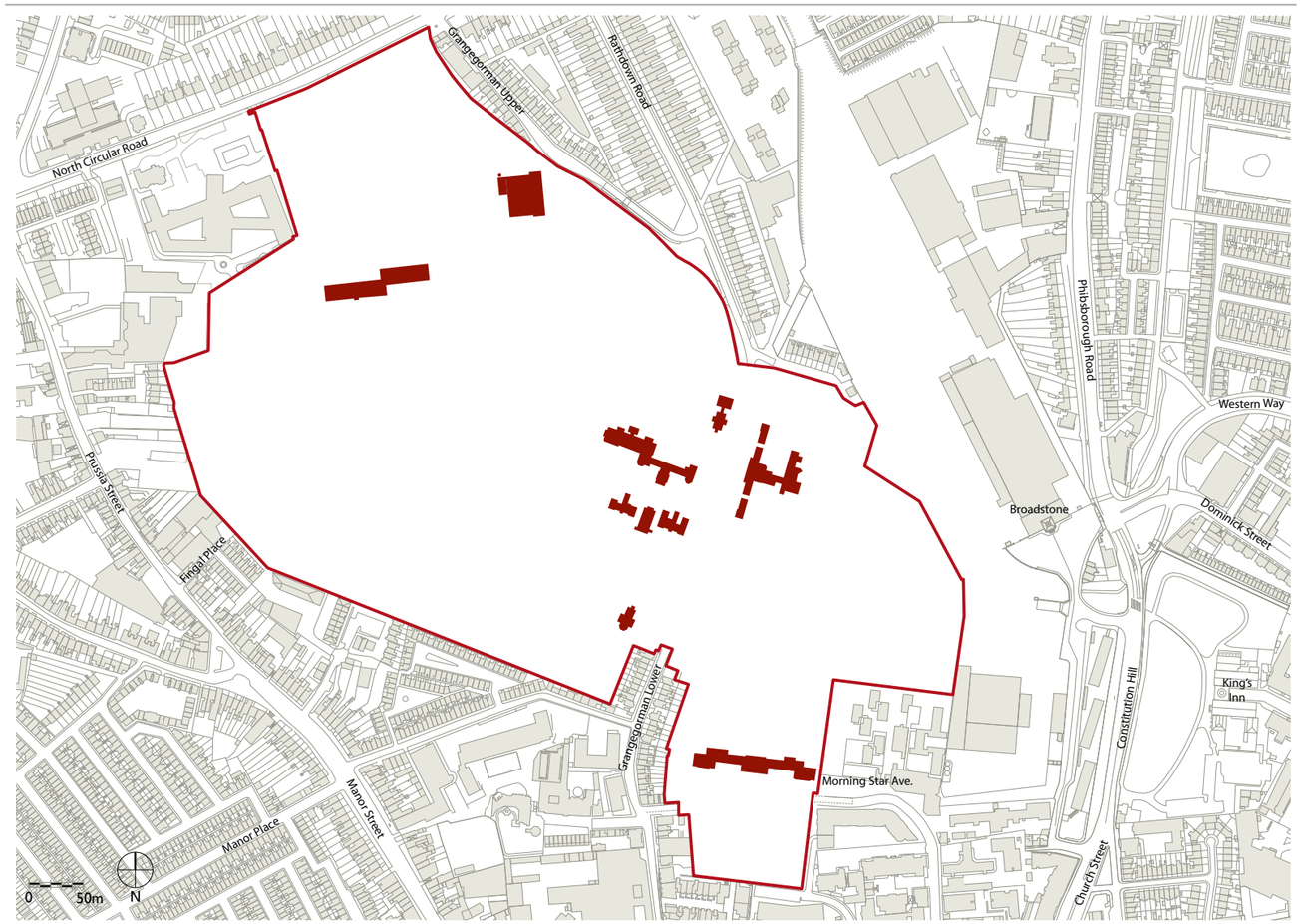


Figure 1.1. Planning Scheme Area

[2] *The Grangegorman Strategic Plan, 2011 is a document required by the Grangegorman Development Agency Act, 2005. It was the subject of a public consultation process and was finalised by the Grangegorman Development Agency Board on 8 February 2011.*

1.2 Statutory Context

Part IX of the Planning and Development Act 2000 (as amended) introduced the concept of Strategic Development Zones (SDZs), to facilitate development deemed to be of economic or social importance to the State.

The Government ordered the designation of 28.69 hectares of land at Grangegorman (Figure 1.1) as a site for a Strategic Development Zone on 21 December 2010. That Government Order[3] came into operation on 22 December 2010 and specified that the Development Agency would be the Grangegorman Development Agency.

The site was designated an SDZ for the provision of schools and other educational facilities, community facilities, including hospitals and other healthcare facilities and services, facilities for the elderly and people with disabilities, childcare facilities, residential (including student and private) commercial activities (including leisure and retail facilities) and sports and recreational facilities.

The site was designated by the Government for the following reasons:

a. The potential and need for the comprehensive planning and development of the site due to its scale and configuration;

b. The efficient use of public investment in infrastructural facilities;

c. The giving of effect to the policies contained in –

- The Strategic Plan prepared by the Grangegorman Development Agency in accordance with section 12 of the Grangegorman Development Agency Act 2005 (no. 21 of 2005); and
- The Dublin City Development Plan 2011-2017 made by Dublin City Council in accordance with section 9 of the (Planning and Development) Act of 2000.

A reference copy of the Government Designation Order accompanies this Planning Scheme.

Before development can be permitted in an SDZ, it is necessary to prepare a Planning Scheme for the area. Grangegorman Development Agency is the specified Development Agency for the Grangegorman SDZ site and therefore is responsible for the preparation of the Planning Scheme for the area, which has been submitted to Dublin City Council (DCC). DCC will invite and consider submissions on the Planning Scheme and the City Manager will prepare a report, including any recommendations, for consideration of the elected members of the council. The elected members will then decide whether to approve, amend or reject the Planning Scheme or not to make it. Their decision may be appealed to An Bord Pleanála by anyone who made submissions on the Planning Scheme (or by the Development Agency).

Once a Planning Scheme has come into effect any development within it will require planning permission from Dublin City Council. Where development proposals are consistent with the provisions of the Planning Scheme, they will be granted permission. Proposals which are not consistent with the Planning Scheme will be refused permission. No party may appeal to An Bord Pleanála the decision of Dublin City Council on any application for permission in respect of a development within the area of the Planning Scheme.

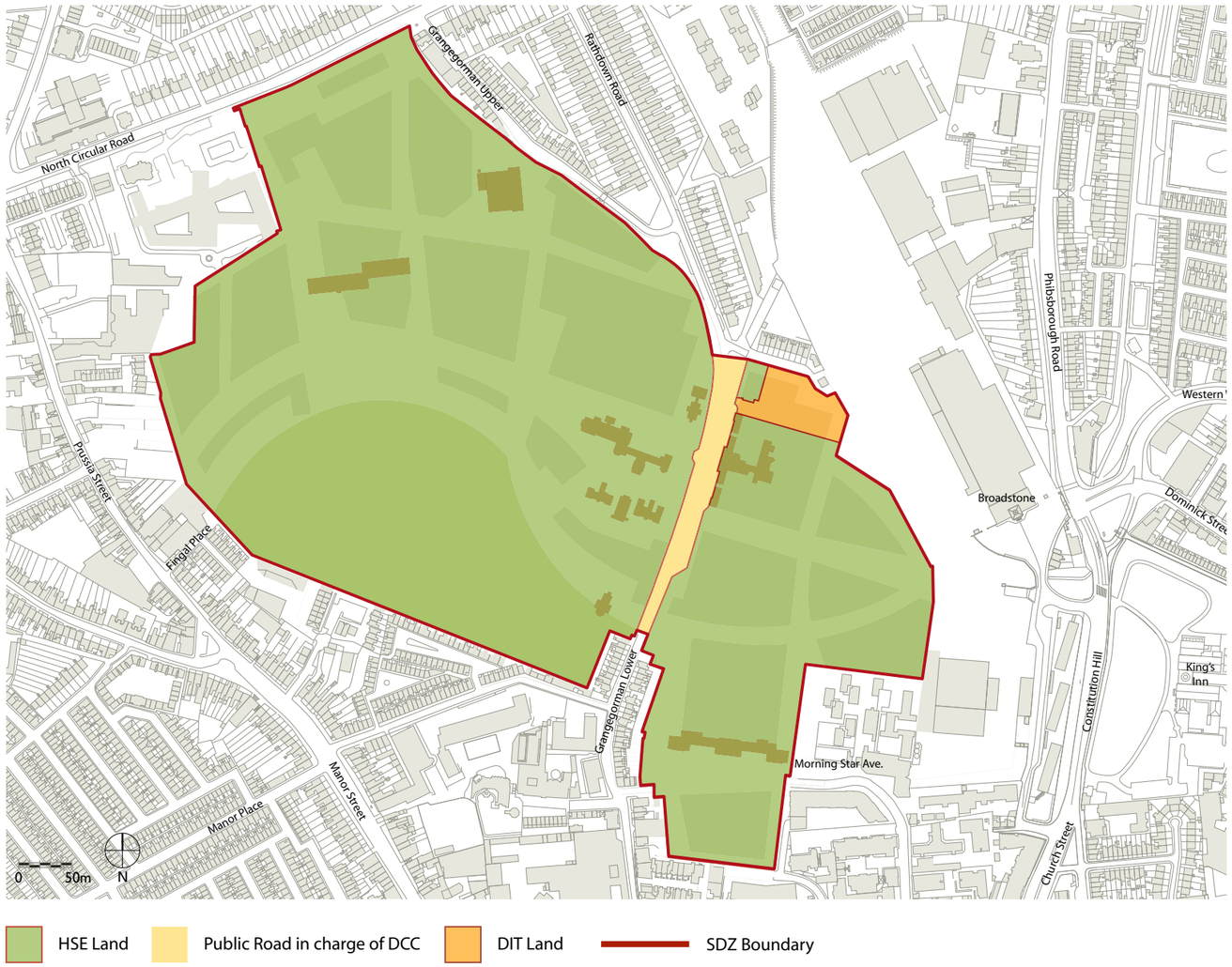


Figure 1.2: Land Ownership map within the Planning Scheme

[3] *S.I. No. 678 of 2010*

1.3 Relationship with Other Plans

Under the Grangegorman Development Agency Act 2005 the GDA was required to prepare a Strategic Plan for the overall development of the Grangegorman Lands[4].

The Strategic Plan includes an overall land-use/architectural plan for the Grangegorman lands and this element of the Strategic Plan became known as the 'Masterplan'. Extensive consultation with the local community and stakeholders has taken place during the preparation of the Strategic Plan (and the Masterplan contained within it). This overall Masterplan, as contained within the Strategic Plan, has formed the basis of this Planning Scheme.

The statutory planning context for the Planning Scheme is set out in a hierarchy of plans including: the National Spatial Strategy 2002-2020; Regional Planning Guidelines for the Greater Dublin Area 2010-2022; Smarter Travel, a Sustainable Transport Future 2009-2020; and the Dublin City Development Plan 2011-2017. The latter of these, the City Development Plan, is the key statutory planning document for the Grangegorman area. Full cognisance has been taken of the Development Plan's policies and objectives for the SDZ lands and the city as a whole in the preparation of the Planning Scheme.

If the Planning Scheme is approved by DCC's elected members it will then form part of the Development Plan in force in the area and will remain part of the Development Plan until such time as the Planning Scheme is revoked. The Planning Scheme is consistent with the Dublin City Development Plan, 2011-2017. The planning context of the Planning Scheme is set out in more detail in Section 2.0.

[4] The Grangegorman Strategic Plan, 2011 is a document required by the Grangegorman Development Agency Act, 2005. It was the subject of a public consultation process and was finalised by the Grangegorman Development Agency Board on 8 February 2011.

1.4 Project Objectives

The Grangegorman Development Agency (GDA) aims to create a vibrant new city quarter with a diverse mix of uses, in a way that is sensitive to the context of the Grangegorman site, its surrounding neighbourhoods and the existing community.

The challenge is to plan for and implement an integrated, multi-phased development which meets the following objectives:

- To avail of a unique opportunity to create a distinct urban quarter close to Dublin City Centre based on current best practice in urban design and sustainability;
- To achieve a key Dublin City Development Plan aim through the development of a designated Strategic Regeneration and Development Area ('SRDA'). This will ensure the realisation of the full potential of this part of the urban core of the City with linkages provided to surrounding areas;
- To deliver new health facilities for the HSE to support the provision of primary, community and continuing care services for the local population;
- To deliver a visionary urban campus within a mixed-use urban setting for a consolidated DIT to meet the needs of a major higher education institution;
- To devise an innovative, sustainable, integrated master-planned development to address the above requirements and to provide for appropriate complementary facilities (e.g. community, commercial and leisure facilities) in line with the Dublin City Development Plan 2011-2017;
- To create a land use framework that will enable community use of new facilities and which is in context with land usage in the vicinity of the site and is sympathetic to the urban setting;
- To ensure a high level of access, particularly in terms of public transport and pedestrian and vehicular linkages to the surrounding area;

- To accommodate new community facilities, and
- To support the development of a knowledge economy which will in turn drive forward economic development. The Grangegorman development will cater for many of the key growth sectors in the economy identified by Dublin City Council; such as Education/Research and Development, Health, Cultural Tourism, Retail/Leisure and Software/ICT.

1.5 Structure of the Planning Scheme

The structure of the Planning Scheme is as follows:

Chapter 1: Introduction

This chapter introduces the Planning Scheme, identifies the area for which it has been prepared, briefly describes the relationship of the Planning Scheme with other Plans and summarises the overall objectives for the project.

Chapter 2: The Site and its Context

This chapter sets out the historical context, the site context and the wider planning context at a local, regional and national level. It identifies some key issues and opportunities of the site.

Chapter 3: Project Vision

This chapter distils the various ambitions for the site as set out by the Grangegorman Development Agency Act 2005, the Grangegorman Development Agency Strategic Plan 2011 and by the Dublin City Development Plan 2011-2017 (ands its predecessor plan), and develops these into an integrated vision for a new Urban Quarter. From this it derives key structuring principles that will shape the future development of the Grangegorman Urban Quarter.

Chapter 4: Nature & Extent of Development

This chapter sets out the nature and extent of development within the Planning Scheme area and provides the detailed design framework for the future development of the Urban Quarter.

Chapter 5: Transportation, Movement & Mobility

This chapter provides a transportation strategy which emphasises the promotion of public transport and sustainable travel patterns.

Chapter 6: Conservation and Cultural Heritage

This chapter sets out guidelines for treatment of the historic buildings and landscape within the proposed SDZ area in terms of re-use and integration as part of the new design framework.

Chapter 7: Provision of Services

This chapter identifies the existing availability of services at the site and details the measures necessary to develop this infrastructure to provide adequate capacity for development on the site

Chapter 8: Phasing & Implementation

This chapter considers the implementation of the Planning Scheme and the phasing priorities of various elements are identified.

1.6 Overarching Considerations

Sustainability

The Planning Scheme provides for the sustainable regeneration and revitalisation of a significant quarter in the north inner city to the benefit of the City's residents and visitors alike. The preparation of the Planning Scheme has therefore been informed by environmental and community considerations.

Environment

Throughout the various sections of the Planning Scheme, proposals are set out for minimising any adverse effects on the environment and on the amenities of the area. These are detailed in the accompanying Environmental Report and in Chapter 9 (Environmental Impacts and Mitigation Measures).

Consultation

Community consultation has also had an important influence on the development of plans for the site and this will continue during the lifetime of the Planning Scheme, in accordance with the requirements of the Grangegorman Development Agency Act, 2005.

1.7 Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a systematic method for assessing the likely effects on the environment of plans and programmes and incorporating environmental considerations into their preparation.

The Planning and Development (Strategic Environmental Assessment) Regulations 2004 require that a SEA is carried out for all SDZ Planning Schemes. Accordingly, the Environmental Report forms a separate document, which accompanied the draft Planning Scheme.

1.8 Appropriate Assessment Screening

An Appropriate Assessment screening of the draft Planning Scheme has been carried out. This concluded that there is no requirement for an Appropriate Assessment to be completed.

A copy of the Appropriate Assessment screening report forms a separate document, which accompanied the draft Planning Scheme.

2 Planning Scheme
Grangegorman

The Site and its Context

Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

Purpose and Layout of this Chapter

The purpose of this Chapter is to describe the site and its context. The Chapter includes an introduction to the principal users of the site and sets out the sites' physical, socio-economic, historic, town planning and infrastructural context.

Contents

2.0 Planning Policy & Strategic Context

The Planning Scheme has been informed by a wide range of national, regional and local planning policy documents, some of which are listed adjacent.

While all relevant plans and guidelines have been considered, the first three above are of particular strategic relevance to the Planning Scheme and the fourth (the Dublin City Development Plan 2011-2017) is of particular relevance in guiding the nature and extent of development proposed.[5]

Policy Context

- National Development Plan 'Transforming Ireland, A Better Quality of Life for All', 2007-2013
- National Spatial Strategy 2002-2020
- Regional Planning Guidelines for the Greater Dublin Area 2010-2022
- Dublin City Development Plan 2011-2017
- Grangegorman Development Agency Strategic Plan 2011
- Architectural Heritage Protection: Guidelines for Planning Authorities, 2004
- Transport 21, 2005
- Dublin Transportation Office 'A Platform for Change' 2000-2016
- Greater Dublin Area Draft Transport Strategy 2011-2030 (NTA)
- Sustainable Residential Development in Urban Areas, Guidelines for Planning Authorities, May 2009
- Urban Design Manual: A Best Practice Guide, 2008
- Retail Planning Guidelines for Planning Authorities, 2005
- Retail Planning Strategy for the Greater Dublin Area, 2008-2016
- Greater Dublin Area, draft Transport Strategy 2001-2030

1. National Development Plan 2007-2013

The National Development Plan 2007-2013 (NDP) identifies investment in higher education as a key objective. It states that this investment "*reflects the immense significance that the Government attaches to higher education at all levels and indicates the critical role that higher education will continue to play in sustaining economic growth and promoting social cohesion. The investment will assist Higher Education institutions plan for continuing growth in participation rates*".

The NDP states that the projects selected will be consistent with its Regional Development Strategy. The NDP explicitly lists the DIT Grangegorman campus and states "*In this context, over the period of the NDP, a major project which will see the development of a large site in Grangegorman, Dublin as a location for education, health and other facilities will be progressed. The site will house the new Dublin Institute of Technology Community Campus.*"

2. National Spatial Strategy 2002-2020

The National Spatial Strategy 2002-2020 (NSS) emphasises the importance of Dublin as a national and international economic driver and promotes the continued growth and consolidation of the Dublin Metropolitan Area.

The NSS clearly sets out that it is not economically, socially or environmentally sustainable for the City to continue to spread outwards towards the surrounding counties. In order to promote a more sustainable approach it is essential to consolidate the physical growth of the City.

The NSS outlines measures to achieve a consolidated City including effective integration of lands use and transportation policy; maximising the opportunity of brownfield, underutilised lands and maintaining and investing in quality of life attractions of the city particularly in terms of education, healthcare childcare, cultural and entertainment facilities.

3. Regional Planning Guidelines for the Greater Dublin Area 2010-2022

The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 stress the need to consolidate the Dublin metropolitan area with an enhanced public transportation system. Given the limited supply of undeveloped lands in the city, the Guidelines emphasise the need to increase densities and deliver well-designed urban environments which enhance quality of life within the City.

The Government decision to consolidate DIT activities on the Grangegorman site, within the city core, is consistent with National and Regional strategy. The Planning Scheme is guided by these policies together with the Dublin City Development Plan and the provisions of the Grangegorman Strategic Plan.

[5] *See Chapter 3 (3.2) for details of how the Planning Scheme embraces the key philosophies of the Dublin City Development Plan.*

4. Dublin City Development Plan 2011-2017

Development Plan Core Strategy and Vision

The Dublin City Development Plan 2011-2017 includes the Core Strategy for the City, which is guided and directed by the policies and objectives of the National Spatial Strategy 2002-2020 and the Regional Planning Guidelines 2010-2022. The Development Plan Core Strategy comprises of three strands:

- A compact, quality, green, well connected city, which generates a dynamic, mixed-use environment for living, working and cultural interaction.
- A smart city, creating real long-term economic recovery.
- A city of sustainable neighbourhoods and socially inclusive communities.

The Dublin City Development Plan 2011-2017 sets out policies and objectives to guide the development of the City to achieve Dublin City Council's vision for a sustainable city with enhanced quality of life and experience for its residents, workers, commuters and visitors, to consolidate the urban form of the city and to do on in conjunction with improvements to the public transportation network. The development of the Planning Scheme will contribute to the realisation of Dublin City Development Plan's Core Strategy and Vision:

- The Planning Scheme will facilitate the enhancement and physical consolidation of the inner city which forms the heart of the city and city region through the redevelopment of a key site within the city that has been underutilised for a long time.

Strategic Development and Regeneration Area

The majority of the SDZ site, in addition to the CIE Broadstone lands, is located within Strategic Development and Regeneration Area 8 (SDRA8) as defined in the Development Plan. The Development Plan sets out the following Development Principles for SDRA8.

1. 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.

Figure 2.1 Dublin City Council Development Plan 2011-2017, Core Strategy

2. To create a highly sustainable urban campus at Grangegorman as a new home for Dublin Institute of Technology with the capacity to develop strong links with other knowledge sector engines located elsewhere in the inner city.
3. 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.
4. To ensure that the existing open space is developed both for the benefit of the new campus and for adjacent existing communities.
5. To co-operate with existing stakeholders in Broadstone to promote the development of a range of higher value economic uses that would be complementary to the campus uses at Grangegorman

6. 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.

7. To ensure that the requirements of the Northern Area Health Board in the provision of health care facilities shall be accommodated in any future development of Grangegorman.

8. To examine in conjunction with the relevant educational agencies including Educate Together the primary and secondary education uses to support this third level campus.

9. To have regard to the physical integration and regeneration potential of Manor Street/Stoneybatter as important streets/ radial routes in the redevelopment proposals for this area.

The Development Plan also designates a number of Key Developing Areas (KDAs) including Grangegorman. These are the main growth areas for the lifetime of the Development Plan. They represent significant areas of the city with substantial development capacity, supporting the economic or cultural specialisms essential for the growth and diversification of the city's economy. KDA locations correspond to high levels of rail-based public transport accessibility.

The wider Grangegorman/Phibsborough area is designated a KDA (this encompasses more than just the SDZ lands). The Development Plan notes that the area has capacity for an estimated 800 residential units, with an estimated 34 ha zoned for commercial/employment use.

The Planning Scheme will comply with the Development Plan Housing Strategy as it applies to the subject site and with the provisions of Part V of the Planning and Development Act (social and affordable housing), as appropriate.

Indicative view of Grangegorman Lower

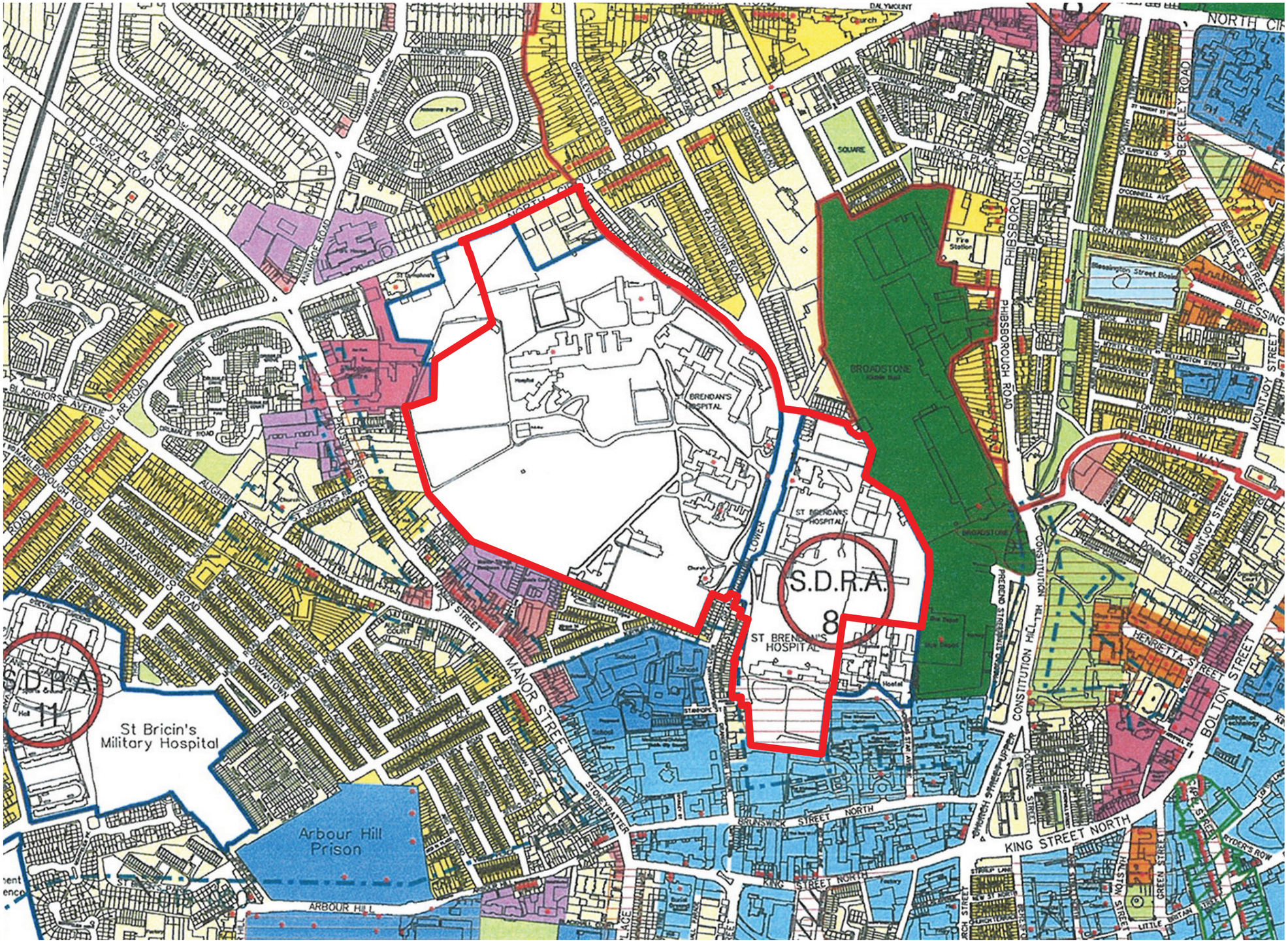


Figure 2.2 excerpt of Dublin City Development Plan 2011-2017 Map E

Land Use Zoning

The majority of the proposed SDZ Site is zoned Z14 "*Strategic Development and Regeneration Areas', the objective of which is 'to seek the social, economic and physical development and/or rejuvenation of an area with mixed use, of which residential and 'Z6' would be the predominant uses*."

The additional corner of HSE land (beside the North Circular Road) is zoned Z1 "*Sustainable Residential Neighbourhoods Residential*", the objective of which is "*to protect, provide and improve residential amenity*."

Grangegorman Lower (a public road in the charge of DCC) is unzoned.

The southern portion of the SDZ site (south of the Lower House) is located within a Conservation Area[6]. The Development Plan requires development proposals in conservation areas to complement the character of the area including Protected Structures and comply with development standards.

The neighbouring CIE Broadstone lands are zoned Z10 "*Inner Suburban*" (Sustainable Mixed Use), the objective of which is "*to consolidate and facilitate the development of inner suburban sites for mixed use development of which office, retail and residential would be the predominant uses*".

Under the Z1 zoning objective the following land uses are permissible or open for consideration:

Permissible Uses:

Buildings for the health, safety and welfare of the public, Childcare facility, Community facility, Education (excluding a night time use), Embassy, Enterprise centre, Halting site, Home-based economic activity, Medical and related consultants, Open space, Park and ride facility, Place of public worship, Public service installation, Residential, Shop (neighbourhood), Training centre.

Open for Consideration Uses:

Bed and breakfast, Betting office, Car park, Civic and amenity/recycling centre, Cultural/recreational building and uses, Garden centre, Golf course and clubhouse, Hostel, Hotel, Industry (light), Media recording and general media associated uses, Petrol station, Pigeon lofts, Public house, Restaurant, Veterinary surgery.

Uses not listed under the permissible or open for consideration categories for Z1 lands are deemed not permissible uses in principle.

Under the Z14 zoning objective the following land uses are permissible or open for consideration:

Permissible Uses:

ATM, Betting Office, Buildings for the health, safety and welfare of the public, Childcare facility, Community facility, Conference centre, Cultural/recreational building and uses, Education, Embassy office, Embassy residential, Enterprise centre, Green/Clean industries, Halting site, Home-based economic activity, Hotel, Industry (light), Live work units, Media recording and general media associated uses, Medical and related consultants, Offices, Open space, Park and ride facility, Part off-licence, Place of public worship, Public service installation, Residential, Restaurant, Science and technology-based industry, Shop (neighbourhood),Training centre.

Open for Consideration Uses:

Advertisement and advertising structures, Bed and breakfast, Car park, Car trading, Civic and amenity/recycling centre, Factory shop, Financial institution, Funeral home, Garage (motor repair/service), Garden Centre, Golf course and clubhouse, Hostel, Internet Café, Nightclub, Off-licence, Outdoor poster advertising, Petrol station, Pigeon lofts, Public house, Takeaway, Veterinary surgery, Warehousing (retail/non-food)/Retail park, Warehousing

Uses which are not listed as 'permissible' or 'open for consideration' under Z14 zoning will be considered on their own merits.

[6] *This refers to architectural conservation rather than environmental conservation.*

Building Height

The Development Plan identifies Grangegorman/ Broadstone as a location with potential to accommodate mid-rise building heights subject to the preparation of a *Local Area Plan (LAP) or SDZ (Reference Section 17.6.2)*. The Development Plan *(Reference Section 16.4.4.2)* includes the following Key Development Principles for the Grangegorman/Broadstone area.

- *"To create a high quality educational campus and healthcare facilities at Grangegorman, with strong linkages to Phibsborough, Manor Street and the city centre through Henrietta Street.*
- *To promote the physical integration of Grangegorman and Broadstone with each other and to the city centre.*
- *To promote the identity and character of this new educational campus by the location of an elegant mid-rise building towards the centre of the main site on elevated ground overlooking a large open space and the city.*
- *To signify the main gateway to the campus by the use of 1 or 2 mid-rise buildings on the proposed main entrance from Constitution Hill/ Broadstone."*

The Development Plan provides definitions of low-rise, mid-rise and high-rise buildings for various parts of the city. Grangegorman will be treated as a low-rise area until an SDZ Planning Scheme or a Local Area Plan (LAP) is approved. If this Planning Scheme is made then 'mid-rise' buildings can be developed in Grangegorman - up to 16 storeys residential or up to 12 storey office (up to 50m in height).

The Development Plan acknowledges that Dublin City is a predominantly low-rise city. It identifies locations in the City where there is capacity for mid- or high-rise buildings. Section 16.4.1 of the Development Plan sets out General Principles for the development of areas where increased heights can be accommodated. The General Principles are quoted below:

- *"All proposals for high buildings must form part of a sustainable, mixed-use urban district at appropriate density, well served by high quality public transport, with a strong sense of place, a coherent urban structure, and with sufficient neighbourhood facilities for both the existing and new communities, including people- friendly civic spaces.*

Figure 2.3: Dublin City Development Plan 2011-2017 Graphic illustrating areas of increased Building Height in Dublin

- *All high buildings must be of the highest architectural quality and should aim to have a slenderness ratio of 3:1 or more and have regard to the existing urban form, scale and character, and the built heritage of the area.*
- *The key principles outlined here must be applied in conjunction with other policies and standards in the development plan, including those designed to ensure good community infrastructure, a pleasant public realm, compliance with the apartment quality standards, energy efficient development, and the promotion of employment, especially in the knowledge economy.*
- *Applications for high buildings will also be subject to assessment under the development management process, including matters such as a shadowing, amenity, microclimate and Environmental Impact Assessment where appropriate. All development involving higher buildings must be designed to mitigate the effects of climate change.*
- *Each of the identified areas for high buildings will (unless there is one already in existence) be the subject of a Local Area Plan, SDZ or Section 25 Planning Scheme as appropriate, to include a co-ordinated urban design strategy which takes on board the guiding principles outlined herein.*
- *Each Plan shall have regard to the overall city form and structure, in order to prevent visual clutter or negative disruption of the skyline.*
- *High buildings should be associated with significant open space, to promote appropriate setting, daylighting and amenity."*

2.1 Dublin Institute of Technology and the Health Service Executive Context

The primary objectives of the Planning Scheme are to provide new accommodation for two established institutions, the Dublin Institute of Technology (DIT) and the Health Service Executive (HSE), to address local community needs and, in doing so, to support the sustainable development of the city as articulated in the City Development Plan.

The redevelopment will provide a major engine for regeneration of the inner city. It will provide important new linkages to and integration with the surrounding community and the city region in the context of the northern innovation corridor as provided for under the core strategy of the development plan and regional economic action pla

Dublin Institute of Technology

The Dublin Institute of Technology was established as an autonomous institution under the DIT Act in 1992, but its origins go back to 1887 and the establishment of technical education in Ireland.

The DIT Act 1992 provided for the formation of the Dublin Institute of Technology by bringing together six colleges of higher education formerly under the City of Dublin Vocational Educational Committee. These were:

- College of Technology, Kevin Street - founded in 1887
- College of Music, Chatham Row - founded in 1890
- College of Commerce, Rathmines - founded 1901
- College of Marketing and Design, Mountjoy Square -founded in 1905
- College of Technology, Bolton Street - founded in 1911
- College of Catering, Cathal Brugha Street - founded in 1941

These colleges had provided much-needed education services, pioneering technician and technologist training and education, both to meet the needs of industry and to develop the students' individual potential. Their graduates played a significant role in the development of industry, business and the community in Ireland throughout the 20th century. By 1992, these colleges were recognised as centres of excellence in their areas of specialism and following the establishment of the Institute, their expertise formed the nucleus of the college structure within DIT.

Today DIT is one of Ireland's largest providers of higher education and continues to build on those solid foundations and to respond to the social, cultural and educational needs of Ireland in the 21st century. DIT is creating a world-class higher education campus at Grangegorman. This campus will be designed to meet a higher education environment which underpins and serves society by supporting the economic, social and cultural life of its citizens and reflects the changing nature and evolving character of education. The campus will be student-centred and resourced to meet the multiple needs of the Institute's current student population of 20,500 students, with the potential to accommodate a further 2,000 full time students when completed, and a further potential increase of 30% in the decades ahead. These students range from undergraduate to postgraduate, research students, full-time, part-time, apprentice students, traditional school leavers, mature students, international students and students studying junior music.

DIT is a part of Dublin and although its many buildings scattered throughout the city, people feel the presence of this long established educational Institute. The Grangegorman project allows DIT to establish a world-class higher education campus on the last available large development site within the city.

For DIT the primary aim of the development is to create a modern learning and research environment that allows it to deliver the objectives of its strategic plan. For over 120 years, DIT has occupied a unique space within the Irish higher education landscape. From its origins in technical education, DIT has evolved to provide a wide range of programmes from apprenticeship to undergraduate and postgraduate level. The DIT strategic plan 2001-2015 and its subsequent series of three year Development Plans underpins the relocation of DIT to its new campus at Grangegorman. DIT has had a strong tradition in part-time education and currently is the largest provider of

part-time education in Ireland. DIT delivers a wide range of community supports aimed at enhancing access and participation in higher education. Due to the nature of its building stock DIT has been restricted in expanding and broadening its student base. The new campus will provide the essential capacity and space to expand to address this constraint.

DIT views the campus acting as a catalyst for partnership and alliances between academia, enterprise, culture, the community and the city. It is this interaction and dynamic that the campus will promote through its design and co-location of activities. In doing so the campus environment will lead to discovery, innovation and technology transfer and an overall enhanced learning experience for the student. The campus will provide the opportunity to improve overall quality and efficiency of DIT operations. Technology is viewed as a defining characteristic of the new campus underpinning core Institute processes such as academic processes, administration, communications and integrated management systems. It will facilitate cross functional working and promote the sharing of knowledge.

Health Service Executive

St. Brendan's Hospital is operated by the HSE within an assortment of buildings, many of which are dilapidated, that are fragmented across what remains of the once great hospital complex. This arrangement severely compromises the capacity of the HSE to deliver its healthcare services and a programme of major reinvestment is required.

Mental healthcare has been undergoing a process of major change over many years, driven both by policy imperatives and increasing expectations. The current mental healthcare and primary healthcare facilities in the Grangegorman locality need to change in order to maximise efficiency and effectiveness. Furthermore the condition of existing buildings is such that, irrespective of the Government decision on the moving of DIT, replacement facilities are urgently required. The Mental Health Commission reported in its Annual Report 2009 that it continued to be of concern to the Inspectorate of Mental Health Services that residents remain accommodated, cared for and treated in such unsuitable premises.

The HSE will provide services on the site for children and families, older people, the disabled, people who are socially disadvantaged and those suffering from mental illness.

The HSE has a broad aim in relation to social inclusion. It intends to improve access to mainstream services, target services to marginalised groups, address inequalities in access to health services and encourage service user involvement in the design, delivery, monitoring and evaluation of health services.

Not only will the Grangegorman project provide for facilities for both the HSE and DIT, it will allow for closer co-operation and partnership between the two service providers. In fact a first step towards this has already taken place. Under the recently announced Programme for Research in Third Level Institutions (PRTLI) V DIT received €12.4 million funding towards the development of the Environmental Health Sciences Institute (EHSI) at Grangegorman. This innovative project will see a dedicated research facility established on the site of the new DIT campus, enabling inter-disciplinary collaboration between scientists and environmental health professionals. DIT will be the lead institution, working in partnership with the HSE, Dublin City Council, the University of Ulster, Dublin City University and the Institute of Public Health in Ireland. The aim of EHSI is to develop national and regional capacity, as well as the scientific evidence base, to inform environmental health policy, planning and decision-making, as well as developing practical solutions to environmental health problems. It is intended that this new facility will be integrated with other research facilities funded under earlier programmes to create a single integrated facility.

It is within this context of evolving needs and urgently required facilities that the redevelopment of the SDZ site is set.

2.2 Location and Extent of Site

The SDZ site is located in the district of Grangegorman, north of the River Liffey and south of the Royal Canal, approximately 1 kilometre from Dublin's City Centre. It mainly comprises of the site of St. Brendan's Hospital, a Psychiatric Hospital owned and run by the Health Service Executive (HSE).

The site extends to approximately 28.69 hectares and is occupied by a large number of buildings dating from the early nineteenth century. The most prominent structures are the former Richmond Asylum, the former Penitentiary and the larger buildings attached to the District Asylum. There are significant tracts of green space comprising of former gardens and playing fields within the western portion of the site along the south, west and northern parts.

In addition to St. Brendan's Hospital, the SDZ Site also includes lands in the ownership of HSE (to the north of the site fronting onto North Circular Road); Grangegorman Road Lower; the DCC Cleansing Depot (land owned by DIT), together with 5 boarded-up terraced houses (owned by the HSE) to the east of Grangegorman Road Lower.

The Grangegorman SDZ site has a diverse architectural, historical, and land use character, developed over two centuries of institutional use. The redevelopment project offers the opportunity to reintegrate the site into the surrounding city fabric and create a distinct urban quarter.

2.3 Site Context

The area is bisected by Grangegorman Lower (a public road) running north-south through the site. The site is bound to the north by the North Circular Road ('NCR') and by Grangegorman Upper, to the west by residential and commercial development which fronts onto Prussia Street and Manor Street, to the south by residential developments which front onto Kirwan Street, Grangegorman Lower, Brunswick Street and, to the east, by the Broadstone and Phibsborough bus depots.

The principal surrounding land use is mature residential, generally in well-established terraces of one or two storeys, especially to the east and south. To the north of the site (North Circular Road) it is also mainly residential, occasionally three to four storey and with some local

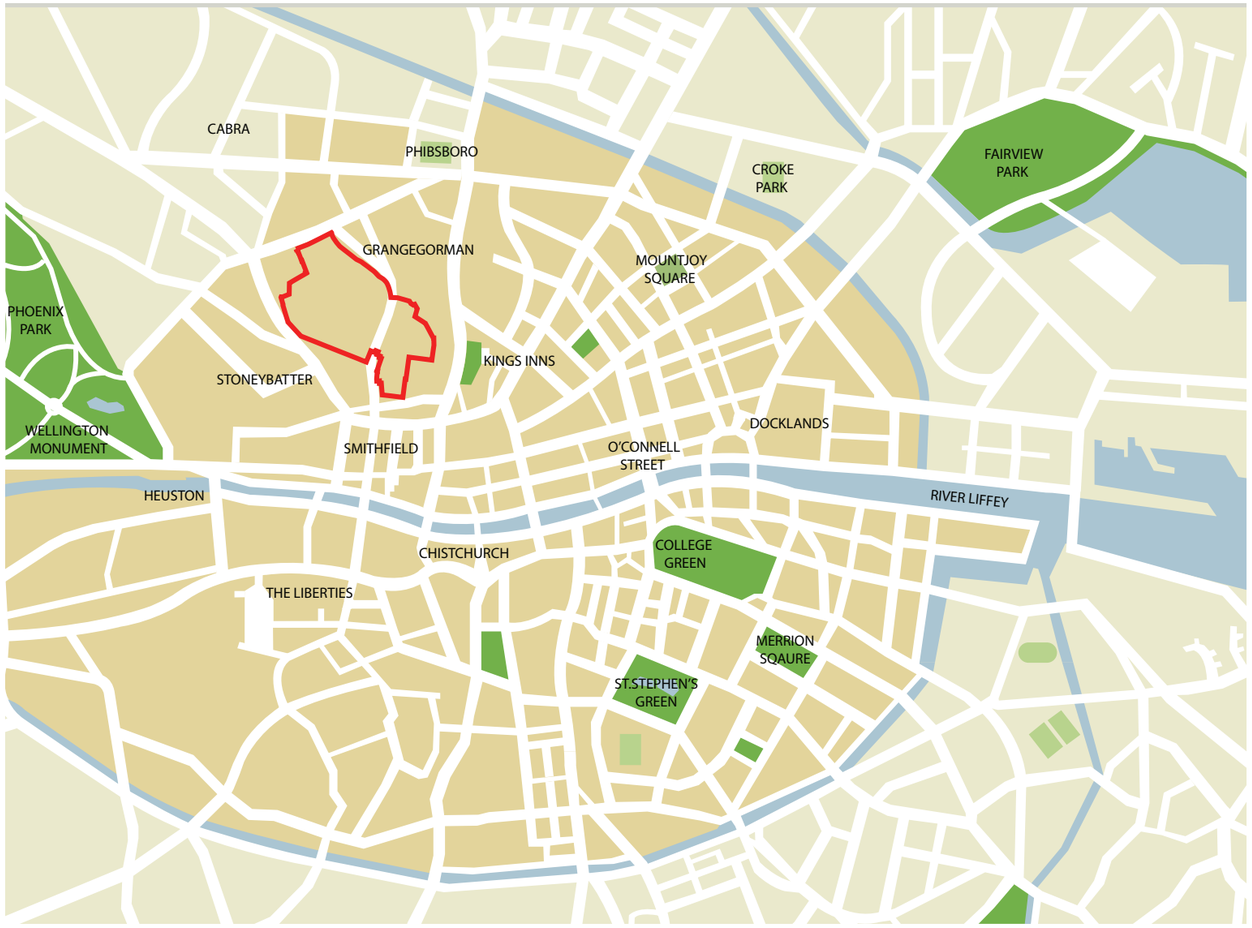


Fig 2.4: Map of Dublin City Centre showing location of Grangegorman

shopping and one substantial commercial block (Park House, across the NCR, at Hanlon's Corner). The character of the area to the west of the site (Prussia Street/Manor Street) is more commercial, with a mix of residential, shopping and some offices/car sales and other commercial/employment uses.

Due to the historic use and enclosed nature of the Grangegorman lands, the central position of the site, in the context of the city centre, is easily overlooked. The lands are adjacent to Phibsborough (to the north), the City Centre (to the south east) and to Smithfield and the Digital Hub area (to the south). In addition, the lands are within easy access of the Phoenix Park (to the west) and the former Royal Canal spur to the east.

This Planning Scheme provides an opportunity to provide new pedestrian, cycle and vehicular connections between the site and the surrounding urban quarters and to enliven those which already exist. These new connections will reintegrate the site into the city context. The adjoining communities will also benefit from the development of new sports and community facilities within the site.

2.4 Social and Economic Context

The Grangegorman site is located in its entirety within the Electoral Division (ED) of Arran Quay B. The Grangegorman neighbourhood, as described in the Grangegorman Development Agency Act, 2005, comprises the area of land stretching from Cabra Road in the north to the River Liffey in the South and from McKee Barracks in the west to Bolton Street/Dorset Street Upper in the East. It includes the EDs of Cabra C East; Arran Quay A; Arran Quay B; Arran Quay C; Arran Quay D; Arran Quay E; Inns Quay B; and Inns Quay C.

Based on the latest available data sources, including Small Area Population Statistics (SAPS) from the 2006 Census it was found that the population of the Grangegorman neighbourhood rose by over one quarter, 27.1%, in the period 1996 – 2006, from 19,304 persons to 24,534 persons. This compares to growth of 5.1% and 16.9% in Dublin City and the State respectively over the same period. The level of growth witnessed in the Grangegorman neighbourhood moderated significantly in the 2002 – 2006 period (9.6%) compared to that experienced in the 1996 – 2002 period (15.9%).

A study of the age profiles in the Grangegorman neighbourhood indicates that there is a heavy concentration in the 15 – 24 and 25 – 44 years age cohorts with no corresponding concentration in the 0 – 14 years cohort. This indicates that the area, due to a combination of location, accommodation supply and access factors, is characterised by higher than average levels of students and young workers (both Irish and Non Irish). 44.1% of the population of the Grangegorman neighbourhood is classified as the 25-44 age cohort, with 24.8% aged 45 and over.

The Grangegorman neighbourhood is culturally diverse, with 67% of the usually resident population in the neighbourhood classified as Irish nationals, compared to 82.8% in Dublin City as a whole and 88.8% in the State.

In terms of the economic status of residents aged 15 years and over, Arran Quay B and the Grangegorman neighbourhood have high labour force participation rates of 59.1% and 59.6% respectively. However the area has also exhibited higher levels of unemployment. While 2006 figures are the latest available, they can be taken as a reference point. Arran Quay C (7.1%) and the Grangegorman neighbourhood (7.6%) - compared to Dublin City (5.7%) and the State (4.4%). At the end of February 2011 the national unemployment level stood at 13.6%, the above figures must be viewed with this in mind.

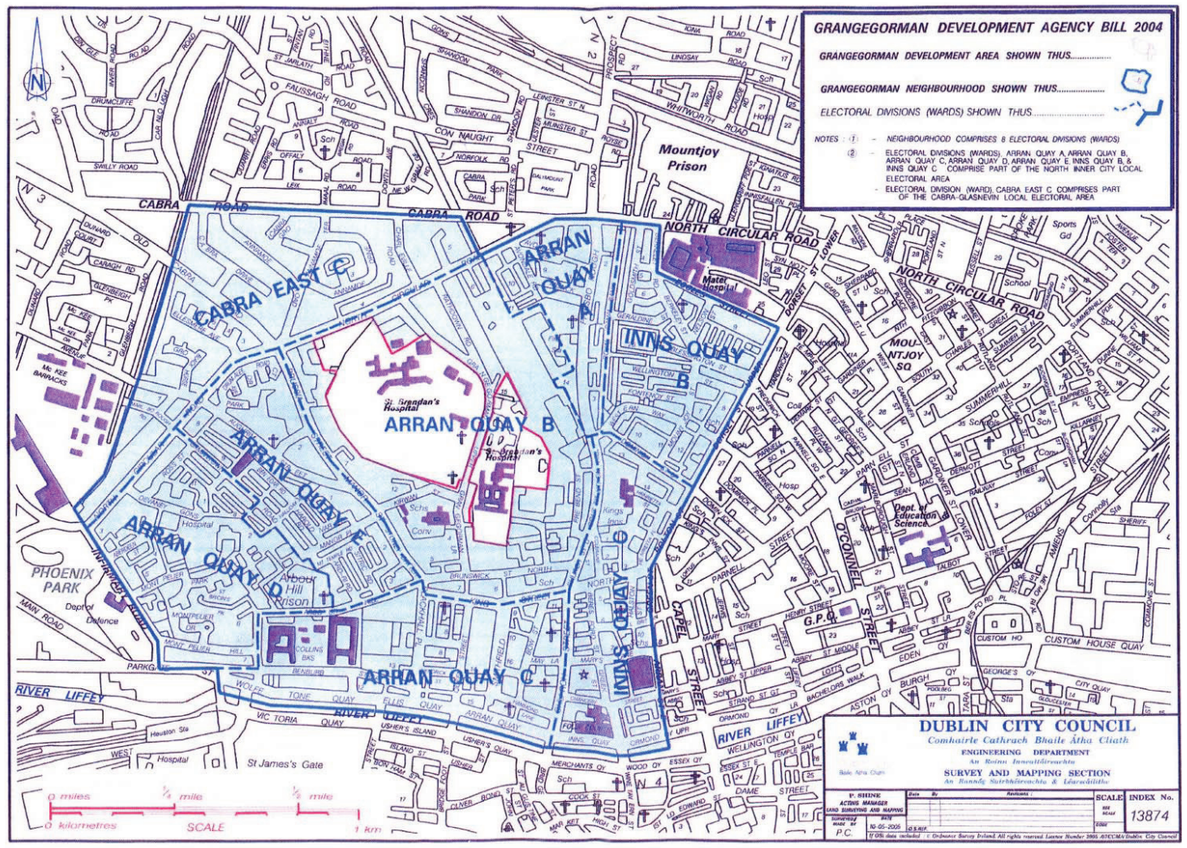


Figure 2.5: Grangegorman neighbourhood as described in the Grangegorman Development Agency Act, 2005

2.5 Heritage Context

The historical evolution of the site is set out in detail in Chapter 6 of this Planning Scheme.

The surviving structures that are to be found in Grangegorman today represent the remains of several institutions built in phases over the last two hundred years. The site has a rich architectural and built heritage and includes many buildings and structures of conservation merit. In addition, there are a number of more recent buildings (1970/80's) which are considered of little or no architectural merit.

This Planning Scheme proposes that all protected structures will be retained and provides guidelines for their sympathetic reuse and incorporation into the new development. Detailed proposals are set out at Chapter 6 and in Appendix 2a Further details of the (non-protected) structures to be demolished are set out at Chapter 6 and Appendix 2b. Historic features and landscape elements which contribute to the special character of the site will also be retained where possible.

Fig 2.6: Existing Structures within Grangegorman Site

2.6 Landscape Character

The east side of the site is brownfield in nature and the west of the site is a mixture of institutional buildings, amenity space and hard surfaces used for car parking. There are currently no open 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)[7].

The site contains mature trees, particularly on the more elevated ground towards the north-western portion of the site. The condition of the trees throughout the site is generally good, though inevitably some individual trees were identified as being of poor quality with recommendations made for their removal. Trees in good condition will be retained consistent with the need to deliver the Planning Scheme, particularly where they contribute to the historic character of the site.

The landscape of Grangegorman is associated with the historic buildings and landscape elements which date back to the 19th century or before. 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 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.

The lands slope gently down towards the south-east. The topography of the landscape at places forms a natural viewing platform giving rise to various views out of the site across the city and to the Dublin Mountains. There are views towards neighbouring properties sharing a boundary with the site, separated by the boundary stone wall. Equally, views of significant buildings on the site are to be had from some locations in the City.

Fig 2.7: Existing Vegetation Map

[7] *There is however a Development Plan 'Conservation Area', which relates to architectural conservation rather than environmental conservation.*

2.7 Transportation Context

The SDZ Site is surrounded by a number of key arteries to the City Centre including the North Circular Road to the North, Prussia Street to the West and Phibsborough Road and Constitution 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 Upper/ Lower which bisects the site.

The Grangegorman lands are within comfortable walking distance of many areas of the north inner city and it is considered that a significant portion of those travelling to the site will rely on walking as their primary transport mode. Adequate pedestrian facilities are generally provided along the surrounding road network, though the site currently suffers from a lack of permeability caused by current restrictions of access through the boundary walls, 3rd party lands, including the Broadstone site to the east. An increased number of entrances are to be provided which will increase permeability in this part of the city and encourage the integration of the site. The Planning Scheme will encourage cycling, and the additional permeability will provide connectivity to the existing cycle network in the vicinity of the site.

The existing public transport provision serving the development site is focused primarily on buses and it is currently well connected by bus services. The majority of these services begin or terminate their journey in the City Centre via the Quays, Parnell Square or 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 to the north very frequent services are provided along the North Circular Road and nearby on the Cabra Road

The existing LUAS Red line running from Tallaght to The Point via Connolly Station has two stops (Smithfield and Four Courts) within walking distance from the Grangegorman site.

Fig 2.8: Proposed Transport network serving area
Source Arup

There are various different transport proposals planned in Transport 21 that will improve access to the site. Within the local vicinity of the site, the planned Metro North and the LUAS Line BXD will directly improve rail services providing high capacity public links to the site.

Metro North will connect Swords in North Dublin to Dublin City Centre (St. Stephen's Green) via Dublin Airport. Metro North will operate underground, surface and elevated tracks with 15 stops between the City Centre and the Airport, including two (Parnell Square and Mater) that are located within reasonable walking distance (approximately 1.4km and 2km, respectively) from the site.

The proposed LUAS Broombridge (Line BXD) will connect the two existing LUAS lines, enhancing the connectivity to and across the City Centre and will extend to directly serve Grangegorman.

The GDA is committed to reducing reliance on private cars and maximising walking, cycling and sustainable public transport usage, in line with the National Transport Authority's GDA Draft Transport Strategy 2011-2030. Therefore, delivery of these external transport proposals will be necessary in order to allow for the full realisation of the Grangegorman development proposals.

2.8 Services and Water Infrastructure Context

The Planning Scheme has had regard to all relevant National regulations and guidelines relating to water quality standards.

Existing sewers serving the site are combined taking both foul and surface water drainage. The Bradogue river system which crosses part of the site has been built into culverts and incorporated into Dublin City Council's sewerage system. The existing public sewer network serving the site is a combined system, which adequately served the site foul drainage requirements. The Planning Scheme proposes a move to separate foul and surface water systems, in accordance with best practice. The removal of the current site surface water discharge from the combined sewer network will free capacity for the proposed increase in site foul drainage.

External water services need to be improved in terms of surface water and foul water capacity, as described in Chapter 7. All planning applications for the site must demonstrate that sufficient water services capacity is available at the time of the application. Notwithstanding any such statement in the Planning Scheme, the Planning Authority will reserve the power to make its own independent determination of the adequacy of water and waste water infrastructure and to refuse permission or phase development as it deems appropriate.

There is a significant water main network in the vicinity of the site with large mains in North Circular Road and Brunswick Street / Constitution Hill.

There is a significant water main network in the vicinity of the site with large mains in North Circular Road and Brunswick Street / Constitution Hill.

It is proposed to decommission existing redundant electricity, gas and telecoms services infrastructure, with new primary utilities to include an energy centre with power distributed from there throughout the site.

See Chapter 7 for details of services and water infrastructure.

2.9 Site Appraisal

A summary of the implications arising from the analysis of the SDZ sites' context

Table 2.1 Implications of Site context Analysis

Theme	Issue	Analysis	Implications
Conservation	Protected Structures	There are a total of 11 No. Protected Structures located within the site (10 No. buildings together with entrance gates, piers and wall at Grangegorman Upper and stone wall along North Circular Road).	Protected Structures will be integrated where possible into the overall development in a manner which respects the character and setting of these structures. Strategies will be established for the repair, intervention, adaptation and extension of these structures.
	Conservation Area	A portion of the site is identified as a Conservation Area in the Dublin City Development Plan.	New buildings close to the Conservation Area will ensure that they enhance the setting and character of the surrounding environment, both natural and manmade.
	Trees	There are a number of mature trees located within the site of varying quality and lifecycle stages.	Where possible mature trees will be retained and incorporated into design proposals and appropriately protected during construction. New trees will be provided in appropriate areas.
	Biodiversity	Existing hedgerows and trees may be of local ecological value and an important site for urban wildlife.	Key hedgerows and trees will be retained where possible.
Infrastructure	Surface Water Drainage	Existing sewers serving the site are combined taking both foul and surface water drainage. The Bradogue river system which crosses part of the site has been built into culverts and incorporated into Dublin City Council's sewerage system.	A new separate surface water drainage system will be constructed on the site and connections made to a new Dublin City Council sewer to be extended to Grangegorman Road Lower from Smithfield. The site surface water discharge will be designed to comply with the Greater Dublin Strategic Drainage Study recommendations to both limit and control run off.
	Foul Water Drainage	The existing public sewer network serving the site is a combined system which adequately served the site foul drainage requirements. The removal of the current site surface water discharge from this combined sewer network will free capacity for the increased site foul drainage.	A new separate foul drainage system will be constructed on the site and connected to the existing Dublin City Council public sewer network.
	Water Supply	There is a significant water main network in the vicinity of the site with large mains in North Circular Road and Brunswick Street / Constitution Hill.	A new site watermain network will be constructed and will be fed from the Dublin City Council Network with a link constructed between the existing North Circular Road and the Brunswick Street / Constitution Hill mains.
	Electricity/Gas/ Telecoms	It is proposed to decommission existing redundant services infrastructure, with new primary utilities to energy centre and distributed buildings.	Adequate availability of supply has been confirmed by each of the relevant utilities providers. New energy infrastructure will embrace sustainable sources such as bio-fuels and geo-thermal where practical.
Transportation	Access	The Grangegorman site is surrounded by a number of key vehicular traffic routes providing access to the City Centre.	General permeability of the site, in terms of both vehicular and pedestrian access, will be enhanced.
	Bus Routes	The SDZ site is well served by a number of bus routes.	Enhanced bus services will be provided.
	Proposed LUAS & Metro routes	The proposed Metro North and LUAS Line BXD Broombridge Route will serve to enhance accessibility to the site.	There will be an opportunity to increase development density in due course.
Urban Design	Opening up the site	The historic use of the site and the boundary wall surrounding the site has resulted in the site being cut-off from the surrounding area.	The boundary wall is of historic significance with parts of it listed on the Register of Protected Structure. New interventions and removal of sections of the wall will be carefully considered in order to ensure that its special character is maintained while further improving accessibility.
	Linking the site	Grangegorman Lower currently dissects the site, resulting in two distinct land parcels within the overall site.	The development of the lands provides an opportunity to integrate both land parcels into a single coherent urban quarter.
	Interface with existing land-uses	The immediate surrounding area is generally characterised by residential properties some of which back onto the site (at Grangegorman Lower, Grangegorman Upper, Fingal Place and Kirwan Street/Kirwan Street Cottages).	Heights will be restricted close to sensitive boundaries. Development proposals will ensure that the residential amenity of the area is protected in terms of overlooking and overshadowing.
	Linkages with surrounding area	There are a number of opportunities to link the SDZ site with the surrounding area, particularly North Circular Road, Prussia Street, Constitution Hill and Smithfield.	Opportunities to link the SDZ site with the surrounding street network are facilitated by the Planning Scheme.
	Site topography	The site slopes down towards the south east.	The Planning Scheme will exploit level changes.

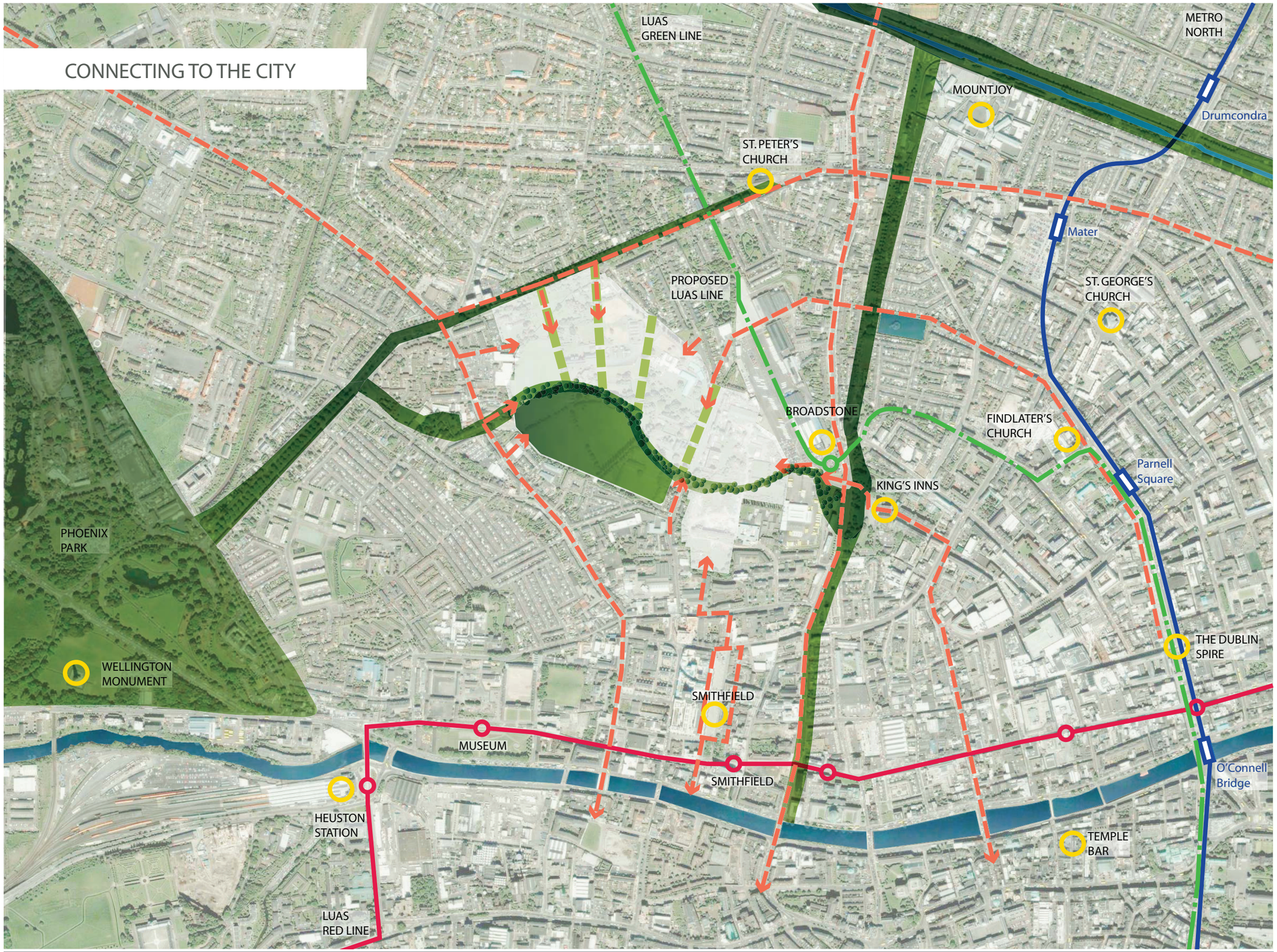


Figure 2.9 Grangegorman site with Indicative Connection to the City and Local Landmarks

3 Planning Scheme
Grangegorman

Project Vision

Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

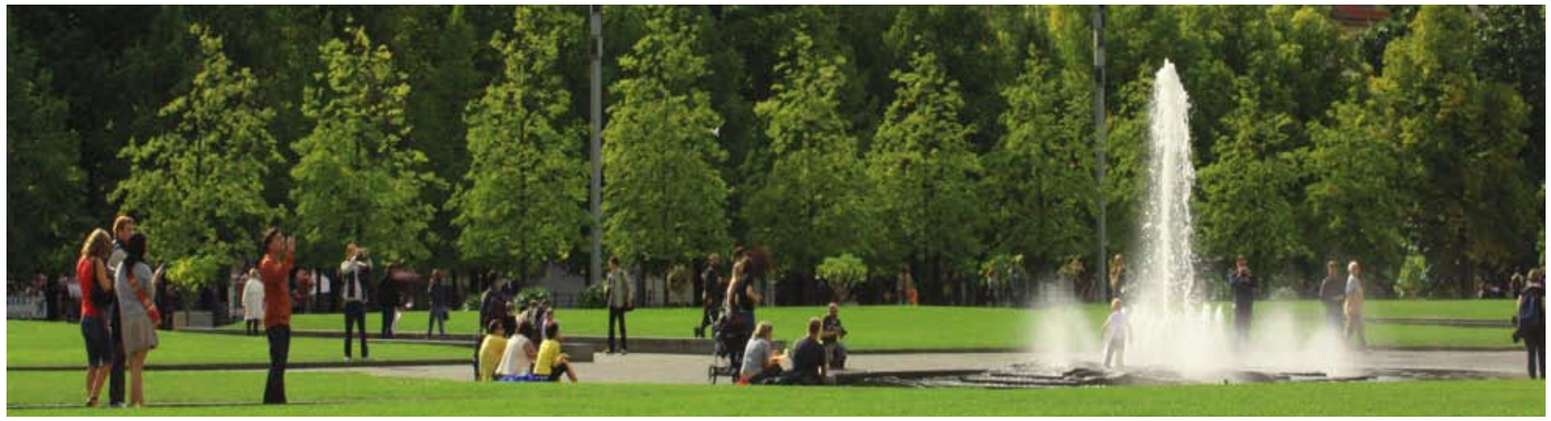
Purpose and Layout of this Chapter

The purpose of this Chapter is to describe why the proposed uses are required and to set down some key concepts which will guide the delivery of the project.

These guiding concepts include the six key themes of the Dublin City Development Plan 2011-2017, and incorporate the core values of the Grangegorman Strategic Plan, the precursor of this Planning Scheme.

Ultimately, these concepts lead to the development of an intergrated vision for a new Urban Quarter, from which are derived key structuring principles that will shape the future development of Grangegorman. These key Structuring Principles then inform the entire design and layout of the Planning Scheme, which is described in Chapter 4.

Contents



3.0 Overview

This chapter describes the vision for the new Urban Quarter and how this vision has been translated into Key Structuring Principles which will inform the urban design hierarchy of the Planning Scheme.

The overall vision for the Grangegorman lands has been driven by a number of factors, including the requirements and aspirations of the Health Service Executive, Dublin Institute of Technology, the wider community, Dublin City Council's six themes for the development of the City and its emphasis on sustainable development, the existing built history of the site and the challenge of creating a sustainable, vibrant, mixed-use Quarter which reaches out and connects with the surrounding urban landscape.

The Vision for Grangegorman

1. The Planning Scheme will create a vibrant, high quality and legible urban quarter, with a clear sense of place.
2. Deliver the requirements of the HSE and DIT in an integrated fashion.
3. Respect and celebrate the heritage of Grangegorman.
4. Reach out to and embrace the existing local community and the future students, service users and staff of Grangegorman.
5. Sustainability is a core requirement and the quarter must be both responsive to its current context and development needs, and adaptable to its future context and development needs.
6. The quarter will be a centre for innovation and creativity.
7. Contribute to the regeneration of the inner city.
8. Provide a dynamic new economic engine for the city and region.

3.1 Requirements for Proposed Uses

The redevelopment of the SDZ site is required in order to facilitate the integrated development of strategic healthcare and educational facilities, which are of economic and social importance to the city and wider community, on an integrated site in accordance with the requirements of the Grangegorman Development Agency Act 2005. In addition, the Planning Scheme provides for recreational and other complementary facilities for the third level educational institution, the healthcare facilities, and the wider community as well as a range of mixed-use development, in order to ensure the economic viability and year-round function of the Quarter.

3.1.1. Dublin Institute of Technology (DIT)

The consolidation of the Dublin Institute of Technology (DIT) at Grangegorman is a major development within the higher education sector in Ireland. After more than 100 years DIT now has the opportunity to address its fragmented nature and to bring together all its operations at Grangegorman. The new campus is designed to provide a higher education environment which underpins and serves society by supporting the economic, social and cultural life of its citizens and which reflects the changing nature and evolving character of education.

The campus is being designed to meet the needs of future generations of students at undergraduate and postgraduate level, across a wide range of full-time and part-time programmes. Future learning is likely to be more collaborative, integrated, blended, immersive and hybrid in nature and this will be reflected in the technology-enabled learning environments across the campus. Learning environments will also support the professional nature of much of DIT's provision, with the creation of practice spaces in the form of laboratories, workshops and studios.

DIT, as Ireland's largest provider of part-time education, will utilise the opportunity offered by the new campus to increase its student population and, in the process, further widen participation in higher education by all sectors of society. The location of the Grangegorman campus will further enhance the many targeted, positive interventions and actions by DIT to promote access within surrounding communities and schools.

The campus will be a place where knowledge is created and is transferred to industry, and where students, academics and leaders in research, business and industry will collaborate. Research and innovation space will be provided to underpin the generation, application and exploitation of new knowledge, enabling DIT to build further on its strong alliances with industry.

There will be opportunities for industry partners and researchers to access specialized facilities and resources on site and to engage with DIT staff and students.

DIT's traditional commitment to culture, sports and the arts will come together in a single location to form a major cultural resource for the city. As well as serving DIT, many of these facilities will also be used by wider communities, making the campus a key destination for Dublin city.

3.1.2 Health Service Executive (HSE)

The project vision for the Health Service Executive (HSE) is to deliver a model of health care services broadly encompassing provision for mental health care; for primary, community and continuing care; for older persons and for people with disabilities, all in line with current policies such as a Vision for Change, Report of the Expert Group on Mental Health Policy, 2010. It encompasses the further development of community services across Dublin North-West which will, in turn, provide local modernised services within a sustainable high-quality built environment.

The HSE aims to accommodate the (currently) in-situ clients and services on-site and also to accommodate local area health services, currently located in high-cost or unsuitable rented accommodation. In addition the HSE aims to provide the required additional health services for the rapidly expanding population in the area, and to promote co-location to sustain and develop improvements in finances, using resources, both in term of facilities and staff, in the most efficient and enlightened way while delivering the best possible care for patients.

3.1.3 Other Facilities

The project will create and sustain a vibrant year-round urban environment that will make a significant contribution to regeneration of the area. Access to the facilities in Grangegorman will offer a range of social, recreational and commercial uses that will benefit students, staff and the wider community alike.

Facilities of particular benefit to the surrounding community include:

- New arts, cultural, sports and recreational and public spaces to serve the Quarter and the wider community;
- A primary school for the Department of Education and Skills, to be operated under the patronage of Educate Together;
- A proposed new public library (the GDA has been in discussion with Dublin City Council on the possibility of co-locating a City Council branch library with the DIT main library on site subject to appropriate funding);

- Provision of an appropriate level of retail and commercial development in order to support the two large public body occupiers (DIT and HSE);
- Appropriately scaled mixed-use development. It is considered appropriate that mixed-use development be provided to achieve the area's optimal development potential, in accordance with the objectives of the City Development Plan relating to Framework Development Areas and to match DIT's strategic aims. This would include retail, science and technology office and enterprise uses with some limited scope for residential development.

The introduction of these additional uses will ensure the creation of a dynamic and vibrant Urban Quarter, in addition to encouraging collaborative research and alliances with enterprise in a creative and innovative environment.

3.2 The Dublin City Development Plan and the Grangegorman Development Agency Vision

Dublin City Council has a two-pronged overarching philosophy for the future growth and success of the City:

- Six Overarching Themes, and
- A Framework for a Sustainable Dublin.

Dublin City Council's Six Overarching Themes

The six themes constitute an interrelated and sustainable approach to the future development of the city and are central to Dublin City Council's vision of a compact city which is made up sustainable mixed-use neighbourhoods.

Six Key Themes for Dublin City (Section 2.2 of City Development Plan)	
1. Economic	Developing Dublin City as the heart of the Dublin region and the engine of the Irish economy with a network of thriving spatial and sectoral clusters, a focus for creative talent and creative assets.
2. Social	Developing Dublin City as a compact city with a network of sustainable neighbourhoods which have a range of facilities and a choice of tenure and house types, promoting social inclusion and integration of all ethnic communities.
3. Cultural	Making provision for cultural facilities and protection of our built heritage throughout the city and increasing our awareness of our cultural heritage and built heritage promoting a safe and active streets through design of buildings and the public realm.
4. Urban Form & Spatial	Creating a connected and legible city based on active streets and quality public spaces with a distinctive sense of place.
5. Movement	Helping to build an integrated transport network and encouraging the provision of greater choice of transport. Planning and zoning objectives will be brought together to increase the opportunities to live and work close to transport hubs and corridors.
6. Environmental	Providing for an over-arching framework involving key principles, strategies and objectives to drive a vision of 'Sustainable Dublin' over the next 25 to 30 years, making sure that buildings can adapt to changing needs and encouraging better waste management strategies.

Framework for Sustainable Dublin (FSD) (section 3.2.7.3 of City Development Plan)

In addition to the six overarching themes discussed above, Dublin City Council has developed the Framework for Sustainable Dublin (FSD) a tool to tackle climate change, which will guide and plan Dublin's shift towards a sustainable society. Dublin City Council's aim is that Dublin will shift to a low-carbon and ultimately a post-carbon economy to become a competitive, resilient and sustainable city.

Framework for Sustainable Dublin City Council

A Five-Level Framework For Strategic Planning & Sustainability Principles*

Level	Explanatory Note	Practical Application
Joined-Up Systems	A whole systems perspective to highlight the dynamic relationships within society and the biosphere. This perspective requires an understanding of how environmental and ecological factors relate to organisational and institutional networks. This level requires a recognition and understanding of the physical environment around us and has an integral role to play in the functions carried out by the City Council.	Six Themes Approach Building Alliances
Vision Level	A concrete vision of success for a sustainable city, striving towards compliance with the four sustainability principles, mindful of the city's responsibility for contribution to sustainability in the region, state and globally.	Vision of a Sustainable Dublin
Strategic Level	Back-casting from the vision of success for a sustainable city, understanding the current reality and awareness of the baseline and developing strategic guidelines to prioritise actions towards sustainability. Making Dublin a Sustainable City in which people can happily live and work.	Development Plan Policies
Actions Level	Actions that move the city towards success, whilst ensuring compliance with the Sustainability Principles.	Implementation of Development Plan Development Management Guiding Principles Sustainable Standards Objectives
Tools Level	Tools that can measure the city's progress towards sustainability.	Monitoring System & Indicators Strategic Environmental Assessment

* All levels have regard to the four Sustainability Principles. This means reducing our dependence on fossil fuels, metals and minerals, as well as synthetic materials and artificial chemicals. It also means that we reduce our encroachment on nature and so should seek to protect the natural environment and bio-diversity. The fourth principle relates to basic human needs, meeting human needs fairly and efficiently. All policies and actions should accord with these Sustainability Principles.

Extract from Dublin City Development Plan 2011-2017.

Dublin City Council's Specific Vision for Grangegorman.

In addition to its specific zoning (set out in Chapter 2) and the overarching considerations of sustainability, Dublin City Council envisages the site as a critical project for the inner city and that it will play a pivotal role in realising the full potential of the northwest flank of the urban core, connecting through Broadstone / Kings Inns and underpinning Smithfield.

How the Planning Scheme Responds to Dublin City Council's Vision

Given the strategic location, cultural significance and significant social function of the site for the provision of important healthcare, education and other community facilities, Grangegorman provides an important opportunity to create a new urban quarter within the inner city which fully embraces Dublin City Council's six themes for the City and the Framework for Sustainable Dublin.

Accordingly, the vision for Grangegorman Urban Quarter is to develop a new city Quarter which links with and adds value to its surrounding neighbourhoods and the city in general, and embraces Dublin City Council's six themes for the City and the Framework for Sustainable Dublin.

The overall vision and key structuring principles of the Planning Scheme reflect and amplify Dublin City Council's vision for the city in the following ways:

1. Economic

The Planning Scheme positions Grangegorman as a vital economic resource and engine with a network of thriving spatial and sectoral clusters, and a focus for educational talent and creative assets. Facilities for the Dublin Institute of Technology will be supplemented by a strong component of training centres, research centres, incubation spaces, retail spaces, offices and science park facilities that will directly benefit the economic development of the community and greater Dublin region. This development will underpin Ireland as a knowledge economy. The full development and implementation of the Planning Scheme will have a major positive impact for the community, providing long term economic opportunities for employment both during the construction and operation of the future facilities in the Urban Quarter.

2. Social

The Planning Scheme reaches out to link the site with the immediate community, as well as Dublin's greater urban context, to create an Urban Quarter that is inviting and connected to its surroundings. The overall "Green Fingers" Landscape Concept represents an open hand that reaches out to draw the community into the development. The Planning Scheme sets up Grangegorman as a compact district with a network of sustainable quadrangles for the Dublin Institute of Technology and the Health Service Executive, providing a range of facilities that promote social inclusion. The fields, a primary school and a local public library will serve the surrounding residential areas.

3. Cultural

A rich and diverse provision for cultural facilities is allowed for in the Quarter. An Arts hub is envisaged as part of the Eastern Heart and will accommodate DIT's arts and culture/performance spaces that will be accessible to the community and will promote lively evening uses. The northward extension of Smithfield's urban arts district will carry through to the Grangegorman Quarter, enhancing Dublin's inner city cultural resources.

4. Urban Form and Spatial

The Planning Scheme creates a connected and legible urban quarter with a clear urban design hierarchy based on vibrant public spaces, active streets and connecting routes along with the incorporation of Protected Structures, all of which provides a strong sense of identity and place. Connections and integration with the surrounding urban fabric are carefully incorporated into the key structuring principles.

5. Movement

The Planning Scheme takes full advantage of its proximity to Dublin City Centre, where transport networks already provide high levels of service. Rather than focusing on new transport links to serve the new population on site, the aim of the Planning Scheme is to enable the seamless connection to the existing and future transportation networks. The emphasis is therefore put into the design of quality linkages from the site to the established city grid.

6. Environmental

The Planning Scheme seeks to create an environmentally sustainable community within its neighbourhood and Dublin. Sustainable strategies focus on three components that will underpin the success of the regeneration of Grangegorman: social well being, economic viability and environmental benefit.

Building massing and form will be required to respond appropriately to wind and solar paths, in order to ensure maximum sunlight exposure, reduce energy consumption and incorporate generous green spaces to provide healthy views. Sustainable drainage systems are proposed to reduce water consumption and the risk of flooding.

The existing protected structures on the SDZ site will be re-used according to viable, adaptive re-use strategies that carefully consider each building's structural condition, plan configuration and architectural character.

The Planning Scheme is based on a transport strategy that encourages the use of public transport and promotes walking and cycling

3.3 Key Project Themes Supporting the Planning Scheme Vision

Six Key Project themes have been developed following consideration of the project vision, the sites planning context and, in particular, the philosophy set out in the Dublin City Development plan 2011-2017. These Key Themes are set out below:

1. Reopening Grangegorman: A New Urban Quarter

Fundamental to the overall redevelopment is the transformation of the SDZ site from an enclosed property into an integral part of the City. The Urban Quarter will be developed as an inviting and welcoming new district which will encourage community use in addition to healthcare and academic functions.

A key priority will be ensuring universal accessibility by designing all aspects of the project so that they may be accessed, understood and used to the greatest extent possible by all people, regardless of their age, mobility or disability.

In order to achieve this, the Urban Quarter will be developed as a primarily pedestrian district which will benefit from a variety of streets and paths throughout the site with strong connections through new openings to the surrounding street network. A key feature of the new Urban Quarter will be permeability with many ways into and many ways through the site. Convenient and safe car parking and access routes will be provided for those with disabilities.

2. Reaching Out: Linking the Urban Context

The project offers a major opportunity to enhance Dublin's north inner city urban quality by connecting the existing urban landscape and introducing new resources north of the Liffey. The raised topography of the site provides views across Dublin's urban fabric thereby enabling a visual link between the site and the city.

The concept for the Quarter is based on the creation of urban plazas, pathways, buildings and open spaces which will link the Quarter to the existing urban fabric. Connections to North Circular Road, Grangegorman Upper and Lower, and Rathdown Road will allow the Quarter to 'reach out' and embrace the surrounding urban context and the nearby re-developed Smithfield area.

Aerial view of site from SE with Planning Scheme boundary

High quality, prominent accesses are required on the eastern and western boundaries of the new Quarter, at Constitution Hill and Prussia Street. These accesses are necessary to ensure that the new Quarter integrates successfully into the existing community, to waymark the campus, to provide permeability through the site and to ease undue pressure on the existing circulation network in the area. These accesses are considered essential to the successful implementation of the planning scheme. The opening up of these accesses prior to the occupation of the facilities by the DIT students is a prerequisite of the planning scheme.

Realising such potential in the future at the site's eastern boundary would allow a Broadstone entry to the Quarter, forming a symbolic and civic marker along Constitution Hill, that could align with the pedestrian entry to the King's Inns and which would reinforce the urban connection to Henrietta Street and to the Liffey beyond.

There already is a blocked-up entrance to the site at Fingal Place, which at one time provided pedestrian access to Prussia St. and which will be retained as a managed secondary pedestrian access. The potential also exists to create other more prominent access points to Prussia Street at other locations and link the site to the residential area of Stoneybatter to the West.

The site also provides an opportunity to reinforce the existing greenbelt pathway along Royal Canal Bank, past Blessington Street Basin, to connect with the Royal Canal at Mountjoy.

3. Connecting the Urban Quarter: the Pedestrian Experience

The design vision for the Urban Quarter will be focused on creating an urban structure, which provides a hierarchy of integrated and well-connected streets and spaces.

A variety of pedestrian routes will be provided across the site, which will serve to connect the site to the surrounding area as well as forming a loose, continuous network of streets. The quality of the pedestrian experience will be maximised through the creation of a rich sequence of spaces, provision of active day and evening uses at ground floor level, diversity in hard and soft landscaping, creation of 'green streets' and the provision of a variety of building edges and profiles.

The main east-west passages will be crossed and extended by fingers of north-south oriented green streets and sequences of courts, forming a loose, continuous grid of communication and connection in the Quarter. Smaller meandering paths can wander at mid-block/mid-court intervals to trace intimate connections between outdoor rooms and gardens.

4. Enhancing Community Infrastructure and Facilities

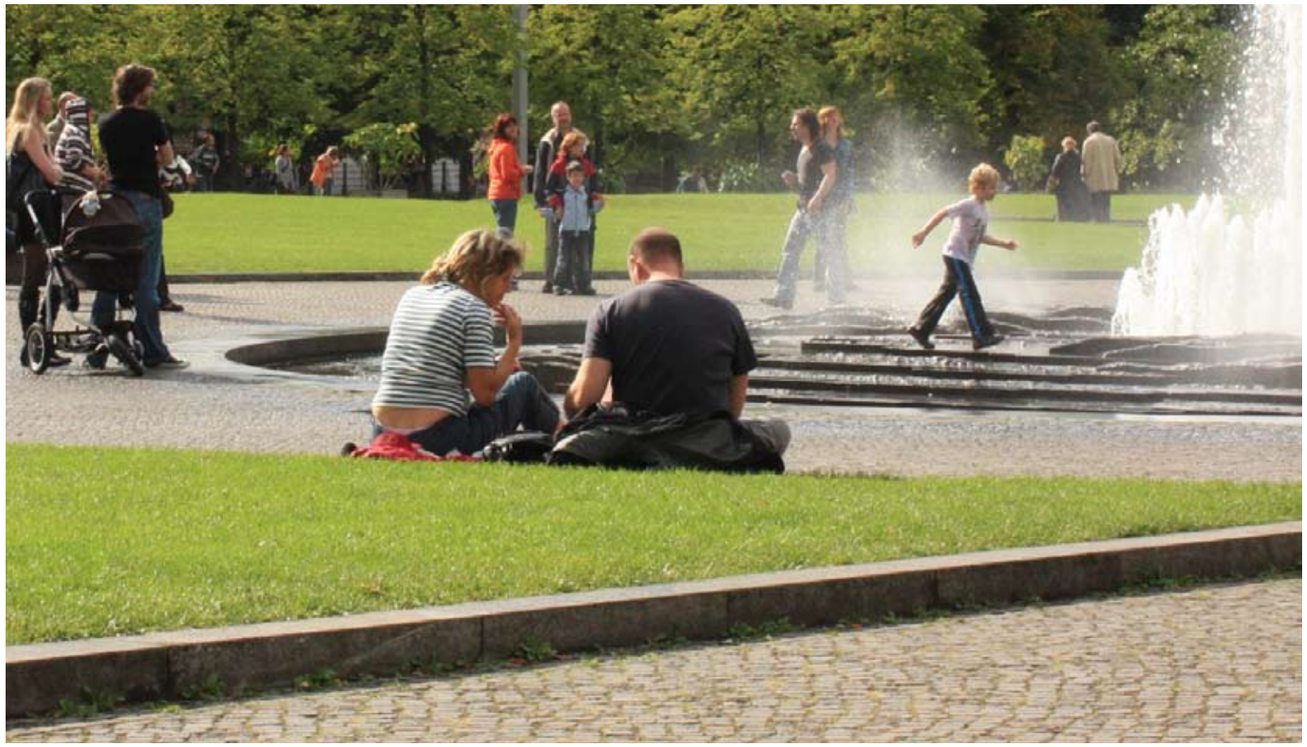
The Urban Quarter strives to facilitate the enhancement of community and social infrastructure as part of the overall development. Allied to this will be the strengthened connections of the Urban Quarter to the surrounding community.

The Grangegorman Urban Quarter will seek to provide a rich, comprehensive range of community related amenities while optimising community access to DIT and HSE facilities. Strong connections to the urban fabric will ensure that DIT and HSE facilities, together with the array of other facilities and spaces created within the Quarter, will be convenient and accessible to the local community.

5. Adaptive Re-use: Celebrating Cultural and Historical Resources

The redevelopment of the SDZ site will seek to conserve and protect the architectural heritage of the site. The Planning Scheme will strive to integrate the historic structures within the new urban quarter in a manner which ensures that they contribute to the generation of spaces and places both in terms of physical layout and character.

This adaptive reuse of the historic buildings for uses which are compatible with their existing form will ensure full and useful occupancy and will allow their important heritage to make a dynamic contribution to the cultural and functional character of the Urban Quarter in tandem with the development of new floor space.



6. Environmental Sustainability

Sustainability is a key underlying feature of the project. Right from the start, the crucial element of the decision in 1999 to keep DIT in its traditional homeland of Dublin Inner city, by relocating it as one coherent and unified campus to Grangegorman, means that the new development could make full use of existing and developing infrastructure and contribute positively to the consolidation of the city.

By maximizing existing and future public transport use, implementing best practice in sustainable building design, giving new life to protected structures and providing positive socio-economic benefits to the surrounding community, the project will be inherently sustainable. Furthermore, other aspects of sustainability will be addressed through the construction methodology utilised and the ongoing remaining site operations (such as dealing with waste) thereby continually minimising impacts on the environment and optimizing the return of potential benefits to all.

As stated above, sustainability for the Quarter encompasses many aspects including the design and construction of buildings; the operational practices of the main institutional occupiers and the lifestyle of individuals living, working and visiting the site.

The best in contemporary green building practice is seen as a base-line for development of the Quarter. Beyond energy efficiency and climate responsiveness, buildings serve sustainability goals by offering lasting use and aging well. The GDA envisions a contemporary fabric of durable structures, with attention to the quality of exterior and interior systems. The Planning Scheme supports a diversity of architecture and its guidelines allow for an inventive use of a set of related systems and materials, giving the Quarter both visual harmony and long-term serviceability.

Careful treatment of historic buildings and landscape on the site underpins the sustainability approach. Adaptive reuse of buildings together with a consolidation of a generous portion of the entire site into open space creates a primary sustainable palette with which the new development will be integrated.

The access strategy (Chapter 5) emphasizes sustainable modes of transport such as walking, cycling and public transport. The Planning Scheme capitalises on the location of Grangegorman as a generally brownfield site close to the city centre with excellent public transport links at present. The Quarter can be easily traversed in a 15-minute walk and internal Quarter circulation is planned so as to encourage pedestrians and cyclists, and enable universal accessibility.

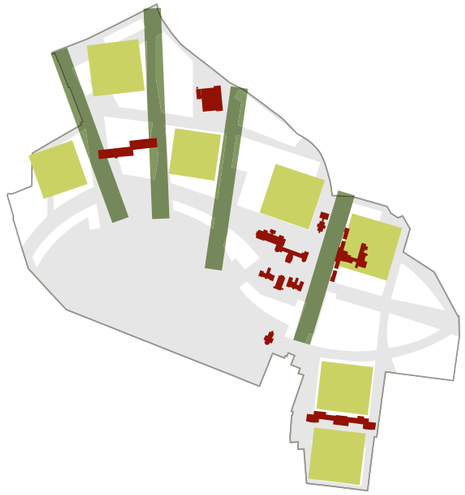
Because of the importance of sustainability, this document and its appendices will deal with sustainable issues throughout. The key aims can be summarized as follows –

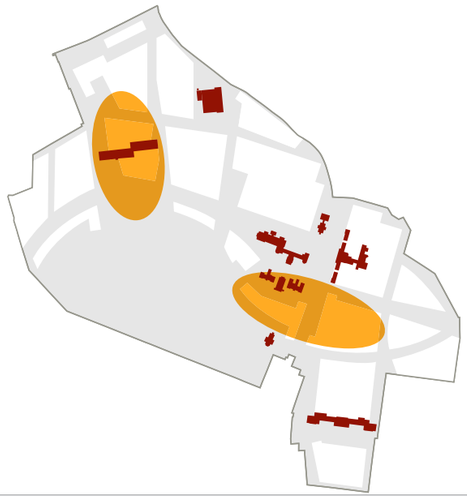
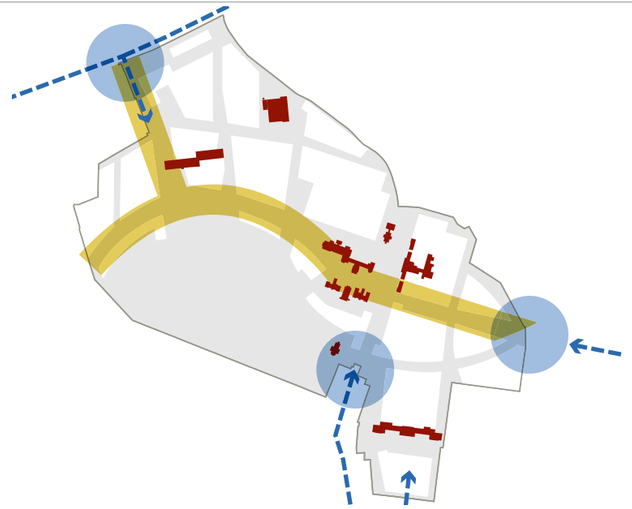
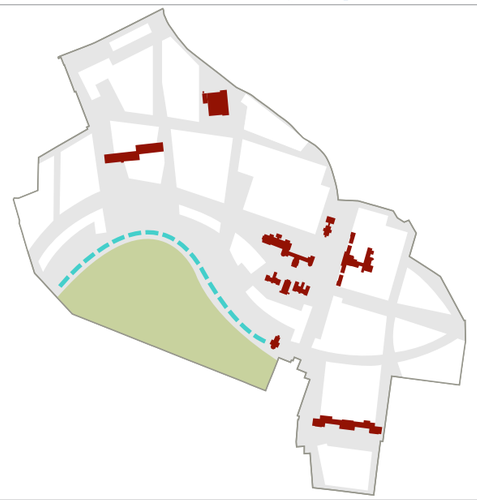
- Energy – the project will seek to limit adverse impacts on climate through building design that minimizes energy consumption and the use of sustainable energy sources. This is dealt with specifically in Chapter 4, as part of Environmental Design Principles (4.4.4.1), in Section 7.2 of Chapter 7, and in the accompanying Environmental Report.
- Water – the project will provide for the reuse, recycling and conservation of water on site and will ensure all site drainage systems are built to meet SUDS (Sustainable Urban Drainage Systems) standards. Further detail on water can be found in Section 7.1 of Chapter 7 and in the accompanying SEA Report. The Bradogue river system which crosses part of the site has been built into culverts and incorporated into Dublin City Councils sewerage system. Surface water runoff currently entering the Bradogue from the site will be redirected into a new separate system, thereby freeing up capacity in the foul system.
- Air Quality – the project, principally through encouraging walking, cycling and use of public transport and the careful monitoring of construction activity, will limit potential adverse impacts on air quality. Section 4.4.4.2 of Chapter 4 and the accompanying Environmental Report.

- Materials – the project will prioritise the sustainable use of recycled, renewable and long-life materials in such a manner so as to assist in achieving the other stated goals of the project, such as energy efficiency and high indoor air quality. Material selection is detailed further in Section 4.4.4 and 4.4.5 of Chapter 4.
- Soil – the project will carefully handle the existing soils on site so as to protect and record any possible archaeological heritage; to minimize movement of soils on or off the site; and to safely remove any possible contaminants that may be discovered during the course of construction.
- Biodiversity – the project will protect and enhance biodiversity, flora and fauna on the site by managing the site in a manner that promotes diversity of independent species, reduces or removes invasive alien species from the site, identifies and minimises interference with habitats of protected species, and retains and enhances existing stands of mature trees where possible. This aspect of the project is dealt with in detail in the Environmental Report.
- Waste – the project will prioritise the reduction, reuse and recycling of waste material produced during the construction and operational phases of the development. See Section 7.3 of Chapter 7 for further details. Any hazardous waste will be dealt with by licenced operators in accordance with current best practice procedures.

3.4 Realising the Vision – Development of Key Structuring Principles

In order to achieve the overall vision for the site five Key Structuring Principles have been developed which will in turn inform the overall urban design hierarchy and layout of the future development of the site. Many of these principles relate to priority open spaces and routes through the quarter and their implementation will have regard to the relevant City Development Plan policy, including relevant updates (for example the DCC 'Public Realm Strategy') as these may arise. Each of these Key Structuring Principles is identified and described below.

Key Structuring Principle	Description	Diagram
Creating Key Connections Through the Site **"St. Brendan's Way & Serpentine Walk"**	Two principal routes through the site which act as the primary organising routes for the overall structure for the site are referred to as St. Brendan's Way and Serpentine Walk. It is envisaged that these principal connections will be punctuated by social gathering spaces and active uses to bring life, vibrancy and activity to the Quarter. It is envisaged that St Brendan's Way (yellow on the adjacent diagram) will be a wide, pedestrian-priority boulevard curving through the site from east to west with a link north to the North Circular Road. This route will seek to mediate against the current divide in the site (Grangegorman Lower and Upper) in addition to closely uniting existing Protected Structures in a central area of the site. St. Brendan's Way is complemented by a second lateral procession—Serpentine Walk—(green on adjacent diagram) a meandering walk that traverses the site in two grand arcs which begin at the Broadstone lands to the east and sweeps across the Quarter to the access to Prussia Street to the west.	
Connecting Primary Urban Structure to the Landscaped Context **"Quadrangles & Green Fingers"**	A network of green spaces will be established which will serve to create a series of landscaped open spaces "Quadrangles" (light green squares on adjacent diagram) and pedestrian access routes "Green Fingers" (dark green lines on adjacent diagram) which in turn will reinforce and enhance the creation of a distinct urban form and sense of place. In a contemporary interpretation of traditional collegiate "quads," the configuration of the buildings on the site will frame a pattern of courtyards and open spaces, creating distinct forms with strong individual identities. The overall "Green Fingers Landscape Concept" represents an open "hand" that reaches out to draw the community into the development. The "Green Fingers" offer a rich sequence of pedestrian paths for the community to access St. Brendan's Way and the Serpentine Walk and the sports and amenity spaces beyond.	

Key Structuring Principle	Description	Diagram
Creating Major Nodes for Campus and Community Activity "Two Hearts"	Two main public spaces are proposed for the Grangegorman Urban Quarter. These are envisaged as two major activity nodes – the 'Academic & Health Heart' to the west, and the 'Social & Cultural Heart' to the east. These 'Hearts' will be open public plazas which will anchor a broad spectrum of social gathering spaces and active uses. Symbolically, the Academic & Health Heart and associated open space and sporting facilities to its south juxtapose the values of Knowledge and Action, the mutual benefits of scholarship, fellowship, and competitive achievement which are central aspirations for this new Campus. It is envisaged that the Social and Cultural Heart is a space where student and community life come together through the creation of a hub of student services together with new arts and culture/ performance spaces to celebrate the rich and diverse cultural history of the site.	
Creating key connections between the site and surrounding District - and marking the key entrances to the site as Gateways Connecting to Smithfield, North Circular Road, Broadstone and Prussia Street and Positioning for Future Connection Opportunities	The transformation of Grangegorman's closed land parcel into an integral part of the life of the City is one of central objectives of the Planning Scheme. Opportunities to connect with the surrounding street network will be maximised. The urban transformation of the site extends into and through adjacent neighbourhoods, creating Gateway entrances at the North Circular Road, Grangegorman Lower, Broadstone and Prussia Street. Main gateway entrances offer 'front doors' to the Quarter from the surrounding streets and the design of these thresholds will reflect the gateway status, making use of existing historic features, creating welcoming spaces and providing contemporary landmark features. The orientation of St. Brendan's Way allows for connections and gateways at Broadstone, Prussia Street and Smithfield.	
Using Landscape Assets for Sports and Recreation "The Fields & the Ha Ha Concept"	The natural centre of the Grangegorman landscape will be 'The Fields' comprising a generous portion of consolidated open space. "The Fields" will form a mix of parkland sports pitches with park-like groves of new and existing trees framed by the Serpentine Walk to the north and the historic wall to the south, and will also contain training facility and children's playgrounds. Running and cycling paths entwine around the edges, linking the complementary qualities of sports fields, sheltering groves of trees, and distant views. "The Ha-Ha" is a landscape feature running alont the northern edge of the fields. It uses the changes in the typography to accommodate a sectional-dip that will allow for internal sports facilities with direct visual connection to the external parkland.	

3.5 Implementing the Key Structuring Principles – Informing the Overall Urban Form and Layout

The Key Structuring Principles identified in Figure 3.1, together with the rich heritage of the Protected Structures on site, are the fundamental building blocks in achieving the overall vision for the SDZ site in terms of opening it up to the city and, more particularly, to the neighbouring community, and making it a distinctive and enjoyable place for all.

As a result, significant connections, pathways, quadrangle development areas and open spaces have been identified, which will influence the overall layout of the site.

This layout will form the fundamental urban design hierarchy.

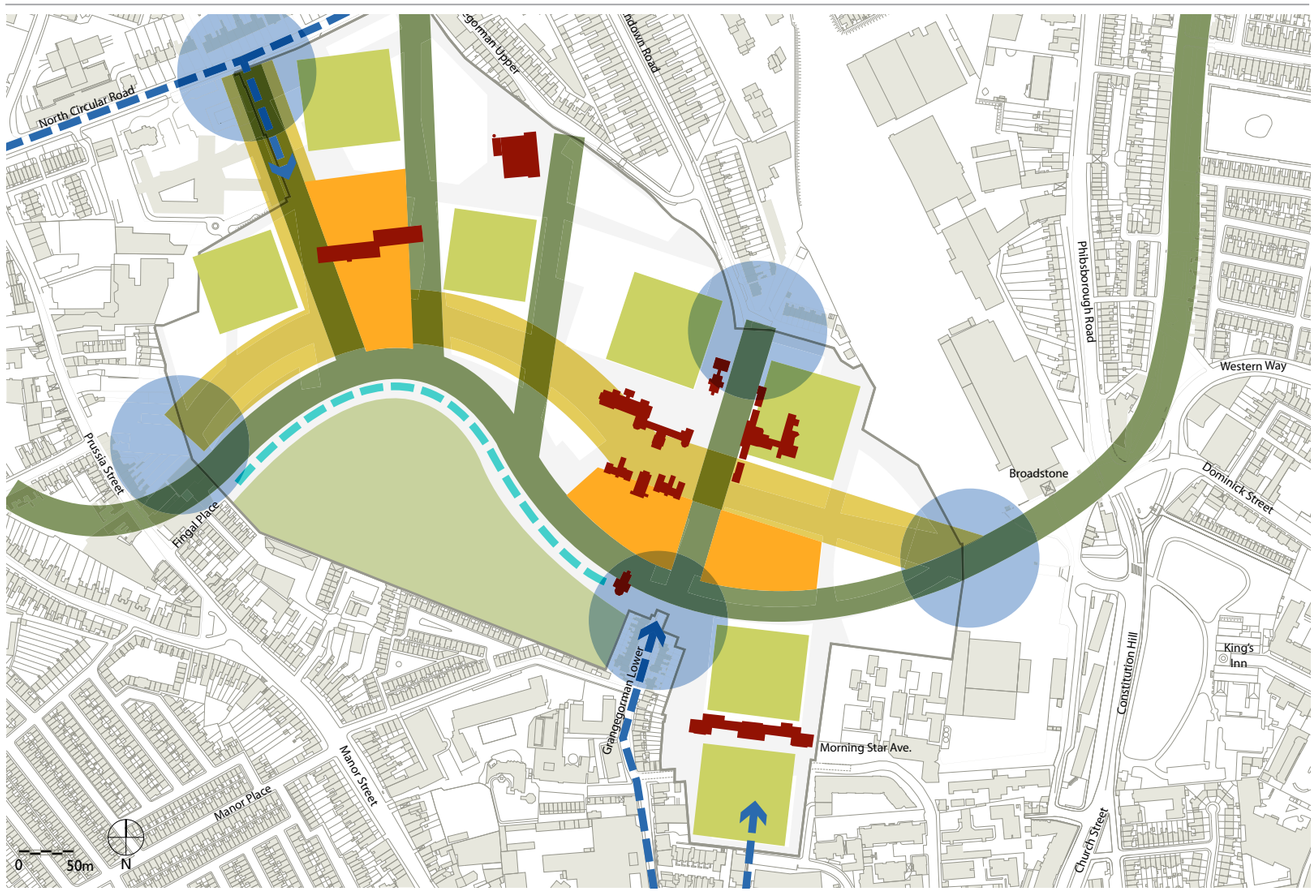
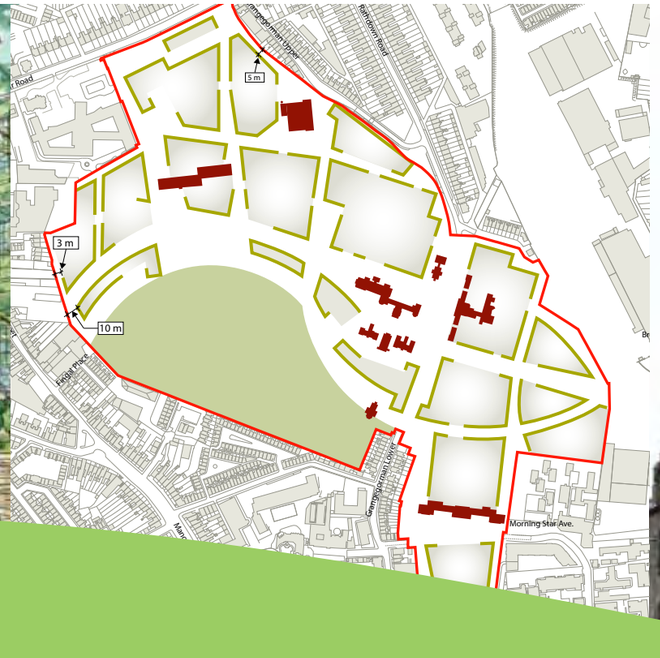


Figure 3.1 Key Structuring Principles which Inform the Overall Urban Form and Layout

4

Planning Scheme
Grangegorman

Nature and Extent of Proposed Development



Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

Purpose and Layout of this Chapter

The Purpose of this chapter is to describe the nature and extent of the development proposed for Grangegorman. It details the urban form that has been derived from the key structuring principles outlined in Chapter 3 and is intended to be used an evaluation for future planning applications to be made under the Special Development Zone (SDZ) designation.

Contents

4.1 Overview of Development

The Planning Scheme has been structured in accordance with the philosophy set out in Chapter 3 (summarised in Figure 4.1). This envisages a campus environment with very significant areas of open space, 'key views' and major pedestrian routes integrating the new urban quarter into the fabric of the city and has regard to the particular nature of education and healthcare facilities. This philosophy imposes an inherent limit on the quantum seen as desirable; probably of the order of 380,000 sq m. Table 4.1 provides an overview of the maximum quantum of development proposed within the Planning Scheme, and the indicative breakdown by use category relating to the main stakeholders.

Under this Planning Scheme, the infrastructure to serve the development and surrounding area both within and external to the site will be developed with sufficient capacity to serve the development on the Grangegorman Site.

In terms of access to the site, creating pedestrian routes to existing public transport infrastructure in the immediate vicinity is of paramount importance. The delivery of public routes through the site, providing connections from North Circular Road, Broadstone and Prussia Street shall be in place to coincide with the occupation of the first tranche of DIT buildings to be delivered under the SDZ process.

Proposed public transport investments will also have an important role to play in the extent of development which can be considered as sustainable. Equally, the development of future access routes to the site may facilitate additional development. Detailed transport analysis established the extent of development that could be sustained in transportation terms. Of this potential maximum, about 238,500 sq m, including 57,000 sq m student accommodation is proposed based on existing transport infrastructure, with the remainder dependent on access and public transport upgrades.

Local view of existing site from South

Table 4.1: Overview of Maximum Quantum of Development within Planning Scheme

Development Type	Approximate Overall Quantum (Sq m)	Approximate Quantum Deliverable Without Significant Transport Infrastructure Upgrades*
Healthcare and Related	42,000	27,000
Educational and Related	270,000	203,000
Public Bodies (School, Library, Elderly Housing)	8,000	8,000
Mixed Use	60,000	0
TOTAL	**380,000**	**238,000**

*Dependent on delivery of additional public transport infrastructure
See Chapter 5 for further details

4.2 The Site Layout

The Key Elements Defining the Site Layout

The 28.69 hectare SDZ Site is currently enclosed and has a rich heritage.

As set out in Chapter 3, the vision for the site includes opening it up to the city and, more particularly, to the neighbouring community, and making it a distinctive and enjoyable place while respecting its heritage.

In Chapter 3 a number of Key Themes were identified broadly associated with this vision. As a result a number of significant organising design features, such as connections, pathways and open spaces were identified and these have influenced the overall layout of the site. These organising features are called Key Structuring Principles, as broadly illustrated in Figure 4.1.

Certain key elements of the Planning Scheme, which are considered critical to the delivery of a sustainable development, are fixed. Other elements, less critical in overall terms, are somewhat flexible. This is an important distinction. Fixed elements comprise of the overall quantum of development (Table 4.1); The key structuring principles (Figure 4.1) and the Urban Form (Figure 4.2).

Flexible elements include Building Form, Building Design (including some height flexibility) Links to surrounding area.

Any development proposals which conflict with the fixed elements will be deemed not to be in compliance with the Planning Scheme and therefore cannot be permitted (see Section 4.9).

Figure 4.1 is derived from the key themes and structuring principles identified in Chapter 3 and includes significant existing features such as the playing fields and historic buildings. It comprises of the following elements, all of which are fixed:

- The Protected Structures (4.3.1 and Chapter 6.0);
- St Brendan's Way and the Serpentine Walk (4.5.1);
- The Green Fingers and Quadrangles (4.5.4 and 4.5.6);
- The Two Hearts - incorporating major public Plazas (4.5.2);

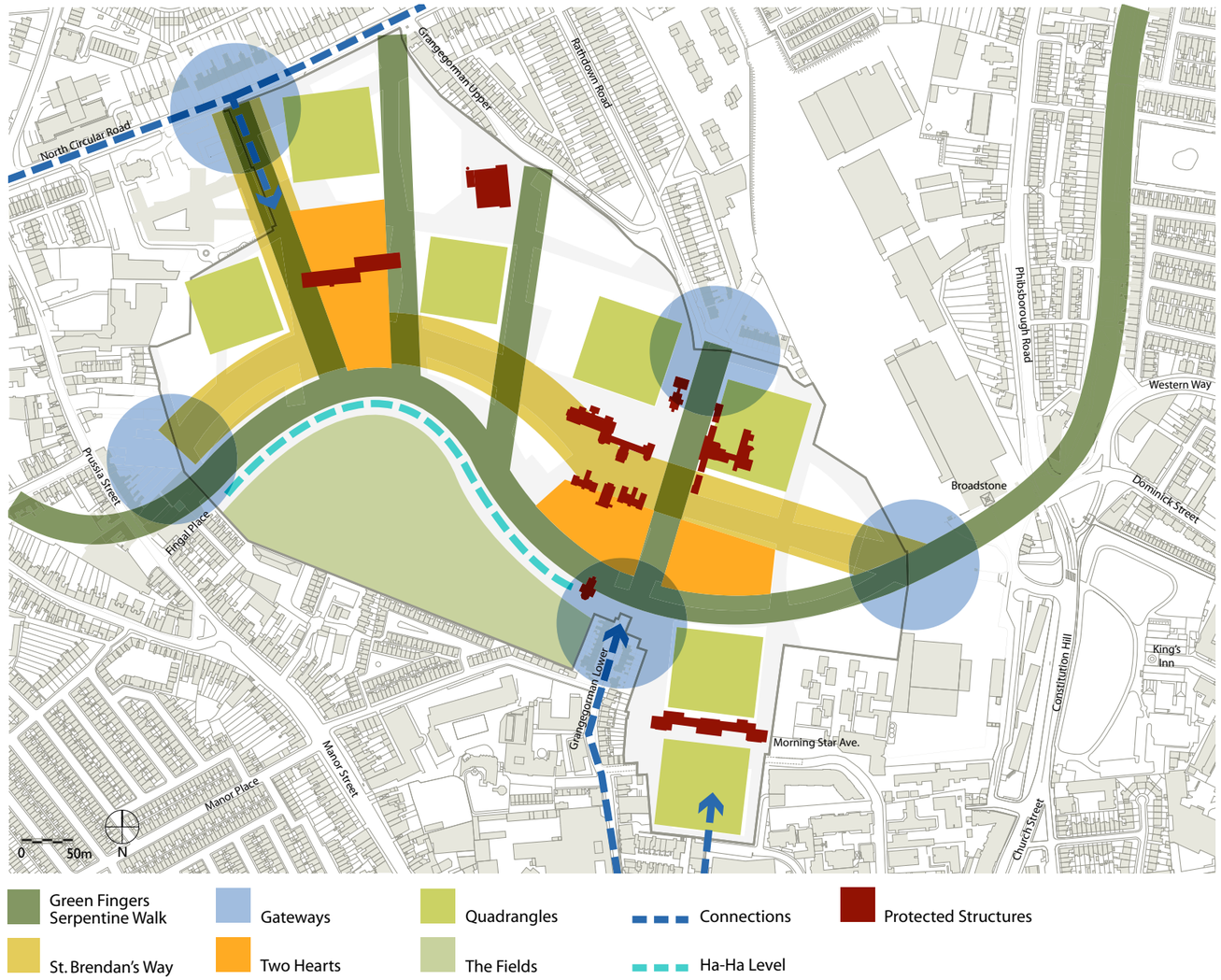


Fig 4.1 Key Structuring Principles

- External Connections and Internal Circulation[8] (4.6);
- The Fields and the Ha Ha Concept (4.5.3).

These important fixed elements establish the urban design hierarchy for the site and determine the appropriate Urban Form to deliver on the scheme's overall vision.

8: The connections shown in Figure 4.1 are fixed elements of the planning scheme. However it is acknowledged that these involve third party lands.

4.3 Deriving the Urban Form

The Principal Features Defining the Urban Form

The Urban Form diagram (Figure 4.2) is proposed to control the extent of the proposed development on the site and protect the fixed elements of the protected structures and the public realm spaces including the main circulation routes, the green fingers and the identified view corridors. The diagram has been derived from the Key Structuring Principles of the site (Figure 4.1) and is designed to respect those elements while delivering the required quantum of development on the site at an appropriate density and height for the site.

Figure 4.2 shows the general areas permitted for development (shaded in light green) and external building lines (dark green lines) to define the location of each of the proposed quads or buildings. The diagram is not intended to represent a design solution; its primary function is to define the public spaces outside the indicative building lines. The set building lines define the building edges and also define the edge of the public realm. However, setbacks from the building line will be permitted in order to create modulation of buildings to form building entrances or external courts adjacent to the public realm spaces and to protect residential amenity, where necessary.

It is important that proposed buildings to be evaluated under the Planning Scheme demonstrate that the concept of the urban form is adequately defined and achievable, with particular reference to the definition of the Public Realm spaces as envisaged in this Planning Scheme. One key aspect to achieving this is the appropriate definition of the external corners of the building lines to create a clearly defined series of public spaces within the site. Where individual development proposals accommodate future expansion along external edges they must provide suitable temporary landscaped solutions sufficient to define the fixed elements of the public realm in the intervening period.

The extent of any proposed building will not extend past the building lines indicated in Figure 4.2 unless it can demonstrate that it will not impinge on the Key Structuring Principles of Figure 4.1. Examples of where this may be permissible include projecting external roofs or canopies, glazed atriums, high level glazed bridges/elements, podiums structures, public seating, rain shelters, bicycle parking, public art, security kiosks or landscape features that can

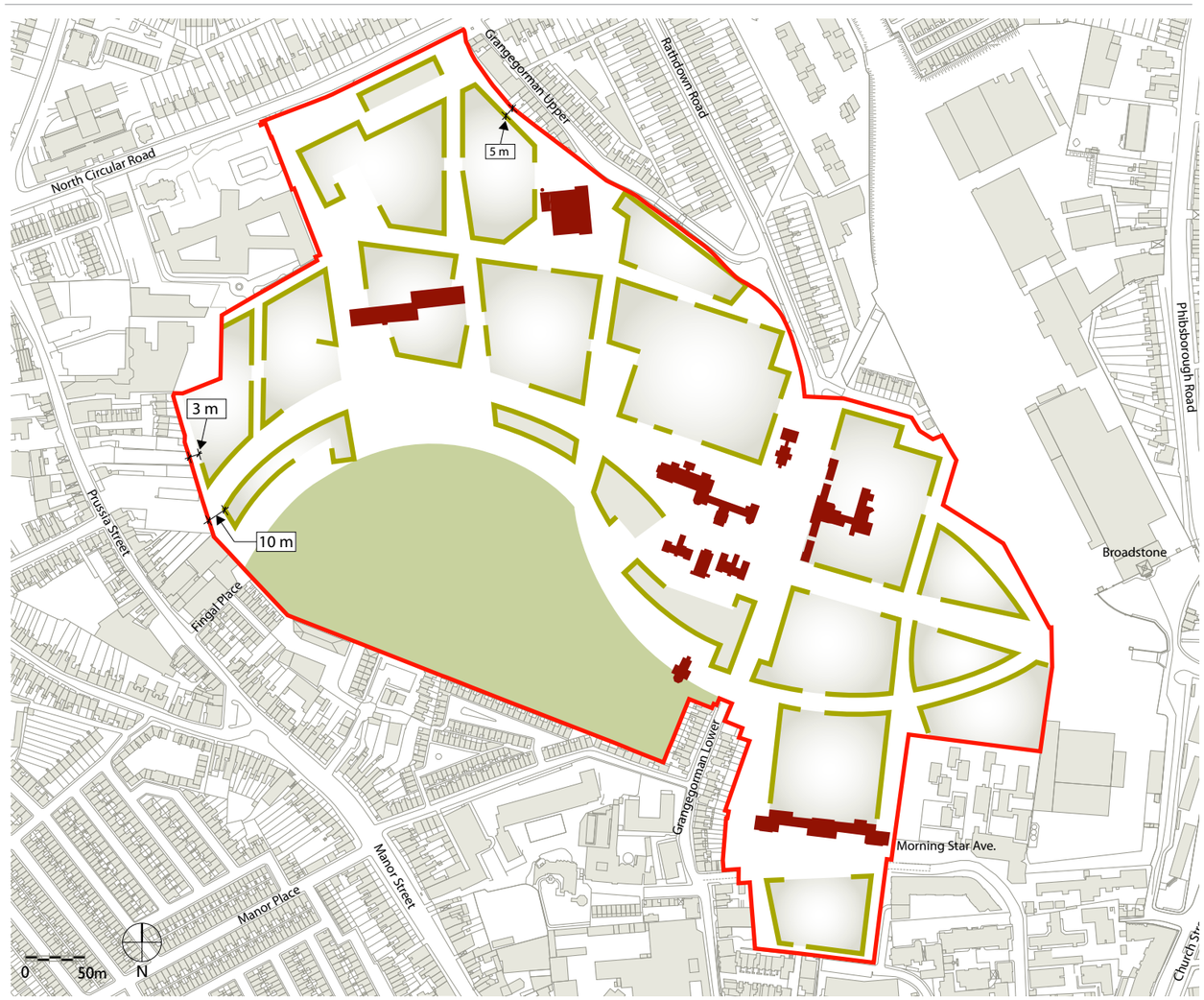


Figure 4.2: The Urban Form

be incorporated into the public realm space. Any such structures must be sited so as not to diminish the identified view corridors (Figure 4.4 and Section 4.3.2) or the settings of Protected Structures.

It is envisaged that most buildings will be designed with a shallow floor plan depth for maximum sustainability.

The urban form diagram envisages that the typology of structures proposed will be predominantly quadrangles. However it is not intended that the urban form diagram dictates the configuration of the internal building lines of each building.

Only sports/recreational buildings of single story pavillion design will be allowed in the Fields.

4.3.1 Protected Structures

The Dublin City Development Plan lists 11 Protected Structures on the site, including parts of the boundary wall[9], and these are identified in Chapter 2 and described in Chapter 6 (at Section 6.3). Figure 4.3 illustrates Protected Structures within the Planning Scheme site.

Treatment of Protected Structures

All of these structures will be retained and integrated into the overall development (although there will be some breaches in the boundary wall in order to open up the site), and their treatment is set out in detail in Chapter 6.

In some cases (such as the Top House) the Protected Structure will be incorporated into a feature building (the Library) whereas in other cases the Protected Structures will be set apart (for example the Laundry Building) to provide a focal point and anchor for the new development in their vicinity. St Brendan's Way will serve to connect the principal group of Protected Structures and will provide an appropriate level of visibility to them.

The main interventions to Protected Structures are indicated in the figures within this chapter. Where such interventions are not indicated in the figures within this chapter then only limited works will be permissible, subject to the building specific guidelines in Appendix 2b.

In addition to the Protected Structures, an old disused passage under Grangegorman Lower, which links the two sides of the site, will be renovated.

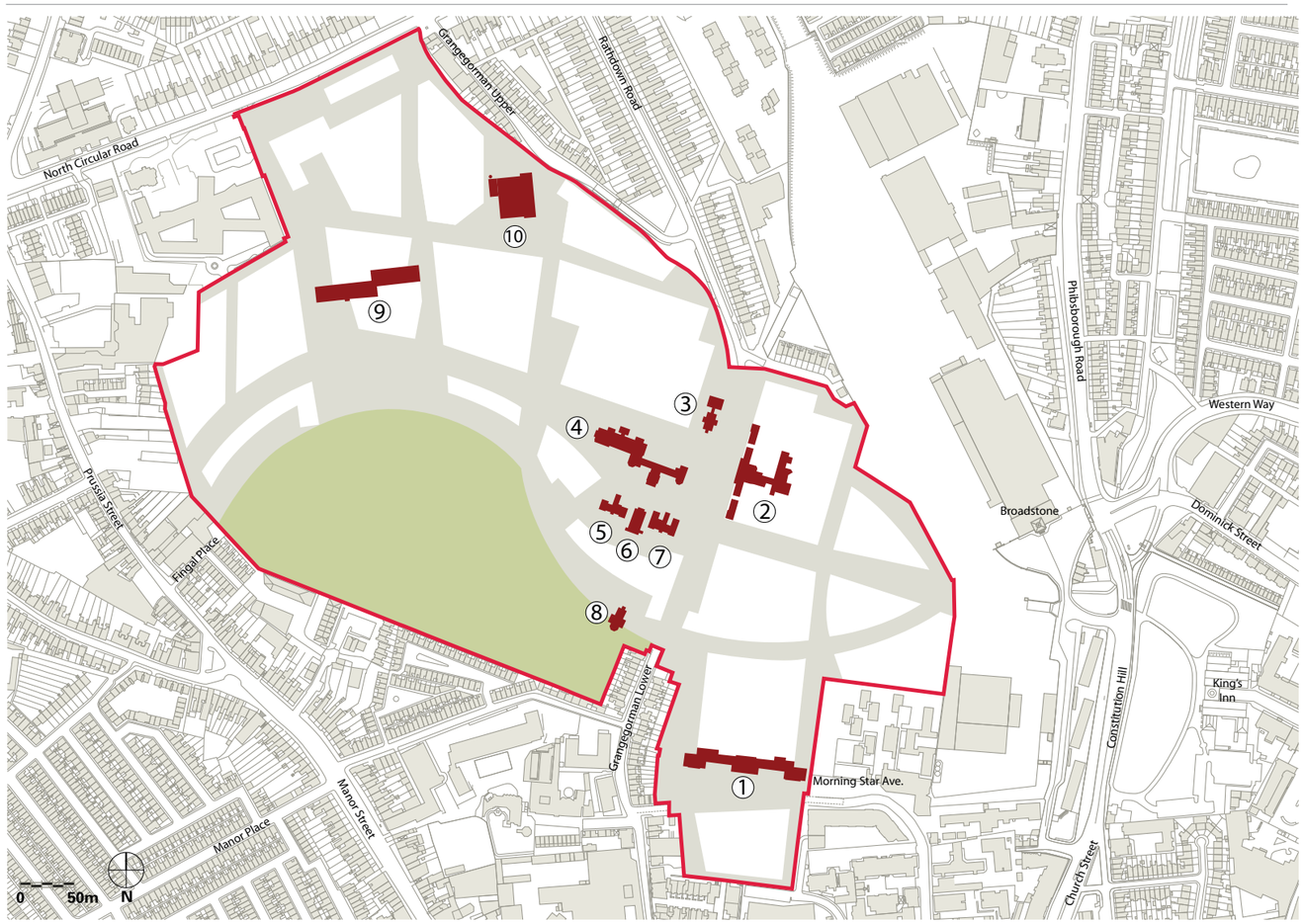


Figure 4.3: Protected Structures

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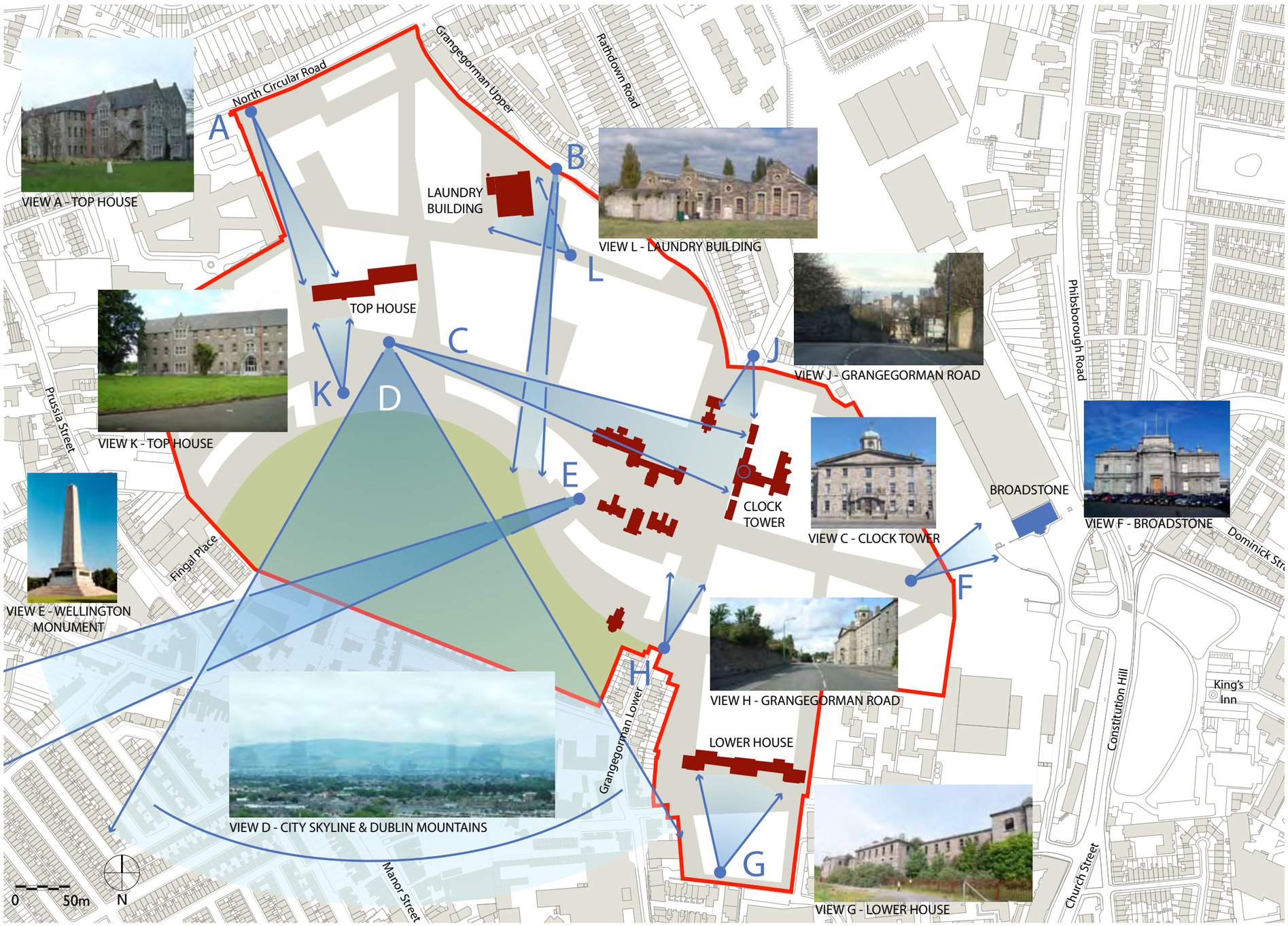


Figure 4.4: View Corridors

4.3.2 Description of View Corridors

The urban form set out in Figure 4.2 establishes and protects a number of View Corridors. These are illustrated in Figure 4.4. The pattern of view corridors through the site-both east-west and north-south serves to connect the site to the surrounding natural and urban environment.

In addition to providing strong guidelines and orientation for pedestrians by focusing views on prominent surrounding landmarks and natural features such as the Dublin Mountains, the Wellington Monument and the Fields, the corridors also help to break down the scale of the overall development and to integrate the site into the existing urban fabric. Each identified view corridor is described and illustrated in Table 4.2.

Table 4.2 View Corridors Description and Characteristics

View A from North Circular Road looking south to the Top House:	This key view from the proposed new gateway in the existing boundary wall (a Protected Structure) from the NCR looking south, will show part of the western bay of the Top House (a Protected Structure) and a glimpse of the Grangegorman development and the Dublin mountains beyond. Any new-build elements associated with the Top House (both to north and to the south) will allow a portion of the full height of the western bay of the existing historic Protected Structure be seen from this vantage point	
View B from east of former Laundry looking south through proposed new scheme to the Dublin mountains beyond:	The purpose of this view is to give a sense of there being something beyond (ie. further facilities; the Fields and the Dublin mountains). It may not give a direct open view of all of the above, as it is intended to draw people further into the site so that the views will reveal themselves as people progress south.	

Table 4.2 View Corridors Description and Characteristics

View C from south of the Top House looking east to the Clock Tower Building:	This view allows for the Clock Tower building (a Protected Structure) to create a formal end to a new vista stretching from the south of the Top House, across the new Cultural Garden and taking in part of the Female House (a Protected Structure).	
View D from the Top House looking south across the Upper Terrace to city the skyline and mountains beyond:	This spectacular view will strongly relate the Academic Heart to the city and mountains beyond, giving people a grand sense of scale and of their location in the city itself.	
View E from the Student Hub / Cultural Heart looking across the playing fields to the Wellington Monument beyond:	This view will be available from the western end of the Student Hub, in the vicinity of the former Male Infirmary (a Protected Structure), across the playing fields and existing mature landscape to the Wellington Monument in the Phoenix Park.	

Table 4.2 View Corridors Description and Characteristics

View F from the eastern end of St. Brendan's Way and Serpentine Walk, looking across east to Broadstone Station (a Protected Structure):	The eastern ends of both St. Brendan's Way and Serpentine Walk will be dominated by the view of the existing Broadstone Station, some 3 to 4 metres higher than ground level at the end of these two prominent routes	
View G from the southern end of lower student housing quad looking north to the main façade of the Lower House (a Protected Structure):	This view takes in the major portion of the Lower House, the first major structure in the original Richmond Lunatic Asylum. New development should allow for a continuous view of the central and two main flanking bays. This view also allows for those potentially entering the quarter via the proposed pedestrian and bicycle route (through 3rd party lands to the south) to see the major portion of the south façade of the Lower House. New development should also be kept a minimum of 10 m south from the side bays to allow for viewing.	
View H from the start of the new quarter on Grangegorman Lower looking north through the quarter partially capturing the 'Clock Tower' building	The purpose of this view is to highlight a principle focal point in the environs of the Clocktower Building. It takes in the key crossing between the eastern and western portions of the site.	

Table 4.2 View Corridors Description and Characteristics

View J from the junction of Marne Villas and Grangegorman Lower looking south through the quarter to the Guinness Brewery beyond:	This view also highlights the environs of the Clocktower Building and, in addition, terminates with a view of the Guinness Brewery / Storehouse.	
View K view from the proposed Upper Terrace looking north towards the Top House:	This is the opposite of View A, and shows portion of the Top House and its associated public spaces and new buildings, with glimpses through towards the North Circular Road.	
View L view of former Laundry building from Ivy Avenue:	This view focuses on the former Laundry Building (a Protected Structure), looking west along Ivy Avenue and will highlight two key facades of the building (the south and east facades).	

4.4 Design Principles

Whereas the key structuring principles, the overall site layout and maximum heights/quantum of development are fixed, the area of building design is flexible, subject to the above. Nevertheless, this Planning Scheme sets out three primary design principles that govern the organisation and character of the open spaces and buildings for the Grangegorman Urban Quarter: Connectivity, Collegiality and Cohesiveness. These three principles will serve to establish consistency throughout the development of the Grangegorman site, and ultimately contribute to a unique identity for the Quarter.

Connectivity

Connectivity, both physical and visual, will be encouraged on the site to facilitate movement across the Quarter as well as to foster a sense of district unity. A contiguous network of interconnecting open spaces, including plazas, quadrangles, gardens and interconnecting passageways, will serve to physically link buildings throughout the Quarter. This predominantly pedestrian landscape will serve as an alternative to pavement circulation along vehicular streets and will offer visual relief to the consistency of the surrounding street pattern. Connectivity is also achieved by establishing a matrix of sightlines that visually link district landmarks and focal points throughout the Quarter.

Collegiality

In relation to Collegiality, the project will support a hierarchy of communal spaces that encourage collective interaction among users. These spaces will be organised around specific clusters, orienting individuals in classrooms, laboratories, residences, offices and other facilities to larger communities within the respective Quarter neighbourhoods. These communal spaces, in turn, will be visually and physically connected to larger, more collective district spaces.

Cohesiveness

Cohesiveness is aimed at promoting visual consistency among architecture and landscapes over the course of development of the Grangegorman Urban Quarter. Collectively, adjacent buildings will maintain similarity by abiding to a consistent massing and basic vertical organisation and surface articulation. Services, for example ancillary telecommunications equipment will, where practical, be integrated with the overall design. All buildings will conform to a range of specified materials and colours. The district landscape will also maintain cohesiveness through the consistent use of specific planting types, paving materials and lighting. Cohesiveness among buildings and open spaces will enhance the legibility and identity of the entire Urban Quarter.

The format of the buildings, and the layout of the district spaces they frame, will emphasise a modular flexibility of uses. Buildings will vary in height and number of storeys, with the most public/shared educational spaces-lecture halls, classrooms, workshops and studios-at the lower floors, and faculty suites, seminar facilities, and departmental administration on upper floors, thereby encouraging a lively ground plane across the site.

4.4.1 Urban Grain

The project will address the adjacent Broadstone site and surrounding neighbourhoods, and in the process establish a new city quarter framing a mix of public and institutional uses with a lively repertoire of urban places. It will offer a flexible matrix of buildings and landscape, while preserving and enhancing the unique open spaces and historic resources of the site to the benefit of DIT, the HSE and the greater city community.

Buildings will support a clear definition of the street/quad structure of the Quarter, producing a legible pattern that enriches formal and informal sequences of movement. Buildings enclose a variety of internal gardens and sky-lit atria, giving the district a collection of distinct, discoverable places. Major activity centres - for example the Upper and Central Plazas at the Library, and the Arts Centre / Student Hub - anchor a broad spectrum of social gathering places.

DIT's principal academic and support service activities and HSE's main areas of service will benefit from their individual identity of place as well as beneficial adjacencies within the site. New buildings will be free to express their diversity of use within a harmonious urban fabric. Student residences and social life will be principally gathered along a major east-west urban procession, linking academic centres, recreation/sports facilities, and the public realm, and making the entire Quarter a place of vibrant activity.

Opportunities for social interaction will occur at multiple scales: from grand places of arrival and movement, to streets and gardens, to on-street cafés and amenities as well as to shared lounges within residential communities.

The urban transformation of the Grangegorman site will extend into and through adjacent neighbourhoods, creating entrances at the North Circular Road, Grangegorman Upper and Grangegorman Lower, and the potential for other gateways at Prussia Street and across Broadstone to Constitution Hill and Phibsborough Road (see Figure 4.1).

View of Indicative Urban Quadrangle

4.4.2 Building Form and Orientation

Open spaces, public gathering areas, pedestrian paths, views and buildings will be organised in relation to the shape and movement of the land, as well as access to sunlight. Given Dublin's frequently cool and wet climate, orientation to the southern light and warmth will be carefully shaped and enhanced for all of the important social gathering spaces- including the major public spaces as well as the individual quad courtyards. The connection of buildings and open spaces with the environment, and exposure to daylight will enhance the specificity of the place and give expression to the culture and community of the Grangegorman Urban Quarter.

The buildings will be principally located on the northern portion of the site, allowing the existing open space to the south (The Fields) to remain an appropriate landscaped space and will be positioned to take advantage of natural daylight, reducing the need for artificial light. Building widths will vary but narrow widths will be chosen wherever possible to assist the penetration of natural light into the interior spaces. Quads generally will open to the south to prevent the overshadowing of exterior landscaped space by buildings. The design of the building footprints, heights and layouts will be developed to allow maximum daylight to enter buildings, minimise overshadowing of each other, of existing neighbouring buildings, and of landscaped areas, as well as to ameliorate existing wind conditions on site. The design of new buildings shall incorporate design measures to enhance and maximise sunlight and daylight access for recreational spaces and in particular childrens' play areas where they are proposed adjacent to or opposite new buildings. Flexibility in height guidance in particular will be required to ensure an appropriate relationship between the school site, play areas and new buildings opposite.

The site itself enjoys a remarkable geographic position and orientation within Dublin City. This project will enhance this larger sense of place, taking advantage of the topographic character of the site to frame southerly views to the City skyline and to the Dublin Mountains.

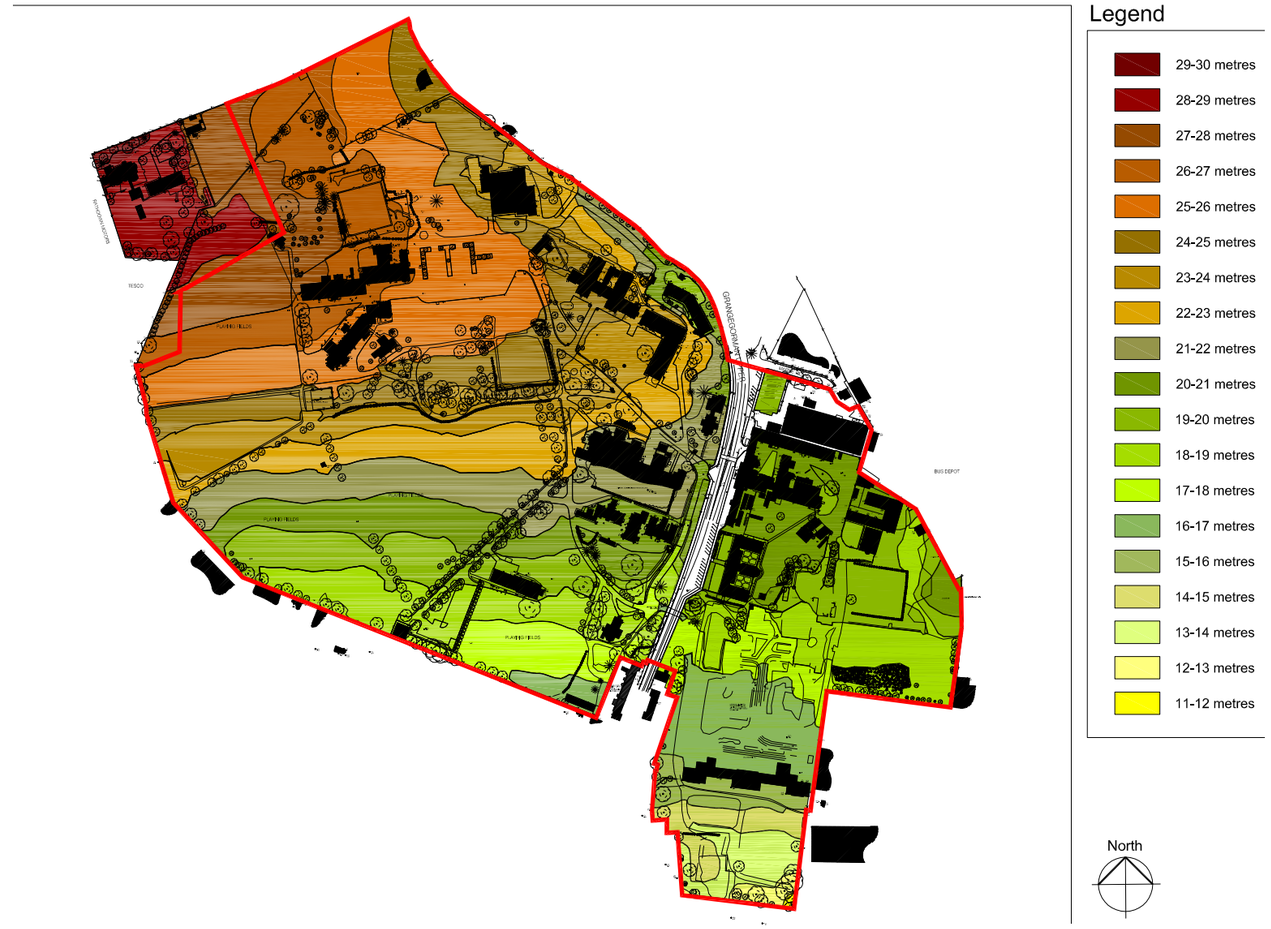


Figure 4.5 Existing Topography of Site

Ha Ha Structure

The topography of the site provides falls in level from the North Circular Road towards the south east corner of the site. (See Figure 4.5). The Planning Scheme provides a layering of this topography which respects the existing Protected Structures that require ground levels immediately around these to remain unaltered and at the same time exploits the opportunity of sunlight, daylight and outlook by providing a change in level along the proposed Ha-Ha. This architectural device allows for accommodation to be built under the Serpentine Walk and Upper Plaza which can have full height glazed walls to the south facing the sunlight. These spaces are proposed to contain the large volumes required by the proposed recreational spaces that also require high floor to floor heights.

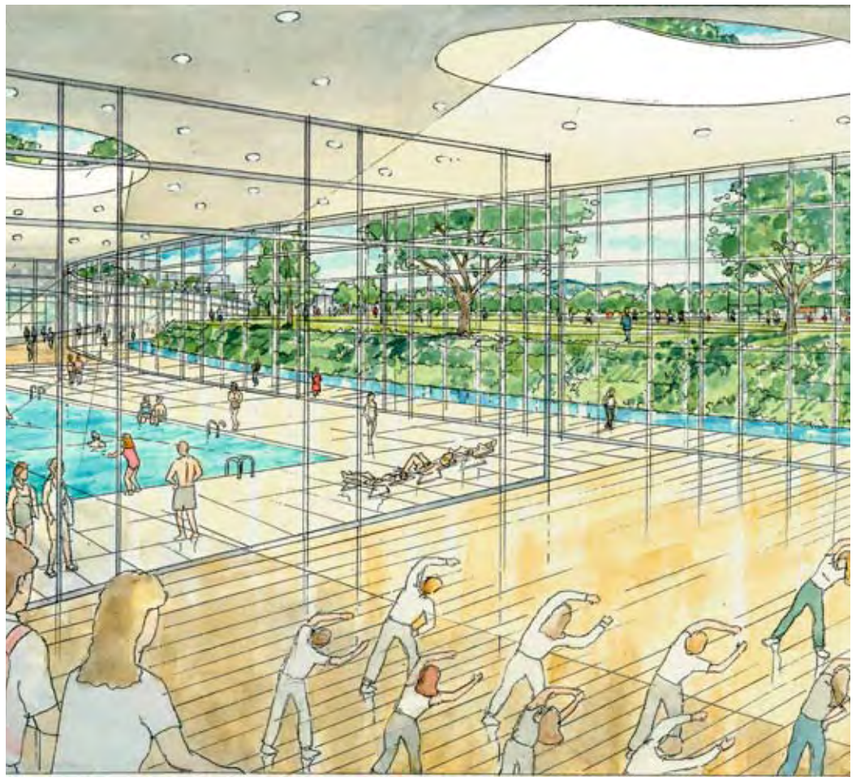
Podium Floors

Another architectural device proposed in the Planning Scheme is the use of partially sunken podium floors to some of the academic blocks. These allow the positioning of other larger volume uses at podium floor levels which can accomodate high floor to floor heights. Such uses may include tiered lecture theatres, exam hall and workshops. These spaces also utilise the sloping topography to allow access onto their landscaped roofs, which also double as a ground level for internal quad spaces.

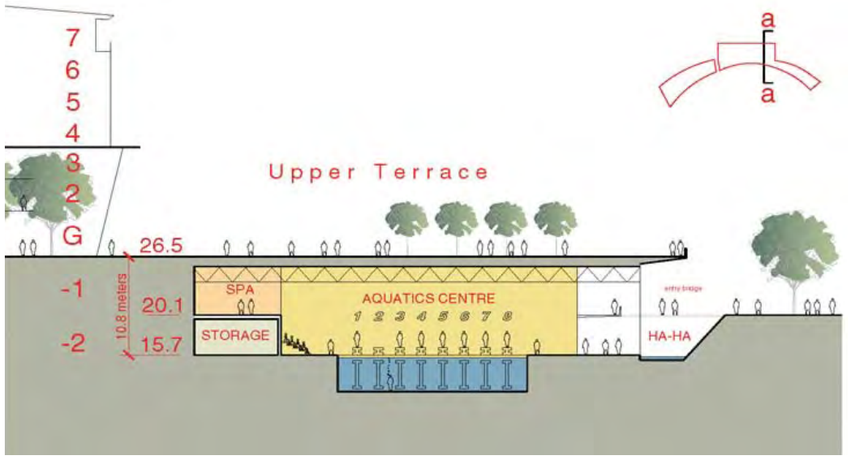
Opportunities for daylighting the podium spaces can arise via use of large feature roof lights or around the perimeter where adjacent ground levels will be lower.

Both the Ha-Ha and podium floors avoid the requirement for large volume of floorspace above ground which would interrupt the fine to medium urban grain proposed throughout the campus. (Refer to Fig 4.25 for indicative extent of podiums and the Ha-Ha structure)

In addition these podiums and Ha-Ha structure can accommodate the necessary ancillary spaces such as maintenance areas, delivery bays, plant spaces and services distribution networks. To assist in on-going maintenance and upgrading of services it is proposed to allow for a 'utilidor' (a 3.5m wide underground utilities corridor) which may run the length of the site, located adjacent to the podium, Ha-Ha structure and or underground/undercroft carparks and building foundations. Figure 4.30 indicates potential areas for undercroft or basement car parking that again are proposed to minimise impact to the urban grain.



Example of Ha-Ha type structure



Indicative section through Ha-Ha Structure

4.4.3 Building Heights

General Building Heights

Figure 4.6 shows the overall building height guidelines for the site, illustrating that most buildings will be between 4-6 stories or, where the building is over a podium, 4 1/2 - 6 1/2 stories in height. These heights are suitable for their intended use as Education, Healthcare and Student Residential and will, in conjunction with the proposed urban form, create an Urban Quarter with distinct character. Figure 4.6 does not indicate land uses.

In line with the provisions of the Dublin City Development Plan 2011-2017, a number of taller ('mid-rise') buildings are included. One (the Campanile) will be close to and overlooking the Fields and two others (both mixed use) close to Broadstone. All buildings, including the three mid-rise structures, will be lower than 50 metres[10]. The mid-rise structures will comply will all relevant provisions of the *Dublin City Development Plan 2011-2017.*

The three proposed mid-rise buildings at Broadstone are considered to be particularly sensitive, having regard to their potential height, visibility across a wide area and proximity to protected structures at Broadstone and the Kings Inns at Constitution Hill. Therefore, although located on SDZ lands, these buildings shall be subject to the normal planning procedures, under section 34 of the Planning and Development Act, 2000, as amended.

Special objectives or conditions

Figure 4.6 indicates a number of special objectives or conditions in relation to height that have been established as a response to their specific context. These include:

- Edge conditions (near parts of the site boundary for example) adjacent to existing residential area
- At sensitive locations such as adjacent to Protected Structures.
- The figure also shows where taller buildings are considered appropriate, accommodating residential and mixed uses.

The residential buildings located along the Serpentine Walk, overlooking the Fields, are proposed at 6-8 storeys in height with the "Campanile" of 10-15 storeys, which is intended to serve as a local landmark, being visible from a number of locations around Dublin.

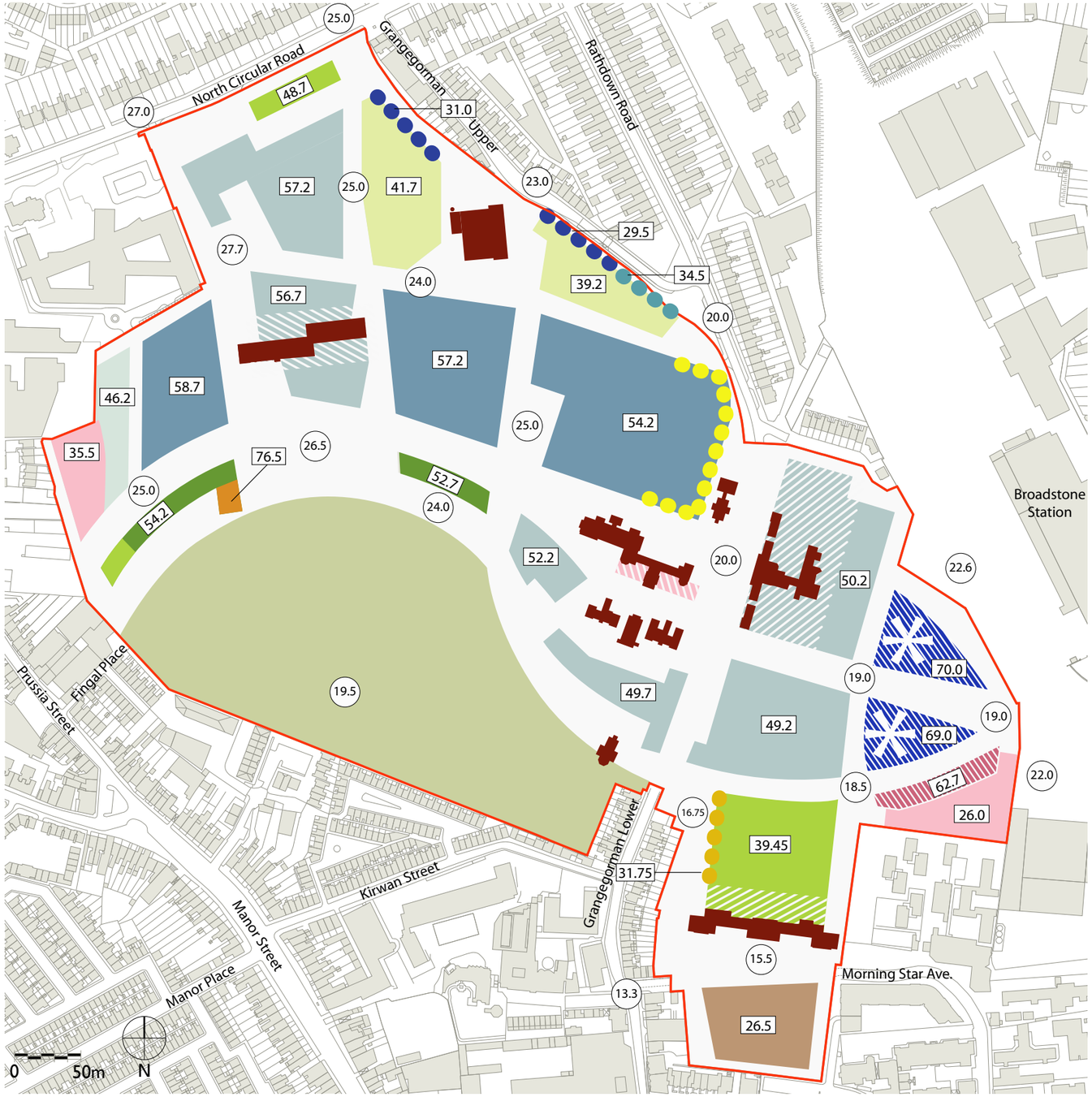
There is also a concentration of higher elements at the Broadstone end of the Campus which eventually would be the focus of the proposed public transport hub. An appropriately high standard of design and finish will be required for these structures.

Building heights beside the Clock Tower, the Lower House and the Top House step down to respect the Protected Structures. A maximum of 3 storeys will be permitted directly adjacent to these Protected Structures to protect the intergrity of their settings. Increased heights will be permitted outside the indicated hatched areas on Figure 4.6

Only limited works will be permissible to other Protected Structures, subject to the building specific guidelines in Appendix 2b with the exception of locations indicated in Fig 4.6

Development adjacent to the Protected Structures will be subject to detailed design, which will be guided by the relevant sections of the Planning Scheme.

10. For the avoidance of doubt, building heights will be construed as inclusive of any rooftop plant or equipment, in accordance with the provisions of the Dublin City Development Plan 2011-2017, but this will not include projections such as vent flues or antennae.



LOWER FLOOR TO FLOOR HEIGHTS

- Campanile 10-15 Storey Residential (Max. 11 Storey - other floor to floor heights)
- 6 - 8 Storey Residential (Max. 6 Storey - other floor to floor heights)
- 4 - 6 Storey Residential (Max. 4 Storey - other floor to floor heights)
- 2-4 Residential (Healthcare / Primary School)
- 3 Storey / Max. adjacent Protected Structure
- 3-5 Residential Max.
- 4 Storey Residential Max.
- 3 Storey Residential Max. (Healthcare / Primary School)
- 2 Storey Residential Max.

OTHER FLOOR TO FLOOR HEIGHTS

- 5 - 8 Storey with 10 -12 Storey Tower Element (subject to normal planning procedure)
- 7 - 9 Storey (subject to normal planning procedure)
- 4 1/2 - 6 1/2 Storey
- 4 - 6 Storey
- 2 - 4 Storey
- 3 Storey / Max. adjacent Protected Structure
- Up to 2 storey / Max. adjacent Protected Structure
- Up to 2 Storey
- The Fields
- 3 1/2 Storey / Max.
- Protected Structures - adjacent structures to respect guidance at Ch.6 Appendix
- + 35.5 Maximum building height (A.O.D.) m (Above Ordnance Datum) *1
- + 26.5 Ground level height (A.O.D.) m (Above Ordnance Datum) *2

1. Maximum building height shown as meters above ordinance datum.
2. Indicative ground level shown as meters above ordinance datum. Maximum building heights in meters can be determined by subtracting [2] from [1].
3. Where edge height restrictions are shown with coloured circles as above, the restriction shall apply to at least that portion of the building which extends seven metres back from the relevant building line.
4. The three buildings at Broadstone, as outlined on the attached diagram with this order, shall be subject to the normal planning application procedures.

Figure 4.6 Minimum and Maximum permissible building heights

Street Sections and Floor to Floor Heights

A number of indicative street sections are included to indicate the general height of buildings in relation to each other and their context. It is important to note that the indicative site sections which follow are not final building designs - they are intended to reflect the vision of the Planning Scheme and will guide the future design of the site. These sections illustrate indicative building heights that comply with the minimum and maximum heights outlined in Fig 4.6 and use typical floor to floor heights for individual building types that would be consistent with the Planning Scheme. The sections are illustrated in Figures 4.8-4.11 and their location is indicated on the key plan Figure 4.7.

The indicative floor to floor heights proposed to be used thoughout the urban quarter are as follows:-

Ground floors of buildings addressing the public realm or main arteries will allow for a floor-to-floor height of 5 metres. Above the ground floor, the floor-to-floor heights will typically be 3 metres for residential use and typically 4 to 4.5 metres for other uses. For example, above ground floor academic and general healthcare buildings and mixed-use would typically be in the order of 4.0 metres floor to floor, while laboratories and research buildings will generally have a maximum floor to floor height of 4.5 metres. The residential healthcare and school building would comprise of lower floor to floor heights, similar to the residential floor to floor heights.

There will be a limited number of exceptions to the ground to floor to floor heights. For example, the podiums, Ha-Ha structure, the energy centre and ancillary maintenance structures may have higher internal heights if required by their function, although they are not permitted to exceed the overall height limits stated in Fig. 4.6 .

Figure 4.7 Key Plan indicating location of street sections

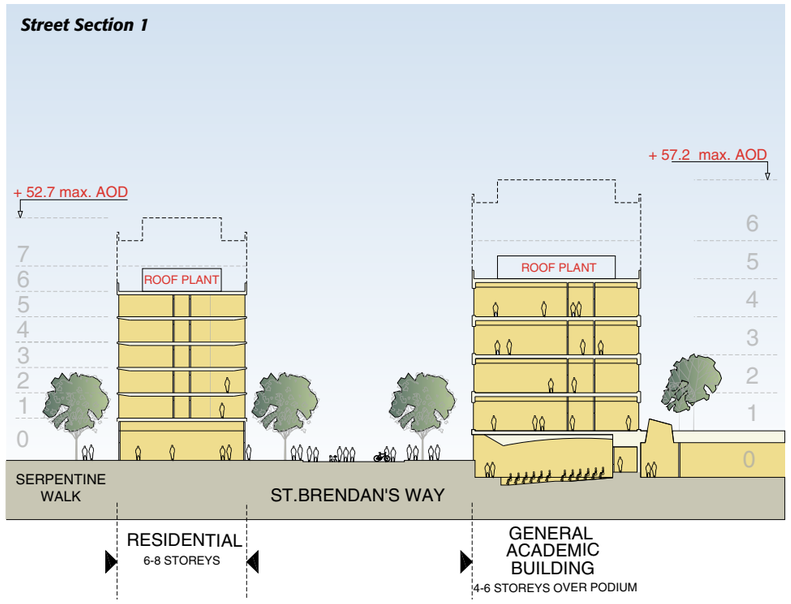


Figure 4.8 Section 1 illustrates a section along St Brendan's Way, through a 6-8 storey building, (if in residential use), or a 6 storey building maximum (if non-residential use), and a general academic building of 4-6 storeys over podium. The buildings will be a maximum of 52.7 and 57.2 metres above ordnance datum (A.O.D), including any rooftop plant.

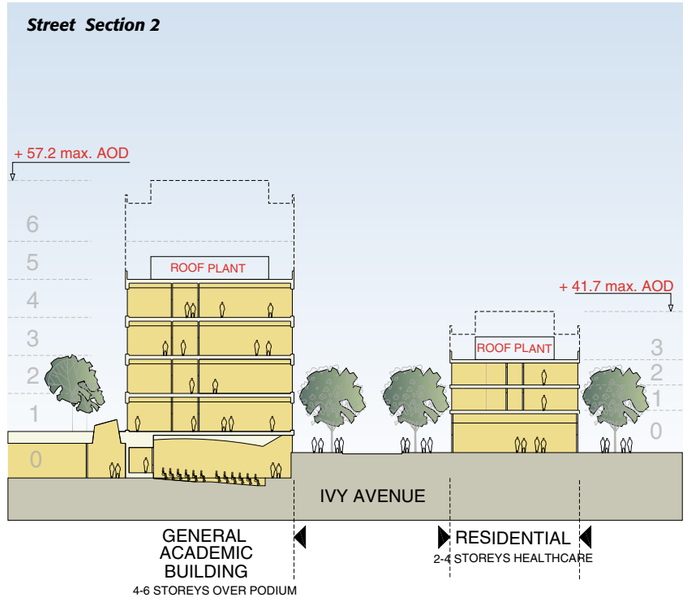


Figure 4.9 Section 2 illustrates a section along Ivy Avenue, again through the general academic building shown in Figure 4.8 and a 2-4 storey healthcare building on the north side of the Avenue. Figure 4.6 establishes that the buildings will be a maximum of 57.2 and 41.7 metres above ordnance datum respectively, including any rooftop plant.

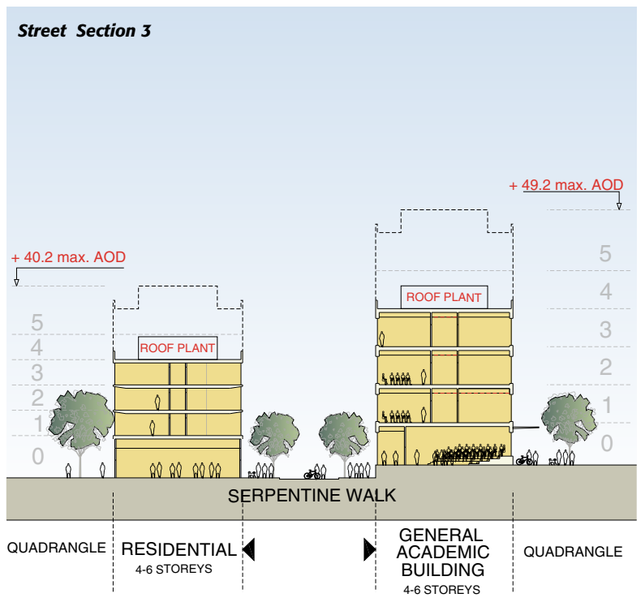


Figure 4.10 Section 3 illustrates a section along Serpentine Way through a 4-6 storey building (if in residential use) or a 4 storeys maximum building (if in non-residential use) and a general academic building of 4-6 storeys. Figure 4.10 establishes that the buildings will be a maximum of 39.5 and 49.2 metres above ordnance datum

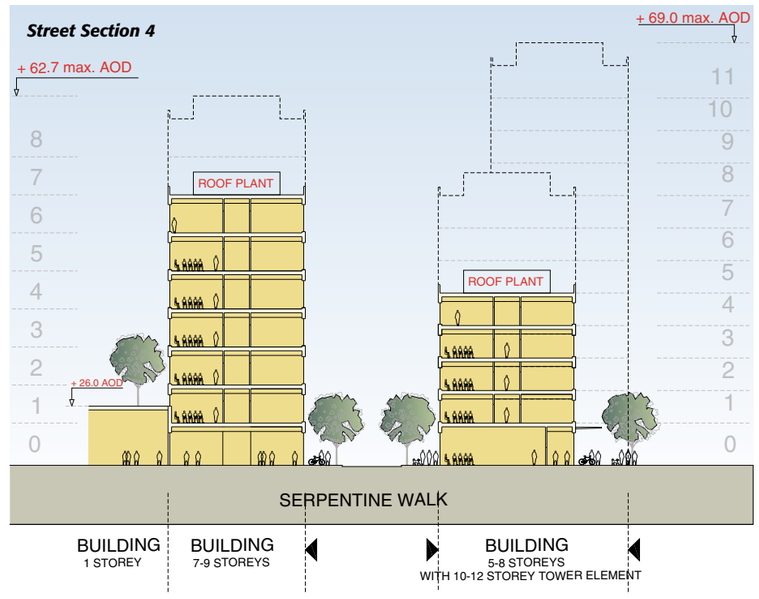


Figure 4.11 Section 4 illustrates a section along Serpentine Way at Broadstone Gate. The buildings are 7-9 storey on the south side of the route and 5-8 storey in height with 10-12 storey tower element on the north side. Figure 4.6 establishes that the buildings will be a maximum of 62.7 and 69.0 metres above ordnance datum respectively, including any rooftop plant.

Site Sections

The following pages of the scheme illustrate indicative scenarios in line with the controls which are in place.

Figure 4.12 shows the locations for the site sections illustrated. Figures 4.13 to 4.19 indicate the typical building types proposed under the Planning Scheme. The site sections demonstrate typical relationships between buildings both within and external to the site, consistent with the urban form diagram (Figure. 4.2) and minimum and maximum height diagram (Figure. 4.6)

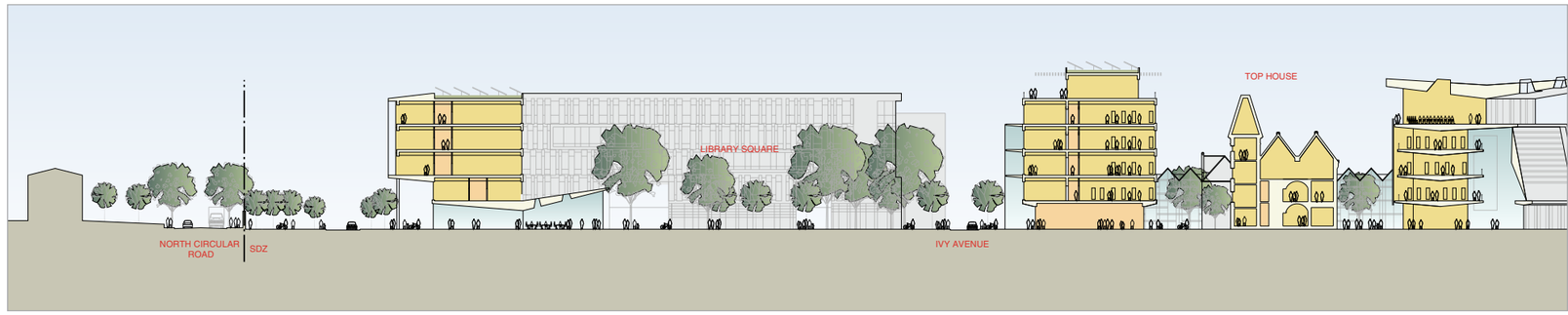


Figure 4.13 site section A

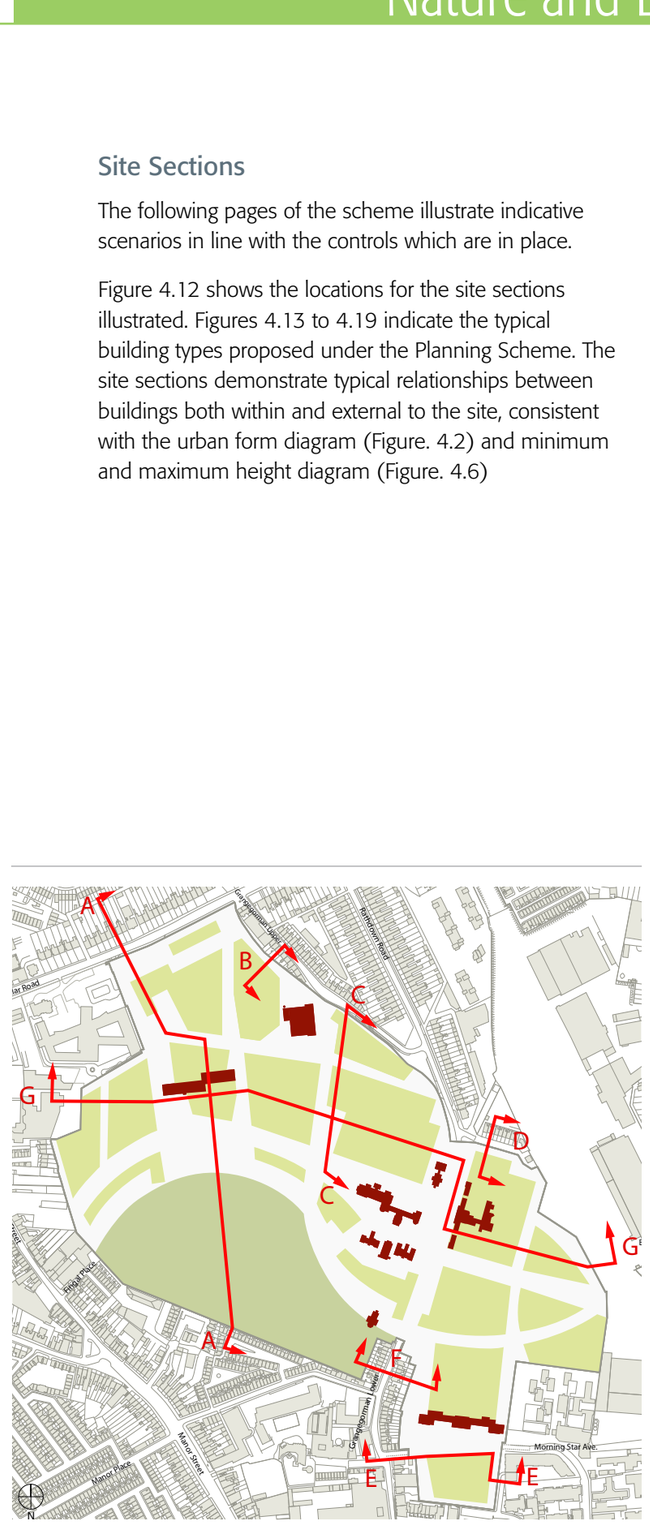


Figure 4.12 Location of site sections

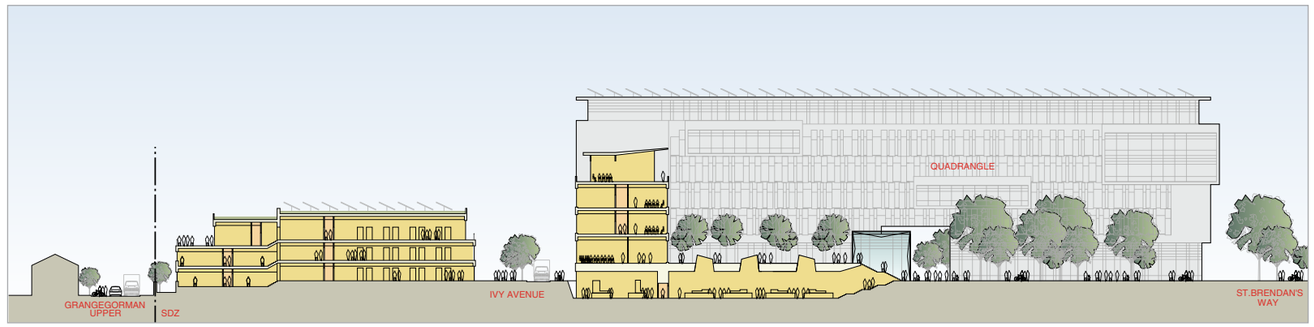


Figure 4.15 site section C

Figure 4.19 site section G

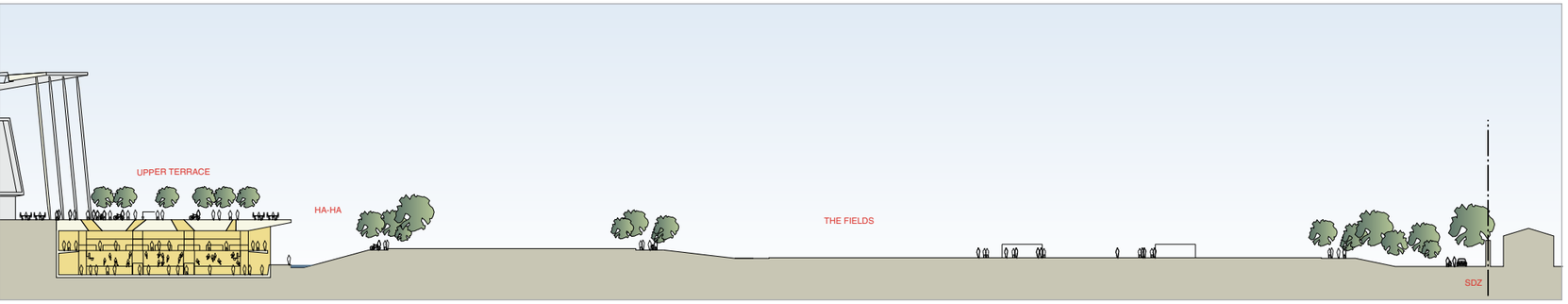


Figure 4.13 site section A (continued)

Figure 4.14 site section B

Figure 4.16 site section D

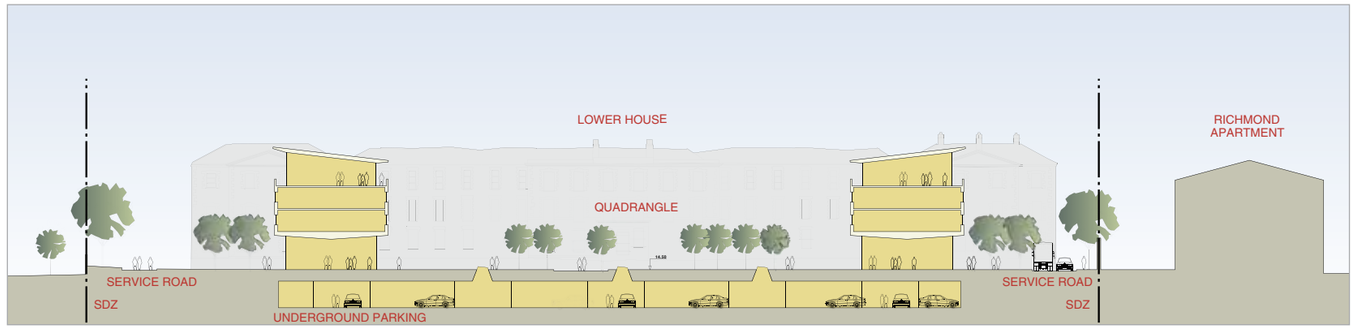


Figure 4.17 site section E

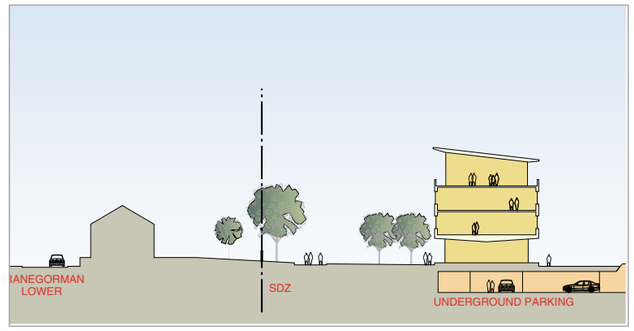


Figure 4.18 site section F

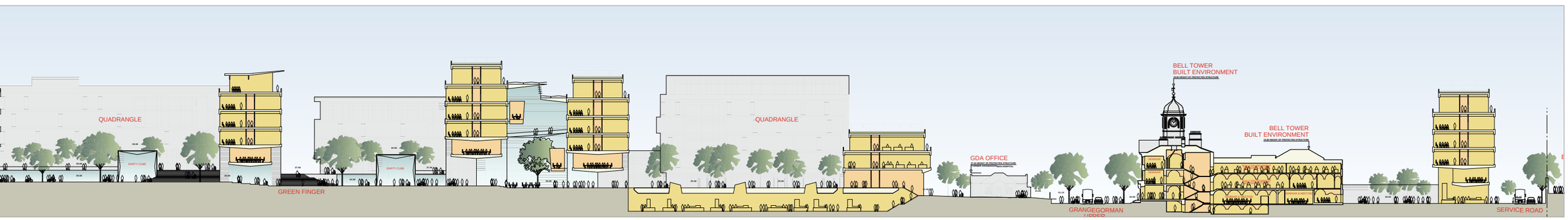


Figure 4.19 site section G (continued)

4.4.4 Environment, Energy and Sustainability

4.4.4.1 Environmental Design Principles

The Planning Scheme incorporates best practice Environmental Design Principles for Daylighting and Natural Ventilation.

Daylighting

Building design will give building users sufficient access to daylight in order to enhance their experience within the buildings and minimise electrical energy associated with lighting. The building design should aim to enable good quality daylight through ensuring adequate sky view for elevations and appropriate positioning of glazing.

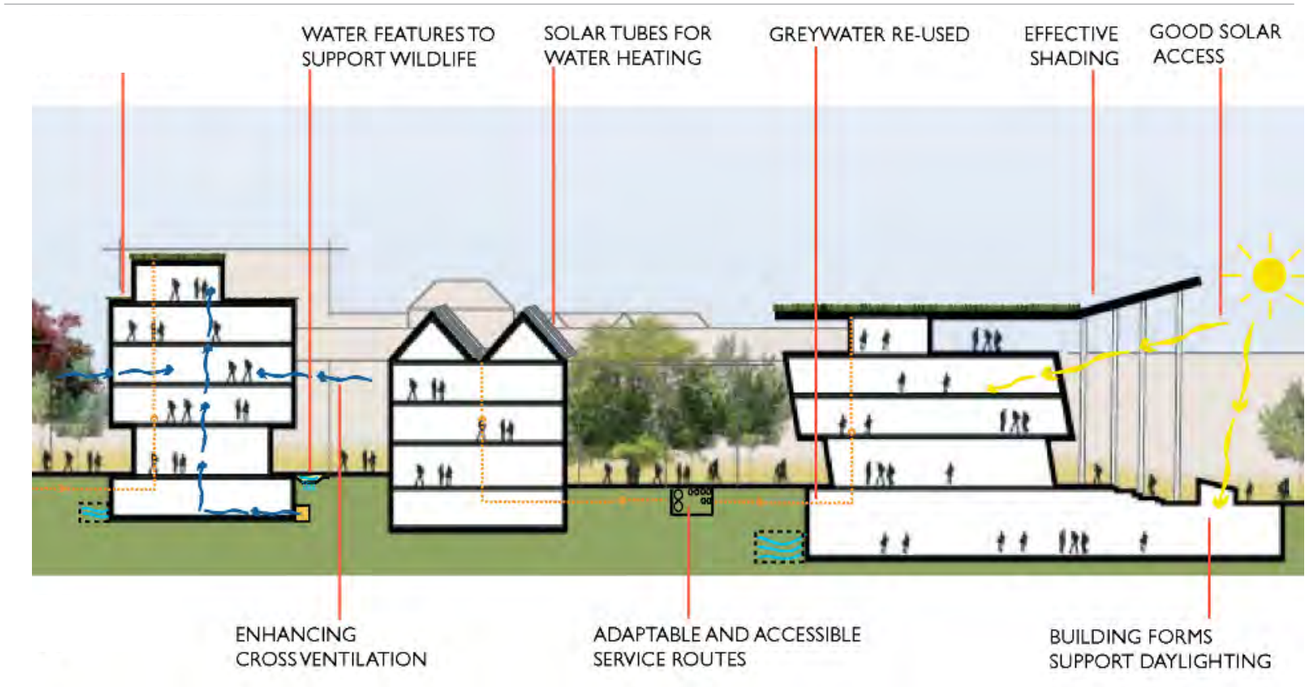
Individual building design will have regard to the provisions of the Dublin City Development Plan 2011-2017 regarding guidelines for appropriate daylighting.

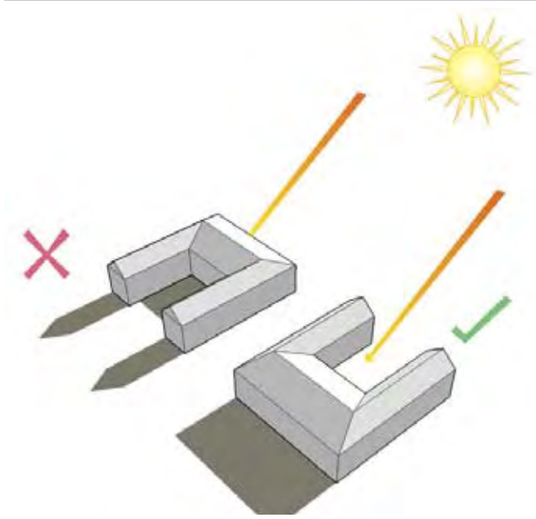
The effectiveness of utilising daylighting in order to reduce artificial lighting usage will be complemented by the use of active lighting controls. Areas of focus for daylighting will be appropriately assessed with referencing relevant best practice guidance documents.

Natural Ventilation Potential

Buildings will be predominately naturally ventilated (unless activity requirements of the building dictate otherwise) and will incorporate the flexibility for future conversion of air-conditioned/ mechanically ventilated buildings to a natural ventilation strategy.

The natural ventilation strategy for buildings will be verified through the use of Dynamic Simulation Modelling (DSM) and Computational Fluid Dynamics (CFD) software, to ensure adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates. Natural ventilation design will be assessed in accordance with relevant best practice guidance.





Materials (Embodied Carbon)

Where possible, materials associated with the construction process will have a low embodied carbon content and will be obtained from sustainable sources, with efforts to secure locally to minimise transportation impacts.

The individual buildings will be designed with reference to Best Practice carbon and energy guidelines.

Energy Use of Buildings

Buildings will be designed to minimise the CO2 emissions associated with their operational energy consumption over their lifetime, with a view to moving towards carbon neutral status.

New buildings within the proposed development will aim to achieve a Building Energy Rating (BER) of A3 or better. In the case of Protected Structures within the development being upgraded and refurbished, this rating will also be targeted. Where the Protected Structure nature of an individual building, or other particular circumstances, dictate the A3 rating to be unviable, improvements in energy performance and associated carbon emissions will still be attained.

An A3 energy rating for buildings, in conjunction with utilising an energy centre to enable best practice efficiency, with the flexibility to introduce future technologies, will result in achieving annual energy saving over current standards of 40%; in conformance with Dublin City Council's Action Plan on Energy for Dublin by 2020.

It is envisaged that a District Heating System, designed as part of the initial infrastructure package, will ultimately provide the heating and hot water requirements of the Grangegorman Urban Quarter.

The centralised nature of the energy systems enables the use of sub-metering. Monitoring of energy use can be displayed in a manner to enable public interaction with energy systems and improve knowledge regarding associated savings due to renewable technologies.

Opportunities for local micro energy generation will be taken where appropriate to further minimise the carbon footprint of the project.

Telecommunications Strategy

The telecommunications needs of the campus including ducting, cabling, antennae, dishes, etc. shall be incorporated into the design of the campus from the outset. A design-led approach will ensure the adequacy of the telecommunications infrastructure, without compromising the quality of the built environment, to minimise the visual impact of attachments to buildings.

4.4.4.2 Minimise Impact on Existing Environment

The proposed development will be designed to ensure that the impact on the existing environment is minimised, in all respects including impact on air, water, soil, human beings, biodiversity, flora and fauna, material assets, cultural heritage and also in terms of terms of overshadowing, overlooking, external lighting and noise. The accompanying Environmental Report describes the strategic environmental assessment process undertaken as an integral part of the preparation of the Planning Scheme.

Many of the buildings surrounding the Planning Scheme area are low-rise and residential in nature, so the provision of necessarily more intensive development on the site must have regard to this. Particular sensitivity is required where development is proposed close to existing residential development (at certain edges of the site) or in close proximity to the Protected Structures within the site.

Although individual buildings have not yet been designed, their external building lines and maximum and minimum heights have been determined in this Planning Scheme. The Landscape and Visual appraisal and sunlight and daylight review have confirmed that buildings which comply with these fixed parameters are appropriately scaled, in terms of environmental impacts, such as visual impact and overshadowing (refer to Planning Scheme Reference Documents).

Daylight/sunlight/overlooking and or visual impacts

Layout and design will seek to minimise overshadowing or loss of sunlight and daylight both to existing and proposed new buildings as well as public spaces, whilst taking care not to unduly weaken any sense of enclosure natural to an urban environment.

While the urban block layout defines the maximum extent of each block (in accordance with Figure 4.2) there is design flexibility within the urban form guidelines and the maximum height parameters. This flexibility will be utilised to ensure that individual building form has regard to the provisions of the Dublin City Development Plan 2011-2017 regarding guidelines for daylight/sunlight/and overlooking.

Where proposed buildings are adjacent existing residential building, a sunlight and daylight analysis will be required unless the conditions set out below are satisfied. (a) all of the new development subtends less than 25° to the horizontal in a section through a residential window. (b) the distance of each part of the new development to the residential window is more then three times its height above the window.

Where visual impact sensitivities are identified a full visual impact assement must accompany all relevant planning applications. In addition, all proposed buildings must have particular regard to the following criteria, so as to avoid seriously negative daylight/sunlight/overlooking and or visual impacts:

- Rooftop plant may be inappropriate; especially in the context of view corridors from the site as set out in Section 4.3.2 and where in proximity to historic or protected structures on site.
- Particular attention will be given to building articulation and surface material selection;
- Particular attention will be given to placement and orientation of windows to mitigate against overlooking;
- Particular attention will be given to mitigating landscaping measures.

Applications for development within the SDZ, when located at site boundaries and /or adjacent to existing residential development shall be required to complete a full and rigorous landscape and visual assessment of the designed development proposals. Sensitivities shall be identified utilising the criteria outlined in the Landscape & Visual Assessment, Section 6.2.2.

Noise

The design will seek to minimise potential operational noise impacts on the surrounding neighbourhood.

Transport - the promotion of sustainable modes of transport, such as walking and cycling, and the careful design of vehicular access routes into the site, along with control of deliveries, will minimise transport generated noise.

Building M+E Plant - the appropriate siting and use of building specific mechanical and electrical plant, and the design of any relevant architectural screening will minimise impacts from any such potential noise sources.

It is not anticipated that any unusual or unacceptable noise generation will emanate from the operation of the site facilities.

Air Quality

Buildings will be designed to ensure that both NOx emissions are minimised and flue/ exhausts effectively dissipated as follows:

- The dry NOx emissions from delivered space heating energy will not exceed 40 mg/kWh (at 0% excess O2).
- Position of flues and air exhausts locations will be designed to avoid recirculation of air into windows and louvres.

4.4.5 Colours and Materials

Colours and materials will play a significant role in creating a cohesive image for the Quarter, while lending distinctive identities to its various parts. The overall palette of appropriate colours and materials will respond to the site's setting. Materials are envisioned to be durable and have a good appearance over time and will contribute to the general appearance of the campus. The materials are inspired by precedents of historical buildings in the City. The traditional Georgian brick and stone buildings of Dublin have retained their engaging appearance despite their age. Materials for the proposed buildings within the Quarter will have similar qualities, to link the new urban quarter into the urban fabric of the City.

In determining appropriate colours and materials a balance is sought between individuality and harmony. The Planning Scheme recognises the importance of achieving harmony and integrity for the entire Grangegorman area. It will be important that the selection and application of colours and materials on buildings follow a harmonious and integrated sense of proportion and scale, utilising rectangular unit modules and horizontal grids that complement each other. The selection and application of all colours and materials must have regard to individual building heights.

All colours and materials will be reviewed and selected, in consultation with the GDA, according to the highest possible standards regarding overall quality for texture, colour, consistency, durability and performance.

Along the major urban path of St. Brendan's Way, a strong sense of urban connection, vitality and lifestyle will be promoted, with prominent areas of ground-level glazing, arcades and canopies to activate the street edges for pedestrians. The exterior material for buildings along St. Brendan's Way will have an overall lighter colour to maximise exposure to daylight.

Brick, Stone and other Materials

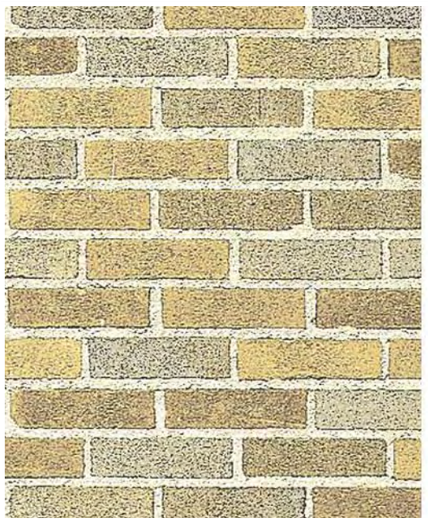
Where brick is proposed for external walls, rich, ochre-like colours that best reflect the light will be promoted. The selection and application of larger brick or stone panels may be considered. The use of intense red, grey and dark brick colours will be discouraged.

The major public, iconic buildings, including those located in the two 'hearts' (reference section 5.4.2) and at the gateways may contain stone and metal elements as well as large expanses of glass to provide a more substantial character.

Visible Systems - Sustainable Energy Generation in the Built Environment

It is a key part of the project to promote sustainable energy generation and use wherever possible (see Section 4.4.4). It is also a key objective of DIT to utilise the built environment as a key learning tool for its staff and students, and as an opportunity to promote its sustainable objectives.

The installation of such energy generating systems (and any ancillary communications equipment) whether on building façades, rooftops, or located at ground level must be integrated into the overall building or landscape composition, and be appropriately accessible for maintenance and/or study purposes.



Windows and Glazing

Windows are essential in defining the desired vertical and horizontal expression, and distinguish the solid and transparent elements of each building. They assist in defining the proportions of a building and will stand out as visible and prominent features at night.

In providing windows the following should be noted:

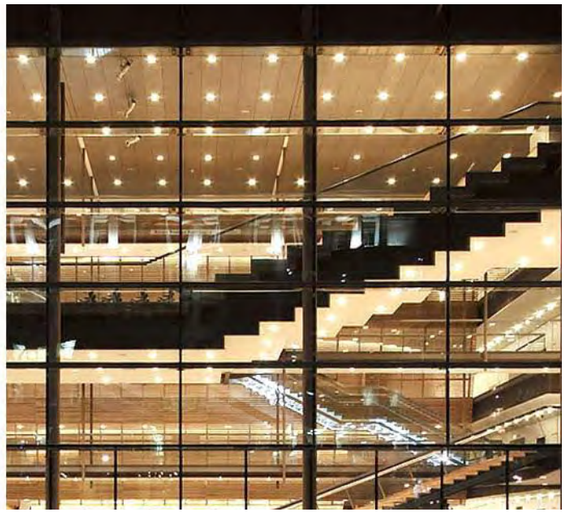
- Care should be taken in the sizing and composition of the frames, mullions and transoms of the windows in order to provide a varied but harmonious effect.
- Windows are important for the internal workings of buildings and bringing light into interior spaces and should therefore be generously dimensioned.
- High performance, low-emissivity glass should be used, with high light transmittance.
- Sufficient depth must be provided between the windows and the exterior wall surfaces by incorporating recesses or projections, in order to avoid a superficial, flat-look in the elevations.
- The use of dark tinted glass, mirrored glass, dark mullions or large/oversized panes of glass will be discouraged other than in exceptional circumstances.

Secondary Materials

In addition to the overall palette of brick and stone, a selection of secondary materials including metal and concrete panels may be considered for the building envelope, on a case-by-case basis.

Other secondary material may be considered for selected buildings. These will be considered on a case- by-case basis and may include the following:

- Glazed wall.
- Point-fixed glazing.
- Framed panel system.
- Stone cladding.
- Combination of brick and concrete.
- Architectural terra-cotta.
- Metal cladding.
- Pre-cast concrete panels.
- Integrated solar panels.



4.4.6 Wayfinding, Street Furniture and Public Art

The new Grangegorman Urban Quarter provides an opportunity to plan and design for the multitude of streetscape elements, including signage, public art, furniture, receptacles and other such devices used by people in their everyday lives, and to organise and locate these items in a clear, coherent and rational way that will facilitate an appropriate level of public access throughout the site.

Signage, street furniture and public art will be designed with reference to the city council's pedestrian wayfinding system and as well as to current Development Plan policies on culture in the public domain[11]. Dublin City Council's Arts Office will be consulted by the GDA prior to commissioning public art.

Signage elements will have the appropriate scale and character to distinguish and provide identity to the Grangegorman Urban Quarter. The design should optimise rapid orientation for all users, add interest to the ground level environment, unify the district as a whole and enhance the overall quality and appearance. Building signage will be integrated into architectural elements as much as possible. All signage will be in Irish and English.

Clusters of external seating, rain and wind sheltering, information kiosks, bicycle parking, play equipment, pavilions, public art including sculpture and water features, will all be provided for in an integral manner with many elements possibly serving more than one function, for example artwork serving as a wayfinding element.

The main pedestrian paths may be enhanced by a variety of climate-protection elements. These elements will be closely integrated into either the fabric/design of the buildings themselves, or the proposed landscape spaces, as follows;

- The sheltering elements can be placed at strategic locations to provide climate protection as arcades or covered passageways.

- At certain key locations, including the Academic Heart, and the Social and Cultural Heart, these elements can create semi-climatised outdoor spaces attached to buildings. These 'outdoor rooms' will serve as active, animated social spaces that encourage and invite interaction by pedestrians.
- At other locations, climate-protection elements can form arcades and canopies in a contemporary interpretation.
- Glazed canopies and light structures and proposed to achieve a cohesive architectural language and to allow sunlight to filter through the pedestrian spaces below.

High quality public art elements, such as individual sculpture pieces, art walks, temporary installations, lighting pieces, digital and live performance art, will help reinforce a connection with the soul, spirit and culture of Grangegorman. The overall Grangegorman project will promote contemporary and experimental art; be local as well as international; culturally diverse, reflect the history of the site, stakeholders and the surrounding community; promote inclusiveness and participation; and reflect a balance of disciplines and art forms.

11: Dublin City Development Plan 2011-2017, Sections 4.4.7 and 7.1.5.5.

4.4.7 Lighting

The quality and intensity of light, as well as the rhythm and pattern created by the placement of fixtures, will contribute to the overall aesthetic character and sense of unity and identity for the Grangegorman Urban Quarter. In daylight, the appearance of the fixtures themselves will have an aesthetic impact as part of the overall public realm. Therefore, lighting levels and fixtures must be carefully designed and selected.

The lighting of the new development will strive to deliver the following key objectives:

- Create a district that is lively and well used both day and night.
- Provide a safe, secure and accessible environment for pedestrians and other users.
- Avoid disruptive glare, sky glow and lighting overspill.
- The lighting design will be closely integrated with the design of the landscape and urban spaces to create a clear and legible hierarchy of light levels and effects.
- Energy efficient fittings will be utilised.

The overall lighting strategy will be defined by the following hierarchy of five lighting zones:

Major Pedestrian Path

As the major pedestrian route, St. Brendan's Way will have strong, glowing lighting as a continuous feature. Elements of featured lighting can be used along its entire length.

Two Hearts

They will be distinguished by the brightest and most intense lighting, as appropriate for these large open public places. These major spaces can also be enhanced by specific appropriate feature lighting.

Quads

Quads and other open spaces will require focused lighting. This can be achieved in a more flexible, specific and articulated manner, in order to create a special ambience for each space.

Secondary Pedestrian Paths

Secondary pedestrian routes such as the "Green Fingers" and other connecting paths will require adequate lighting for safety, but no strong pattern of lights is desired.

Outdoor Sports Facilities

Carefully designed focused lighting, including flood lighting, will be required to support outdoor sports activities. Due consideration of adjacent residential amenities must be given to such lighting, in terms of design and operation.

4.5 Landscaping and Public Realm

The principle landscape elements of the site include; the Fields, the Cultural Garden, the Green Fingers, the Playspaces, the Quadrangles, the Two Hearts (public Plazas) together with the main pedestrian circulation routes of St. Brendan's Way, The Serpentine Walk and Ivy Avenue. This will provide a diverse range of different landscape character areas ranging from more urban hard landscaped spaces enclosed by buildings to the natural softer spaces like the grassed woodlands adjacent to the Fields. The collection of these spaces is referred to as Public Realm and these are defined by the urban form diagram (Fig 4.2).

The landscape concept for the site has been based on the key structuring principles (Fig. 4.1) which respects the existing topography of the site and allows for the retention of significant number of mature trees. These will be augmented by an extensive planting plan to be prepared for the public realm and include the use of native species. Fig. 4.20 Illustrates the Overall Landscaping Concept for the site.

There are many healthy mature trees on the site. Apart from their intrinsic value, many of these mature trees provide opportunities to complement the redevelopment of the site by providing mature settings for new buildings and spaces or by reinforcing the context of the retained Protected Structures. Figure 4.22 illustrates the proposed trees in good condition with a medium to long life expectancy that are proposed to be retained and the proposed planting structure to complement the existing trees.

Conversely, some are in poor health or may be in unsustainable positions relative to existing structures or are in conflict with key structuring principles and urban form of the Planning Scheme. Therefore this Planning Scheme proposes to retain many of the mature trees on the site, with the exception of those which must be removed to facilitate key structuring principles and urban form or which are physically unsound Fig. 4.21 indicates all the significant trees that are proposed to be retained and the trees to be removed. A tree survey has been carried out of the site (see Planning Scheme Reference Documents) and Chapter 6.0 provides further details on the treatment of trees (6.10).

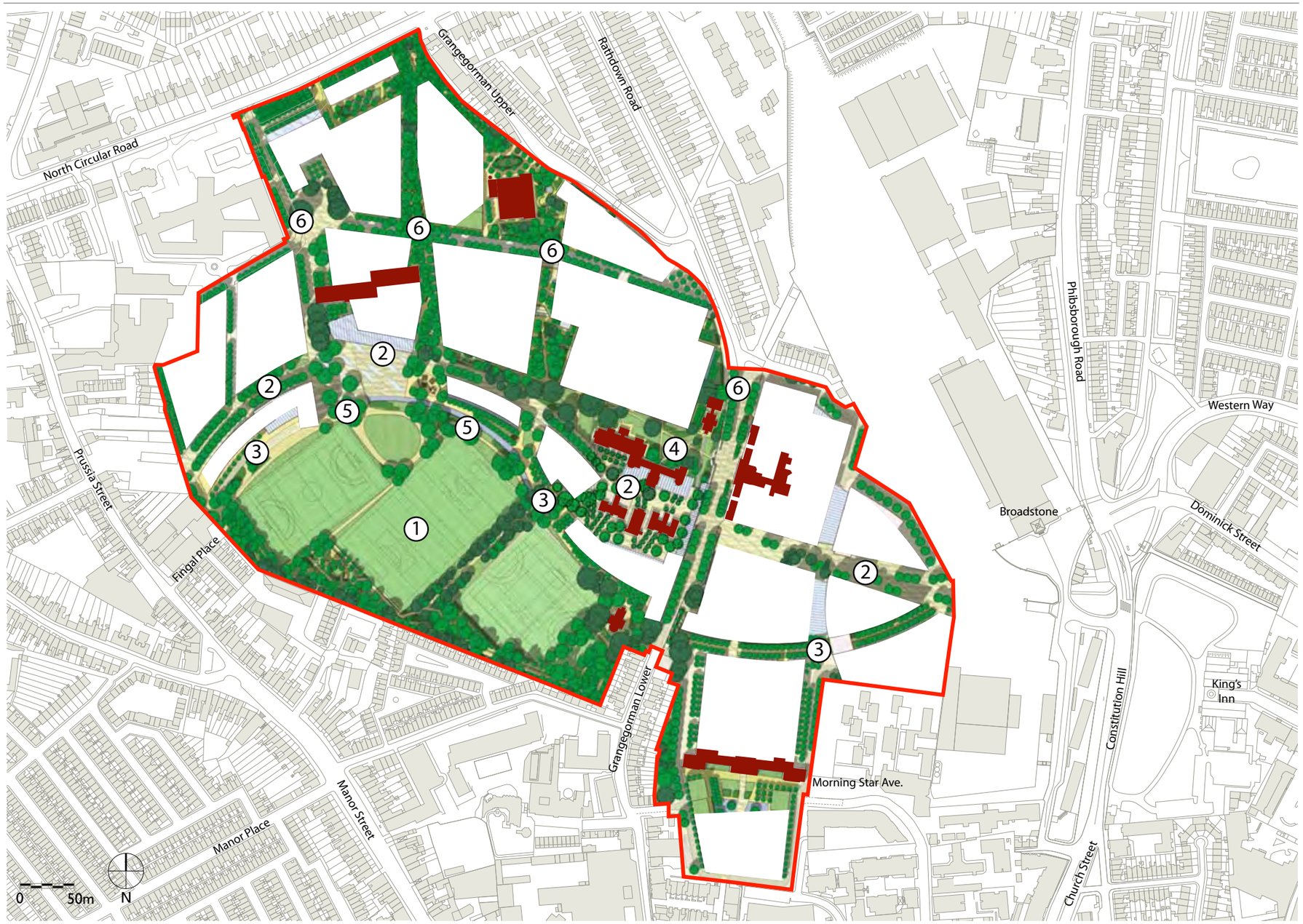


Figure 4.20 Overall Landscape Concept

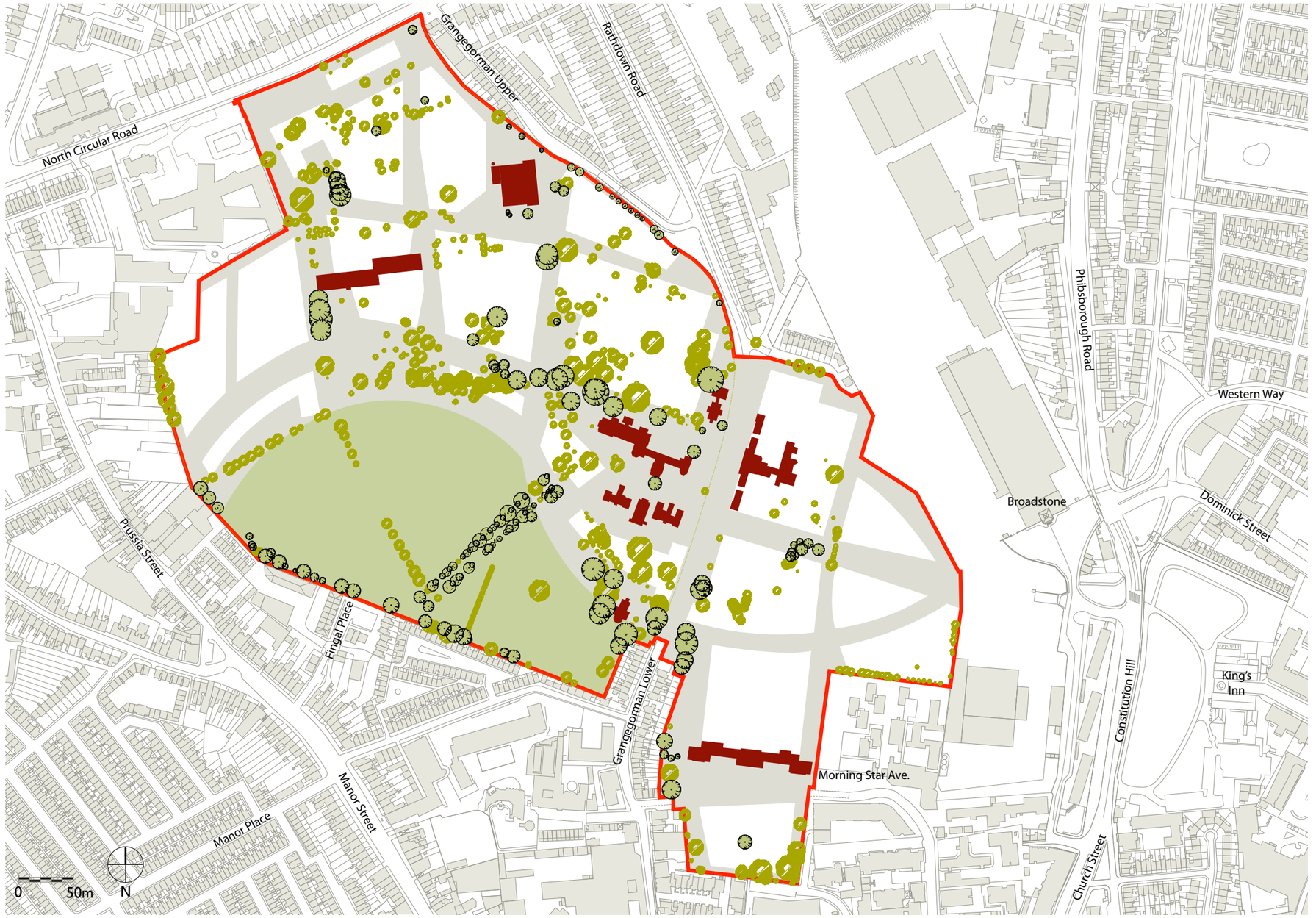


Figure 4.21 Trees to be retained and trees to be removed

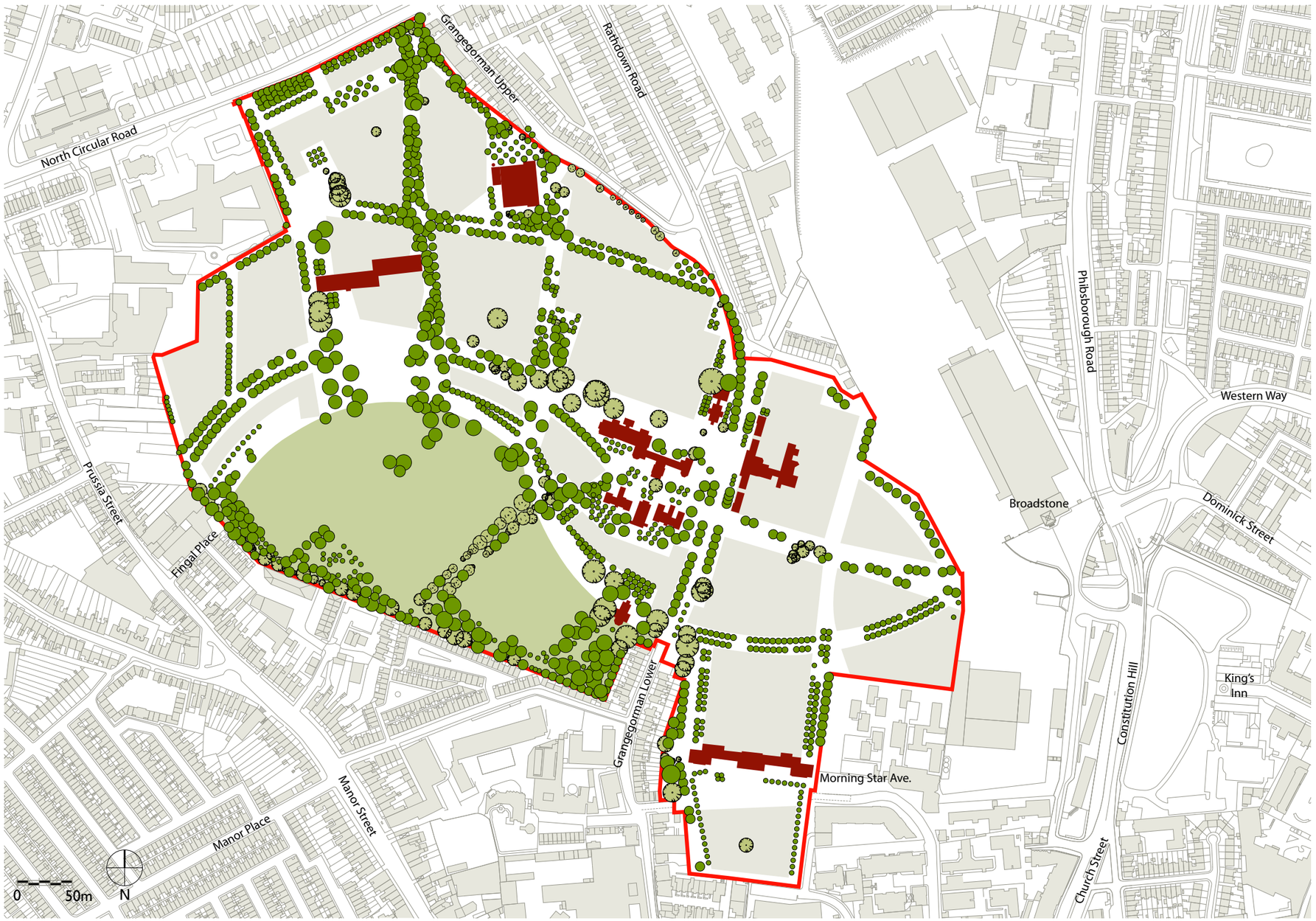


Figure 4.22 Retained and Proposed New Trees

4.5.1 St Brendan's Way, the Serpentine Walk and Ivy Avenue

There are three principal routes through the site; St Brendan's Way, the Serpentine Walk and Ivy Avenue. The first two form part of the key structuring principles of the Planning Scheme (Figure 4.1) and are critically important in terms of connecting the site internally and externally and emphasising the pedestrian priority and open nature of the quarter. The third, Ivy Avenue, is a subordinate link of a slightly different character, more like a street, to be used by service vehicles with footpaths for pedestrians.

Description of St Brendan's Way

St Brendan's Way is a wide, pedestrian-priority boulevard curving through the site from east to west with a link north to the North Circular Road. It is the primary urban route through the Quarter. It gives access to a series of academic and cultural centres, and is continuously activated by a rich sequence of distinct places with day and night uses, including student residence halls; retail and social outlets; amenities and other social spaces. It features paved and landscaped surfaces, plentiful public seating, and a variety of building edges and profiles. The balance will be towards hard rather than soft landscaping.

The site is currently divided by Grangegorman Lower and Upper and it is intended this division will be mediated by carrying the principal pedestrian sequence of St. Brendan's Way across the existing roadway. This broad crossing also serves to closely unite existing Protected Structures into a central village of academic and student life. It also provides for accesses through Broadstone, Constitution Hill and Prussia Street. This route forms the main east-west route, linking the campus to the local community and to the wider city. The early implementation of this route will be crucial for the campus in regard to permeability and integration, both in physical and social terms.

Characteristics of St Brendan's Way

- Shared surface where pedestrian (including mobility impaired) and cyclist movement and access are the priority throughout. Cycle parking to be provided throughout, with larger banks of cycle parking to be provided in locations nearest the largest cycle trip generators.
- High quality surface treatment and street furniture throughout. Possibility to re-use existing site materials, in accordance with conservation and waste strategies, to be considered where appropriate.
- Clusters of high quality seating areas to be provided for along this route.
- Use of existing landscape features, where possible, such as trees to be integral to public realm design, with some new planting to complement and enhance the existing.
  - Some limited vehicular access allowed, as follows:
  - Service vehicles (including maintenance vehicles) allowed on an apropriate managed basis.
  - Emergency vehicle access throughout.
  - Vehicular access for mobility impaired allowed throughout.
  - Limited taxi drop-off in selected locations on a managed basis.
  - Some out-of-hours/night time parking for private vehicles may be provided to allow for animation of the route, to optimise use of social outlets such sports facilities and cafes/ restaurants/bars and to assist in the provision of passive security.
- Signage and road markings will be restricted and integrated into the public realm design. The needs of the visually and mobility impaired will take priority.
- Control points will be located at the various entry points onto St. Brendan's Way. These will take the form of a gate, barrier or retractable bollard either remotely or locally operated as appropriate, and / or signage.
- Underground services will be located under appropriate landscaped surfaces to minimise disruption where possible.

Indicative view of St Brendan's Way Looking towards Clock Tower

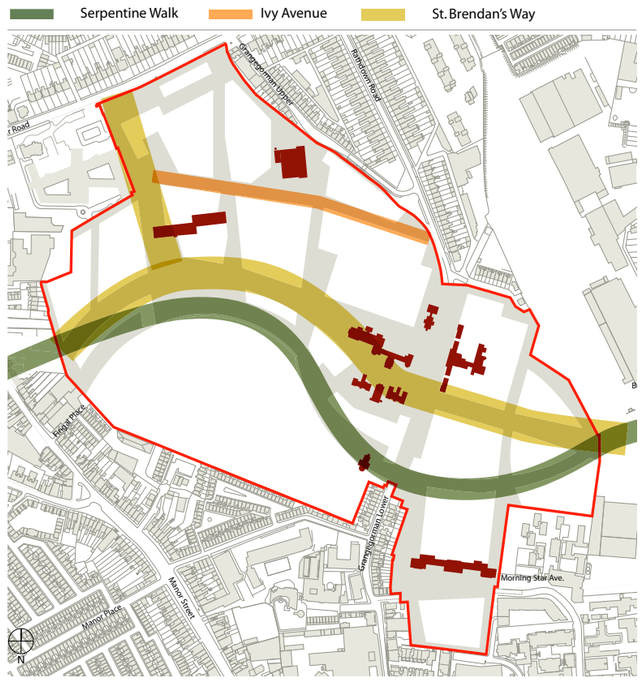


Figure 4.23 St. Brendan's Way the Serpentine Walk and Ivy Avenue

Indicative view of Serpentine Walk, the Fields and the Ha-Ha

Description of the Serpentine Walk

The urban quality of St. Brendan's Way is complemented by a second lateral procession-Serpentine Walk-a meandering walk that traverses the site in two grand arcs which begin at the Broadstone lands to the east and sweep across the Quarter to a potential access to Prussia Street to the west. It is a contrasting secondary route, quieter and softer in nature to St. Brendan's Way.

On the eastern portion, it runs down the centre of what will be a heavily planted, tree-lined route between mixed use and student residential development. This route will be centrally located to allow for privacy of those living and working along this portion of the route. In addition, vertical openings and breaks in the buildings to the south will be encouraged to allow views and direct sunlight to penetrate and animate the route.

On the western portion of the site, it will be characterised by development with active ground floor uses (such as dining, social and study lounges, and related shops fronting onto St Brendan's Way), to create an active street edge to its north, and high quality recreational and sports facilities to the south.

Characteristics of the Serpentine Walk

- Pedestrian (including mobility impaired) movement and access are the priority throughout. Bicycle access will be allowed on the eastern portion of the route (i.e. east of Grangegorman Upper and Lower).
- Surface materials include for high quality paving, such as water bound gravel and the like, to reflect the softer nature of the route. Possibility to re-use existing site materials, in accordance with conservation and waste strategies, to be considered where appropriate.
- High quality street furniture will be used, with occasional seating provided for throughout, especially on the western portion (i.e. west of Grangegorman Upper and Lower) to take advantage of the views across the Fields.
- Use of existing landscape features where possible, such as trees, on the western portion to be integral to public realm design, with extensive new planting (trees and ground cover) to complement and enhance the existing.
- Emergency vehicle access will be required for the Eastern portion, with a minimum clear width of driveable surface of 3.75m.
- Some service vehicle access will be allowed on the eastern portion of the route, with a minimum width of 3.75m with local widening to accommodate opposing traffic to pass, and set-down / loading bay spaces and turning movements.

Description of Ivy Avenue

Ivy Avenue is a further lateral route across the western portion of the site, primarily running parallel with St. Brendan's Way to its south, and intersecting it at the Upper Plaza at the Academic and Health Heart. It also intersects the Green Fingers at roughly their halfway points.

Its function is to complement the more pedestrian and shared nature of St. Brendan's Way with a more traditional street character, with greater vehicular use allowed and greater separation between vehicular traffic and pedestrians. How Dawson Street complements Grafton Street in Dublin's city centre would be analogous.

The urban form of Ivy Avenue on the north and south sides will be created to optimise solar orientation and shape architectural identity. The north (south-facing) side is more open, incorporating generous landscaping and breaks in the building line, in order to maximise sunlight access into the quads and courtyards. The south (north-facing) side is provided with a more solid street edge to strongly define the road and buildings along this edge.

Characteristics of Ivy Avenue

A traditional street make-up of pavements, kerbs and vehicular carriageway will be created on Ivy Avenue. The vehicular carriageway will primarily be 5.5m wide, but the use of traffic calming measures such as horizontal deflections and pinch points will occasionally reduce this width.

- High quality surface treatment and street furniture throughout. Possibility to re-use existing site materials, in accordance with conservation and waste strategies, to be considered where appropriate.
- High quality new planting to be installed along this route, while retaining existing landscape features, such as trees, where possible.
- Signage and road markings will be restricted and integrated into the public realm design. The needs of the visually and mobility impaired will take priority.
- Control points will be located at the key entry points onto Ivy Avenue these will take the form of a gate, barrier or retractable bollard either remotely or locally operated as appropriate, and / or Signage.

Indicative plan of Ivy Avenue

- Underground services will be located under appropriate landscaped surfaces (such as grass and the like) to minimise disruption where possible.
- Managed vehicular access allowed, as follows
  - Service vehicles (including maintenance vehicles) allowed on an appropriate managed basis. On street parking for service, delivery and maintenance vehicles will be allowed for on Ivy Avenue.
  - Emergency vehicle access throughout.
- Vehicular access and parking for mobility impaired allowed throughout as appropriate.
- Limited taxi drop-off in selected locations on a managed basis.
- Some out-of-hours/night time parking for private vehicles may be provided to allow for animation of the route, to optimise use of social outlets such sports facilities and cafes/ restaurants/bars and to assist in the provision of passive security.

4.5.2 The Two Hearts (including Public Plazas)

Description of the Two Hearts and the Plazas

Two 'Hearts' are proposed for the Grangegorman Urban Quarter. These are envisaged as two major activity centres - the 'Academic & Health Heart' to the west, and the 'Social & Cultural Heart' to the east. These 'Hearts' will anchor a broad spectrum of social gathering spaces, and a key component of the Hearts will be significant public spaces (Plazas).

There will be three Plazas, two centred on the Western Heart and one on the Eastern Heart. All Plazas will be designed with active uses at ground floor level and appropriate seating provision to encourage social interaction and relaxation.

Characteristics of the Hearts and Plazas

The Academic & Health (Western) Heart

The Academic & Health Heart is centred on the Top House and will constitute the academic and health core of the Urban Quarter. It will include two linked Plazas (the upper and the central plazas), one at either side of the Top House (a Protected Structure), connected via a section of St Brendan's Way. The central plaza will provide a natural viewing platform across the open spaces to the south with the grand backdrop of the Dublin skyline and mountains and will be laid out and furnished so as to encourage people to linger and enjoy the space. A tiered stairway/ amphitheatre will be provided to the south, overlooking the Fields, offering a venue for a variety of related large-scale events (such as conferring ceremonies) as well as a social meeting place.

The Social & Cultural (Eastern) Heart

A second focal point of activity for the Quarter is the "Social/ Cultural Heart", a space where district and community life come together. This Heart will accommodate new arts and culture/performance spaces for DIT that will be accessible to the city community, creating vibrant day and evening uses as well as enhancing Dublin's inner city cultural resources. Uses such as a Performing Arts Centre, a Concert Hall, Museum and Art Galleries will be encouraged at this location. The student recreational facilities will also be within this heart, centred on the lower range of Victorian buildings to the west of Grangegorman Lower.

The Plazas

These will be significant public spaces at key nodes within the site. They will be defined by their social activity which will generate opportunities for casual meeting. Plazas will not have the sense of enclosure of Quads, but they will be surrounded by active uses and will be clearly defined spatially by adjacent buildings.

In terms of design, the Plazas will be characterised by an expansive paved space with landscaping and street furniture. Plazas will be open to members of the public. The Upper Plaza will provide a key circulation and orientation space adjacent to the health facilities at the main North Circular Road entrance and will provide views of the Top House and adjacent new facilities and beyond to the central Plaza and the Fields.

The Central Plaza will be the key pedestrian node of the campus, intersecting with St Brendan's Way and the Serpentine Walk and overlooking the Fields. The space will be defined by the new library, and by a tiered stairway/ amphitheatre leading from the plaza to the Fields. Important campus buildings and uses are assembled in and around the Central Plaza, including the main library, lecture halls, student centres and administrative offices.

These two Plazas have a strong connection via St Brendan's Way - the two linked Plazas thereby creating the overall "Academic and Health Heart" for the entire Grangegorman Quarter.

The Lower Plaza will be associated with the area around Grangegorman Lower, between St Brendan's Way and the Serpentine Walk. It will be defined by arts and cultural performance spaces, where student and community life will come together. This cultural centre will be energised by the activities associated with the student hub on the other side of Grangegorman Lower, together creating a social and cultural heart that zips the Quarter together across the public road.

Indicative view of the Library Square

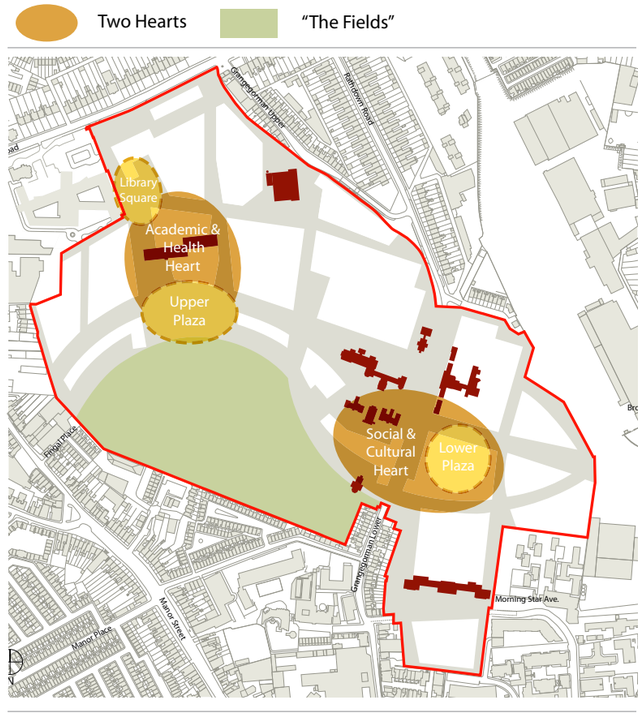


Figure 2.24 Two Hearts including Public Plazas

4.5.3 Fields (and Ha-Ha Concept)

Description of the Fields

A portion of the current Grangegorman site is laid out in parkland with playing pitches. This will be substantially retained and enhanced and will become the main green lung of the new quarter, linked to the remainder of the site by the various routes previously described (such as St Brendan's Way, the Serpentine Walk, and the Green Fingers).

The Fields will be used for formal sporting and recreational events and for informal recreation and strolling.

The Fields will be framed by the Serpentine Walk to the north and the historic Grangegorman boundary wall to the south.

Characteristics of the Fields

The Fields will have a park-like feel, rather than a simple collection of playing pitches (which will include an all-weather pitch). The playing pitches will be visually separated by groves of trees and running and cycling paths will entwine around the edges. Built elements will be confined to a small number (2 or 3 at most) single story structures required for the recreational use of the Fields. When events are held in the Fields temporary structures (marquees/bandstands/catering etc) may be accommodated.

Along the north edge of the Fields, the "Ha-Ha" landscape concept is proposed to take advantage of the natural higher slope of the site and to accommodate the main recreation and sports facilities underneath the plinth for the public promenade above. These indoor sports facilities will relate visually to the adjacent external spaces and include a swimming pool, a running track and sports courts.

Together with social and retail amenities located immediately along Serpentine Walk, this continuous spine of activity will invite daily use by residents, students and the public.

Indicative view of the fields

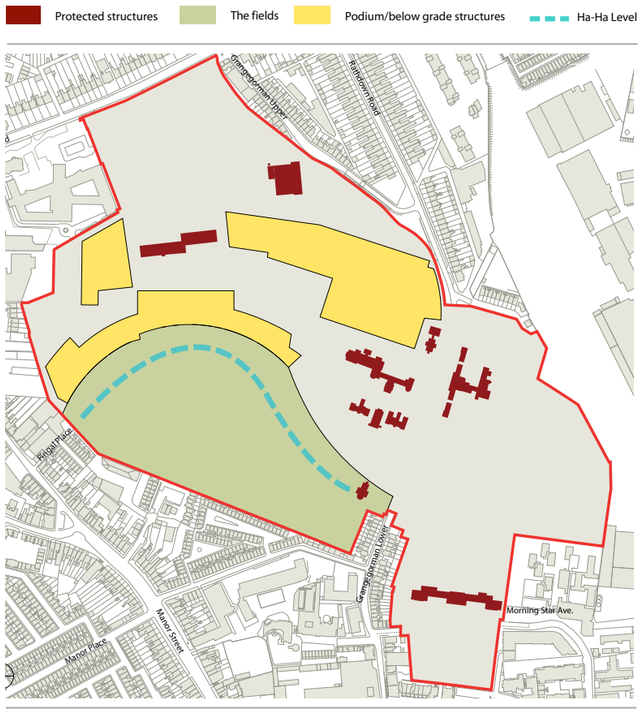


Figure 4.25 Location of the fields and Ha-Ha

4.5.4 The Green Fingers

Description of the Green Fingers

The overall design vision described in Chapter 3 includes linking the site with the immediate community, as well as Dublin's greater urban context.

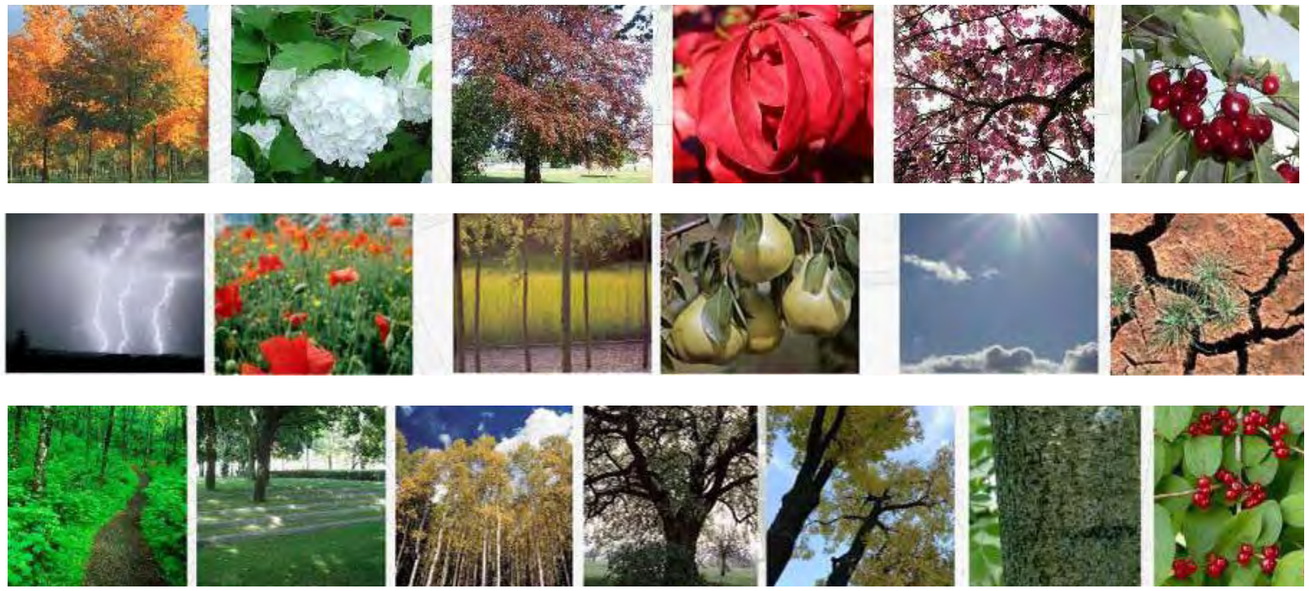
The overall Green Fingers landscape concept represents a series of landscaped public routes which run generally north-south and offer a rich sequence of pedestrian paths for the community to access St. Brendan's Way and the Serpentine Walk and the sports and amenity spaces beyond.

Characteristics of the Green Fingers

Three of the Green Fingers are also View Corridors (see Figure 4.4) and they all share many of the characteristics of View Corridors. They are landscaped routes, framed by building edges and intersected by the main internal circulation routes for the quarter.

In addition to providing orientation, visual amenity and circulation routes through the quarter the Green Fingers have an important ecological role.

Their surfaces will be permeable, contributing to the overall sustainable drainage strategy for the site. They will be planted with native species (especially shrub berries and other feeding plants for songbirds) and existing large trees will be integrated into them, enhancing both biodiversity and carbon absorption. They will improve the microclimatic conditions on the site by creating air-cooling lanes in warmer weather and wind breaking throughout the year.



Indicative planting plan for the green fingers

Figure 4.26 Location of Green Fingers

4.5.5 Indicative Layout of the Cultural Garden

Description of the Cultural Garden

The Cultural Garden is to be a more formal space, offering unrestricted views of the central axis of the Clock Tower building. It will form a green connection between the academic/ health heart and the cultural heart of the Grangegorman site. Parts of the garden will reflect the history of the site and will feature a range of spaces for contemplation, gathering and relaxing.

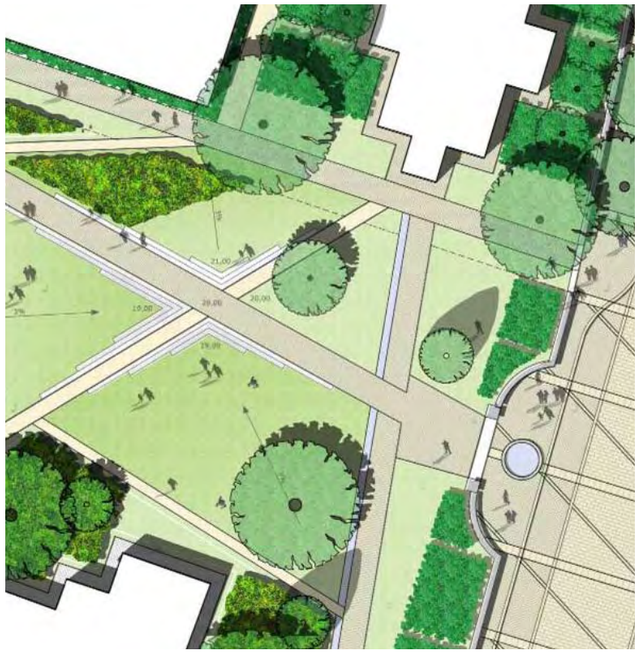
Characteristics of the Cultural Garden

The Cultural Garden will have a more formal planting concept than the other public spaces, with a series of hedges creating 'green chambers' with informal seating and a calming water feature.

The garden will provide a respectful setting for the collection of Protected Structures off Grangegorman Road Lower, and will visually integrate them with the new development in the Quarter.

The Cultural Garden will be home to one or more public art pieces reflective of the particular history of the site. In particular, the garden will include art work commemorative to those who lived out their lives within the grounds of the Grangegorman complex, and those who met untimely death while in institutional care in Grangegorman.

Indicative view of Cutural Garden



Part Plan of Cultural Garden

4.5.6 The Quadrangles

Description of the Quadrangles (Quads)

Most new buildings will be in a block form as indicated in the Urban Form graphic (Figure 4.2) and many blocks will have a particular identity, associated with a DIT College or a particular healthcare or other distinctive use.

Figure 4.27 indicates where individual blocks have associated quadrangle spaces ('Quads'), designed both as a local focus for the particular block and also as a series of landscaped urban spaces to be experienced by all those visiting the perimeter buildings and via the series of linked pathways. The Quads may vary in size and shape in response to their context from traditional rectilinear court layouts, to more organic or dynamic three-dimensional forms.

The various Quads will be physically and conceptually connected to each other by a harmonious design using plants, surface materials, street furniture and lighting to create a cohesive identity. The surface materials will contain permeable features to allow rainwater runoff to percolate back into the aquifer below and not be introduced into the city's drainage system

Characteristics of the Quadrangles

Quadrangles will have a sense of enclosure, created by a configuration of perimeter buildings framing a courtyard. Not all sides of the courtyard need to be enclosed by buildings. Quadrangles may contain appropriate structures such as fountains, podiums, information kiosks, seating, artwork etc.

Quadrangles should have strong and clearly defined perimeter edges but flexible interiors. Internal flexibility will facilitate a variety of particular functional uses. The various courtyards created by the quadrangle form will have an individualised harmonious landscape design using plants, surface materials, street furniture and lighting.

Quadrangles will be organised to ensure that the buildings framing the Quad connect with the open space and environment. Smaller meandering paths through the Quads will trace intimate connections between outdoor rooms and gardens. Quads will present a welcoming entry to their associated buildings.

A number of the quadrangles will incorporate podium floors as described in section 4.4.2. This will involve changes in level between the public realm and the interior courtyard level of the quads. These level changes will need to be integrated into the design and access strategy and address the challenges of Universal Access.

Indicative view of quad space

The western element of the quadrangle located directly behind Grangegorman Villas, if used for student accommodation, shall be designed so that no balconies are provided facing westwards and the area between the western façade of the western element and the rear boundaries of properties at Grangegorman Villas shall be suitably landscaped so as to give enhanced boundary treatment to protect the amenities of existing residential properties.

Opportunities may arise for certain Quads to become semi-climatised using glazed atria or the like in order to enhance the passive sustainable nature of the buildings framing the Quad. Such enclosing features should maintain the intended open landscape nature of the Quad as well as the intended connectivity with the rest of site. For each quadrangle proposed, a minimum of 20% of the space within the external building line shall be allocated as open space and/or winter gardens.

Opportunities will also be considered to design "learning spaces" in each Quadrangle to relate to the academic purpose of the DIT camput. These are spaces that enhance and facilitate learning opportunties for sutdents.

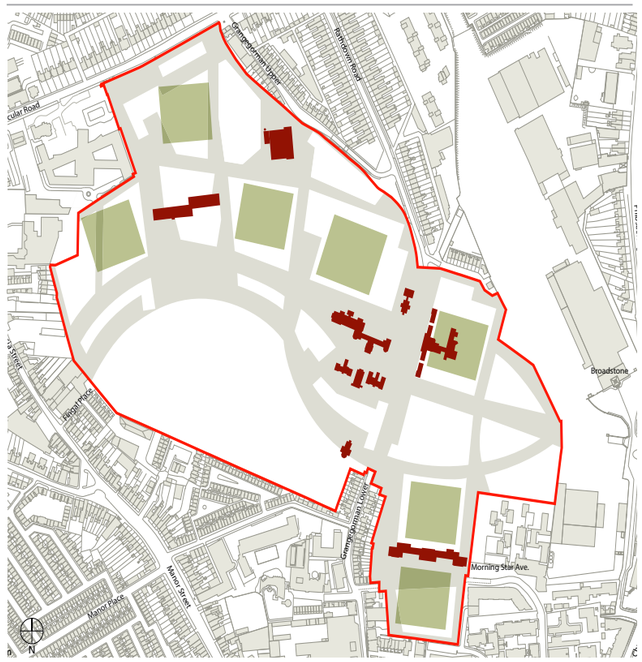


Figure 4.27 Location of the Quadrangles

4.5.7 Playspaces

Several areas will be reserved for development of playspaces.

Playspaces will be easily accessible to users of different age groups, be safe and secure, and be suitable for both able bodied and disabled. They will be accessible to the local community during normal hours.

Certain playspaces within the Fields will be designed to cater for a range of children, including those aged up to 5 and older children.

The playspaces within the urban spaces will be designed for age specific groups and will be sited close to cafes and retail facilities, thereby providing an attractive location for parents and passive surveillance of the playspaces.

All playspaces will have facilities for supervising adults, including adequate seating and litter bins. All playspaces will be accessible by people with disabilities or decreased mobility.

Indicative plan for one of playspace adjacent to the fields

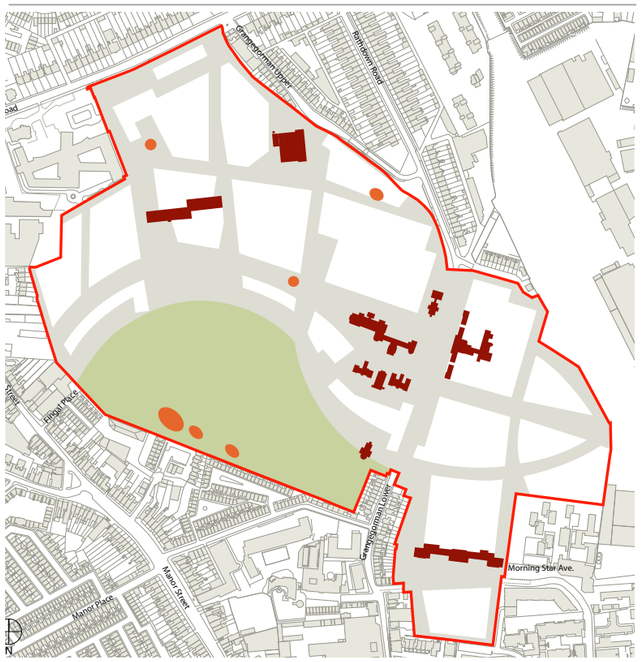


Figure 4.28 Indicative Location of Playspaces

4.6 External Connections and Internal Circulation

It is considered vital, in addition to opening up the site, to reach out from the site to the neighbouring community and the wider city. The earlier Figure 4.1 indicated some key connections, including important links with Smithfield, Broadstone/Constitution Hill and Prussia Street.

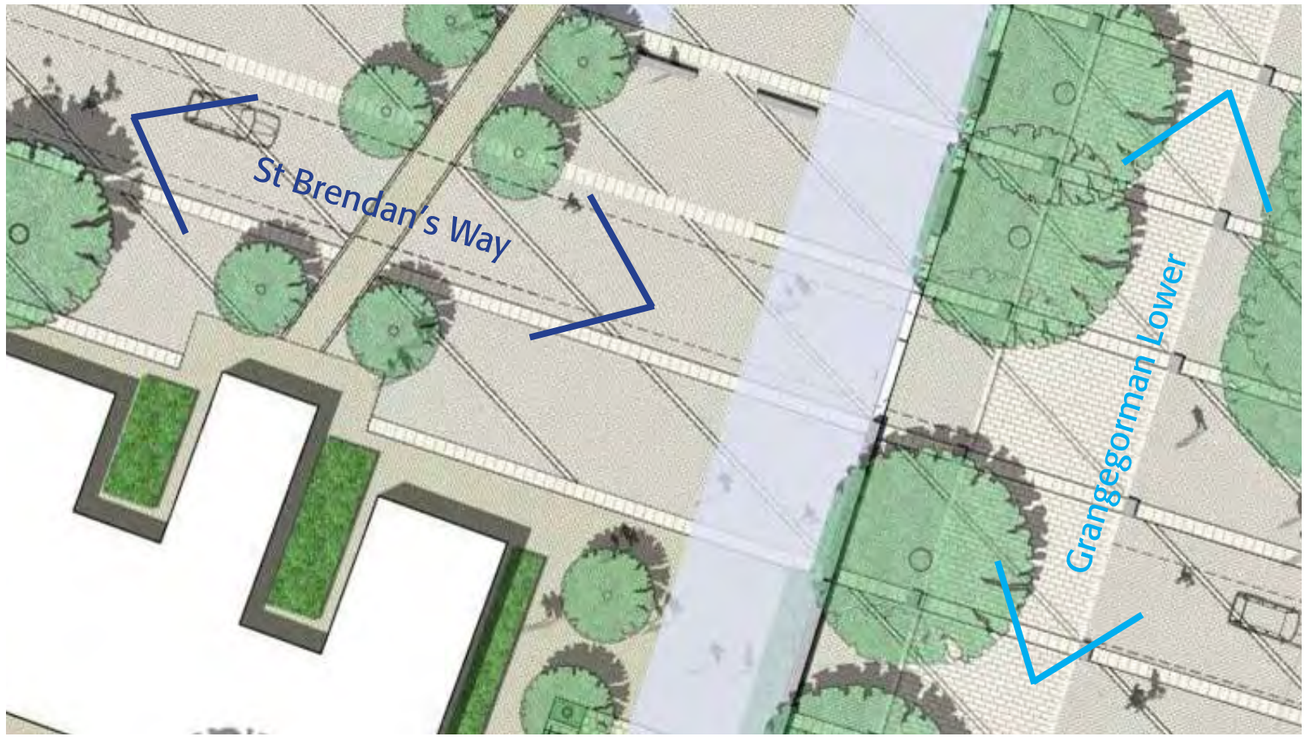
Particular opportunities exist to develop links with the Smithfield cultural quarter identified in the Dublin City Development Plan 2011-2017. In particular, Smithfield could be utilised as a public event space for activities associated with the Grangegorman Quarter, promoting cultural integration with the surrounding community and city. DIT's wide range fo cultural activites could also spread down to Smithfield and reinforce the nascent artistic and cultural elements already establishing in the area. The GDA will work with Dublin City Council to promote cultural integration and synergies between the two quarters. The Planning Scheme provides for the creation of gateways through Broadstone and Prussia Street, facilitating the movement of pedestrians and cyclists from a westerly direction to the city centre and vice versa.

Grangegorman Upper and Lower, which bisects the site, will be the only available through-route for external traffic. It will be traffic-calmed at the section opposite the clock tower building and the intersection with St. Brendan's Way and will be landscaped in similar to the plan indicated.

The site will have an internal circulation network of links serving different functions, with different character and typology. Certain sections of the network will have limited access for vehicles but all links will be pedestrian priority.

Various access routes throughout the site provide set-down areas, as well as servicing and maintenance roads along the periphery of the site and along the perimeter of the Fields. These Secondary Links are for limited traffic mainly related to servicing, maintenance, disabled access, and possibly taxi and 'out-of hours' access and limited on-street car parking. Some access points will be secured outside core hours for security reasons.

The character of the Secondary Links is predominantly pedestrian space, shared with occasional vehicular traffic. Generally, the shared surfaces may be flush, but with clear delineation of carriageway space.



Indicative landscape plan of Grangegorman Lower and St Brendan's Way

Occasional variations to the horizontal alignment will be included to add to traffic calming effect.

These access routes are considered under three separate headings:

Pedestrian Access (Figure 4.29)

Vehicular Access and Parking (Figure 4.30);

Service Access (Figure 4.31);

It is the intention that the Public Realm areas of Grangegorman campus will be accessible through the day and evening, consistent with the need to provide a safe and secure environment for students, staff, residents, the general public and visitors. This will necessitate active management of individual access points, particularly at night.

The design and management of pedestrian and cycle access points adjoining residential streets will in particular ensure appropriate measures to remove the potential for anti-social behaviour and nuisance for adjoining residential amenity and include adequate access control (particularly at night time), good lighting, good visibility and options for CCTV facilities as part of an effective management system, which will be subject to monitoring and review.

4.6.1 Pedestrian Access Routes

Pedestrian access will be provided throughout the site in a series of paths and walkways, as illustrated in Figure 4.29.

In some cases the pedestrian routes coincide with vehicular and service routes and, in those cases, pedestrian access will be on footpaths adjoining the carriageway (for example on Ivy Avenue). In other cases the surfaces will be shared between vehicles and pedestrians, with priority to pedestrians, and elsewhere the routes are for pedestrian use only.

The main arterial routes will be shared surfaces for use of both pedestrians and cyclists.

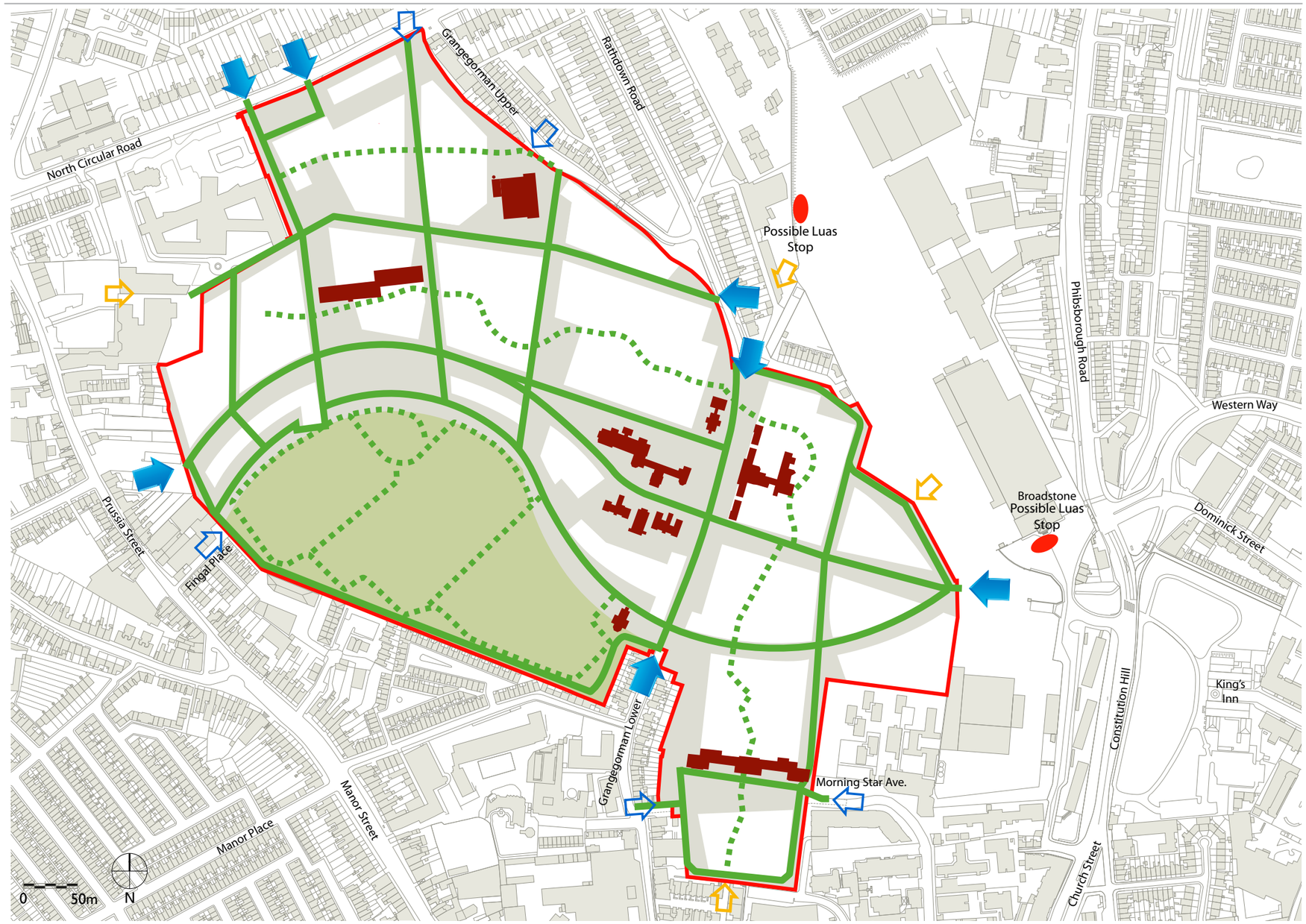


Figure 4.29 Pedestrian and Cyclist Access Routes

4.6.2 Vehicular Access Routes and Parking

The principal vehicular access points will be from the North Circular Road and from Grangegorman Lower.

There will be a subsidiary vehicular access from Morning Star Avenue to an underground/ undercroft car park, exiting onto Fitzwilliam Place North.

Vehicular access to the site will be controlled by restrictions at entry points (called Control Points in Figure 4.30). Internal vehicular routes will not allow transit from one side of the site to another except for service uses.

Three opportunities for future vehicular access through third party lands are identified In Figure 4.30. Delivery of these access points is outside the control of the GDA but, in the event that they are delivered, they will be controlled in the same way as the other vehicular access points and will not allow transit from one side of the site to the other. An area of the site (beside the Broadstone bus depot) may be used for bus parking, pending resolution of ongoing discussions on a permanent access across the Broadstone lands.

Car parking will be mainly underground/ undercroft, in the positions indicated in Figure 4.30, with limited provision for surface parking to the internal circulation network to allow for disabled parking, loading bays, drop off positions, short term parking. Further detail regarding the Access Strategy and Traffic Management are detailed in Chapter 5. The total number of car spaces on the site will not exceed 1,150 spaces and will cater for the entire Grangegorman SDZ site.

While development is underway, and in advance of the delivery of underground/ undercroft parking, temporary surface car parking will be provided at locations illustrated in Figure 8.1. in Chapter 8.

Temporary parking arrangements during construction operations are described in Chapter 8.

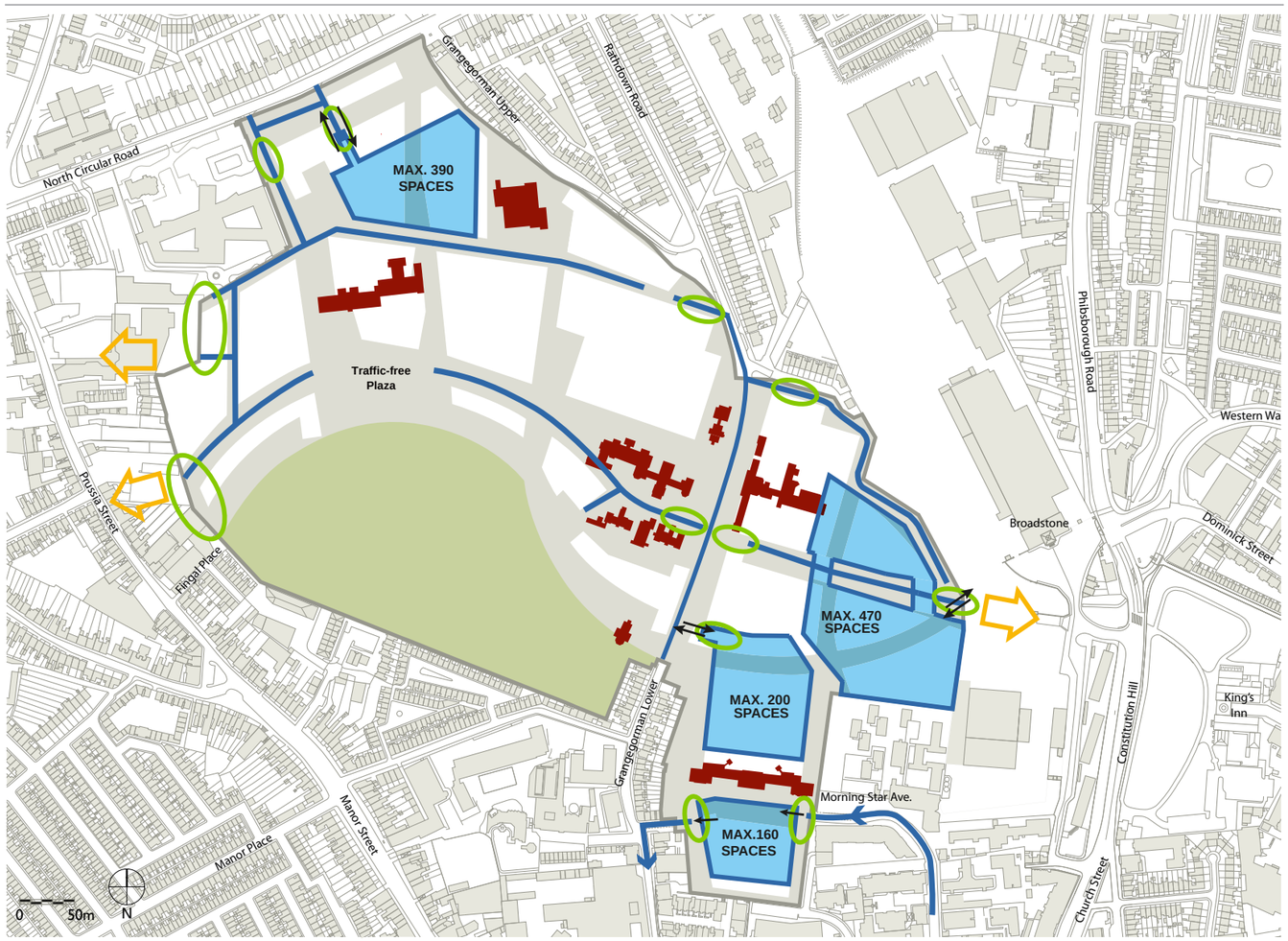


Figure 4.30 Vehicular Access and Indicative location of parking

4.6.3 Service Access Routes

The principal service access points will be from the North Circular Road and from Grangegorman Lower. There will be a subsidiary vehicular access from Morning Star Avenue, exiting onto Fitzwilliam Place North (see Figure 4.31).

Service access to the site will be controlled by means of control points. Service vehicles may be allowed to transit from one side of the site to the other during restricted service access hours, depending on internal and external conditions.

Three opportunities for future service vehicle access through third party lands are identified in Figure 4.31. Delivery of these access points is outside the control of the GDA but, in the event that they are delivered, they will be controlled in the same way as the other vehicular access points.

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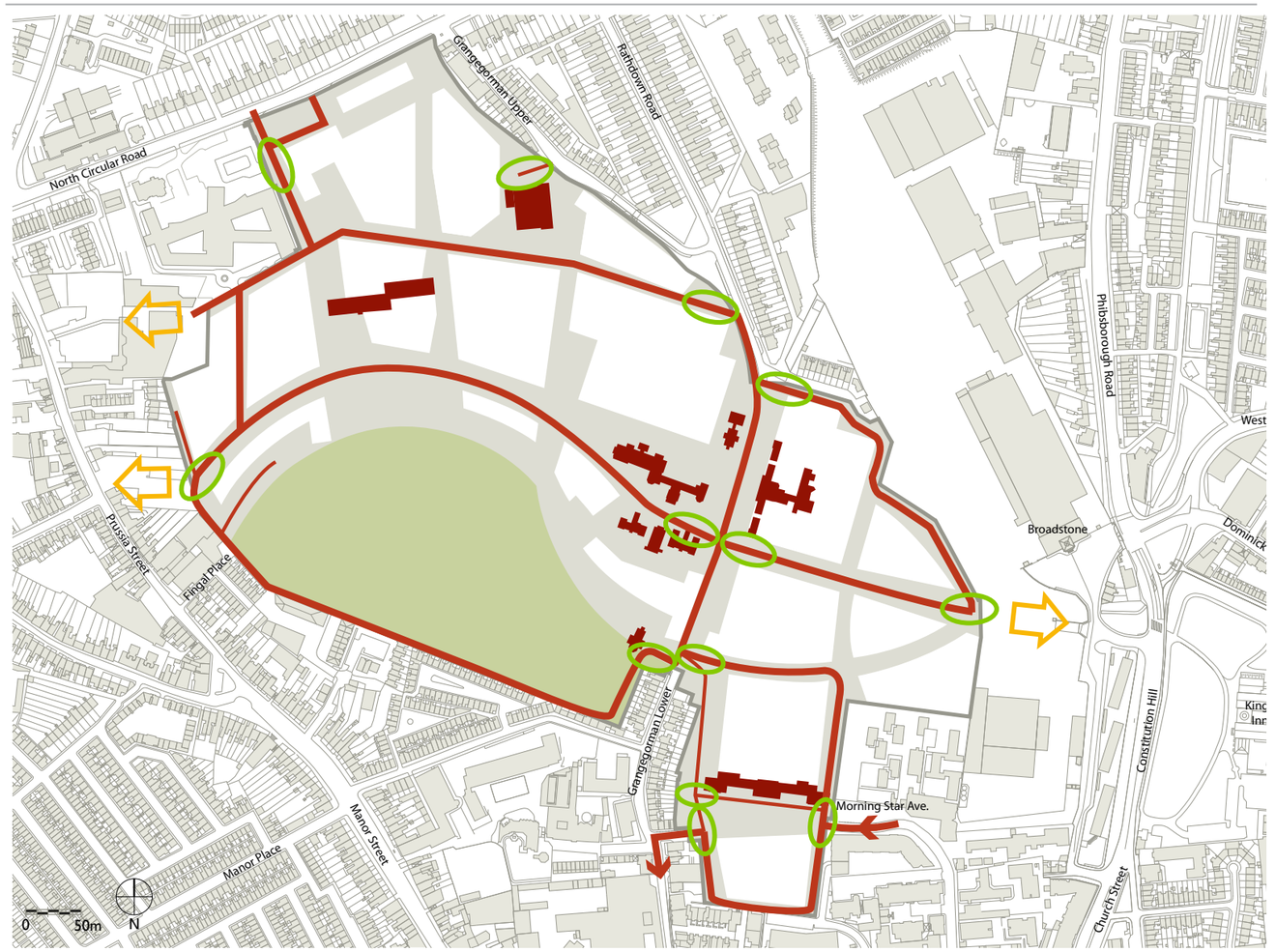


Figure 4.31 Service Access routes

4.7 Land Use Zones and Quantum of Development

4.7.1 Overview of Land Use Zones

In addition to ensuring the delivery of the core institutional accommodation as envisaged by the Grangegorman Development Agency Act 2005, the Planning Scheme seeks to achieve a vibrant, lively, mixed use urban quarter.

Therefore, in addition to Healthcare and Educational uses the Planning Scheme seeks to provide a range of uses (including residential, both student and private), shops, offices, business incubation, restaurants, cafes, campus bar and leisure facilities) which will support the future users and the wider local community, attract people at different times of the day and night, provide passive supervision, animate the public realm and optimise the opportunity offered by the site.

The current land use zoning of the site is discussed in detail in Chapter 2 of this Planning Scheme. The Dublin City Development Plan 2011-2017 has designated most of the site as a Strategic Development and Regeneration Area (SRDA 8). SRDA 8 sets out a number of specific objectives for the area, all of which align with the provisions of this Planning Scheme. The primary land use zoning is Z14, with a relatively small section of Z1. All of the land uses proposed in this Planning Scheme align with those listed under the site's Development Plan zoning.

Figure 4.32 divides the overall SDZ site in to six main 'use zones'. The nature of each of these use zones is described below with more detail on each of the principal land uses provided in Section 4.7.2.

1a Healthcare

The uses located within in this zone will primarily be HSE healthcare accommodation including medical facilities (comprising health centres, clinics, respite care and nursing facilities), administrative uses, sheltered and supported residential accommodation, a housing development for the elderly and day centre facilities. The uses may also include nursing home facilities. Other uses which may be considered include limited retail, cafe and restaurant uses. Smaller elements of educational and training uses can also be provided on site to promote integration of healthcare and education on the site.

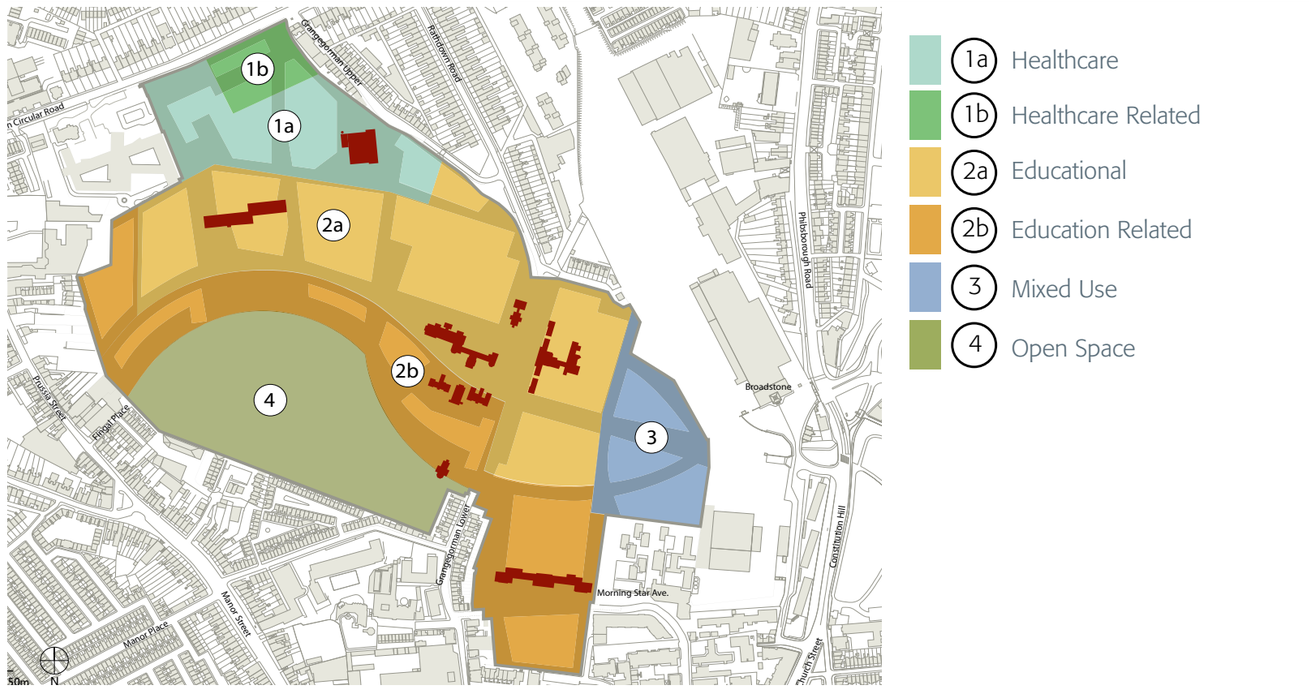


Figure 4.32 Land Use Zone

1b Heathcare Related

This zone will accommodate additional space for healthcare related uses (as per Zone 1a) and private residential use. The private residential use is proposed in order to support funding for the provision of healthcare facilities by the HSE. The uses may also include nursing home facilities.

2a Educational

This zone will primarily accommodate the main DIT College buildings and will include lecture theatres, laboratories, libraries, craft training, kitchens, workshops and administration. Services such as research centres, energy supply infrastructure, student facilities, retail, cafe, restaurant/takeaways and campus bar will also be considered acceptable in this area.

2b Education Related

This zone will primarily comprise uses which support the educational facilities located in Zone 2a. Such uses will include student accommodation, sports and recreation facilities and student support services and facilities.

The educational uses envisaged in 2a will be considered acceptable as will retail, cafe, restaurant/takeaways, energy supply infrastructure and centrally located campus bar.

3 Mixed Uses

This zone will include mixed uses which will support employment and economic vitality and complement educational and healthcare uses located elsewhere on the site. Predominant uses will include science and technology, commercial research and development laboratories, incubator accommodation (for start-up business) and general office. Other uses which may be considered appropriate would include limited retail, cafe/restaurants, limited residential (private or student) educational and transportation associated use. The buildings for these uses shall be subject to normal planning procedures.

4 Open Space

Built elements within this zone will be limited to uses which are directly associated with the open space/recreation/sport or events use.

4.7.2 Distribution of Principal Land Uses

This section provides more detail on the following broad range of uses proposed for the site:

- Healthcare Uses;
- Educational Uses;
- Mixed Uses;
- Accommodation (Student and Private);
- Recreational, Amenity and Sports Uses;
- Childcare Facilities;
- Cultural and Arts Uses;
- Parking;
- Power and Utility Uses

Healthcare Uses

HSE facilities will be provided in Zone 1a with additional space provided in 1b. These zones will include Healthcare and Healthcare related and DIT's National Optometry Centre (plus some limited Educational Uses)

The primary objectives for Healthcare provision are as follows:

- Accommodate the clients and services already in-situ on site
- Provide for required additional health services for the area
- Consolidate local area services currently located in the wider community

HSE Facilities will include provision for primary, community and continuing care facilities; mental health care services and facilities; addiction services; care for older persons and for people with disabilities; sheltered accommodation for various user groups and healthcare related administrative functions.

Services for older persons will include nursing care facilities, respite care and sheltered residential accommodation. Sheltered residential accommodation will also be provided for people with physical, sensory, learning or psychiatric impairments or other long-term health conditions and persons with learning disabilities.

Support services to underpin all the above will be allowed including, for example, a day care social centre, a gardening area, a training centre for services users of mental health facilities who are resident in the broader community.

The underlying concepts for the various facilities in this Zone are that the healthcare services for the local community and the future Quarter population are integrated, and that privacy and dignity for service users are respected.

The Primary Care functions will be generally located proximate to the site's North Circular Road entrance and adjacent to the Mental Health facility permitted under Reg. Ref. 3112/09 and Reg. Ref. 3365/10. Supported housing accommodation will be located further east. All healthcare accommodation will be designed to ensure flexibility of use. This will ensure that buildings can be easily adapted to alternative healthcare uses to facilitate the evolving needs of the health service providers and users.

Approximately 42,000 sq m of Healthcare facilities (including up to 8,000 sq m of future expansion) will be provided across the Urban Quarter but predominantly in Zones 1a and 1b.

Educational Uses

DIT facilities will be provided primarily in Zones 2a, 2b and 4 (Figure 4.32).

The aspiration of DIT is to create an attractive vibrant learning environment and campus life. The campus will be student centred and resourced to meet the multiple needs of the student population. All existing functions of DIT are to be consolidated eventually onto the SDZ site, including academic buildings, craft training facilities and research and development functions, and will expand to meet the developing needs of a varied and increasingly diverse student cohort.

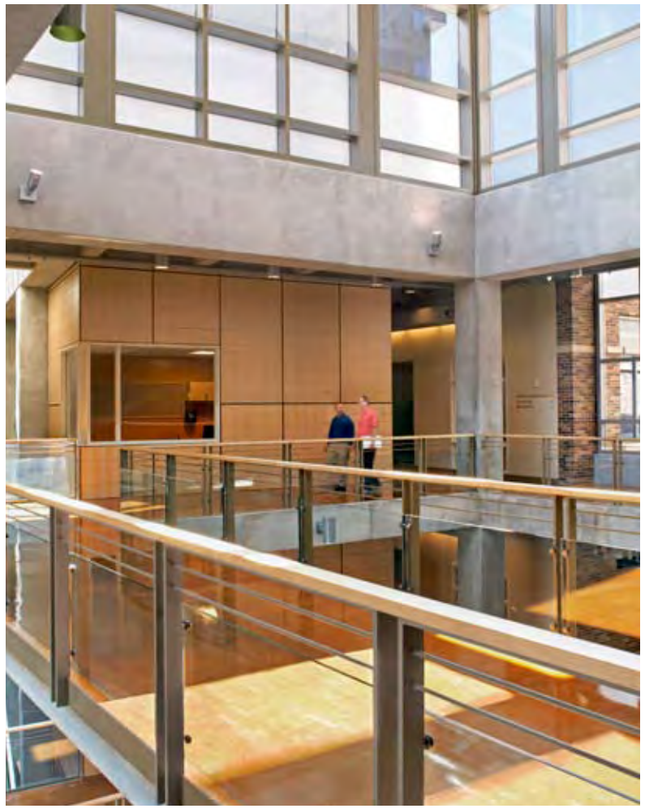
DIT educational uses will comprise traditional academic uses and include the provision of lecture halls and theatres, class rooms and seminar rooms, research centres and laboratories, craft training areas, staff offices, sports and recreation facilities, kitchens, workshops and ancillary administrative and student areas.

Facilities and services, such as research centres in Zone 2a and 2b, while primarily those of DIT, will allow other appropriate institutions or commercial enterprises which can demonstrate synergies with the main education function of the zone.

DIT educational space will also include central student services and facilities such as library and learning resources, areas for academic support, lifelong learning and staff training and development, student support and services, examination halls and seminar facilities. The DIT Library will anchor the academic heart and will be located to the south of the North Circular Road entrance. It is intended that a public library of Dublin City Council may also be located adjacent to and work in tandem with the DIT Library.

A designated site for a Primary School has been identified in Zone 2a. The primary school will comprise in the order of 16 classrooms with ancillary special education rooms. The primary school will replace the temporary school (permitted under Reg. Ref. 4291/08) located elsewhere on the site.

A maximum of about 270,000sq m of Educational and related facilities may eventually be provided across the Urban Quarter (refer to Table 4.1) but predominantly in Zones 2a and 2b, including student accommodation (c. 57,000 sq m) and provision for future expansion educational facilities (c. 35,00 sq m).



Mixed Uses

As part of the newly created urban quarter, complementary mixed-use development will be provided to achieve the optimal development potential of the SDZ site. A mixed-use area (Zone 3) will be located at the Broadstone boundary and will comprise a range of uses. This mixed-use area will benefit from a high profile location adjacent to the CIE Broadstone lands (which may be developed in due course) and from proximity to future public transport improvements.

Commercial uses appropriate at this location will primarily be science and technology uses and office space. Science and technology uses which are considered appropriate at this location include incubator facilities for start-up companies, laboratory based industry, knowledge based enterprise and research centres, all of which would benefit from strategic synergies with DIT and HSE.

In addition to office and science and technology uses it is envisaged that Zone 3 will also include appropriately scaled retail (including non-retail services) and residential development as detailed in the relevant sections below. Ground floor uses should generally have a public use in order to provide an 'active' facade to the street and create a vibrant district.

The provision of this mixed use district will create a major hub of intellectual capital that will enable employers to locate with DIT and with a major business and technology base thereby creating a significant economic engine for the north-west inner city.

Approximately 60,000 sq m of mixed use facilities (excluding retail and non-retail services and private residential which are treated separately in their respective categories below) will be provided, predominantly in Zone 3. This zone is subject to normal planning procedures.

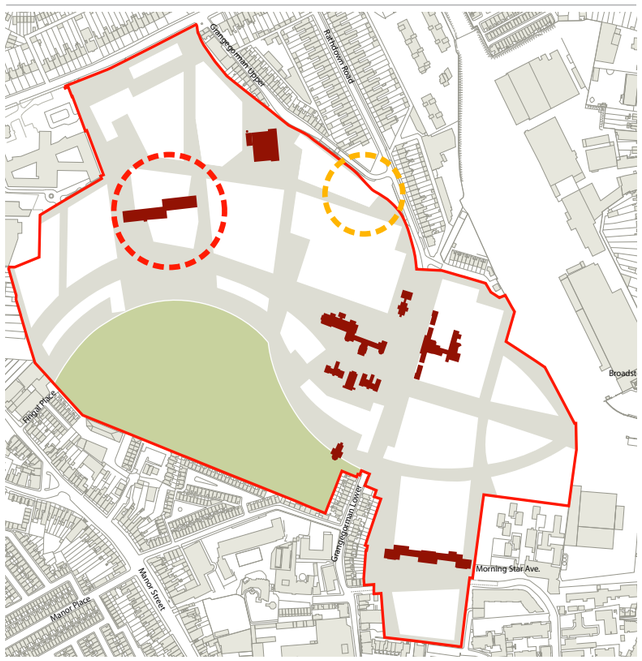


Figure 4.33 Location of Library and Primary School

Residential (Student and Private)

Residential development on the site will predominantly comprise student accommodation provided for DIT students. The Planning Scheme provides for approximately 1,500- 2,000 bed spaces which would accommodate about 15% of DIT's full time students. Provision of bed spaces will be phased over time.

Student accommodation will be located mainly in Zone 2b, with potential for some also in Zone 3. The provision of student accommodation will assist in creating an 'urban' feel to the Quarter, create passive surveillance and assist in the creation of a living campus.

Limited private residential development will be considered appropriate within Zones 1b and 3. Within Zone 1b total private residential development will be limited to 6,500sqm (gross floor space). Within Zone 3 total residential development, including student accommodation will be limited to about 15,000 sq m (gross floor space).

In total, approximately 71,000 sq. m of residential facilities will be provided in Zones 1 and 2 and 3 (i.e. 1a plus 1b together with 2a and 2b and 3) as set out in Table 4.4.

The student accommodation will be oriented / designed to reduce the impact of possible noise or disturbance to adjoining existing residential areas. All residential developments will comply with the relevant policies, objectives and standards of the Dublin City Development Plan, including Chapter 17- Development Standards and Appendix 23- Guidelines for Student Accommodation.

Table 4.4: Breakdown of Maximum Residential Floor Space Permissible within Planning Scheme

Residential Use	**Maximum Floor Space (sqm)**
Student Accommodation Zone 2b	c. 57,000 sq m
Private Residential Accommodation Zone 1b	c. 6,500 sq m
Housing for Elderly (DCC) Zone 1a	c. 3,400 sq m
Sheltered Housing and High Support Hostel Zone 1a	c. 4,000 sq m
Private Residential Zone 3	c. 15,000 sq m
TOTAL	**c. 85,900 sq m**

Retail & Non Retail Services

The provision of new HSE Facilities, a DIT Campus and a mixed-use development zone will create a demand for shops, services, cafes, restaurants and a campus bar to serve the needs of students, healthcare users, health and education staff, office workers and visitors to the Quarter. The provision of these facilities within the Quarter will assist in creating a vibrant, lively area both during the day and evening.

A maximum of 5,000 sq m of retail space (including convenience and comparison) will be provided throughout the site. Retail floor space will comprise a mix of convenience and comparison shopping, to complement existing facilities in the immediate neighbourhood.

Some retail floor space will be related to the health and education function of the Quarter such as a pharmacy or bookshop. In addition, local shops and facilities will also be required to serve the future population of the Quarter such as students, residents, staff and visitors. Any retail floor space within the Quarter will primarily serve a "walk-in" population only.

Non-retail services which are considered appropriate include (but are not limited to) post offices, financial services (including banks), drycleaners, health and beauty services and supporting facilities such as sandwich shops, cafes, restaurants, takeaways and a campus bar.

Retail and non-retail services will generally be concentrated at ground floor level across the Urban Quarter, along St. Brendan's Way and the Serpentine Walk, in order to enliven and give character to these two central circulation routes. Certain retail use will be facilitated within Protected Structures, where this can be achieved without significant adverse impacts on the heritage value of the structures.

Cafes and restaurants will be located throughout the Quarter to provide necessary facilities to students, healthcare users, staff and visitors.

The campus bar, takeaways and student venues, will be designed to minimise impact on the amenities of the existing community and will only be located within the areas shown in Figure 4.34.

All applications which include retail or non-retail services should have regard to the current Retail Planning Guidelines for Planning Authorities, the Retail Planning Strategy for the Greater Dublin Area 2008-2017 and to the provisions of the Retail Strategy for Dublin City (Appendix 4 to the Dublin City Development Plan 2011-2017.

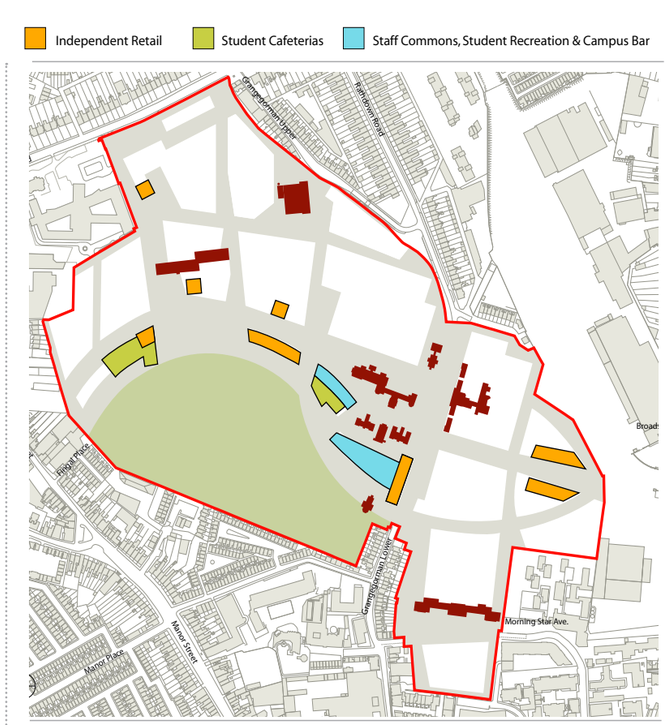


Figure 4.34 Indicative locations for retail and non-retail services.

Recreational, Amenity and Sports Facilities

The Fields (Zone 4) will comprise an extensive green area containing playing fields in a parkland setting, children's playgrounds, and a garden area, along with an all weather sports pitch. Only limited development, directly related to sport and recreational activities, will be permitted in this zone. Such uses would include changing facilities, equipment storage, flood lighting (for pitch sporting uses) or ancillary maintenance facilities.

The uses on the Fields will be complemented by indoor sports facilities in Zone 2(b) including a sports hall and aquatic centre (included under 'Educational Uses' above). The sports halls and aquatic centre will provide a range of leisure facilities for students and other users in addition to a potential education space for leisure related programmes in the DIT. The sports centre will be managed with access made available to others (including local clubs, schools etc.), thereby providing important leisure facilities for the other users of the Quarter including users of the healthcare facilities, the Primary School and the wider local community.

Indicative view of the fields

Crèche & Childcare Facilities

Crèche and childcare facilities will be provided to support students and staff of the Urban Quarter. Such facilities will be incorporated into the Healthcare and Education facilities as considered appropriate, at locations where safe and convenient access can be provided and access to outdoor play space is available. DIT is a major provider of Early Childcare Training and it is intended that the DIT crèche will serve as a "model" crèche.

Cultural & Arts Spaces

The value of the cultural and social heritage of the SDZ site and the promotion of cultural provision is an important consideration of the Planning Scheme. Uses which promote the enjoyment of the cultural heritage of the site and of the arts in general will be positively considered. Provision is made for occasional cultural events in the Fields by provision of temporary stands and or marquees.

The creation of a Cultural Garden, in addition to the appropriate reuse of existing historic structures, will ensure that the opportunity offered by the heritage of the site is optimised and awareness of the social heritage of the site is promoted. In addition, the rich cultural and social heritage of the site will be recorded and displayed in the library buildings, or any other building as appropriate. Other mechanisms to record and reflect the heritage of the site will be explored, for example, through signage, placenames, public art and architectural design details.

The Eastern Heart will accommodate arts and culture/ performance spaces, accessible to the wider community, to promote lively evening uses. This space will also accommodate educational facilities which will have natural synergies with the performance spaces. Uses promoted in this area will include performance venues and display and exhibition space.

Vehicle Parking

Car parking will, in the longer term, be predominantly provided underground (at basement level)/undercroft. Access points to underground/undercroft parking shall be located and designed to minimise the visual impact and the impact on pedestrian/cycle movements and to minimise car movements within the site and impacts around the site. Please refer to Section 4.6.2 and Chapters 5 and 8 for further detail on quantum and permitted locations for car parking and construction parking.

Limited surface car parking will be acceptable throughout the site to facilitate drop-off and set-down facilities, as well as possible night-time and weekend use of the site.

Short-term temporary car parking at surface level will be facilitated across the Quarter pending the construction of basement level car parking. Please refer to chapter 8 and figure 8.1 for further detail on the quantum and permitted locations for temporary surface car parking.

A public transport facility will be permitted within Zone 3. With the introduction of Luas onto the Broadstone Station site, some displacement of existing adjoining bus operations may be necessary, in particular bus parking/servicing and bus turning. The area of land required for public transport services may extend into Zone 3 to facilitate bus stop/turning/parking and to support a light rail/bus interchange.

Cycle Parking

DIT already has a high proportion of cycle users. A key objective of this Planning Scheme is to build on that foundation and to encourage the safe use of bicycles by the greatest attainable number.

Cycle space provision will be a key component of this and exact numbers will be worked out in due course as part of a Mobility Management Plan, which may include an extension of the successful Dublin Bikes Scheme to Grangegorman. (Refer Planning Scheme Reference Documents)

Power & Utility Buildings

The Campus power and utility buildings (including energy centre, data centre associated storage areas and composting areas) will be consolidated at a location within Zone 2a or 2b (Figure 4.32). Other ancillary utility facilities will be accommodated throughout the Quarter as required. Substations will be located throughout the site within the footprint of their associated buildings.

4.8 Transport Infrastructure

As set out in Section 4.1, the attainable quantum of development at Grangegorman is linked to the capacity of the public transport infrastructure serving the area (and is also inherently limited by the Planning Scheme design philosophy, which envisages a campus with very significant areas of open space, important 'key views' and major pedestrian routes).

The core HSE, DIT, community and ancillary elements can be supported by the existing transport infrastructure (subject to improved access and some upgrades to existing transport infrastructure). These elements amount to c. 238,000 sq m of development.

As additional public transport capacity becomes available there is potential for appropriate expansion, to c. 380,000 sq m as indicated in Table 4.1. This is the maximum quantum consistent with the design philosophy of the Planning Scheme, regardless of whether a higher theoretical quantum could be sustained by additional public transport capacity.

The detailed transportation assessment is discussed in the following Chapter. This assessment concludes that the most critical elements can be developed immediately without the need for extensive investment in upgrading the public transportation network to serve the site. It also shows that there is capacity for appropriate expansion in due course, so that the overall development can capitalise on its strategic location in terms of proximity to the city and proposed public transport investments.

As development progresses additional transport infrastructure will be required. This may comprise any combination of:

Additional and/or new bus services;

Access from Constitution Hill;

Broadstone Luas;

Metro North.

4.9 Flexibility of Planning Scheme

The preceding sections of this chapter have set out parameters with regard to the nature and extent of the development proposed by the Grangegorman Development Agency at Grangegorman.

The Planning and Development Act, 2000 (as amended) requires that development within a Strategic Development Zone be in accordance with the relevant Planning Scheme and that any proposed development which is deemed to comply with the Planning Scheme must be granted planning permission.

In light of this provision, and for the avoidance of doubt, the Compliance Matrix (Appendix 1) sets out the minimum standards required to comply with this Planning Scheme, and the following sections discussed what elements in the Planning Scheme are deemed fixed and what offer more flexibility .

As stated earlier at section 4.2 certain elements, which are considered critical to the delivery of a sustainable development, are fixed. Other elements, less critical in overall terms, are somewhat flexible.

This is an important distinction. Any development proposals which conflict with the fixed elements will be deemed not to be in compliance with the Planning Scheme and therefore cannot be permitted.

Fixed Elements

- Overall Quantum of Development;
- Key Structuring Principles;
- Urban Form.

Fixed elements include the maximum overall quantum of development for the site (Table 4.1) and the Key Structuring Principles set out in Chapter 3 as described in Figure 4.1. The key structuring principles set out all of the key open spaces, circulation routes and public spaces and therefore define the public realm which then defines the urban blocks which have been designed to provide opportunities for development which will be required to meet the accommodation requirements for the innovative urban quarter.

Figure 4.1 and 4.2 also indicate all the Protected Structures on the site, which will be retained, refurbished and incorporated into the overall development of the site. Key connections to the surrounding area are also shown. Some, such as the connections to Smithfield, open the possibility of utilising Smithfield as a public event space associated with DIT, promoting cultural integration with the surrounding community and the city.

Taken together, the elements of Figure 4.1 determine where new buildings may occur across the entire site. Based on this overall urban form, Figure 4.2 fixes the external building lines of all new buildings on the site.

Deviations from the Key Structuring Principles (4.1) or from the Urban Form (4.2) will not be acceptable.

Flexible Elements

- Building Form;
- Building Design (including some height flexibility)
- Links to surrounding area

A degree of flexibility is incorporated in the Planning Scheme in order to allow the development to respond to potential changes in the requirements of the stakeholders (advances in healthcare provision or educational demands for example) and to respond to environmental and market conditions over the timeframe of the Planning Scheme. The east-west connection of Grangegorman to the wider community is considered an essential element of the Planning Scheme.

This flexibility mainly relates to building form and design within the maximum permitted volumetric envelopes which are defined and are fixed elements. Thus, for example, the Planning Scheme identifies the external building lines of all blocks, but not the internal building lines (see Figure 4.2 and additional text at section 4.3). Similarly, building height is stated as a range ('4 to 6 storeys' for example – see Figure 4.4.7) subject to a maximum and minimum height.

In reality, it will never be possible to develop all the urban blocks to the maximum extent of their respective volumetric envelopes, as this would greatly exceed the maximum quantum of development proposed for the site (Table 4.1) This flexibility will allow the individual building designers to respond to the brief and context of each package in a responsible manner and at the same time bring an element of diversity into the overall context. This opportunity will allow for a degree of individual character to be expressed for the respective buildings and balance the overall coherent quality that the Planning Scheme provides.

The flexibility allows that buildings in sensitive locations, such as adjacent to Protected Structures or existing residential areas, to respect their context and by subtle manipulation of the proposed building, within the parameters set by the Planning Scheme, mitigate possible impacts on the protected structures and/or existing development in the area. The Planning Scheme therefore includes a series of indicative height sections through the site and a number of indicative floor height diagrams (see Section 4.4.7).

However, given the particular location of the three proposed buildings west of Broadstone, in proximity to protected structures and their highly visible location, it is considered that the detailed design of these buildings should be subject to Section 34 of the Planning and Development Act 2000, i.e. normal planning application procedures.

In addition, at sensitive boundary locations, these maximum building configurations have been analysed in terms of visual assessment and environmental sunlight and daylight impacts (see Planning Scheme Reference Documents).

Section 4.6 addresses the aspirations for opening up the site to the surrounding community and allowing the site to reconnect this area of the city that was by the nature of its former use a barrier between communities. Fig 4.29 includes a number of additional pedestrian access opportunities and Fig 4.30 a smaller number of additional vehicular access opportunities. These will be reliant of the Grangegorman Development Agency working together with other third parties to achieve the aspirations to allow more opportunities to connect with the wider community. As these opportunities all involve negotiations with third party landowners outside the SDZ boundary, it is considered that these, while considered of strategic importance are flexible elements and as such have been discounted in all transportation modelling. If these were to become available then they would open the site more to the surrounding community and provide a more permeable site and at the same time offer a greater degree of flexibility for visitors to access the site or connect with the surround public transport network

5 Planning Scheme

Grangegorman

Transportation, Movement and Mobility

Purpose and Layout of this Chapter

This chapter addresses the transportation issues in relation to the proposed development of Grangegorman Strategic Development Zone and sets out the access strategy for the development. The objectives of this chapter are as follows:

- To describe the existing transportation environment
- To describe the transport proposals including the access strategy and how they will take account of, and integrate with, existing and future transportation infrastructure
- To quantify the transportation demand associated with the proposed development
- To assess the impacts of the travel demand on the surrounding transportation infrastructure
- To identify possible measures which will mitigate against the transportation impacts of the development

Specific Transport Assessment and Mobility Management Plan reports for the proposed development have been prepared which present a full technical assessment of the development proposals. These documents should be referenced for additional detail to that presented in this Chapter. This chapter has had regard to all relevant guidelines, including the National Transport Authority's (NTA) recently published Draft Transport Strategy for the Greater Dublin Area 2011-2030 (see 5.2.4).[12]

Contents

12: The NTA is a State body set up under statute in 2009. The role and functions of the NTA are set out in two Acts of the Oireachtas; the Dublin Transport Authority Act 2008 and the Public Transport Regulation Act 2009 and include encouraging greater use of public transport, both nationally and in the Greater Dublin Area.

5.1 Development Proposals

The development proposals involve the construction of a consolidated campus location for Dublin Institute of Technology (DIT) as well as modern replacement facilities for the Health Service Executive (HSE). These aspects will be supplemented by facilities for the surrounding community, such as a public library and primary school, as well as commercial and research land uses.

The schedule of accommodation is set out in table 5.1. The overall quantum of development has been broken down into various land use categories for the purpose of assisting in transportation trip generation assessment. Grangegorman SDZ will be developed in an incremental manner, please see Chapter 8 (Phasing and Implementation) for further details.

DIT currently occupies approximately 39 individual buildings around Dublin city centre with a total population of 21,624 comprising of full and part time staff, undergraduates, postgraduates as well as apprentices and junior musicians. It should be noted that this population is quite diverse and produces staggered attendance times across a typical week. This pattern is expected to continue following D.I.T's relocation to Grangegorman. It is predicted that the DIT population will increase by 2,000 following its move to Grangegorman. This increase will comprise completely of full time students and will bring the total DIT population to approximately 23,624.

The existing diversification of DIT building locations generates significant travel demand across the city. Grangegorman will offer a consolidated campus environment which can play an important role in generating sustainable travel patterns for the city. While, the majority of travel demand for the DIT facilities at Grangegorman will have been rerouted from another city centre location, at a local level, it is important to note that at no time will the entire DIT population be on site on the same day let alone converge at the same time. The quantification of this travel demand will be discussed in more detail in Section 5.4 below.

The proposed HSE facilities within the Grangegorman SDZ will supplement replacement facilities which were subject to a separate planning application. These additional facilities will provide for additional health services for the rapidly expanding population in the Dublin North West area as well as providing improved facilities for staff and administration. The HSE estimate that it is at present providing services in the area for a population of 45,000 which is expected to rise to 70,000 in the near future. This will be supplemented by the addition of some 25,000 students and staff who may attend the DIT campus plus additional services and persons that the new Quarter will attract.

A primary school for approximately 460-490 pupils and with specific provision for special needs pupils is to be developed on the site and operated by the Educate Together body. The school currently occupies a temporary building on the Grangegorman site which opened in 2009. All of the above will be supported by a mixed use development proposed in the eastern section of the site. This aspect will comprise of commercial land uses such as office and retail as well as research space. Please refer to Chapter 4 for a more detailed description of the development proposals.

Indicative view of Grangegorman Lower

Table 5.1 Grangegorman SDZ Schedule of Accommodation

Development Type	Element	Building
Healthcare and Related	HSE Core (6,560 sqm)	HealthCare /Training, Primary Care and High Support Hostel
	HSE Core Additional (20,600 sqm)	Community Generated Rehab, Primary Care, Dementia Unit, Community Nursing Unit, Respite/Intermediate Care Unit & Services for People with Disabilities.
	Healthcare Related (14,500 sqm)	Residential accommodation and HSE expansion
Educational and Related	DIT Core (108,100 sqm)	Academic Faculty Buildings, Research Centres, Library, Sports Centre, Student Union, Building Maintenance, Executive Learning Centre, Early Learning Centre, supporting academic and student facilities
	DIT Core Additional (32,500 sqm)	Additional Academic Faculty Buildings and support services
	DIT Ancillary Educational (38,000 sqm)	Sports facilities, Performance Space, Bookstore, Cafe
	Student Residential Housing (57,000 sqm)	Student Residential Building (1,550-2,000 bed spaces)
	DIT Expansion (34,000 sqm)	
Public Bodies	Primary School (2,800 sqm), Library (1,500 sqm) & Elderly Housing (3,400 sqm)	Primary school for approximately 400 pupils and Dublin City Council operated library
Mixed Use	Mixed Use Development (61,000 sqm)	Offices, Retail, Science, Industry uses & Residential

The existing modal split for D.I.T was determined following extensive research carried out by the National Institute for Transport & Logistics (NITL) and published in a report: 'Towards a Transport Plan for DIT's Grangegorman Campus' (Aug 2006) which established travel patterns at each of DIT's current locations. The existing modal split for DIT can be seen in Figure 5.1. The NTA Employee & Student Travel Survey for D.I.T. (Dec 09/Jan 2010) was also referenced (See Section 4.4 of Mobility Management Plan Report).

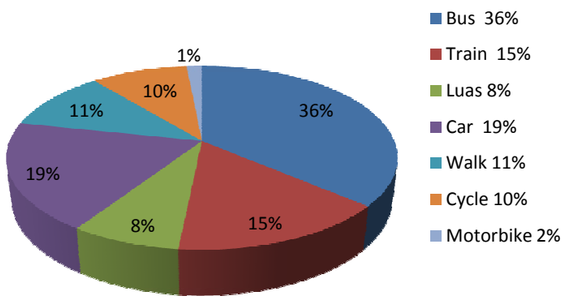


Figure 5.1 Modal Split for existing DIT Population

It can be seen that bus is the primary mode of transport across DIT's existing campus locations as it would provide the best access to facilities at Bolton Street and Cathal Brugha Street. The Luas has also quite a high modal share as the green line runs in close proximity to Kevin Street and Aungier Street and terminates at St Stephen's Green nearby while the Red Line serves the existing Bolton Street and Cathal Brugha Street campus locations. It can be seen from Figure 5.1 above that the existing modal split is well balanced with a reasonable share proportioned across all typical modes.

The modal share for Luas may be curtailed by high rents along the route which would discourage students from locating there. Walking and cycling are represented with reasonably high modal shares and this is reflective of the city centre locations of the existing campus with good pedestrian and cyclist linkages available. The existing DIT modal split is quite a desirable modal split with the modal split for the car only representing 19% of the total person trips. However, it is envisaged that the car modal share will decrease further when DIT relocates to Grangegorman as a result of a carefully managed car parking provision and access strategy.

A travel survey of existing HSE staff working in St Brendan's Hospital on the Grangegorman site was undertaken in 2009 to determine the residential location of existing staff, the time of arrival and departure from Grangegorman, the current modal split and the attitudes to potential changes to travel patterns. The modal split determined from the travel survey is illustrated in Figure 5.2.

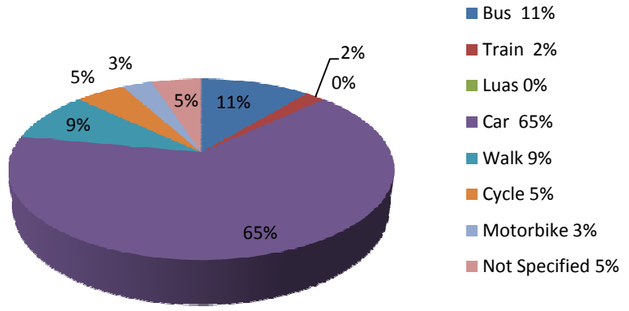


Figure 5.2 Modal Split for existing HSE population

It can be seen that there is a large proportion of staff using a private vehicle to access the site. This is primarily as a result of the existing provision of 382 parking spaces on site. There are no restrictions on the use of these parking spaces and as a result staff choose to drive despite excellent sustainable transport alternatives being available. Another reason for the large modal split for the car is the working hours of many of the staff and nurses in particular. The nursing shifts in operation at present are 08:00 – 20:30 and 20:30 – 08:00. Public transport services would not be as frequent at the shift turnover times, particularly in the evening.

It is an objective of this project to encourage these motorists to use more sustainable modes of transport, particularly cycling. This can be achieved primarily by implementing a car parking management plan which will restrict the quantum of parking available to staff. The overall proposed parking strategy for Grangegorman SDZ will be discussed in more detail in Section 5.4 below.

5.2 Transportation Context

The Grangegorman site has an area of approximately 28.69 hectares and is located north of the River Liffey and south of the Royal Canal, approximately 1 kilometre from Dublin's City Centre. The site is split by Grangegorman Lower and Upper which runs in a north south axis through the site. The Grangegorman SDZ site is surrounded by North Circular Road to the north, Prussia Street and Stoneybatter to the west, and Brunswick Street and Smithfield to the south.

The site occupies one of the largest undeveloped sites within Dublin City Centre and is currently poorly utilised and difficult to access. Its redevelopment is seen as an opportunity to address these issues. Its location, close to the city centre, provides excellent opportunities for the provision of sustainable travel measures. The proximity of the public transport network in the city centre and the intensification of land use at Grangegorman support the principles of sustainable transportation.

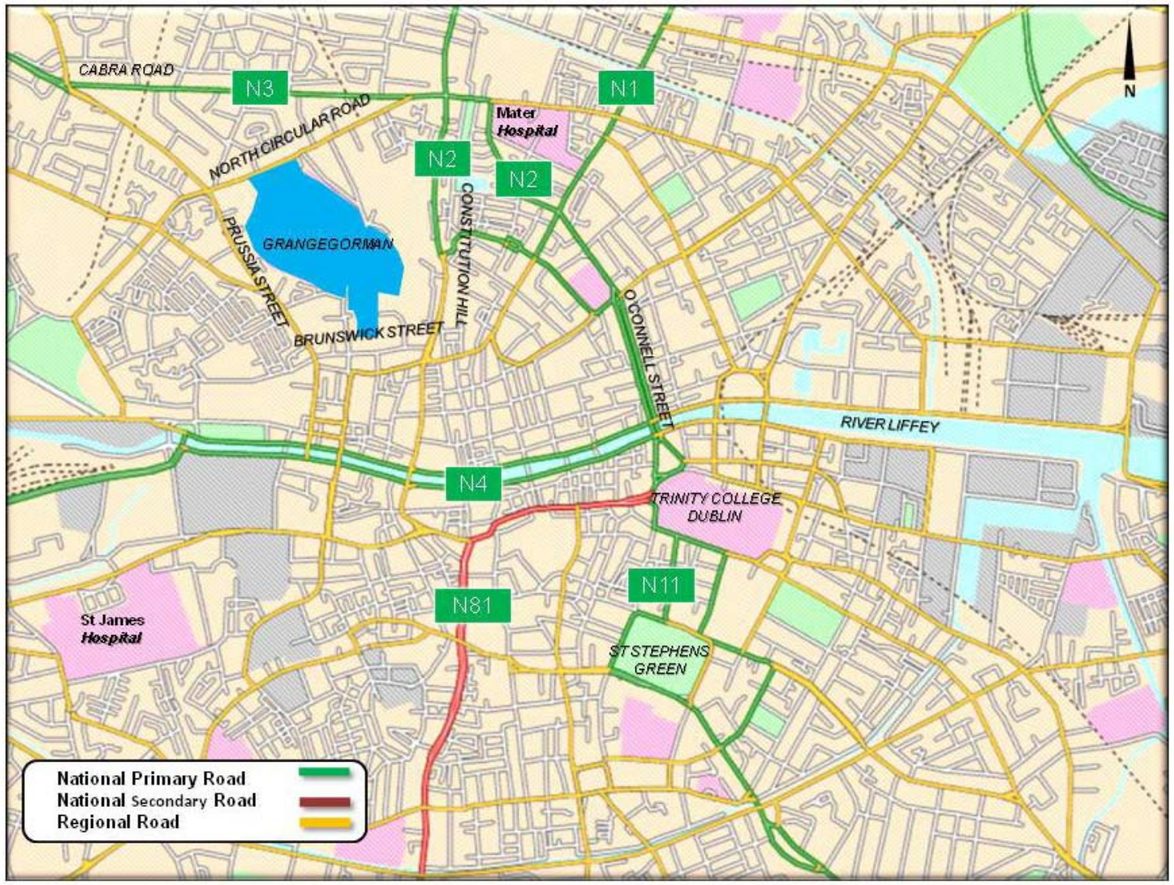


Figure 5.3 Grangegorman Location - (SDZ area shaded blue)
Source: Aecom

5.2.1 Existing Road Network

The road network surrounding the site provides a variety of movement functions. The N3 Cabra Road, N2, and N1 provide strategic movement functions by providing connectivity to the Greater Dublin Area and the North West. The North Circular Road provides an orbital function and plays an important role in cross city movement. These routes provide for pedestrians, cyclists and motorists alike and a general commentary on these facilities is presented below:

Cabra Road (N3)

Cabra Road is a high quality single carriageway road which runs in a general east to west direction in proximity to the site and forms part of the N3 National Primary Route. The N3 connects the northwest of Ireland to Dublin City. It is an important strategic route and forms an arm of a signalised junction with the North Circular Road (commonly referred to as 'St. Peter's Church') approximately 900m from the northern boundary of the proposed site. There are good quality footpaths provided on both sides of the N3 for the majority of its length. An eastbound bus lane is provided in the vicinity of the junction with the North Circular Road.

North Circular Road (R101)

North Circular Road is a high quality single carriageway road approximately 7.5m wide with approximate 2m wide footpaths on both sides. It runs in a general southwest to northeast direction and forms part of regional route R101. It is envisaged that the North Circular Road will form a key access route to the proposed development. The North Circular Road forms a signalised junction with the N3 Cabra Road in the northeast and another signalised junction at Old Cabra Road/Prussia Street in the southwest. This signalised cross-road to the southwest of the site is known locally as Hanlon's Corner. This road is currently assigned a 50km/h speed limit. There are good quality footpaths provided on both sides of the North Circular Road for its length. On road cycle lanes are provided in both directions between St Peter's church and the junction with Rathdown Road while a westbound on road cycle lane is provided for the majority of the remaining length.

Grangegorman Lower/Upper

Grangegorman Lower is a local road which runs between Brunswick Street in the south before diverging into Grangegorman Upper and Rathdown Road which both form junctions with North Circular Road in the north. Traffic travels in both directions along the road which is approximately 10.9m wide in the vicinity of the existing access to St Brendan's Hospital.

Good quality footpaths are provided on both sides of Grangegorman Lower/Upper with some sections of footpath closer to Brunswick Street in possible need of repair.

Rathdown Road

Rathdown Road runs between North Circular Road and Grangegorman Lower and provides access to existing houses which line both sides of the road. The total carriageway width is approximately 9.9m which comprises of 2 general traffic lanes as well as on street parallel parking on both sides of the road. Good quality footpaths of approximately 2.5m width are provided on both sides of the road.

Prussia Street/Manor Street/Stoneybatter/Blackhall Place

Prussia Street runs from North Circular Road and becomes Manor Street, Stoneybatter and then Blackhall Place before joining Ellis Quay to the south. The junction between Prussia Street and North Circular Road is locally known as Hanlon's Corner and the distance between this and Ellis Quay is approximately 1.25km. The total carriageway width varies between 7.9m and 16.9m while minimum footpath widths of 1.9m are present on both sides along the route.

The southbound lane of Blackhall Place is for buses only between King Street North and the quays. General traffic must turn left onto King Street North before accessing the quays via Queen Street. A further section of southbound bus lane is provided between the Aughrim Street and Arbour Place junctions. A northbound bus lane is provided between the quays and the Blackhall Street junction while a northbound section of on road cycle lane is provided between Arbour Place and Hanlon's Corner.

Brunswick Street

Brunswick Street is a one way street for the majority of its length and runs in a west to east direction between Stoneybatter and Church Street. The street is two way for a limited section between its junction with Stoneybatter and Fountain Place to allow for local access. The road is approximately 9.0m wide and consists of 2 lanes of eastbound traffic between its junction with Grangegorman Lower and Church Street. Footpaths are provided on both sides of the road for its entire length. A limited section of on road cycle track is provided in a westbound direction between George's Lane and Stoneybatter.

King Street North

King Street North is also a two lane one way street which runs between Stoneybatter and Church Street. Traffic flows in an easterly direction from Stoneybatter before turning left onto George's Lane and right towards Queen Street. There is no through traffic allowed in an eastbound direction beyond this point. All southbound traffic wishing to access the quays from Stoneybatter must do so via King Street North because Blackhall Place caters for buses and taxis only between North King Street and Ellis Quay.

Traffic flows in a westbound direction only from Church Street with no through traffic allowed beyond the junction with Queen Street and George's Lane. Therefore, traffic either turns right onto George's Lane or left onto Queen Street.

King Street North is approximately 9.5m wide in the vicinity of the junction with Church Street and footpaths are provided on both sides of the road for its entire length. A westbound on road cycle lane is provided between Church Street and continues onto Queen Street.

Queen Street

Queen Street runs between King Street North and Ellis Quay and caters for southbound traffic only. The total carriageway width is approximately 10.5m and consists of 3 southbound lanes with minimum 2.5m wide footpaths on both sides. Southbound traffic from Stoneybatter must access the quays via Queen Street because of the southbound bus only movement allowed on Blackhall Place. A limited section of on road cycle lane is provided from the junction with King Street North.

Morning Star Avenue

Morning Star Avenue is a 6m wide road and runs between Brunswick Street and the south eastern corner of the Grangegorman site. It currently provides access to a number of existing HSE facilities, residences and hostels. Morning Star Avenue has one footpath on the eastern side of the pavement approximately 1.5m wide. On street parking is also provided on the eastern side of the road.

Church Street/Constitution Hill

The R108 commences as Bridge Street just south of the River Liffey and becomes Church Street as it crosses to the north side. The road becomes Constitution Hill in the vicinity of the CIE Broadstone depot before it becomes the N2 national route. The R108 varies between a two and three lane road on both sides north of the River Liffey. A northbound cycle lane is provided north of Broadstone while cycle lanes are also provided on both sides of the road for the majority of its length. The maximum carriageway width is approximately 15m which includes a solid central median in the vicinity of its junction with Brunswick Street.

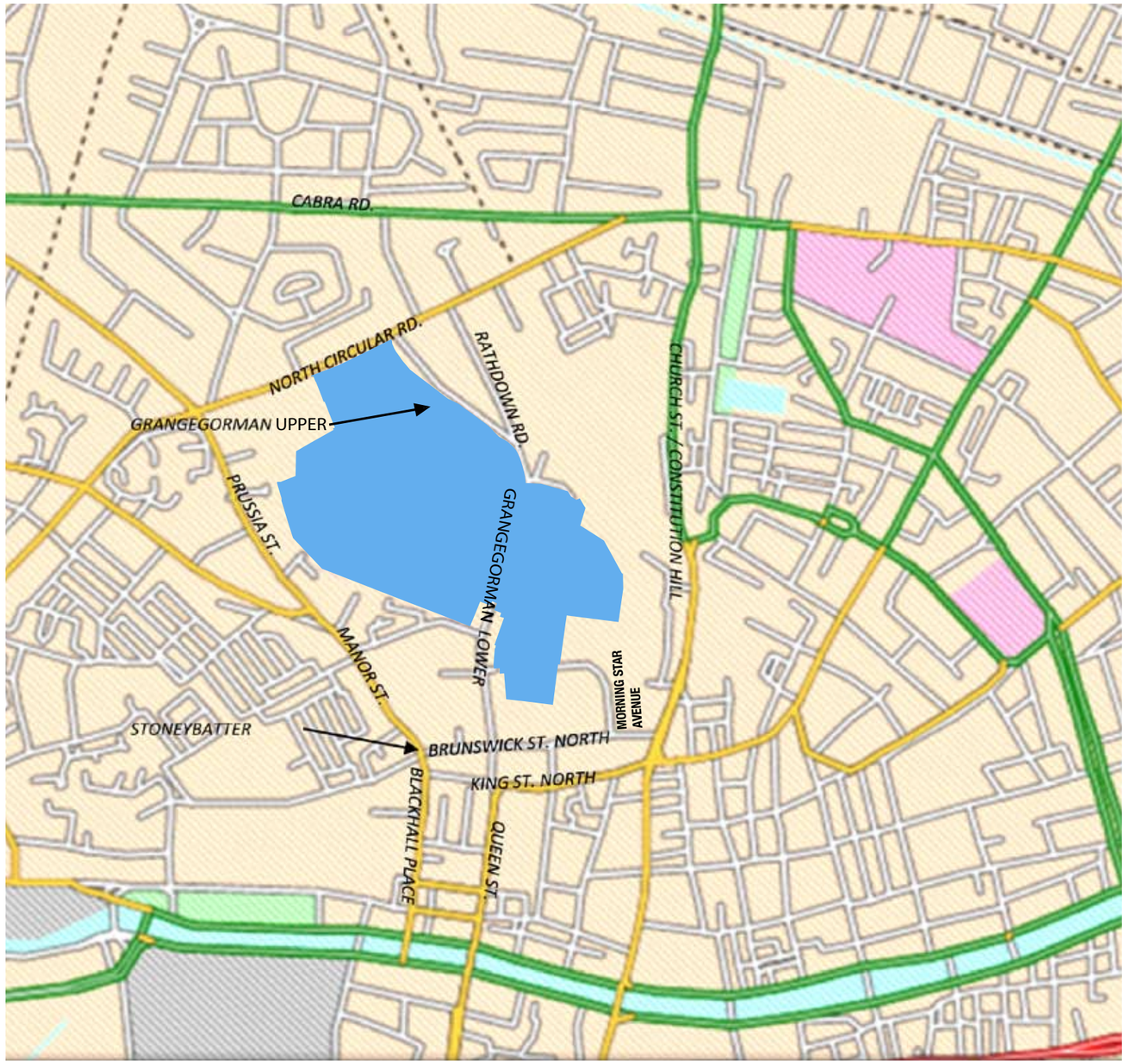


Figure 5.4 Local Road Network - (SDZ area shaded blue)
Source: Aecom

5.2.2 Existing Pedestrian Provision

Existing pedestrian movement through the area tends to correspond with the more significant traffic corridors such as Prussia Street and Constitution Hill / Phibsborough Road. This is a function of the current land use within Grangegorman and its weak connectivity with the surrounding areas. The addition of the east- west permeability offered by the proposed development would be of a major benefit for the area. The majority of the road junctions in the area are signalised and provide good pedestrian crossing facilities in the form of drop kerbs, tactile paving and pedestrian refuge islands at the larger junctions. Pedestrian facilities in certain areas would be in need of repair such as around Stoneybatter and the Grangegorman Lower/Brunswick Street junction.

5.2.3 Existing Cycling Provision

Cycle facilities are provided on the North Circular Road which connects with facilities on Old Cabra Road and Prussia Street linking to the City Centre. Cycle lanes are also provided on both sides of the Constitution Hill/Church Street. Sections of cycle lanes are also provided along Blackhall Place/ Stoneybatter as well as King Street North and Queen Street.

Cycle lanes are also provided along the north and south quays of the River Liffey. Some of the residential streets in the wider Grangegorman area are lightly trafficked and provide suitable cycling environments. Figure 5.5 illustrates the Grangegorman site location in the context of the existing Dublin cycle network. It can be seen that Grangegorman is well positioned to avail of this existing network.

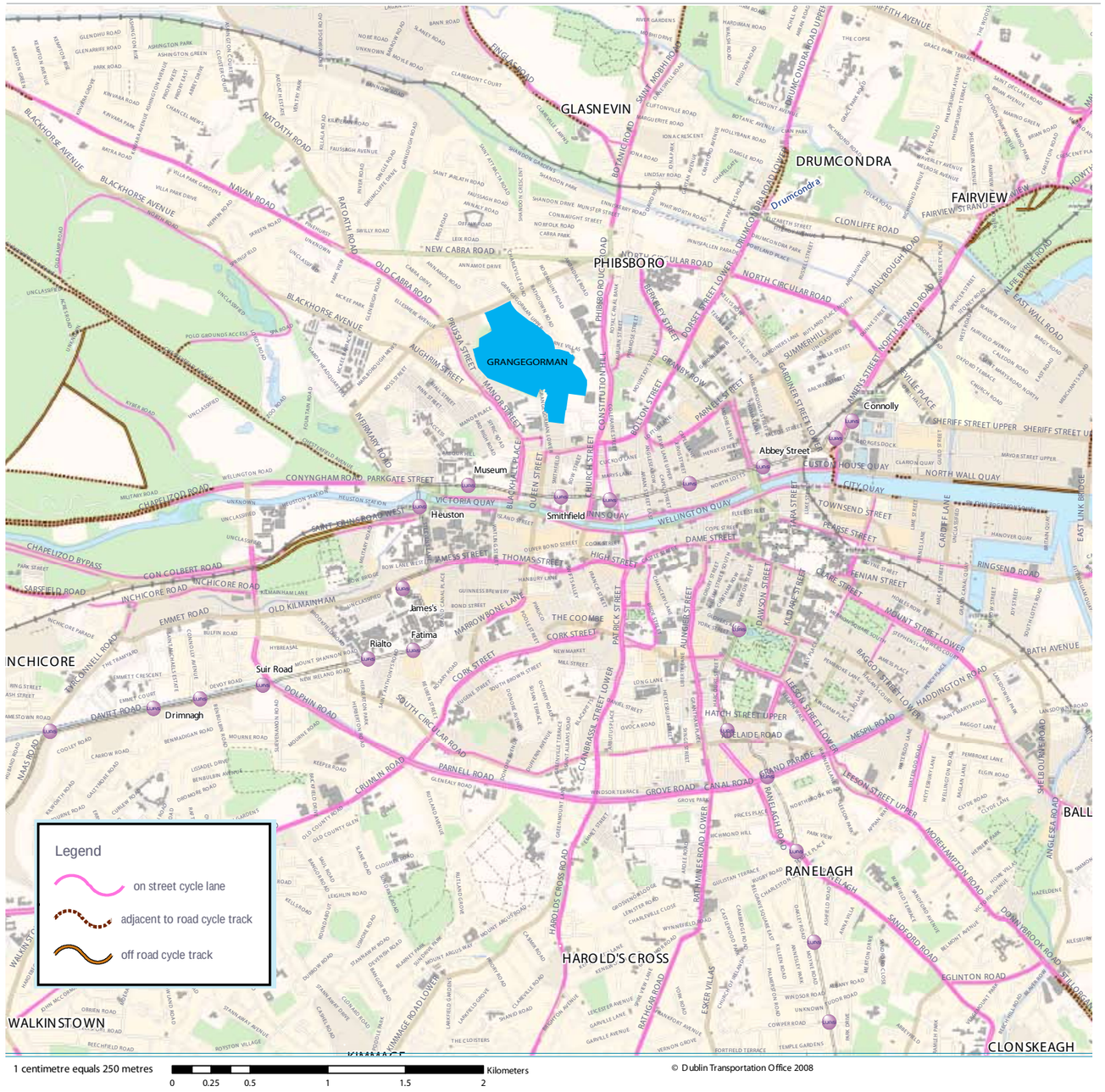


Figure 5.5 Existing cycle provision in Dublin City Centre
Source: Dublin Transport Office

5.2.4 Existing Public Transport

The Grangegorman site is currently well connected by bus services as shown in Figure 5.6 and is surrounded by a number of existing Quality Bus Corridors (QBC). Blanchardstown QBC, Lucan QBC, and Ballymun QBC are all in close proximity to Grangegorman.

The existing LUAS Red line running from Tallaght to Connolly/The Point has three stops (Four Courts, Smithfield and Museum) within 12 - 15 minutes walking distance from the Grangegorman site as shown in Figure 5.7 below. The Luas lines connect the site to the mainline rail network at Heuston and Connolly Stations.

Grangegorman is within 30 minutes walking distance of the City Centre where the majority of bus routes terminate, making the site accessible from transport hubs such as Bus Aras and Connolly Station.

The site's proximity to existing public transport nodes as well as existing pedestrian and cyclist linkages mean that the sustainable modes will be highly attractive and should lead to a modal shift from the private vehicles.

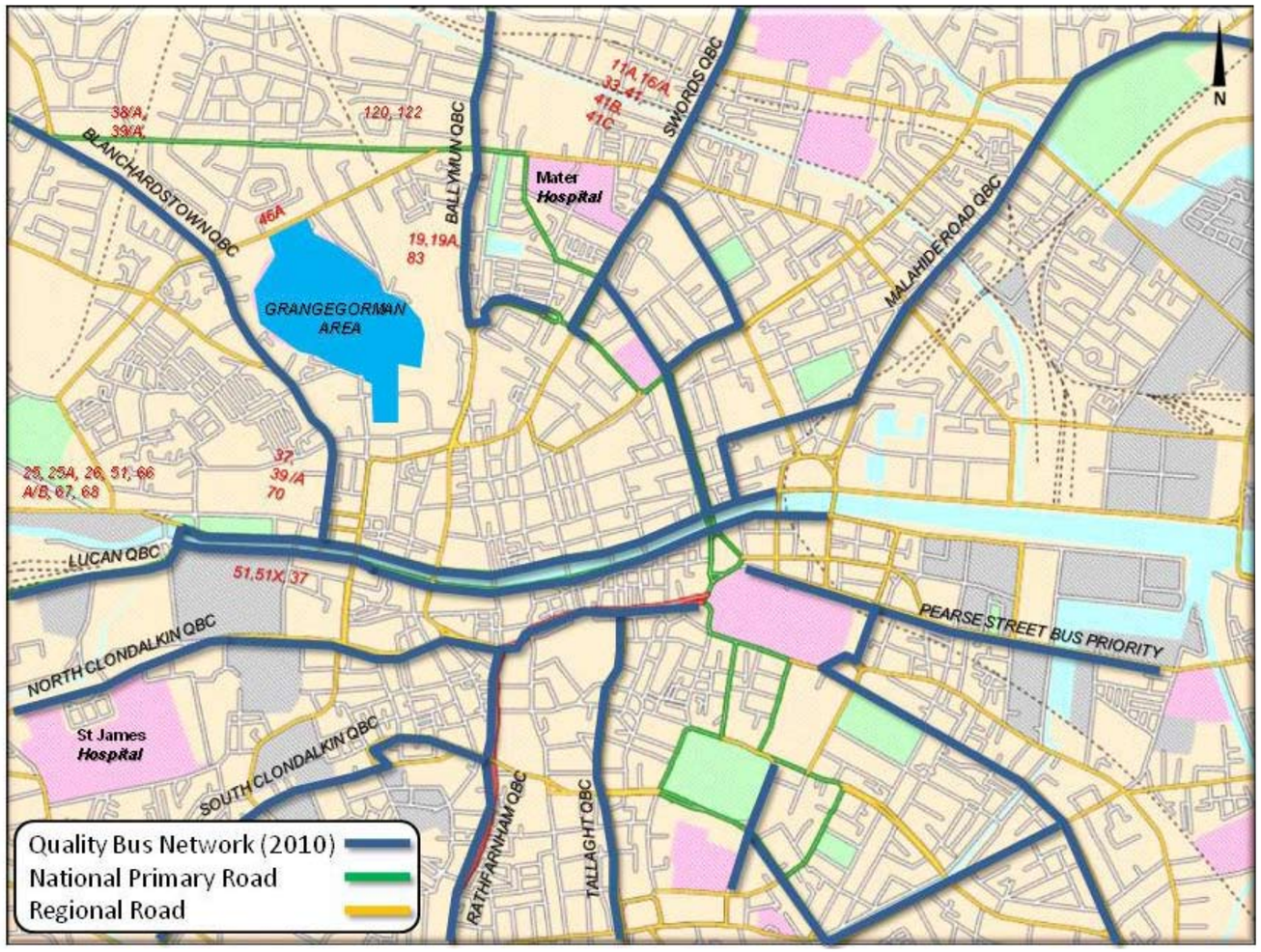


Figure 5.6 Quality Bus Network
Source: Aecom

The National Transport Authority (NTA) carried out accessibility modelling using the Accession modelling tool on behalf of the GDA and this showed that 95% of the population of the Greater Dublin Area is within a 90 minute catchment of Grangegorman by walking & public transport combined. 58% of the population of the Greater Dublin Area was found to be within 60 minutes of Grangegorman by walking & public transport. This is presented graphically in Figure 5.7 and is based on the existing public transport pedestrian linkages.

A similar exercise was carried out by the NTA based on travel to the site by bicycle only. This assessment showed that approximately 245,000 people live within an acceptable 20 minute cycling distance of Grangegorman. Therefore, it can be concluded that Grangegorman is ideally located to offer excellent connectivity to adjacent existing public transport nodes and pedestrian and cyclist links so as to ensure that sustainable modes of transport will be used by the vast majority of visitors to the site. This accessibility will be improved upon further following the introduction of several infrastructural upgrades which will be discussed below.

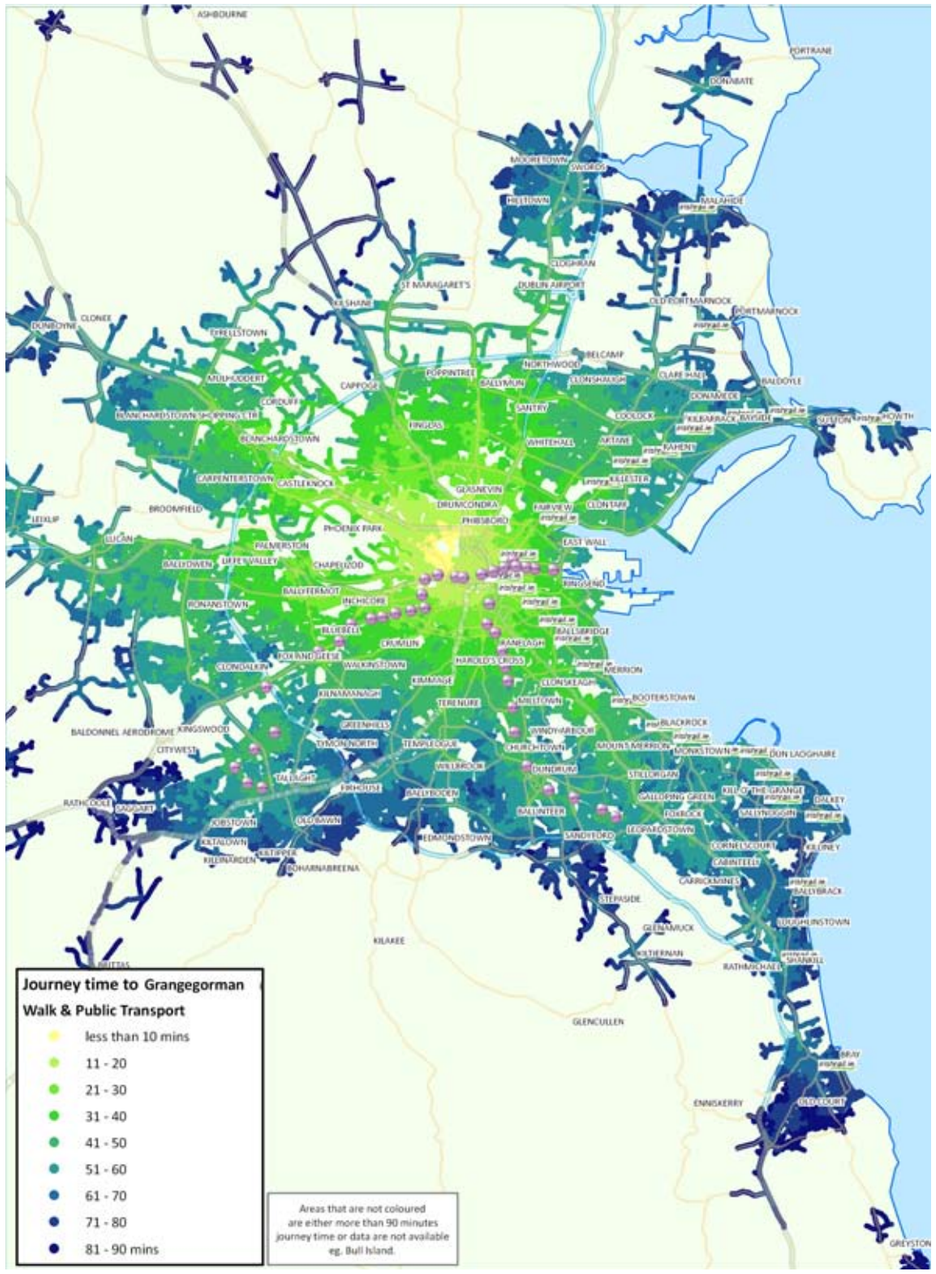


Figure 5.7 Journey time to Grangegorman by walking and existing public transport
Source: NTA

5.2.5 Proposed Public Infrastructural Upgrades

Transport 21 Proposals

There are significant proposals planned in Transport 21 that will improve access to the site. Within the local vicinity, Metro North and Luas Line BX and D will directly improve services providing high capacity public transport links. Metro North will connect Swords to Dublin City Centre (St Stephen's Green) via Dublin Airport. Two proposed stops at the Mater and Parnell Square are located within reasonable walking distance from Grangegorman.

Luas line BX will connect the two existing Luas lines, providing enhanced penetration to the City Centre. Luas line D will extend line BX towards Liffey Junction via Broadstone. The preferred route for line is illustrated in Figure 5.8. The proposed Broadstone D.I.T. stop has been designated to serve Grangegorman SDZ while an additional stop (Grangegorman) which could also serve the site may be constructed slightly further north. The proposed link to Broombridge train station to the north would also provide a connection to the Maynooth commuter rail line to the west.

A further initiative proposed within Transport 21 which will improve accessibility to Grangegorman is the rail interconnector. This planned link connecting the northern rail line to Heuston Station will remove the existing rail capacity restriction within the city centre at Butt Bridge.

The Grangegorman Development Agency supports the principals of the Transport 21 proposals based on the increased levels of accessibility offered by the initiatives.

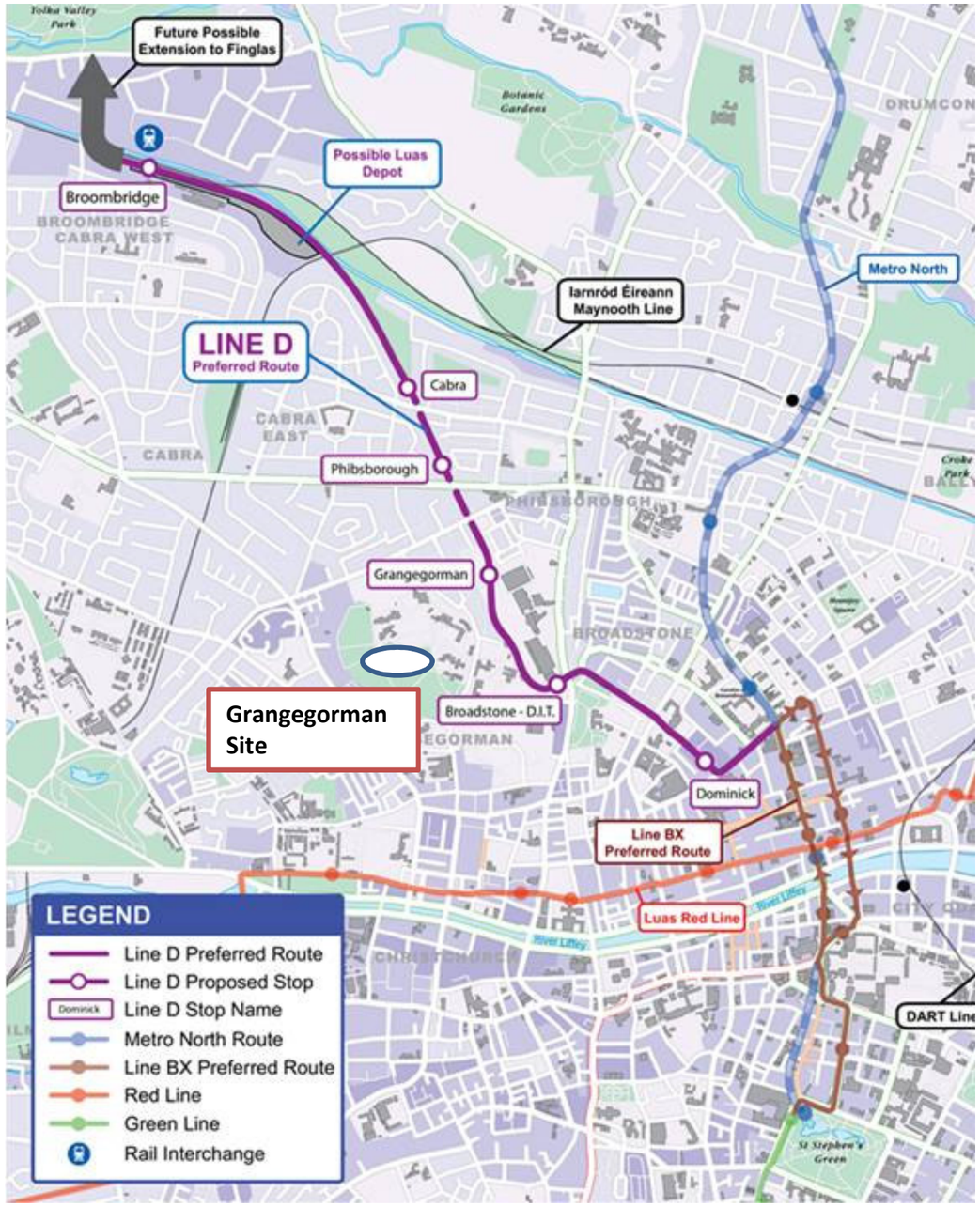


Figure 5.8 Preferred route for Luas Line BXD
Source: RPA

Dublin City Council Strategic Green Routes

The Dublin City Council Development Plan (2011 – 2017) identifies a number of proposed Green Routes (which would provide for cyclist and pedestrians), strategic pedestrian routes and cycle routes across the city. Figure 5.9 illustrates the city centre green route network proposed in the Development Plan while Figure 5.10 illustrates the strategic pedestrian routes proposed in the same document.

It can be seen from Figure 5.9. that Grangegorman SDZ has been identified to form part of a future strategic pedestrian route that will extend westwards towards the Phoenix Park and the Royal Hospital via Heuston Station and the Liberties and eastwards towards the city centre commercial areas of Henry Street, Jervis Street etc. Similarly it can be seen from Figure 5.11 above that the development of Grangegorman in conjunction with other linkages will enhance connectivity within the city centre green route network.

Grangegorman in its current state restricts and represents a barrier to east-west connectivity. However, the proposed permeability and layout of Grangegorman SDZ will lend to DCC's access strategy for the city. In fact the site holds such a strategic location that it could be stated that its development will integrate the city. The proposed site layout and access strategy will be described in further detail in Section 5.4 below.

The Dublin City Council Development Plan also outlines citywide proposals for the construction of new cycle tracks and upgrades to existing cycle tracks. The majority of these routes may form some part of journeys for visitors to Grangegorman however some routes which would be of particular significance are shown adjacent.

Therefore, cycle approaches to Grangegorman from north, south, east and west will be upgraded or introduced under the proposals of the Development Plan. This will further encourage the use of the bicycle as a means of accessing the site. The GDA is committed to working in conjunction with Dublin City Council to deliver the principles and proposals outlined in the current Development Plan.

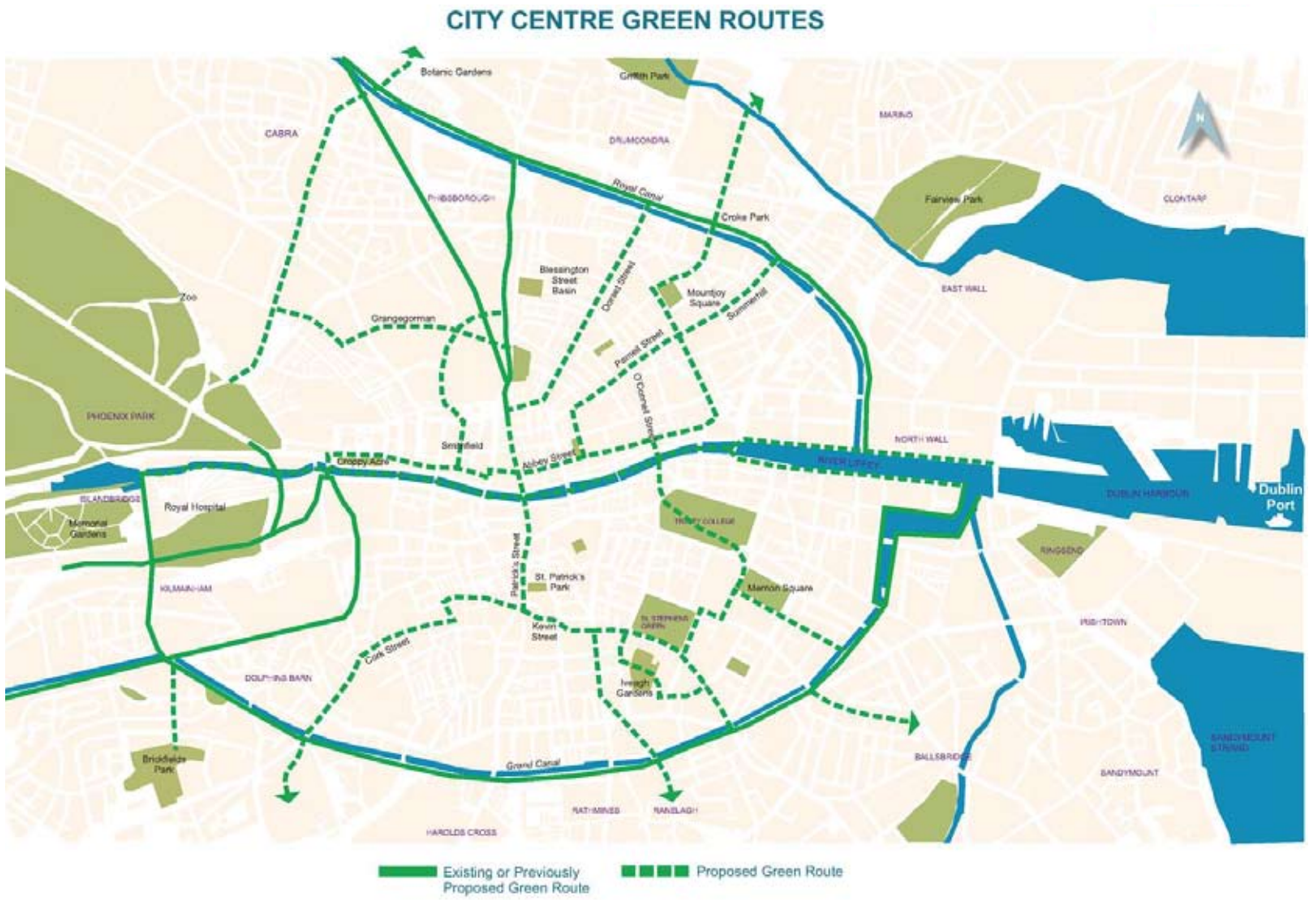
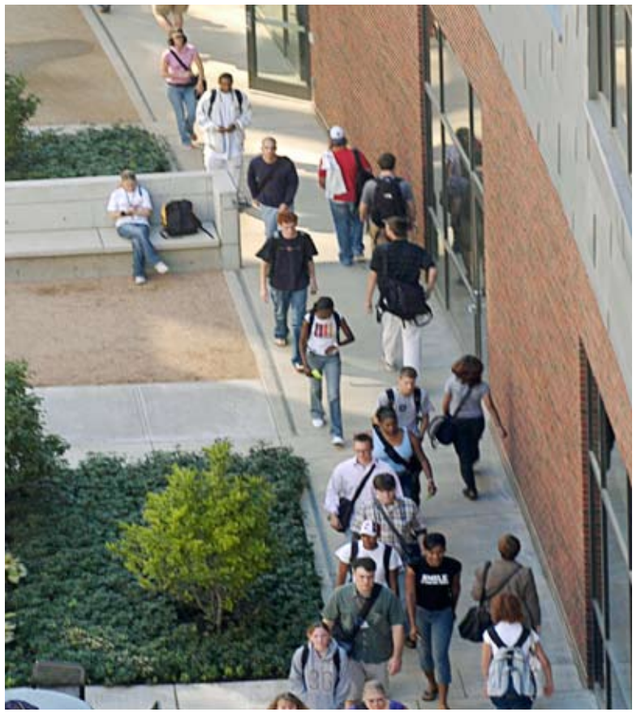


Figure 5.9 City Centre Green Routes (DCC Development Plan 2011 - 2017)

New/upgraded cylcle tracks serving Grangegorman (Dublin City Development Plan 2011-2017)

- Rathdown Road, Grangegorman Upper and Lower, Brunswick Street
- Prussia Street, Manor Street, Stoneybatter, Blackhall Place
- Phibsborough Road, Connaught Street, St Peter's Road
- North Circular Road, Cabra Road, Old Cabra Road
- Parnell Square/Parnell Street
- Conyngham Road, Parkgate Street, North Quays
- Infirmary Road
- Capel Street
- Dorset Street
- Queen Street
- King Street North, Bolton Street



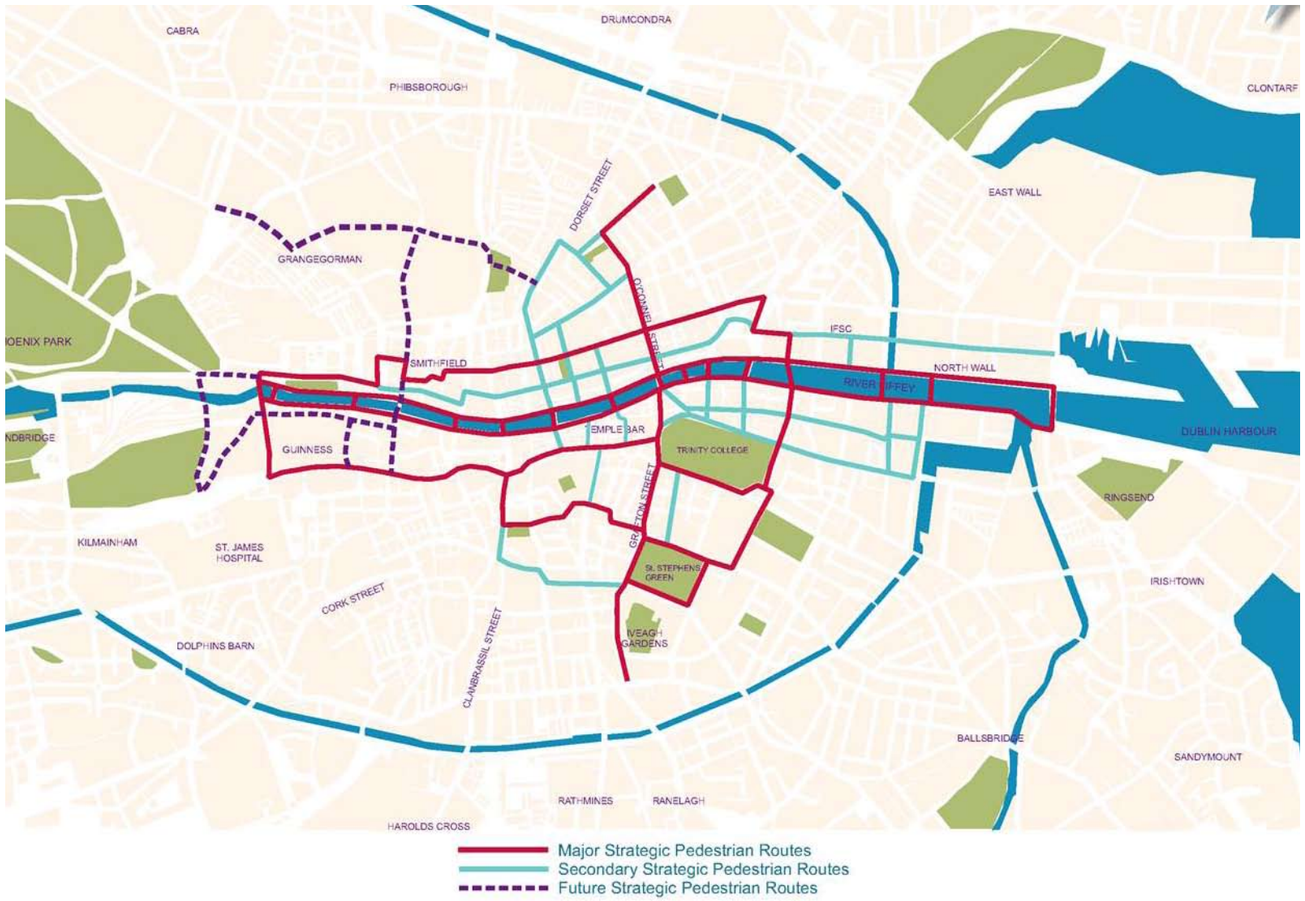


Figure 5.10 Strategic Pedestrian Routes (DCC Development Plan 2011 – 2017)

Draft Transport Strategy 2011 – 2030, National Transport Authority

Within the Draft Transport Strategy 2011 – 2030, the NTA highlight the importance of bus priority measures in particular measures such as the dedicated provision of road space, priority for buses at signals and restriction to some or all vehicles along sections of road.

The NTA has identified a number of Quality Bus Corridors (QBCs) for proposed upgrades. The routes highlighted as Bus Priority 1 have been selected for improvement to journey times, service reliability and comfort levels on the basis of their significance. Routes highlighted as Bus Priority 2 have also been selected for improvements with regard to bus segregation and bus priority. Further to this, orbital routes outside the city centre have also been highlighted for improvement. The NTA will explore the possibility of introducing Bus Rapid Transit to a number of the QBCs. The NTA has stated in its document, that it anticipates that a number of the Bus Priority 1 routes will migrate to facilitate Bus Rapid Transit type services.

Routes of particular relevance to the Grangegorman site include the Swords, Finglas Road, Blanchardstown and Lucan QBCs. The Stillorgan Road QBC is also important to the Grangegorman site as a result of the recent rerouting of the 46a bus service along the North Circular Road. In addition to bus priority measures, the NTA also have a number of objectives in relation to the Luas. These objectives area as follows:

- The upgrade of passenger capacity on the existing Luas Green Line as required to meet demand;
- Extension of the Luas Green Line from St. Stephen's Green to Broombridge via Grangegorman (Luas BX & D);
- Extension of Luas Green from Brides Glen to Bray area;
- Upgrade of Luas Green Line to cater for Metro services and extension of the proposed Metro North tunnel to meet the Green Line.

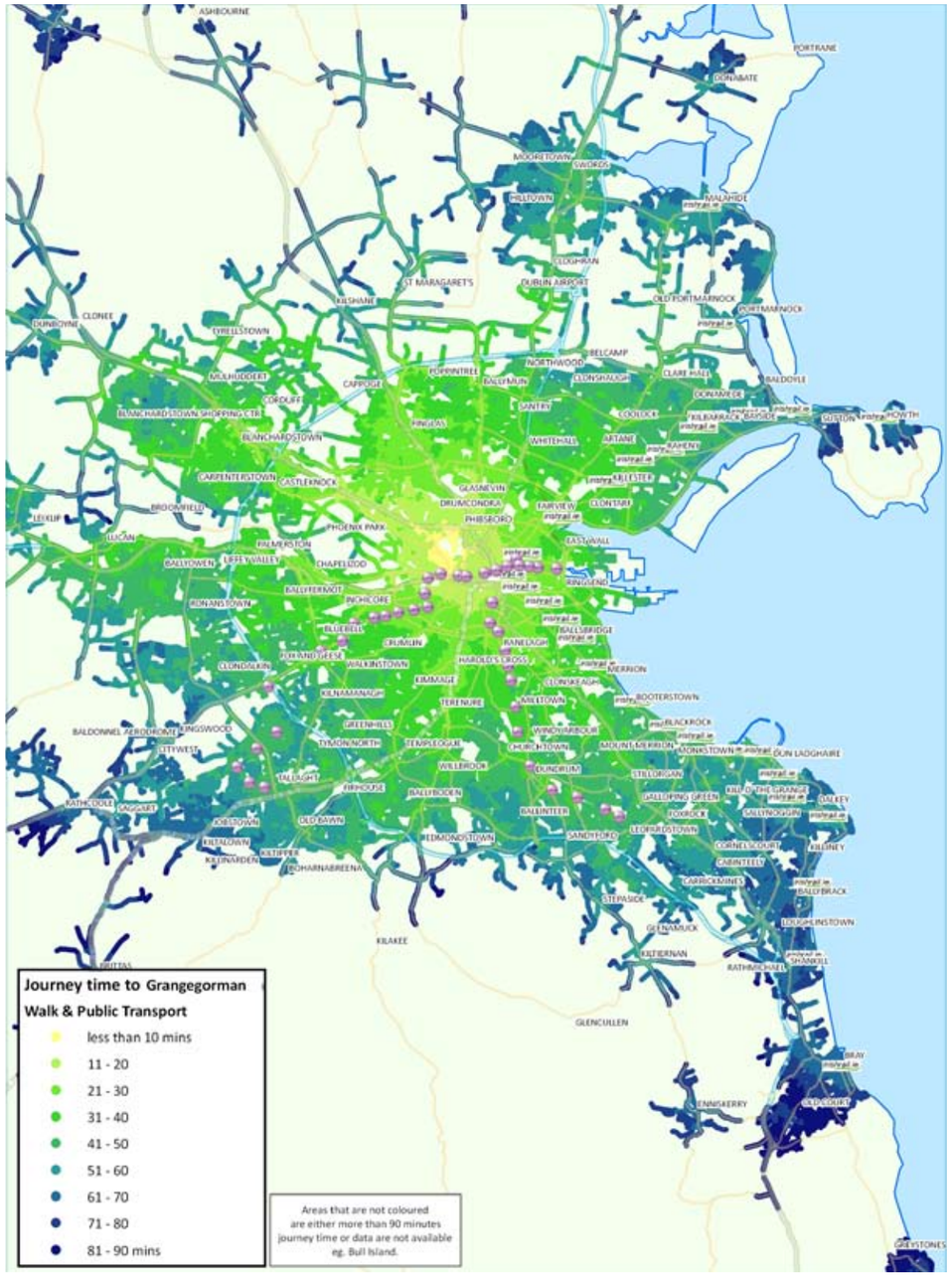


Figure 5.11 Future journey times to Grangegorman by walking and public transport
Source: NTA

The NTA has also used the Accession modelling programme to forecast future journey times to the Grangegorman site following the development of the 2030 strategy which includes Transport 21 proposals namely, Metro North and Luas Line BX and D and the Green routes proposed by DCC. Metro North and Luas BX and D will provide high capacity public transport links within the vicinity of the site. Metro North will connect Swords to Dublin City Centre (St Stephen's Green) via Dublin Airport. Figure 5.11 highlights the future site accessibility which illustrates improved levels of accessibility when compared to Figure 5.7.

As indicated in Figure 5.11, the 90 minute catchment within the Greater Dublin Area will have increased and will encompass 97% of the population, an increase of 2% the catchment shown on Figure 5.7.

It is expected that an increasing modal shift towards sustainable transport modes, such as public transport, walking, and cycling will occur in the future. Grangegorman is ideally located to benefit from the increased levels of accessibility offered by proposed infrastructure upgrades.

5.2.6 Proposed Modal Split

The modal split for DIT and HSE will change somewhat following the construction of their respective facilities in Grangegorman[13]. The existing modal split for DIT and HSE, determined from surveys undertaken, have been discussed in Section 5.1 above. Future modal splits have been developed for DIT to take account of the consolidation of the entire campus at one location in Grangegorman. Future modal splits were developed based on the expected location of the DIT population.

A modal split has been developed in conjunction with DIT based on the existing public transport infrastructure. This modal split can be seen in Figure 5.12.

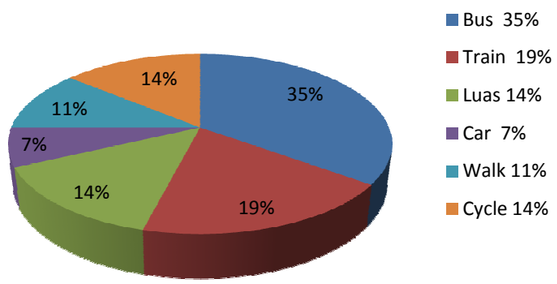


Figure 5.12 Proposed DIT Modal Split based on existing public transport

It can be seen that the Luas modal share has increased when compared to the existing modal split. This is due to the proximity of the existing Luas Red line at Smithfield. It is expected that a number of students would relocate along this line as rents tend to be more affordable than when compared to those along the Green line. Total car use has decreased significantly and this is reflective of the proposed car parking management plan and limited availability of car parking. The cycling modal share has also increased as it will be more attractive to site users because of cyclist facilities being proposed within the SDZ and also those proposed by Dublin City Council in the current Development Plan. The accessibility modelling undertaken by the NTA, and discussed in Section 5.2.4 above, demonstrates clearly that a significant population is within an acceptable cycling distance from the site and therefore the 14% cycle modal share is realistic.

It should be noted that the NTA's projected modal splits for the Grangegorman area predict a higher modal split for the soft modes of walking and cycling (31%) when compared to that illustrated in Figure 5.14 (25%) with a lower public transport share (36%) when compared to the figures above. It is felt that the adoption of a lower soft mode modal share and an increased public transport modal share would be more suitable for the purposes of producing a robust and conservative transport impact assessment with regard to capacity of public transport services. However, it will be an objective of the Mobility Management Strategy to attain an increased modal share for the soft modes.

An additional future modal split was also developed to take account of the introduction of Luas BX-D and Metro North. This modal split can be seen in Figure 5.13.

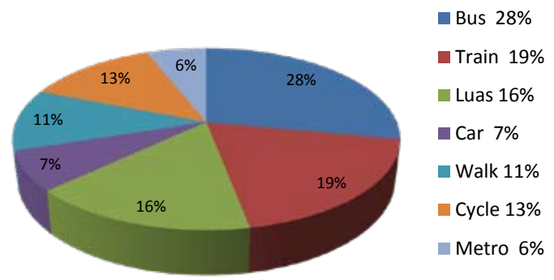


Figure 5.13 Proposed DIT Modal Split including Luas BX-D and Metro North

It has been assumed that this modal split will be applicable after 2019 which has been stated as the projected completion date for Luas BX-D. The proposed completion date for Metro North is 2016. However, in the interests of providing a conservative opening year transport impact assessment for the SDZ in 2016, Metro North has not been assumed to be operational at this time.

It can be seen that the Bus modal share decreases following the introduction of Luas BX-D and Metro North as students can move to these new modes instead. Car use remains almost exactly the same as the car parking provision is the primary driver of vehicular trips and this will remain the same for both scenarios. The Luas modal share increases by 2% following the construction of Luas BX – D as the principal benefit derived from this proposal is the secondary connection it will provide between the site and other public transport links which are already used as primary modes such as the existing Luas lines.

13: Further detail on the methodology adopted in generating the modal splits for each of the principal uses of Grangegorman SDZ and also future year modal splits Refer Chapter 5 of the Transport Assessment Report.

A modal split has been developed for HSE based on the existing public transport infrastructure as it is expected that HSE will have constructed its replacement mental health facilities at Grangegorman in advance of the completion of Luas BX-D or Metro North. This modal split can be seen in Figure 5.14.

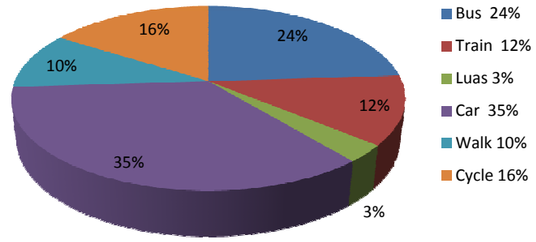


Figure 5.14 Proposed HSE Modal Split with existing Public Transport

It can be seen that the car modal share has decreased significantly when compared to the existing situation. This is as a direct result of a restriction on the number of car parking spaces proposed as part of the development. The HSE staff travel survey highlighted that a large proportion of staff live within an acceptable walking and cycling distance and as such it is envisaged that these modes will experience an increase in modal share as car use is restricted and incentives are implemented to improve their attractiveness. An additional future modal split was also developed to take account of the introduction of Luas BX-D and Metro North. This modal split can be seen in Figure 5.15. It has been assumed that this modal split will be applicable after the completion of both infrastructural upgrades.

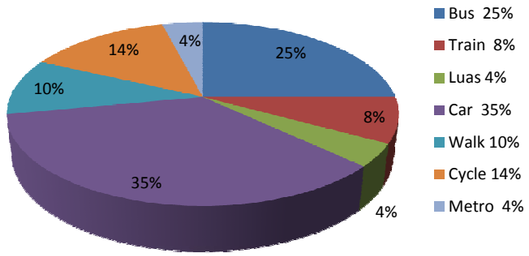


Figure 5.15 HSE Split with Proposed Public Transport

As mentioned above the majority of the existing HSE staff lives in close proximity to Grangegorman. This trend is expected to continue and as a result the Metro and Luas BX-D will not have as major effect on the modal split as that of DIT's. However it can be seen that a slight modal shift does occur from bus and rail to Metro North which will affect employees living along the Metro North corridor such as Swords or Ballymun.

The mixed use or commercial aspect of the development is proposed to be provided following the introduction of LUAS BXD and Metro North to the area. As such a future modal split was developed including these modes. This modal split is illustrated in Figure 5.16.

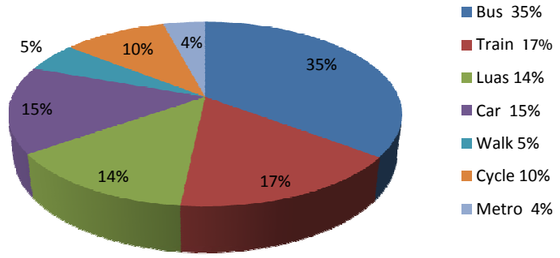


Figure 5.16 Modal Split for Proposed Commercial Development with Proposed Public Transport

Further detail on the methodology adopted in generating the modal splits for each of the principal uses of Grangegorman SDZ and also future year modal splits Refer Chapter 5 of the Transport Assessment Report.

5.3 Transportation Demand

A considerable data collection phase including extensive liaison with all stakeholders of Grangegorman SDZ allowed the trip generation associated with each phase of the development proposals to be fully understood. The table below sets out the travel demand in person trips during the weekday AM and PM peak period. Extensive detail on the methodology adopted in formulating the anticipated travel demand for Grangegorman can be found in reference document (Chapter 5 and Technical Appendix) Transport Assessment report.

It should be noted that the number of person trips evaluated are extreme values based on robust assumptions. It is unlikely that DIT will generate such a high transport demand during the traditional AM & PM peak hours. However, this extreme if unlikely scenario has been considered for the purposes of providing a conservative and robust assessment of the transportation impacts of the proposed development.

Table 5.2 Person Trips during Peak Periods

Element	Person Trips			
	Weekday AM (08:00 – 09:00)		Weekday PM (16:30 – 17:30)	
	Arrivals	Departures	Arrivals	Departures
HSE Core (6,560 sqm)	108	9	21	119
HSE Core Additional (20,600 sqm)	213	51	38	232
Healthcare Related (14,500 sqm)	91	60	45	110
DIT Core (108,100 sqm)	5500	0	672	2323
DIT Core Additional (32,500 sqm)	779	0	0	212
DIT Ancillary Educational (38,000 sqm)	341	14	62	400
Student Residential Housing[14]*	-527	0	0	-129
DIT Expansion (34,000 sqm)	815	0	0	222
Primary School	476	0	0	0
Library	0	0	0	0
Elderly Housing	0	0	7	5
Mixed Use Development (61,000 sqm)	1012	0	0	1314
Totals	**8808**	**134**	**845**	**4808**

14: Following the completion of the Student Residential Housing there will be a reduction in the number of external trips as some students will be located on campus.

5.4 Access Strategy and Traffic Management

The access strategy for Grangegorman SDZ has been developed with a multi modal approach in mind. Pedestrian and cyclist access points have been sited to maximise connectivity with public transport services and also the surrounding pedestrian and cyclist network. Vehicular access will be provided from North Circular Road, Morning Star Avenue and multiple access points from Grangegorman Lower/Upper.

The proposed development has been designed along the principals set out in the NTA Draft Transport Strategy 2011 – 2030 giving priority to soft modes (walking & cycling) followed by public transport and vehicular traffic in that specific order.

As development progresses within Grangegorman SDZ the more detailed analysis will be carried out (to the requirements of DCC) taking into consideration the specific priorities identified above. Therefore at specific locations where for example pedestrian movement is predicted to be high the junction will be designed to meet the pedestrian demand in terms of crossing facilities.

5.4.1 Pedestrian, Cyclist and Public Transport Accessibility

To achieve good integration with the external transport network and the best possible access to public transport, the development scheme has been designed with excellent permeability for all transport modes.

The pedestrian/cycle network will provide a comprehensive network of internal streets, designed to modern standards which will encourage the sustainable movement of people. This will be supplemented by the provision of ancillary facilities such as the generous provision of cycle parking, in addition to showers and locker rooms.

A pedestrian access route will be provided to the Blanchardstown QBC, which runs along Stoneybatter/ Prussia Street, from access points on Prussia Street and North Circular Road. Pedestrian access to the existing Luas Red Line and the Quays will be provided via multiple access points on Grangegorman Lower and Morning Star Avenue.

Pedestrian & Cyclist Access Opportunities

The main gateway accesses are to be supplemented by additional pedestrian and cyclist accesses at North Circular Road, Fingal Place and other locations, as illustrated on Figure 5.17. These accesses will provide for north-south and east-west connectivity, to avail of public transportation services proximate to Grangegorman. The pedestrian accesses will also cater for cyclists and link with existing cycling routes on the North Circular Road, Prussia Street and Church Street, Constitution Hill and future cycle routes, as set out in the Dublin City Council Development Plan.

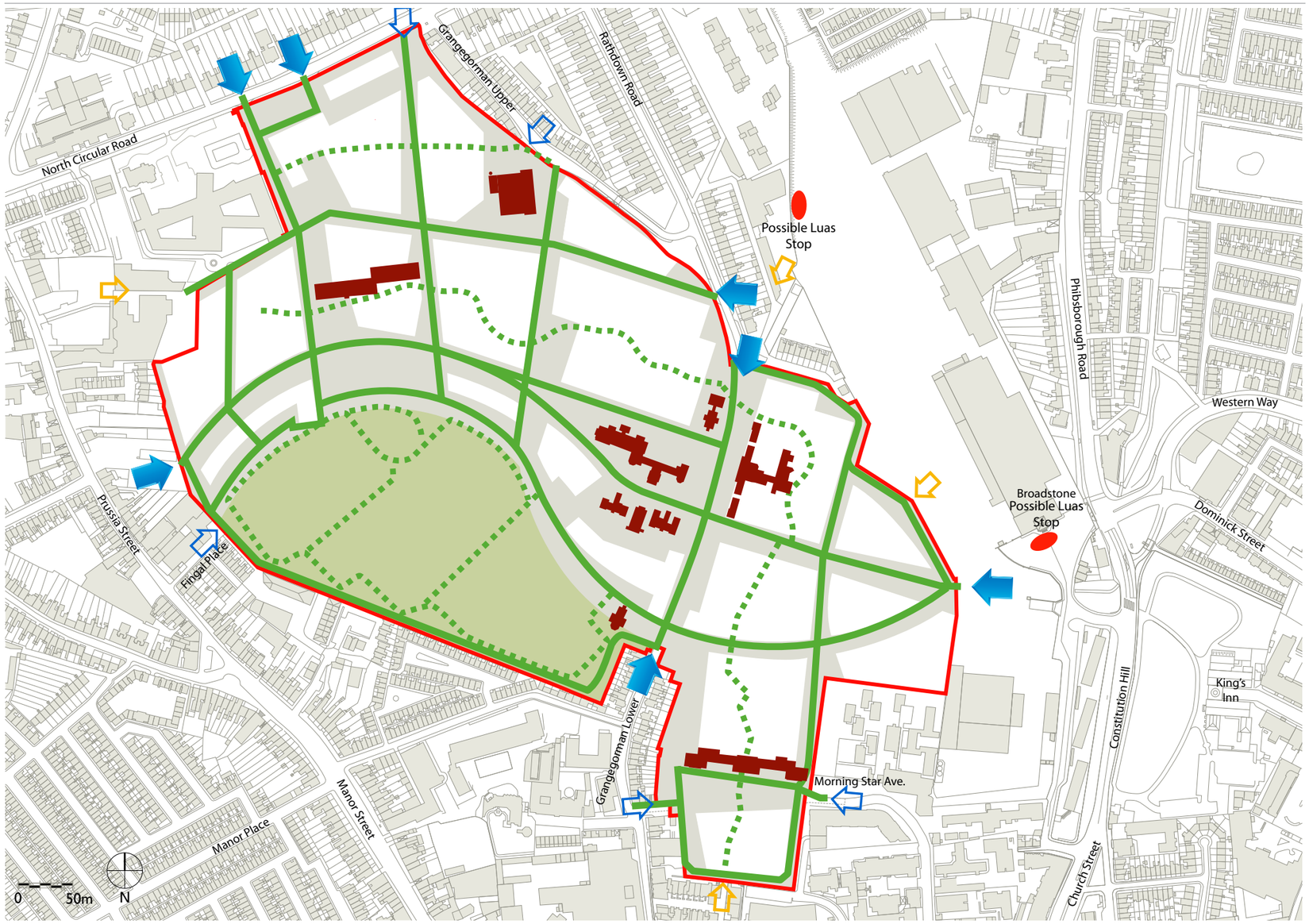


Figure 5.17 Proposed pedestrian/ cyclist access points

5.4.2 Vehicular Access

The principal vehicular accesses are to be provided from North Circular Road, Morning Star Avenue and Grangegorman Lower/Upper. Daytime vehicular access will be restricted to designated parking areas which are presented in Figure 5.18.

Traffic Calming

A vehicular traffic calming scheme has been designed and is described in the Planning Scheme. The traffic calming proposals are designed in a manner which prioritises pedestrians over motorised traffic. Shared surfaces are envisaged internally to give priority towards pedestrians along roads where appropriate.

In addition, traffic using the two car parks on the south-eastern part of the site will be required through signage and junction build out to exit to the north/south as appropriate, to discourage traffic exiting / entering the car parks passing along the most narrow part of the road of Grangegorman Lower.

The primary road link is Grangegorman Lower/Upper, which bisects the site. Grangegorman Lower will be the only available through route for external traffic and it will be traffic calmed along its length using build outs or appropriate surface treatment to the requirements of Dublin City Council.

Secondary links into the site include Ivy Avenue and Prussia Street, the access to the car parks, as well as servicing and maintenance roads along the periphery of the site. These secondary links are intended to be used by limited traffic volumes mainly related to servicing, maintenance, and disabled access. Emergency access will be provided in accordance with appropriate regulations.

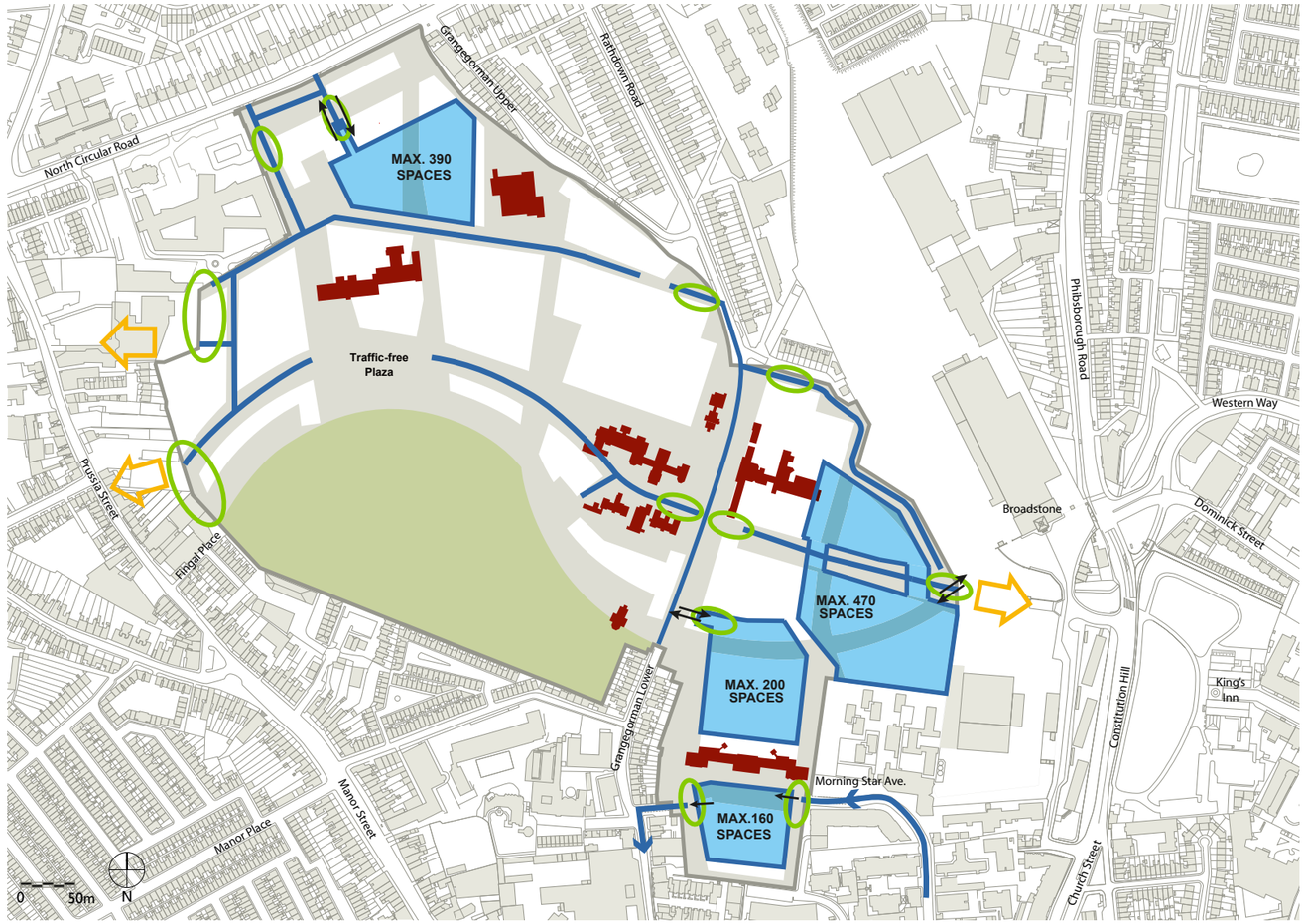


Figure 5.18 Proposed vehicular access points and possible car parking areas

5.4.3 Servicing

Servicing will be undertaken predominately from the North Circular Road access junction and Grangegorman Lower/ Upper. Within the site, the road network has been designed to accommodate servicing vehicular movements. However, vehicular access to these links will be restricted to off peak hours. Their character is predominantly pedestrian shared space with limited vehicular traffic and flush shared surfaces with minimal delineation of carriageway space.

The proposed service access routes are illustrated in Figure 5.19. It can be seen that the proposed routes will be restricted to peripheral routes. In the interests of clarity and to protect residential amenity, the secondary service route via Grangegorman Lower/ Morning Star Avenue will include measures such as traffic calming and control points to ensure it does not become a through-route for the purpose of servicing and is restricted for use of emergency and maintenance vehicles.

5.4.4 Car Parking

The provision of car parking facilities is a key element to the management of travel demand to the development site. The proposed parking provision is also the principle driver for the vehicular modal split for each aspect of the development. An over - provision of car parking may lead to the inducement of vehicular trips while an under - provision may lead to an overspill to the surrounding on street car parking facilities. The provision of car parking on the site has been optimised to ensure that it satisfies the operational requirements of the various land uses while protecting the adjacent amenity.

The parking provision has been quantified and assigned with reference to the Dublin City Council Development Plan maximum standards.

Dublin City Development Plan 2011 - 2017 was referenced to establish the car parking requirement specified in this document. Table 5.3 outlines the car parking provision based on these standards. Car parking provision has been quantified for the entire Grangegorman site i.e. the SDZ site and the adjoining site to the north west where planning permission has been granted for a replacement health facility. Thus the HSE floor space areas are increased in Table 5.3 to reflect development across the entire site.

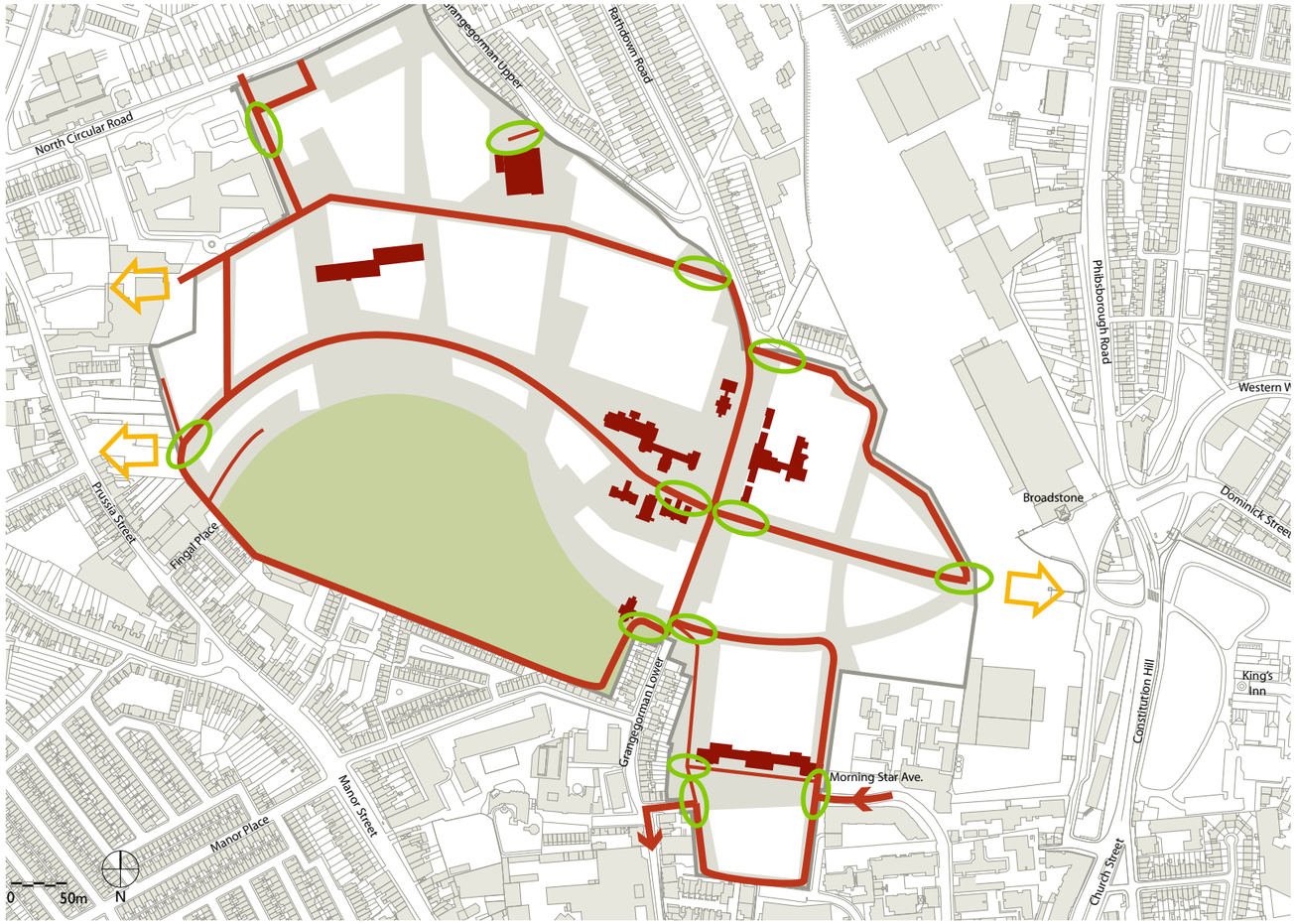


Figure 5.19 Proposed service access routes

The proposed parking provision for each land use is set out in Table 5.4

The proposed locations for on-site parking as well as the proposed vehicular access routes are presented in Figure 5.19. It should be noted that this Figure shows maximum parking numbers at each location which will be refined at a later date such that the on-site total of 1,150 car parking spaces will not be exceeded.

It should also be noted that the parking provision for the HSE replacement mental health facilities are also included within the 1,150 total provision. HSE replacement facilities will be constructed within the Grangegorman site but not within the SDZ designation.

The principal reason for the parking provision in excess of the Development Plan standards is the allocation of 350 spaces for DIT's Core educational facilities. There is no specific requirement for third level educational facilities in the Development Plan. However, this quantum is deemed appropriate due to the nature of the development, the majority of which is a replacement facility.

DIT currently has 300 parking spaces across its existing campus locations, 100 of which are provided at Aungier Street. It is felt that the provision of 350 spaces for DIT at Grangegorman is a reasonable quantum when it is considered that DIT will eventually expand its facilities by 58% when compared to its existing facilities. It would not be advisable to apply the Dublin City Council Development Plan standard of zero parking in this instance as this would lead to an increased demand for on-street parking in the vicinity of Grangegorman. The DIT parking provision will be carefully managed so as to discourage the unnecessary use of the private vehicle.

Provision will be made within the Grangegorman site for electric or battery operated vehicles with charging points and measures will be explored to facilitate the roll-out of charging infrastructure for such vehicles, including advance planning for the suitable layout and location of facilities for electric or battery operated transport. Provision will also be made for as an appropriate quantum of parking spaces for disabled motorists in accordance with National Policy.

Additional detail on the proposed parking management scheme can be found in the Mobility Management Plan report.

Table 5.3 Development Plan Car Parking Calculation

Element	Floor Areas (sqm)	Rate per sqm	DCC Car Parking Requirement	Overall Parking Requirement
HSE	22,000*	1 per 150	147	147
HSE Additional	20,600	1 per 150	137	137
HSE at North Circular Road	14,500 (6,500 sqm/65 units Residential, 8,000 HSE Facilities)	1 space per unit 1 space per 150 sqm	118	118
DIT Core & Core Additional	108,100 & 32,500	None	-	-
DIT Ancillary	3,400 (900 seats) 8,000 800 5,000 3,000 17,800	1 space per 100 seats, Performance Space 1 space per 400sqm, Sports Centre None for Early Learning Centre None for Energy Centre 1 space per 350 sqm retail space 1 space per 400 sqm Industry/ Research space	9 20 0 0 14 45	88
DIT Student Residential Accommodation	57,000 sqm 2,000 beds	1 per 10 beds**	200	200
DIT Expansion	34,000	None	0	0
School	2,800	None	0	0
DCC Library	1,500	No Standard	0	0
DCC Elderly Housing	3,400 sqm 34 units	1 per unit	34	34
Mixed Use Development	43,000 16,400 1,600	1 space per 400 sqm commercial labs/research space 1 space per 400 sqm office space 1 space per 350 sqm retail space	108 41 5	154
Total				**878**

Table 5.4 Proposed Car Parking

Element	Car Parking Allocation
HSE	385
HSE Additional	Included in 385 spaces above
HSE at North Circular Road	Included in 385 spaces above
DIT Core & DIT Core Additional	350
DIT Ancillary	43
DIT Student Residential Accommodation	200
DIT Expansion	Included in 350 spaces above
School	16
Library	0
DCC Elderly Housing	21
Mixed Use Development	135
Total	**1,150**

**15,060 sqm of 22,000 sqm HSE Core are HSE replacement facilities and are not within the SDZ designation but will be constructed by the opening year of the SDZ (2016). As such the parking requirements of this element of the HSE development is included in the overall parking provision for the site as set out in Table 5.4*

***Student residential parking requirement agreed with Dublin City Council*

On-site parking will be introduced on a pro rata basis in line with the proposed provision outlined in Table 5.4 and the quantum of development completed. The proposed car parking areas will be managed and designated for different aspects of the proposed uses so as to control and limit vehicular access to the site, thereby managing the traffic impact of the development.

Initially, a surface car park will be constructed in the area to the North of the site designated for later HSE facilities after it is no longer required as a site compound (see Figure 8.1). Similarly, an interim surface car park will be constructed adjacent to the existing Lower House building to the Southeast corner of the site. It is anticipated the surface car parks will be replaced with underground/ undercroft car parks in those general locations at such time as development comes on stream in those areas. Please refer to Chapter 4 of the Transport Assessment for more detail on the proposed parking provision.

5.4.5 Mobility Management

The Grangegorman Development Agency (GDA) will develop and co-ordinate a mobility management strategy for the Grangegorman site to be adopted by all stakeholders prior to occupation of the site. The approach to the development of an appropriate Mobility Management Strategy is the employment of the well-documented 'Carrot and Stick' approach. Such an approach tackles the transport problem from both ends. It utilises the 'Carrot' which incorporates the improvements in alternative modes of travel, effectively opening up transport options for commuters, and the 'Stick' which discourages the use of car transport for those who do not need it.

'Carrot' measures incorporate measures to facilitate Public Transport, car sharing, flexible travel times, and an improvement to the walking and cycling environment. 'Stick' measures include car parking restraint and other fiscal measures. Both elements of this approach are required to achieve a successful result. The parking provision for the Grangegorman area will act as a powerful mobility management measure as it has been calculated specifically to ensure against an overprovision of parking and a resultant over reliance on the private vehicle. This will be supplemented by measures to encourage more sustainable modes of transport such as walking, cycling and the use of public transport.

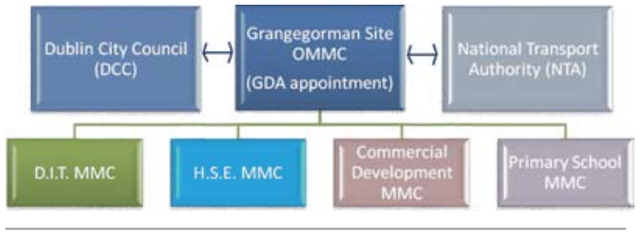


Figure 5.20 Proposed Mobility Management Structure

It is intended that all individual stakeholders will appoint a Mobility Management Coordinator (MMC) who will promote all aspects of the Mobility Management Plan (MMP) within their organisation. The GDA will appoint an overall MMC (OMMC) for Grangegorman who will liaise with individual MMCs and ensure that MMPs for all stakeholders are being developed in an appropriate and coordinated manner which will benefit the area as a whole. The overall co-ordinator will be appointed prior to any occupation of the site. A proposed Mobility Management structure for Grangegorman SDZ is presented in Figure 5.20

Table 5.5 presents a number of measures proposed within the Mobility Management Plan for Grangegorman. These measures were derived from consultation with the future occupants of Grangegorman, namely HSE employees and the existing DIT population.

These suggested measures, supplemented by further incentives such as the provision of a one-stop travel centre within the proposed student hub, will encourage the use of sustainable modes of access to Grangegorman. The travel / mobility management information point will be for the use of all of the future occupants of the Grangegorman area. The OMMC appointed by the GDA and associated staff will be accommodated at this facility and will coordinate the activities of the stakeholder MMCs from this point. This information point will dispense travel information to both staff and students at the site upon request in relation to walking, cycling and public transport. This facility will be located in the proposed student hub.

Please refer to the separate Mobility Management Plan Report for further detail on the mobility management strategy.

Table 5.5 Proposed Mobility Management Measures

Element	Car Parking Allocation	Car Parking Allocation
Secure, covered bicycle parking	Additional direct bus routes / services to campus	Car parking management
Shower and changing facilities	Improved bus waiting facilities	Reserved car parking for car sharers
Information on cycle routes	Incentives in terms of discounted fares	Development of a car sharers database
Safer, lit paths to campus	Real time information at bus stops	Emergency ride home service should the car share arrangement break down momentarily
Improved cycle lanes to campus	Metro line to serve campus	Reduced parking charges for car sharers
Bicycle maintenance classes	Luas tram line with stop at campus	
Cycle training	More convenient drop off points to campus	
A DIT bike fleet		

5.5 Transportation Impact

An assessment of the impact of the proposed development on traffic conditions in the vicinity has been undertaken. In addition an assessment of the likely impact of the development on existing public transport services was also carried out. The results of these assessments are discussed below.

5.5.1 Public Transport Interventions and Impacts

Following an assessment of the residual capacity available on the existing public transport network it was calculated that there are approximately 4,330 person trips available on the network for Grangegorman SDZ following upgrades to several Dublin Bus routes during the critical AM peak period. These upgrades are discussed in further detail below.

The estimated number of public transport trips generated by each element of the SDZ is presented in Table 5.6

The addition of circa 1500 – 2,000 student beds will actually lead to a reduction in the number of external public transport trips generated by Grangegorman SDZ. The addition of student accommodation will reduce the number of external trips being made by students to Grangegorman SDZ. Therefore, the number of public transport trips will also be reduced. However, in the interests of producing a conservative assessment this reduction in public transport demand has not been included & hence the student residential element of the SDZ is not included in Tables 5.6 and 5.7.

Table 5.7 sets out the public transport impacts based on a possible development scenario for Grangegorman and derived from the modal splits outlined in the Transport Assessment. The scenario below outlines a possible scenario for the delivery of the overall project. Delivery of individual elements will be dependent on availability of finance, procurement methods adopted and property disposal. Please refer to Chapter 8 of this document for more information on phasing and implementation. It is considered that the Dublin Bus upgrades required to

Table 5.6 Public Transport Trips (AM Peak Hour)

Element	Public Transport Trips
HSE Core (6,560 sqm)	46
HSE Core Additional (20,600 sqm)	103
Healthcare Related (14,500 sqm)	56
DIT Core (108,100 sqm)	3740
DIT Core Additional (32,500 sqm)	538
DIT Ancillary (38,000 sqm)	241
DIT Expansion (34,000 sqm)	562
Primary School (2,800 sqm)	105
Library (1,500 sqm)	0
Elderly Housing (3,400 sqm)	0
Mixed Use Development (61,000 sqm)	708

Table 5.7 Public Transport Impacts (AM Peak Hour 08:00 – 09:00)

Phase 1	Element	Public Transport Impacts
	HSE Core (6,560 sqm)	This phase of development will generate approx 4,255 additional public transport trips. The following bus routes will need to be enhanced during the peak periods: Dublin Bus Route 7 Cherrywood to City Centre Dublin Bus Route 14/A Dundrum Luas to Parnell Square Dublin Bus Route 33 Balbriggan to City Centre Dublin Bus Route 42 A/B Blunden Drive to City Centre Dublin Bus Route 116 Ballinteer to City Centre
	DIT Core (108,100 sqm)	
	HSE Core Additional (20,600 sqm)	
	DIT Ancillary (38,000 sqm)	
	Primary School (2,800 sqm) & Library (1,500 sqm)	
	Elderly Housing (3,400 sqm)	
Phase 2	DIT Core Additional (32,500 sqm)	This phase of development will generate approx 538 additional public transport trips. This number of public transport trips could be supported by either (i) LUAS BXD (ii) Metro North and additional Shuttle/Feeder bus services or (iii) the introduction of BRT services or increased capacity of existing Luas lines as proposed in the Draft NTA Strategy for 2030
Phase 3	Mixed Use Development (61,000 sqm)	This phase of development will generate approx 1,326 public transport trips LUAS BXD; Metro North could support this number of trips. The Interconnector rail tunnel and integrated ticketing will also facilitate greater integration between public transport services.
	DIT Expansion (34,000 sqm)	
	Healthcare Related (14,500 sqm)	

**Access from Constitution Hill will deliver greater levels of accessibility for pedestrian and vehicular trips*

accommodate Phase 1 of the development are feasible. The routes identified would typically require an increase in frequency by 1 service inbound during the AM peak with the 33 bus service requiring the greatest increase in frequency with an additional 4 services required in the AM peak.

The Red line would experience the highest patronage of the two existing Luas lines from the Grangegorman population with an occupancy of 13.8% of its existing inbound capacity compared to 11.8% on the Green line during the AM peak hour. The patronage on the outbound Red line services in the AM peak would be 21.9% as people use the route to connect Grangegorman with Connolly station. However, these short hop trips would be against the typical tidal flow of the Red line which would have ample capacity to serve these trips.

The subsequent phase of development as outlined in Table 5.7 shall be supported by further interventions in the form of additional public transport infrastructure, namely the completion of Luas BX-D. Luas BX-D is considered to be of greater benefit to Grangegorman as it will offer increased levels of connectivity with existing bus, train and Luas services as it traverses the city. Luas BX-D will also have a stop at Broadstone gate, at the eastern boundary of Grangegorman, while the closest Metro North stop will be located at Parnell Square.

In the scenario that Luas BX-D was not to be provided the public transport provision should be supplemented by additional Shuttle/Feeder bus services to achieve the improved levels of connectivity which Luas BX-D would offer. An example of such services could possibly include a shuttle bus from the Metro Parnell Square stop or a shuttle service from Broombridge train station and a service from Connolly Station.

The full development of the Grangegorman SDZ will generate a demand of approximately 1,332 additional public transport trips which could be accommodated following the construction of Luas BX-D and Metro North or further significant public transport upgrades such as Bus Rapid Transit or increased capacity on existing Luas lines as proposed within the NTA Draft Transport Strategy 2011 – 2030.

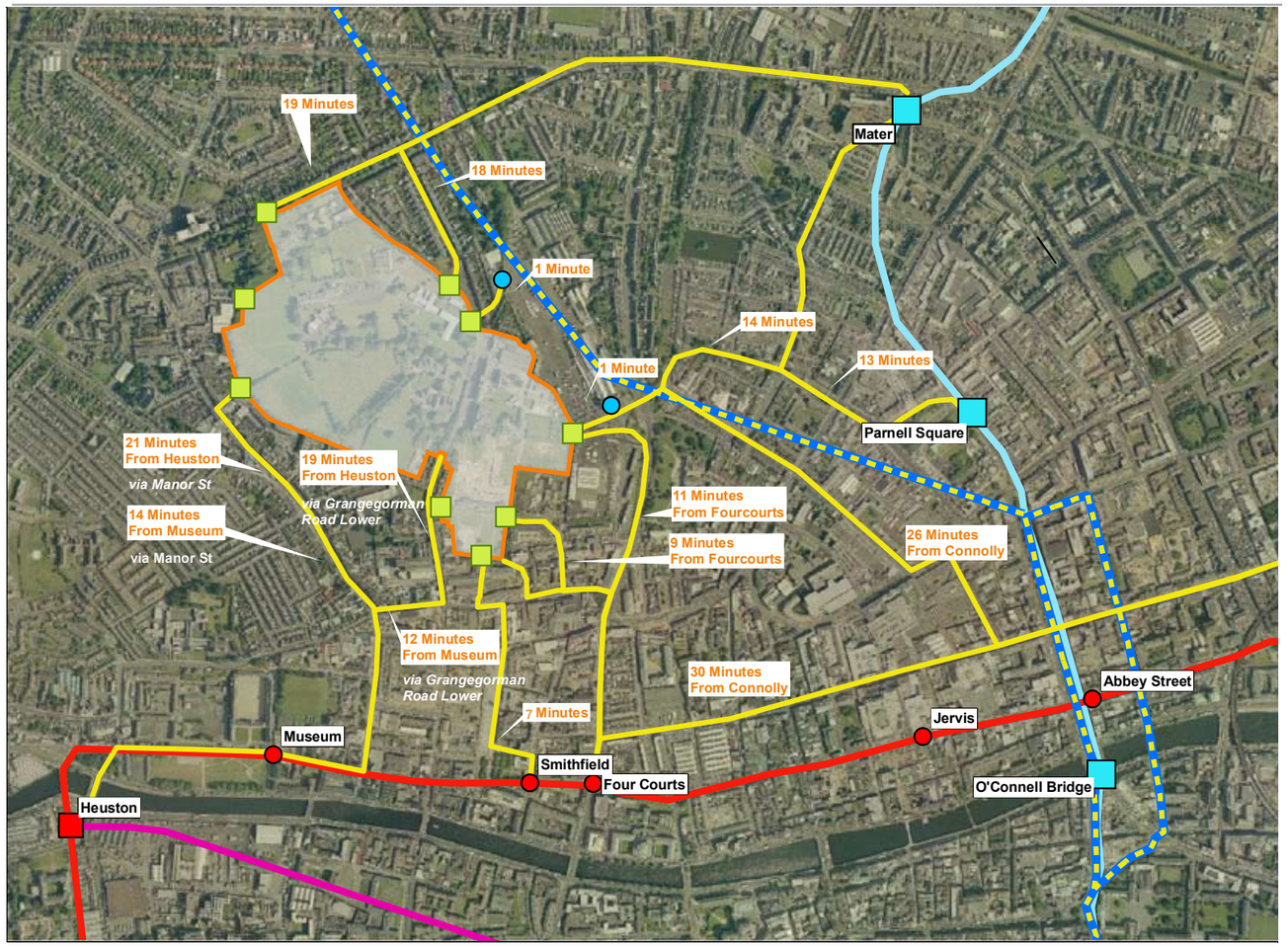


Figure 5.21 Walking distances from existing and proposesd Public Transport
Source: Arup

5.5.2 Road Interventions and Impacts

The traffic associated with the development proposals will be directly related to the volume of car parking provided within the site. The number and allocation of car parking has been set out in Section 5.2.4. The following sections of this Chapter will present the results of an assessment of the impacts associated with this quantum of parking.

Strategic Traffic Impacts[15]

The traffic model developed to assess the impacts associated with LUAS BXD was kindly made available to the Grangegorman Development Agency by the Railway Procurement Agency. This model provided a useful tool in understanding the wider traffic context given the implementation of a number of traffic management measures within the city centre such as the College Green bus gate. Specifically the model facilitated an understanding of the trip distribution patterns in the area. The results of this assessment facilitated the identification of key junctions in the vicinity of the site which warranted a more detailed assessment of their operational performance.

Key Junction Analysis

The following junctions were identified for further junction analysis following the strategic traffic assessment. The location of these junctions is presented in Figure 5.22

Junction 1: Infirmary Road / Parkgate Street signalised junction;

Junction 2: Aughrim Street / North Circular Road / Blackhorse Avenue signalised junction;

Junction 3: Prussia Street / Old Cabra Road / North Circular Road (Hanlon's Corner) signalised junction;

Junction 4: Cabra Road / North Circular Road signalised junction;

Junction 5: Grangegorman Road / Rathdown Road priority junction;

Junction 6: Grangegorman Road Lower / Brunswick Street signalised junction;

Junction 7: Stoneybatter / Brunswick Street / Arbour Hill priority controlled junction.

Junction 8: King Street North/ Blackhall Place signalised junction

[15] *For further detail on the methodology adopted in assessing these impacts refer to Chapter 6 of the Transport Assessment Report*

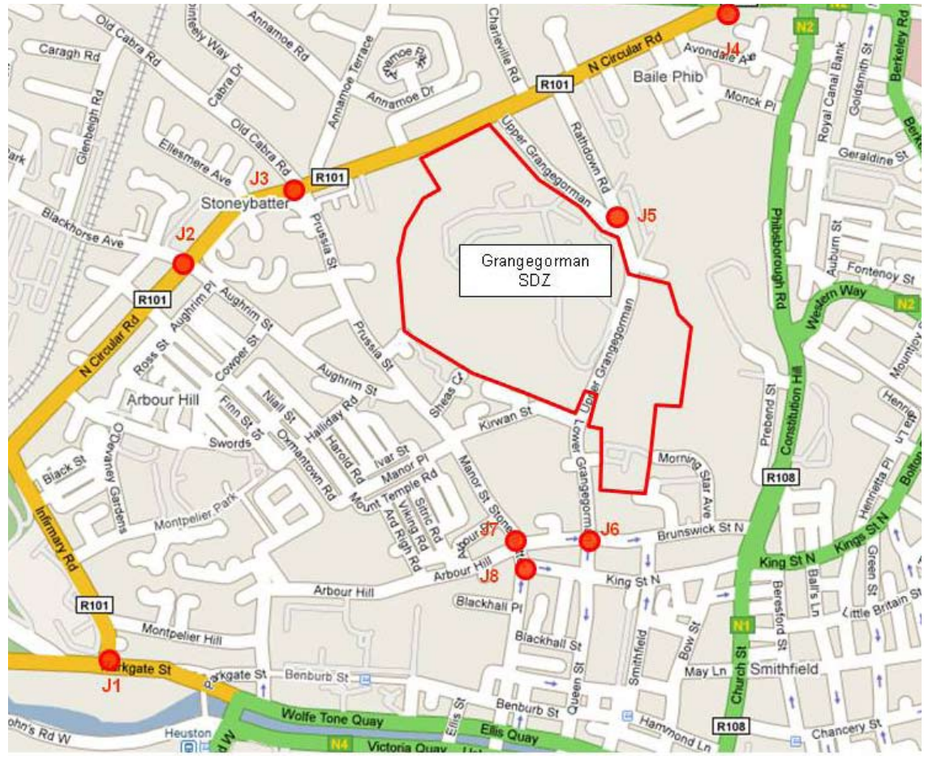


Figure 5.22 Scope of traffic junction assessment

These junctions were assessed using microscopic traffic modelling programs LINSIG and PICADY. The assessment concluded that the performance of the junctions in the post development scenario could be improved by a number of interventions. Subsequent to these interventions being implemented the junctions will operate at similar or better levels of service than that currently provided. The following junctions were identified as requiring mitigation measures:

Junction 6: Grangegorman Road Lower / Brunswick Street signalised junction

Junction 7: Stoneybatter / Brunswick Street / Arbour Hill priority controlled junction

Junction 4: Cabra Road / North Circular Road signalised junction

The transportation impacts of the proposed development of Grangegorman SDZ have been assessed in a multi faceted manner. This assessment concludes that the proposed development can be accommodated with minor modifications to existing road infrastructure while the programme of development will be aligned to the provision of proposed public transport infrastructure. The redevelopment of Grangegorman and the east – west permeability offered by the development will be of major benefit for the surrounding area and the city as a whole. In effect, the redeveloped site will integrate the city. Therefore the proposed development is appropriate from a transportation perspective.

6

Planning Scheme

Grangegorman

Conservation And Cultural Heritage

Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

Conservation And Cultural Heritage

6.0 Purpose and Layout of this Chapter

This chapter addresses two principal matters, namely guidelines and proposals. It sets out guidelines for the assessment of the historic buildings and structures within the proposed SDZ area in terms of their re-use and integration as part of new design proposals. The chapter provides proposals and guidance in relation to retention, removal, interventions, use and settings of the existing buildings on the site. These have been prepared following inspection of the existing buildings and structures within the site; review of previously prepared Architectural Appraisal reports and review of historic records and documents relating to the site.

The chapter includes general guidelines which will be applied to all building projects as well as specific guidelines for each building or structure. The guidelines are intended as a design tool for architects and other design team members as well as a tool to aid assessment of design proposals, building techniques, etc. by the GDA and the relevant planning and development authorities.

6.1 Historic Context / Development of Grangegorman

The surviving structures that are to be found in Grangegorman today represent the remains of several institutions built in phases over the last two hundred years. Prior to that, the lands remained largely undeveloped, having passed through a series of owners over time. In 1170, at the time of the Norman invasions, the lands formed part of the Priory of Holy Trinity, Christchurch Cathedral. The village of Stoneybatter gradually developed around a manorial residence which was constructed on these lands. During the early eighteenth century the manor house and lands became the residence of the Monck family, Earls of Rathdown, later Viscount Monck of Charleville House, Wicklow. In the 1760's the North Circular Road was laid out, forming the northern boundary to the site.

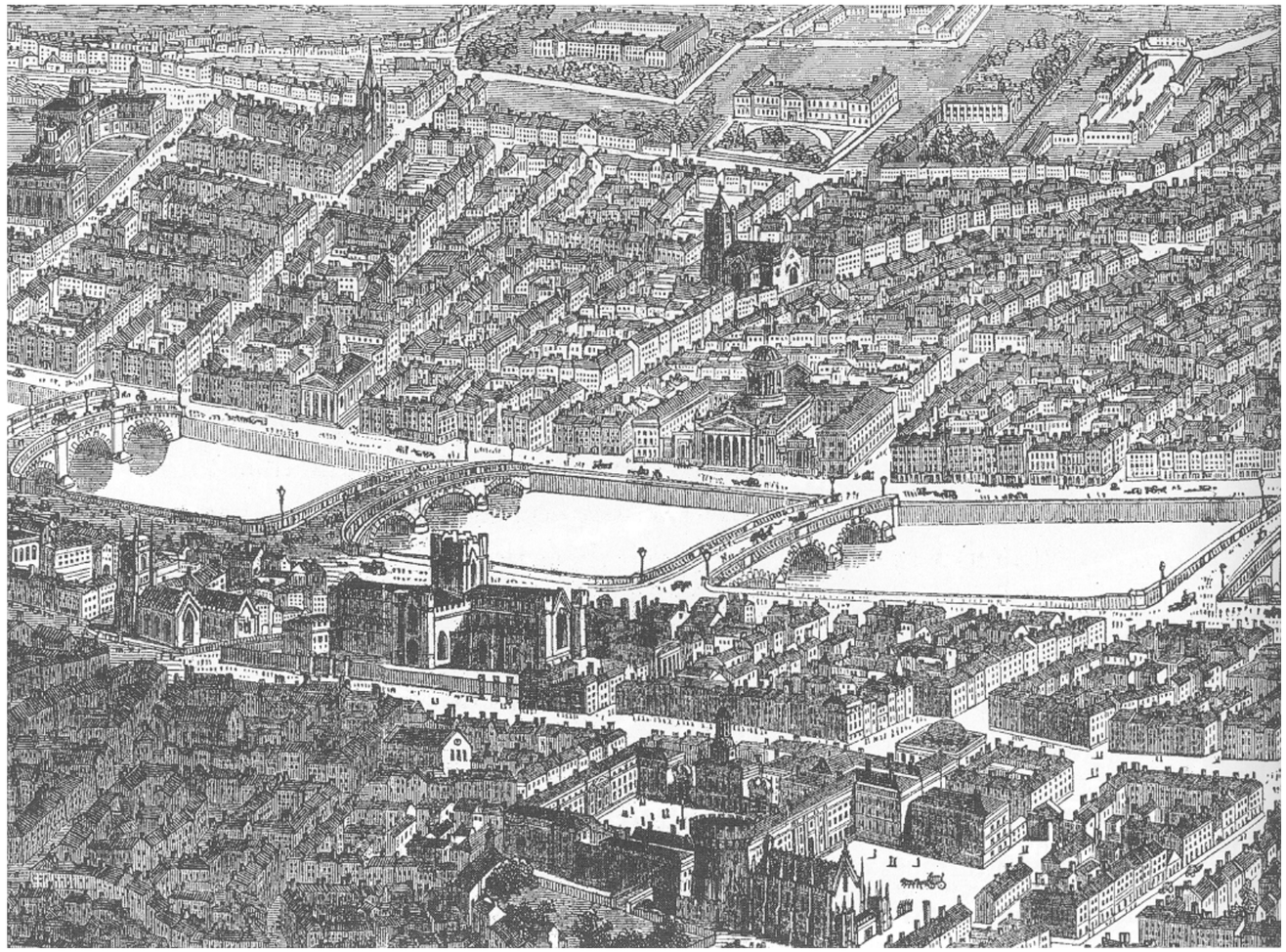


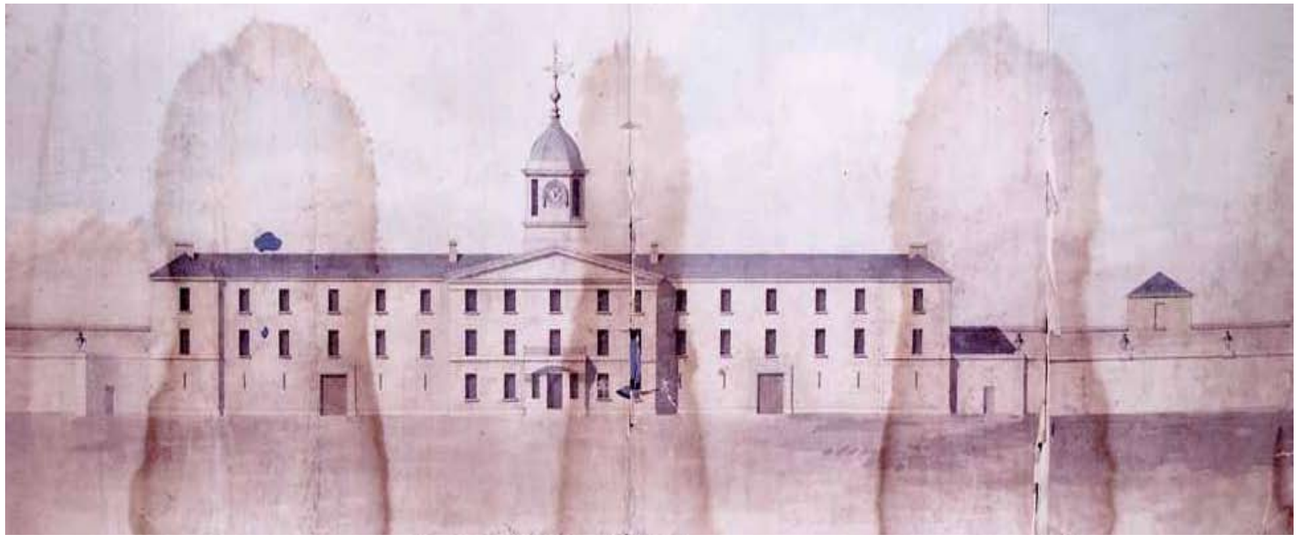
Figure 6.01 1846 view of Dublin city from south side of Liffey looking north towards Grangegorman area (note grouping of institutional buildings at top of drawing). Source: Illustrated London News, 1846

The Dublin House of Industry was set up in 1773, on the foot of parliamentary acts which had been passed the previous year. It was located on a site on what was later to become Morning Star Avenue (to the east of the surviving section of the Former Richmond Lunatic Asylum/Lower House). Initially it provided relief of the poor in addition to punishment for 'vagabonds and sturdy beggars', however it was increasingly used to accommodate the mentally ill and the governors sought in 1809 to build accommodation specifically for 'lunatics'.

In 1814 the Richmond Lunatic Asylum (today known as the Lower House), designed by Francis Johnston, located adjacent to the House of Industry and based on the plan of the London Bethlehem Hospital ('Bedlam'), received its first patients from the House of Industry. In 1812 building work commenced on the Richmond Penitentiary (now called the Clock Tower Building), also designed by Francis Johnston, on a site north of the Richmond Lunatic Asylum.

While this building opened in 1816, it was not fully completed until 1820. The design, layout and operation of these institutions reflected the most advanced contemporary thinking with regard to treatment of mental health and criminality, however the early history of both these buildings is one of continual pressure from overcrowding. This overcrowding and an Act of 1831 which enabled the Richmond Lunatic Asylum to receive as many patients as it could accommodate led to the purchase of extensive additional lands on the west site of Grangegorman Lower from Lord Monck in 1836 and again in 1851. A tunnel, constructed under the road to connect these lands to the Asylum, still survives.

In c. 1851 a chapel (Chapel of St. Laurence), designed by Murray and Denny, -initially serving both Catholic and Protestant patients- and two flanking infirmaries (the Male Infirmary and the Female Infirmary), were built as an ensemble on the western section of the site. The Church of Ireland Chapel designed by George Wilkinson was constructed in 1860. To supplement the Richmond Lunatic Asylum, the Richmond District Asylum was completed by Murray and Denny in 1854 in the north-western section of the extended lands, built to house males only. The preferred entrance to this building was from the North Circular Road but it was not permitted by Lord Monck and so the present entrance on Grangegorman Lower, opposite Johnston's Penitentiary building was formed. The decorative cast iron gates and granite piers of this entrance are not original to here, being the c.1780 gates of Santry Court which were re-erected here c. 1940.



Original elevation of Richmond Penitentiary.

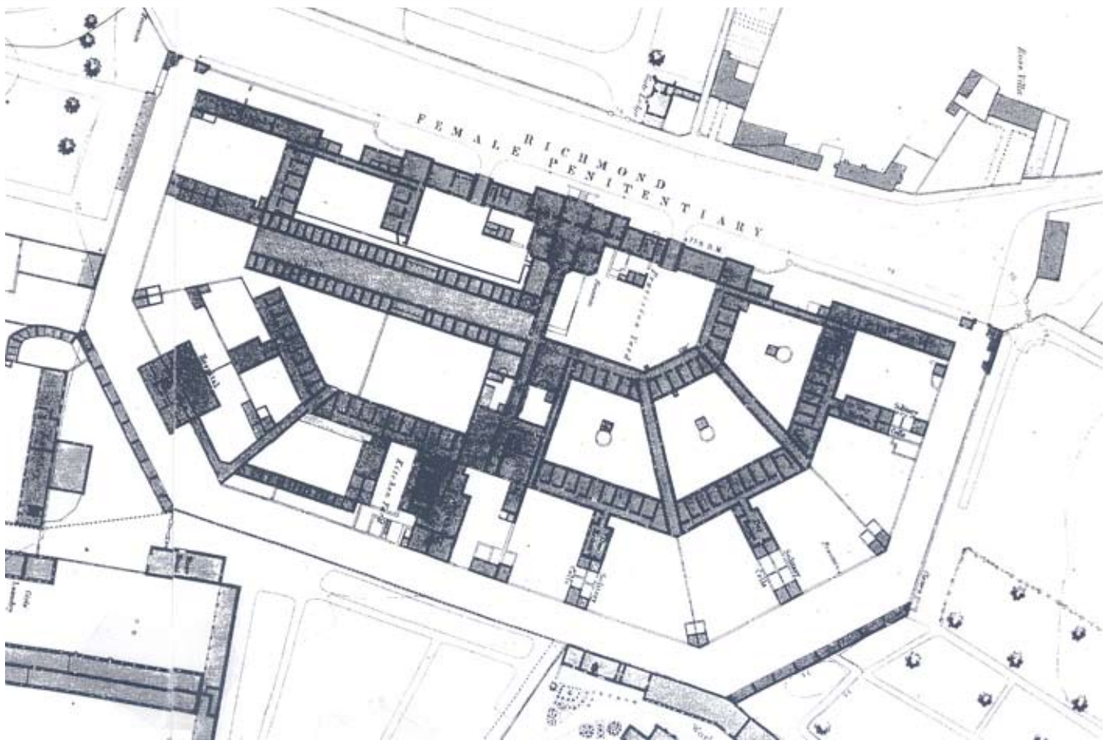


Figure 6.02 Plan of Richmond Penitentiary.
Source: 1847 OS map

The District Asylum was extended in phases, ultimately comprising a large series of wings and ranges, see figures 6.3, 6.4 6.5 and 6.6. Today nothing survives of the original buildings, all that survives are the first two floors of the last phase—the c.1910 western wing—which currently houses the offices of the Grangegorman Development Agency.

Female patients remained in the Richmond Lunatic Asylum until in 1866 a new Female House (orginal Architect unknown) was built alongside the earlier (Murray and Denny) chapel and infirmaries. It was later remodelled in 1898 by W.H. Byrne.

At the end of the nineteenth century, prisoners in the penitentiary were transferred to nearby Mountjoy Gaol and the building was taken over as part of the asylum complex. Alterations took place in the early twentieth century that reflected this change of use. Also in the late 1800's, the lands fronting onto the North Circular Road were finally acquired—although it became necessary to use a compulsory purchase order to acquire these lands from Lord Monck following a dispute regarding their value. St. Dympna's (now known as the Conolly Norman House after Dr. Conolly Norman who was appointed medical superintendent of the Richmond Asylum in 1886), was built on part of these lands in 1905. In 1894 the single-storey brick Laundry building was built to designs by W.H. Byrne. Byrne was also responsible for the mortuary building which is of a similar style and vintage and is located at the entrance to the western portion of the site.

Building continued in the twentieth century and the 1936 and 1943 Ordnance Survey Maps indicate the extent of land which was ultimately developed by the institutions. In c.1936 three detached doctor's houses were built fronting onto the North Circular Road and in 1938 Vincent Kelly completed the U-shaped Nurses home immediately south of the Richmond Penitentiary, which required the removal of the southern section of the Penitentiary complex. This building was extended in 1949.

In 1958 the hospital board passed a motion to rename Grangegorman 'St. Brendan's Hospital'. A programme of demolitions in the 1980's resulted in the loss of significant amounts of the nineteenth century buildings, in particular large amounts of the extensive ranges from the two Johnston buildings and the later Richmond District Asylum.

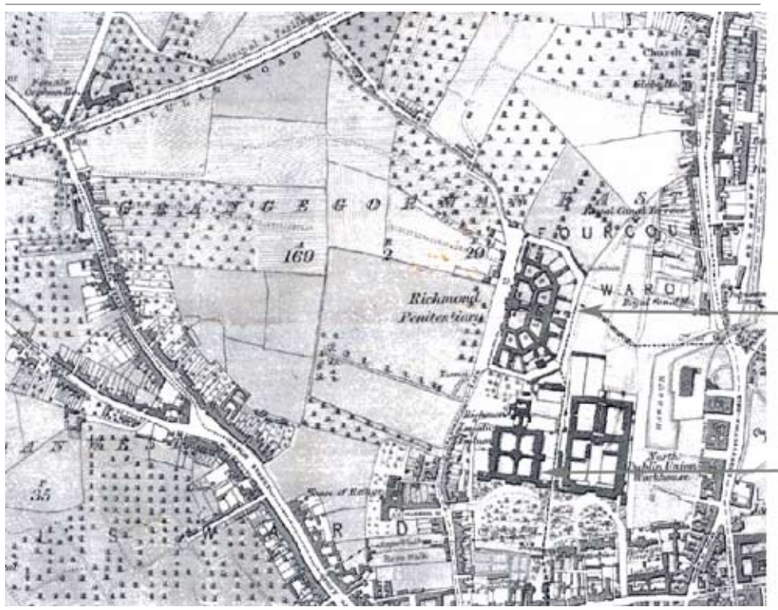


Figure 6.03 Ordance Survey Map Grangegorman in 1837. House of Industry (named as North Dublin Union Workhouse), Richmond Lunatic Asylum and Richmond Penitentiary all constructed to east of Grangegorman Lower. No institutional development yet in evidence on western portion of site.
Source: 1837 OS map.

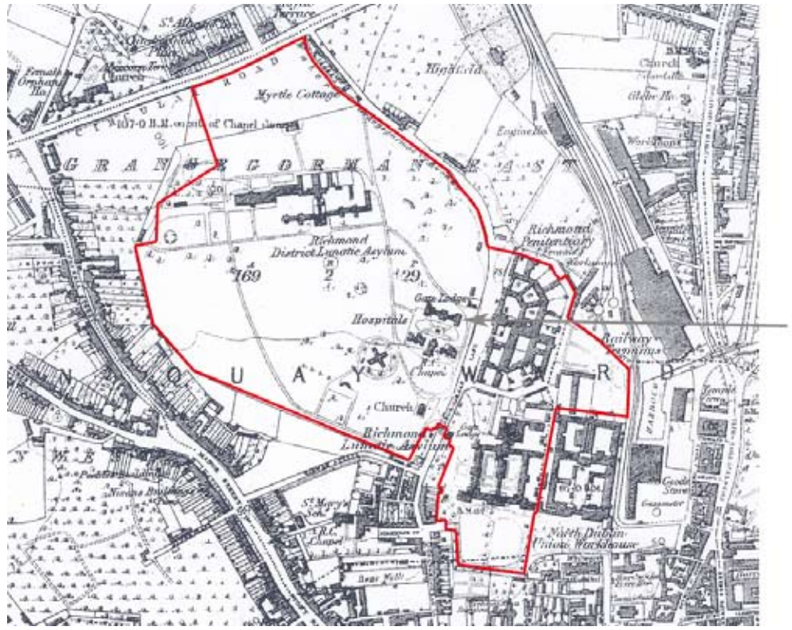


Figure 6.04 1876 Ordnance Survey Map with indication of SDZ boundary

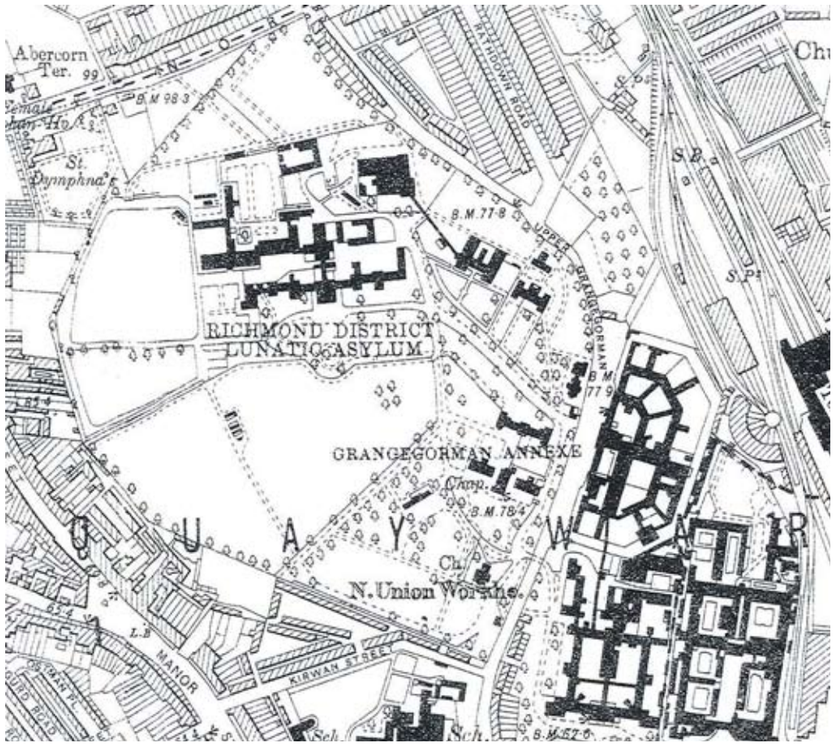


Figure 6.05 1907-8 Ordance Survey Map

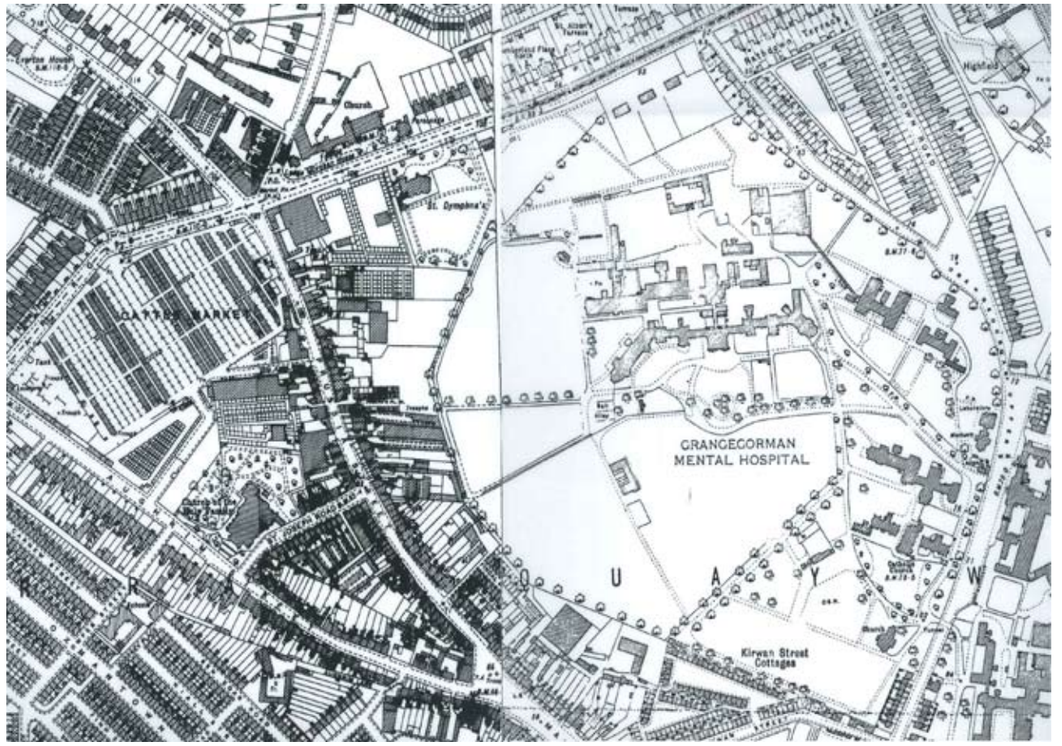


Figure 6.06 1936/1943 Ordnance Survey Maps

Front elevation of Richmond Lunatic Asylum. Source: Irish Architectural Archive

6.2 Statutory Context for Cultural Heritage

The site contains 11 structures which are listed in Dublin City Council's Record of Protected Structures (RPS) and as such are statutorily protected as outlined in the Planning and Development Act 2000. These protected structures comprise 10 buildings and sections of boundary walls, gates and piers. These are listed and described below and in Appendix 2a to this chapter, 'Protected Structures'.

The open lands to the south of the Richmond Lunatic Asylum are designated a Conservation Area in the Dublin City Development Plan 2011 -2017, being the northern section of the Smithfield Conservation Area. There are a number of protected structures close to or bounding the site, including St. Dympna's (also known as Connolly Norman House) on North Circular Road, No. 29 Prussia Street, 232 North Circular Road and the Broadstone Terminus and Bus Depot buildings. Some of the bounding residential areas are zoned Z1 and Z2 in the Dublin City Development Plan, which is aimed at protecting and/or improving the amenities of residential conservation areas, existing architectural and civic design character of the area.

Generally the existing Protected Structures do not sit within specific, individually distinct sites. Several, notably the Lower House, Former Penitentiary and Upper House, are the remaining parts of once much larger structures or complexes that were subject to demolition and as such, create a particular difficulty in defining a current relevant curtilage. Previous Architectural Appraisals of the site prepared by Dublin City Council and the GDA, define the curtilage of the protected structures as being within the immediate vicinity of these structures. For this Planning Scheme it is necessary to distinguish between the legal definition of 'curtilage' and the planning concept of setting. The DoEHLG Architectural Heritage Protection Guidelines state that 'curtilage can be taken to be the parcel of land immediately associated with that structure and which is in use for the purposes of the structure'. It is proposed, therefore, that the curtilage of the protected structures aligns with that proposed in the Architectural Appraisal prepared for Dublin City Council.

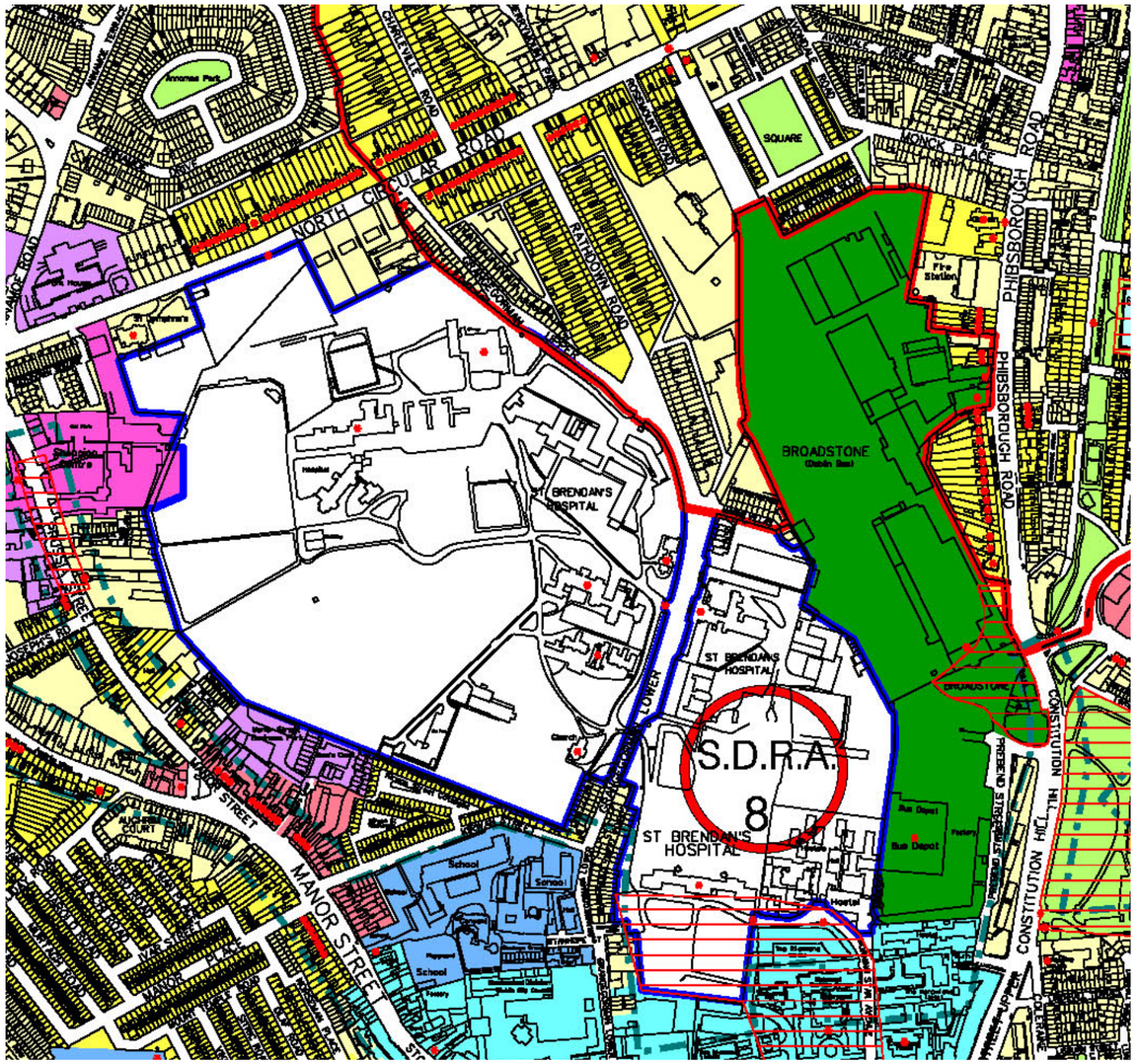
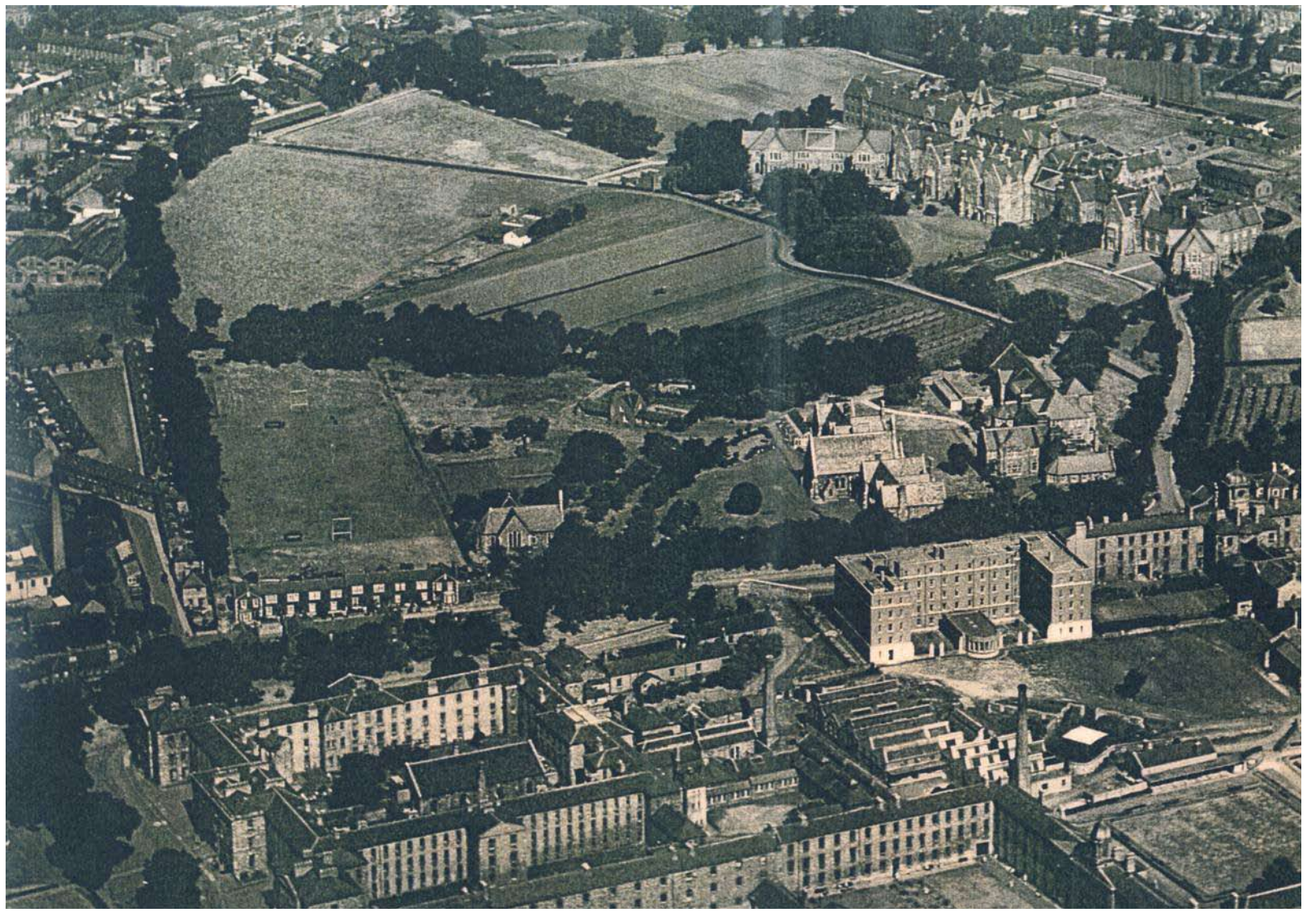


Figure 6.07: Extract from Dublin City Development Plan 2011-2017 Land Use Zoning Map, indicating land use zoning objectives for the site, including conservation area objective and protected structures. It should be noted that while the former Female and Male Infirmary buildings are indicated as protected structures on this map, they are not included in the written record, which is the primary and overriding record. However, in this Planning Scheme these two buildings have been considered as protected structures, lying within the curtilage of the Catholic Church (RPS No. 3328).

6.3 Significance of Site Heritage

The heritage of the 'St Brendan's Hospital' complex is significant in a variety of ways:

- For such a large tract of publicly-owned land to survive in the centre of the capital city with buildings reflecting a range of styles and vintage is significant.
- The surviving buildings relate an architectural history of institutional approaches to mental health treatment and care from the late eighteenth century up to modern times.
- Many noted and leading architects of their time were involved in the collection of buildings that survive.
- Some groupings of buildings survive that enhance the significance of the individual structures themselves; most notably the Catholic Church and flanking Male and Female Infirmaries, but also of note is the relationship between these buildings and the Female House and Mortuary as they form a cluster near the entrance gates, and the relationship between this cluster of buildings and the older former Richmond Penitentiary on the opposite side of Grangegorman Lower.
- Some fine trees survive, as individual specimens and as more formal groupings of designed landscape.
- As a site of significant cultural memory.



Aerial photo of Grangegorman taken mid-C20th.
Source: DIT

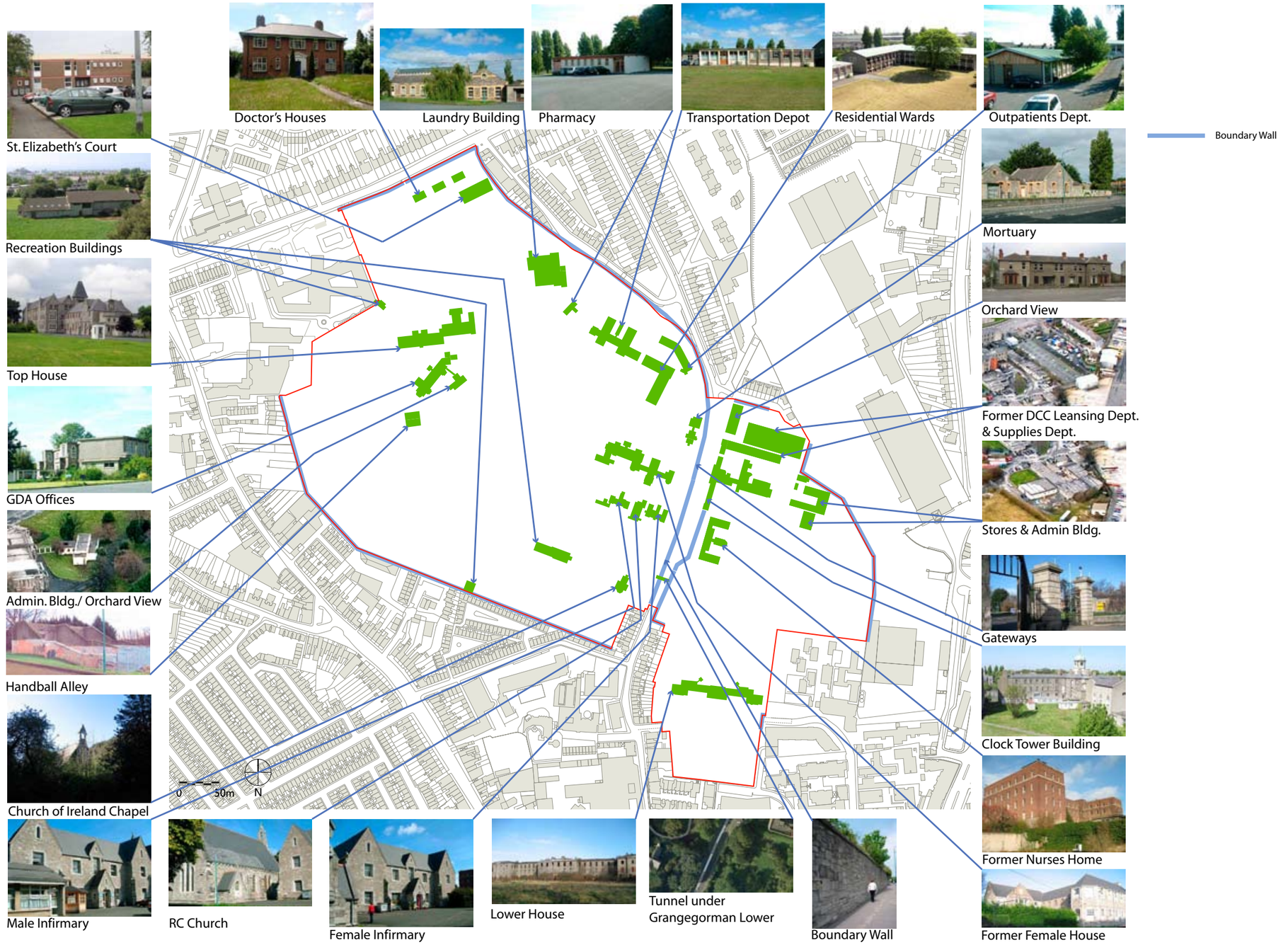


Figure 6.08 The Structures on Site

6.4 Retention of Existing Structures

The Planning scheme retains all the existing structures that are on the RPS, as listed in Table 6.1 . In addition, the historic tunnel which connects the two parts of the site under Grangegorman Lower, will also be retained. Structure specific guidelines for those structures to be retained are as outlined in Appendix 2a. to this chapter.

Figure 6.09 identifies the buildings to be retained. Figure 6.10 shows the boundary wall with sections to be retained and sections where breaches may be formed subject to guidelines contained in Appendix 2a.

Table 6.1
Structures listed on the Record of Protected Structures

Lower House (Former Richmond Lunatic Asylum)	This building is a three-storey, twenty six bay structure (on the southern elevation), c.1810, designed by Francis Johnston. It is all that remains of the oldest surviving buildings on the site. The wings were added in 1822, to a design by William Murray. Virtually nothing is left of the interior of this structure.
Clock Tower Building (Former Richmond Penitentiary)	This building is a three-storey, seventeen bay structure, c.1814, designed by Francis Johnston. It is one of the oldest surviving buildings on the site. It was remodelled extensively c. 1864, by Edward Carson.
Former Female Infirmary	This building is a two-storey, five-bay structure, c.1850, designed by William Murray, who also designed the two adjacent buildings (structures 20 and 21) at the same time.
Former Male Infirmary	This building is also a two-storey structure, c.1850, designed by William Murray, who also designed the two adjacent buildings at the same time.
Catholic Church	This building is a five-bay structure with a gallery, c.1850, designed by William Murray.
Church of Ireland Chapel	This building is a four-bay structure with a gallery, c.1860, designed by George Wilkinson.
Special Care Unit (Former Female House)	This building is a two-storey structure, c.1870, altered by W.H.Byrne. In use as residential wards.
Laundry Building	This building is a single-storey structure, c.1895, designed by W.H.Byrne. Formerly used for Occupational Therapy.
Mortuary	This building is a single-storey structure, c.1900, possibly designed by W.H.Byrne. Still in use as a mortuary.
Top House (Former Male House)	This building is a three-storey detached structure, c.1870, and is currently unused.
Boundary Wall & Gateways (parts of)	The walls form the boundary to the site and comprises of Calp limestone rubble walling construction, with sections of high quality snecked coursing, limestone entrance piers and the eighteenth century (1780) wrought-iron entrance gates and granite gate piers relocated from Santry Court to their current position c.1940.

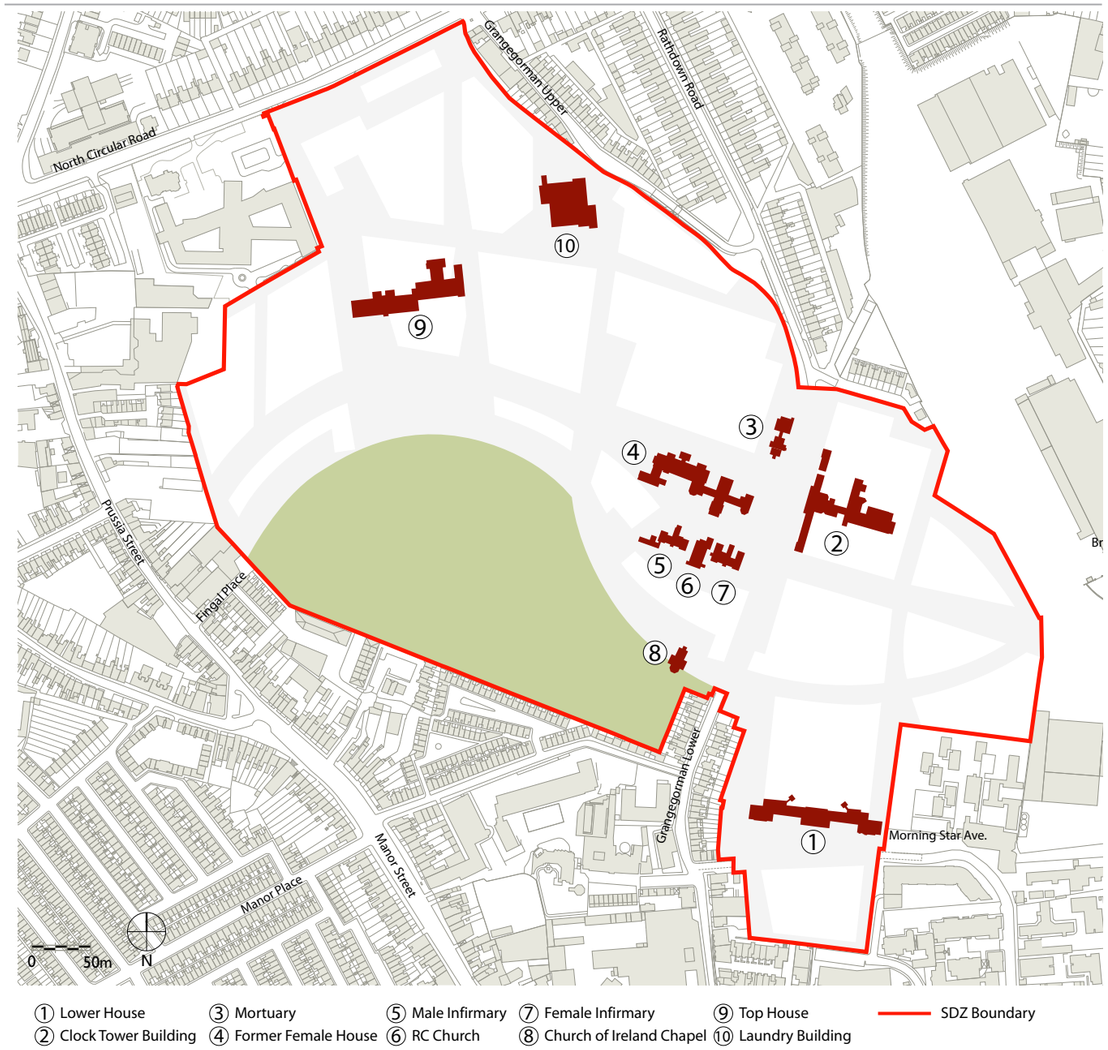


Figure 6.09 Key plan identifying buildings to be retained

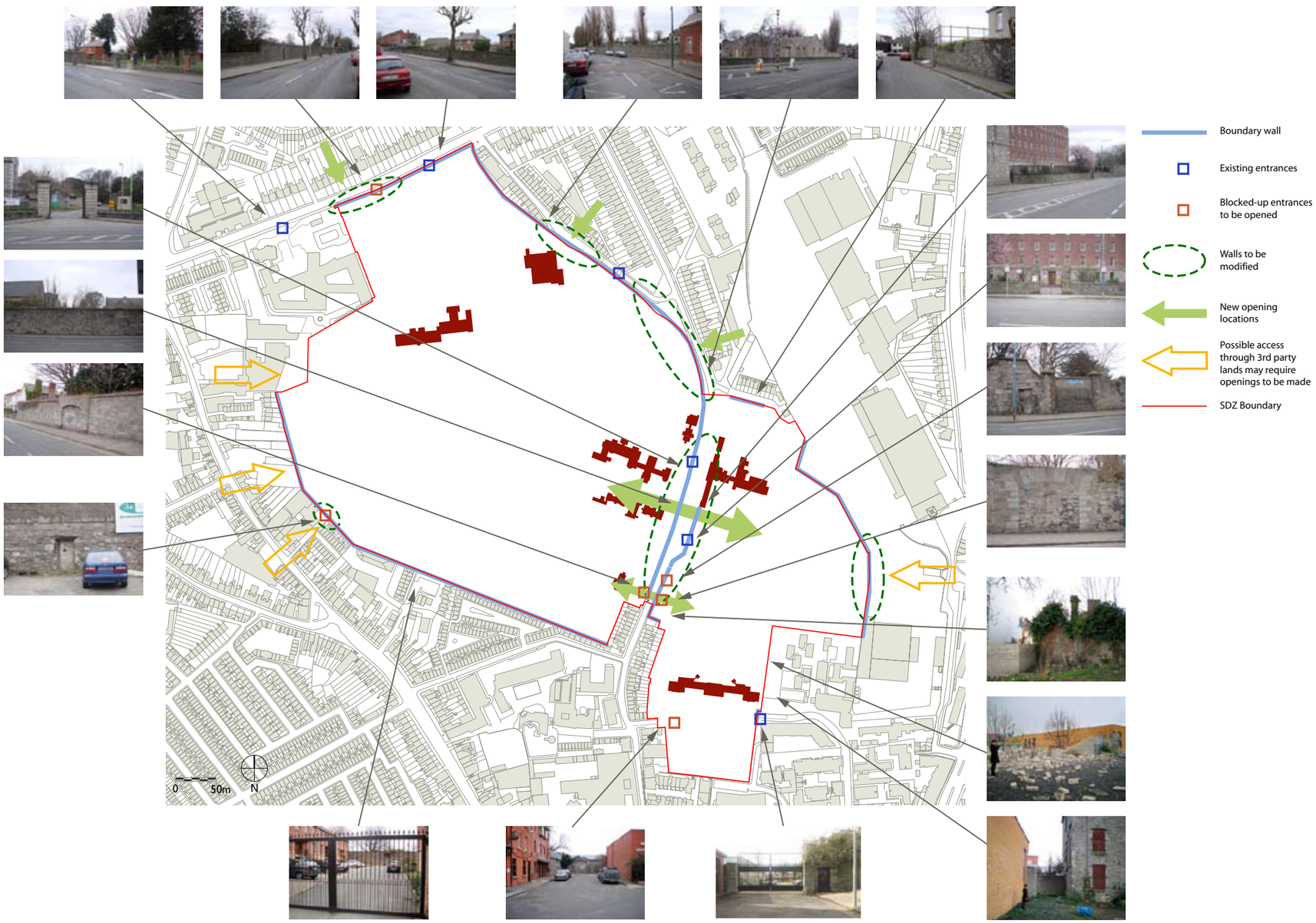


Figure 6.10 Key plan identifying site boundary wall highlighting section which may be modified.

6.5 Removal of Existing Structures

Structures to be removed fall into two broad categories, those that have some architectural merit or historical significance (but are not on the record of protected structures) namely the Nurses Home, the Handball Alley, the remaining fragment of the former Richmond District Asylum (the GDA offices) and the Doctors' Houses and all the remaining structures (not protected) that do not have such merit and are relatively commonplace and undistinguished.

All buildings to be demolished are described in Appendix 2b to this chapter and guidelines on matters such as drawn or photographic recording, and possible reuse of elements of materials are set out where appropriate.

Table 6.2
Other Buildings and Structures within the Subject Site

1	Doctors Houses	These three buildings are detached, two-storey houses, c.1936, currently in medical use. Two are hostels (structures 3 and 4) and one is used as a day care centre (structure 5).
2	St. Elizabeth's Court	This building is a two-storey detached structure, c.1970
3	GDA Offices	This building is a two-storey structure, c.1920, originally constructed as an extension to the Richmond District Lunatic Asylum, which was demolished in the 1980s. It was built for residential use, and is currently used by the GDA. The earlier pitched roof has been replaced by a flat roof.
4	Administration Building/Orchard View	This building is a single-storey detached structure, c.1950.
5	Handball Alley	This structure contains two handball alleys, constructed from concrete, c.1900.
6	Pharmacy	This building is a single-storey detached structure, c.1970.
7	Transportation Depot Building	This building is a single-storey detached structure, c.1930.
8	Residential Wards (Units 3A & 3B)	This building is a two-storey detached structure, c.1970, in use as wards.
9	Teaching Centre	This building is a single- and two-storey detached structure, c.1970, in use for teaching and administration.
10	Recreational Buildings	This building is a part two-storey, part single storey detached structure, c.1980. This building is a single-storey detached structure, c.1970.
11	Former DCC Cleansing Dept	This building is a single-storey detached structure, c. 1970, including a local bring centre.
12	Supplies Building	This building is a multi-bay, single-storey detached structure, c.1970, attached to the former Richmond Penitentiary.
13	Former Nurses Home	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.
14	Engineering Department	This building is a single-storey detached structure, c.1970.
15	Engineering Stores Department	This building is a single-storey detached structure, c.1970.
16	Terrace of Houses at corner of Marne Villas and Grangegorman Lower (Nos.1-5 Orchard View)	This terrace comprises of a group of five, c. 1935 two-bay, two storeys houses.

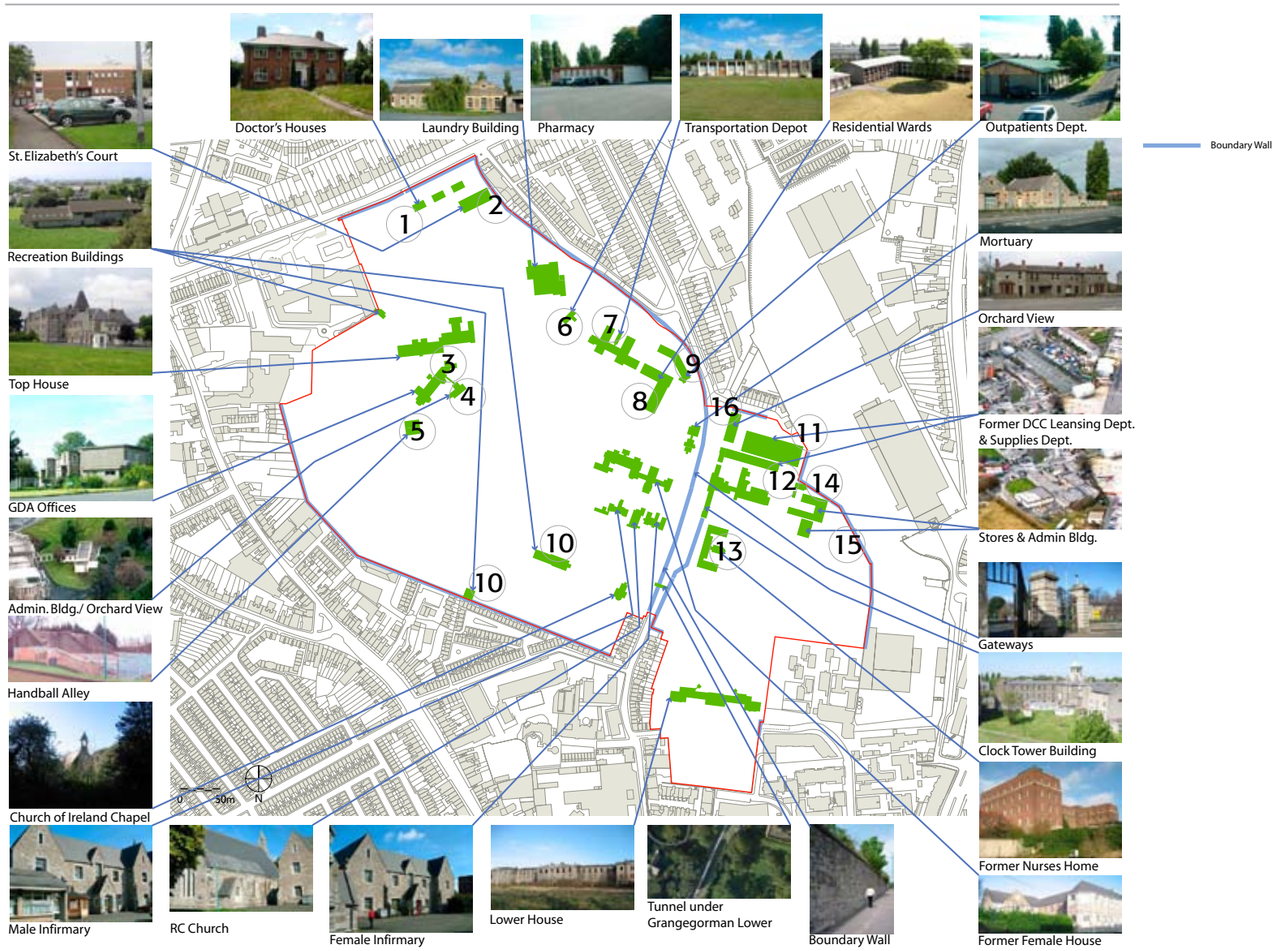


Figure 6.11 Key plan identifying main structures

The dismantling of heritage buildings is generally discouraged and re-use of the salvaged items must be carefully considered to ensure no confusion arises regarding their provenance. In order to mitigate the loss, the removal of important or decorative elements, e.g. the stone window surrounds of the Former Nurses Home, this will only be permitted when the items have been recorded prior to dismantling and their future use in close proximity to the original location identified and specified. It will be a requirement to tag and store these salvaged materials on site.

6.6 Conservation Strategy

The following Conservation Strategy has been developed for redevelopment of the site;

- To establish and articulate the historic–social, urban and architectural–values of Grangegorman and to ensure these are suitably incorporated within the overall plan. As such, it is important to understand the historic significance of the site from the earliest development of the city and its environs, through to its more known and recent history as an institution.
- To integrate the historic structures of significance within the SDZ in a manner which ensures that they contribute to the generation of spaces and places–both in terms of physical layout and character.
- To identify opportunities where history–in built and memory form–can influence design in a way which enhances sense of place and, in so doing, enables distinctiveness of place and identity.
- To establish strategies for repair, intervention, adaptation and extension to the historic structures. These will include both general and specific strategies and will also include approaches and objectives for upgrading of historic structures for increased thermal efficiency and other initiatives to achieve objectives for greater energy efficiency and sustainable development.
- To ensure that the integration of historic and new built form and landscape achieves an overall coherence and integrity both at the level of the SDZ and the individual buildings.

In addition to the above, the policies and objectives set out in Chapter 7.2 Built Heritage of the Dublin City Development Plan 2011-2017 will also apply.

6.7 General Guidelines for Existing Buildings, Structures and Elements

The following guidelines are general and will apply when works are to be carried out to existing buildings, structures or elements within the Grangegorman site. Further structure specific guidelines are set out in Appendix 2b for each structure to be retained.

6.7.1 Building Repairs

While the adaptation of the buildings to be retained will require intervention and alteration to meet specific use requirements, a considerable portion of the works involved will require repairs to historic structure and fabric. This work will be carried out in line with the following principles for the repair of historic structures:

- Department of Environment, Heritage and Local Government Guidelines for the Protection of Architectural Heritage and current conservation principles and techniques.
- All works are to be carried out under the professional supervision of an architect or expert with specialised architectural conservation experience and expertise.
- The extent and scale of works to the buildings will be carried out in a manner sympathetic to the intrinsic quality and architectural significance of the structure.
- Retain and repair authentic architectural structure and fabric. Respect for the existing architectural integrity of the building is to be a priority, and works will be carried out with reference to historic authenticity.
- All existing fabric which is sound is to be protected. Generally a minimum interventionist approach is to be taken with an emphasis on repair, with replacement only of decayed or missing parts, rather than outright replacement.
- Repairs and alterations will be carried out without attempt to disguise or artificially age, but shall also be carried out so that they are sympathetic with the architectural and aesthetic integrity of the building, or building element.
- All existing features and decorative work to be retained will be protected during the works. Any addition, whether reconstruction or repair, is to be implemented in a manner which will not damage existing fabric or features, and will not obliterate existing authentic work. In as far as possible, repairs should take place in situ.

View of Top House

- Materials used for repairs will be compatible with and, in as far as is possible, match the historic materials. Work to be carried out using traditional or appropriate methods. The aim is to use natural and traditional materials in preference to synthetic materials which will, in general, be avoided.
- Salvage materials will only be used where of proven provenance and will only be used in a manner that will not confuse the understanding or appreciation of the historic structure. As a general principle it will be the intention to salvage and re-use all sound material arising from modifications or removal of existing structure where feasible and appropriate.
- Loose debris/rubbish resultant from the works will be removed from the building and disposed of in accordance with waste management disposal requirements of the Local Authority and waste strategy for this Planning Scheme. This operation is to be supervised to ensure no important building fabric is removed.
- Reversibility or substantial reversibility will be a guiding principle to repair, alterations and additions to protected structures. As genuine reversibility cannot always be appropriately applied it should not be used to justify inappropriate interventions in these instances.

6.7.2 Interventions and Additions

There is considerable guidance policy available on this aspect in particular the DoEHLG Architectural Heritage Protection Guidelines for Planning Authorities which is a statutory guidance document. Due regard should be had in all applications for development within the curtilage of a protected structure to current or subsequent Government Guidance and to the current City Development Plan polices and objectives contained therein regarding additions or works within the curtilage of protected structures. In addition, reference should be made to the Conservation Advice Series also published by the DoEHLG. See also definitions of the curtilage, attendant grounds and of protected structures in Appendix 2A.

In brief, however, the following points are particularly relevant to the likely projects to be carried out within the proposed SDZ area:

Informed intervention: Successful interventions and additions to protected structures arise from a good understanding of a structure and the aspects which make it significant. This requires up-front research, analysis and the ability to interpret. A well-informed research-led approach will be taken in preparing design proposals for alterations, interventions and additions. The lead architect is to be experienced and skilled in conservation and adaptation of historic buildings or such expertise will be embedded in the design team and design process from the outset to completion. A considerable amount of research has already been carried out on this site and Design Teams will be given copies of the available documentation, existing buildings surveys and historic drawings, illustrations and photographs as part of the project briefing documentation.

Scale: In developing detailed proposals for additions to the protected structures, these will address the particular scale of the existing building. This does not necessarily mean that the additions/extension should be similar in scale to the existing buildings, but that there should be a coherent relationship between the form, massing and proportion of the existing building and any additions.

Plan Form: The original plan form and physical envelope of the existing protected structure will be legible following any intervention.

Retention of original/historic fabric: Interventions will, so far as is practicable, retain as much original/historic fabric as possible and where fabric is to be removed it will be re-used on site or, where this is not feasible, an appropriate reuse elsewhere will be identified. Designs and planning applications will demonstrate how any negative impact on the historic fabric will be minimised.

Female House

Junctions between new and old: New extensions and additions will engage with the historic buildings. Junctions between new and old should relate to primary architectural features of the historic buildings.

New basements adjacent to existing buildings: A number of basements/sub-ground floor levels may be proposed under the new development. Where these will be close to, or abutting, existing buildings and structures, these will be set back/detailed in a manner which does not comprise the structural integrity and weathering of the protected structures and any design proposals/planning application will include sufficient details to show how this will be achieved.

Cultural and Historic Archiving: The Agency aims to recognize and have regard to the cultural and historic aspects of the site. This will include developing a strategy for the archiving, interpreting and displaying as appropriate material relating to the conservation and restoration of the built environment and the already existing significant collection of records, documentation, equipment and artefacts from St. Brendan's Hospital.

6.7.3 Setting, Public Realm & Landscape

The new development will significantly alter the existing setting of the protected structures. In line with the Masterplan proposals, new buildings, additions and public realm/landscaping works will be planned and designed in such a way as to enhance the architectural and spatial quality of the setting of the protected structure. This will include views to and from the protected structures at ground and upper floor levels. In the siting of new buildings and the design of additions, the changes to natural light, sun, shade, wind and any other micro-climate conditions will be such as to minimise negative impacts on the qualities, character and fabric of the protected structures, both externally and internally and to maximize opportunities to improve these qualities through removal of unsympathetic later additions to protected structures, where appropriate.

New buildings which provide a backdrop to a protected structure, particularly where there is an identifited view corridor, will need to demonstrate a considered architectural relationship.

Street Kerbs, Paving, etc.

Historic granite kerbs and limestone cobbles survive in places within the site and adjacent public streets. These should be carefully retained and incorporated within the new landscaping. Where it is not possible to retain these elements in situ, they should be salvaged for reuse elsewhere within the site or immediate area.

A number of historic ornamental lighting standards survive within the grounds. Where possible these might be retained—relocated as necessary - and integrated within the new public realm works.

Church of Ireland Chapel

Grangegorman Lower

6.7.4 Sustainability objectives

It has been stated that generally the most sustainable building is an already existing building, due primarily to its embodied energy. The cultural heritage value – collective memory, associations, etc – also contribute to the social sustainability (identity) of place and needs to be included in any sustainability assessments.

Appropriate initiatives to improve the energy efficiency of existing buildings will be implemented. The approaches to upgrading will depend on the condition and significance of the internal and external fabric, however there are many ways in which energy efficiency can be achieved without compromising the architectural heritage value. It is important that compatible materials and techniques are used, for example hygroscopic insulants where upgrading breathable external walls. As the historic buildings will form part of a larger development, centralised energy centres, e.g., district heating systems using renewable energy sources, could also serve existing buildings and thus minimise impact within the historic building. There are a number of emerging guidance documents addressing the appropriate adaptation and treatment of historic buildings to reduce carbon emissions and dependence on non-renewable energy sources. Designers and specifiers can avail of advice from the DoEHLG Architectural Heritage Advisory Unit on the appropriateness of such guidance.

6.7.5 Use

Within the Strategic Plan and its Masterplan proposals there is a general objective to encourage uses which promote public access to protected structures.

The Strategic Plan also has considered uses in terms of their impact on the protected structure. Some uses will require significant alteration of plan form, or demanding services and infrastructure installation which involve considerable intervention and which may result in considerable loss of architectural significance.

A well accepted principle of conservation is that the original use is the most appropriate use. In the case of Grangegorman this is not possible, (with the exception of the Chapel of St. Laurence, which will remain in church use), and new uses, where if appropriate, can add value to a protected structure. Thus, uses which are complementary and can revitalise the historic structures, should be favoured over inappropriate uses which can destroy the particular qualities which make a building special.

Lower House

6.7.6 Accessibility

The protected buildings at Grangegorman are important for their intrinsic cultural heritage value but they are also important because of their future, and, in some cases, current, use as places where people will work, learn, live and enjoy everyday activities.

For some people with disabilities, barriers exist which make visiting and using historic buildings and places difficult or impossible. In adapting the historic buildings and landscape of Grangegorman for improved access, it will be important to design and develop appropriate strategies and solutions to improve the accessibility of the buildings, while protecting the particular character, significance and aspects of special interest.

Regard shall be given to existing and future guidance on improving access to historic buildings and sites.

6.7.7 Monitoring and Maintenance

Maintenance plans are to be provided for all protected structures. This will include provision for monitoring condition both in advance of any refurbishment/ redevelopment works and during the ongoing lifetime of the building. Where current building condition is causing deterioration of structure and fabric, appropriate protection measures, temporary or permanent, should be put in place as a priority, subject to necessary approval by/agreement with the Planning Authority (for example by way of Section 5 Declaration of Exemption, or Section 57 Declaration, Planning and Development Acts 2000 to 2010).

6.8 Building Project Design Briefs

Design Briefs for all building projects within the SDZ area will direct design teams to have regard to respond to and take on board the existing architectural heritage assessment and research (in particular the Paul Arnold Architectural Appraisal prepared for Dublin City Council and the Robin Mandal Conservation Report prepared for the GDA[16]) which provide substantial architectural historical information as well as inventories and architectural assessments of all buildings and structures. This information will be made available to building Design Teams from the outset of the design process. Such briefs will where relevant form part of the Design Procurement Strategy referred to in Section 8.2.2.

6.9 Documents and Information Required for Planning Compliance

6.9.1 Condition Surveys

A condition survey of the protected existing structure should accompany any planning application for the re-use and development of the buildings to be retained. A comprehensive assessment of the current condition of the relevant existing structures will inform the strategy for re-use of those structures, and will potentially inform any strategy for the dismantling of any parts of these structures which are to be removed, including an approach for the recovery and re-use of salvageable materials. In some cases it may be necessary to put temporary measures in place in order to permit safe access to carry out the condition report. The report should also identify other essential stabilisation works required in order to secure structures against the weather/water penetration. However, it should be stressed that costly temporary works should be avoided wherever possible by the incorporation of the necessary repairs into the programme of development works at the earliest possible stage.

These works would be carried out by a team led by an appropriately qualified conservation architect and including a structural engineer with expertise in historic structures.

16: *Framework Architectural Conservation Strategy for the Existing Buildings the Lands at Grangegorman, Dublin 7, prepared by Robin Mandal Architect for Grangegorman Development Agency, dated May 2007*

Illustration of the Top House from the Richmond District Lunatic Asylum, Report of the Resident Medical Superintendent, 1878.
Source: St. Brendan's Hospital Archives.

6.9.2 Proposal Drawings and Supporting Information

Submitted design drawings should include an appropriate level of detail to allow for a full and proper assessment of proposals. The information should clearly show the existing situation and details and describe—in drawing and text formats—the rationale behind the proposal and how any new works relate to or are informed by the existing architecture and the conservation strategies and general and specific guidelines within this Planning Scheme. This rationale should also include material specification. Also to be included are construction methodologies for significant or material interventions which set out clearly the works proposed, sequencing and an outline of likely temporary works required. Fire strategies and building services strategies should be provided as part of a planning scheme compliance submission relating to protected structures.

6.9.3 Recording Prior to Material Alteration

Where material alterations are proposed to protected structures or where it is proposed to demolish an existing structure, the structure should be fully recorded in photographic and drawing format prior to alteration or demolition. Copies of these records should be lodged with the GDA and, where requested, other archive bodies, such as the Irish Architectural Archive, the Dublin City Archive etc.

6.9.4 Maintenance Strategies

A maintenance strategy is to be provided as part of the planning documentation which will set out the key monitoring and maintenance requirements to be implemented during the ongoing lifetime of the building.

6.10 Trees in the Historic Landscape

Figures 4.21 and 4.22 Illustrate trees to be retained and removed on the site.

6.10.1 General description

The trees within the subject area fall within two distinct groups i.e. those on North Circular Road (NCR) and those within the lands of the H.S.E. and St. Brendan's Hospital sites.

The trees on the N.C.R. are London Plane (Platanus x hispanica) and were planted in the early 1900s. They are located on both the north and south sides of the road and are generally in good condition. They have had regular management over the years to control crown development and have acquired the typical pollard crown shape associated with these trees within urban environments. Odd specimens have areas of decay but these were not regarded as being significant in terms of structural integrity within the tree survey. The remaining trees which are located within the H.S.E. and St. Brendan's Hospital lands are a combination of non-native and native species planted for ornamentation and self-seeded native specimens generally located within disused areas of the site. Given the broad age class and species assemblage present the condition of the trees is as would be expected mixed in nature.

Little of the historic landscape and trees associated with it appears to be in place within the H.S.E. and St. Brendan's Hospital lands, though Mandal R (2007) has identified the area to the south of the Lower House as perhaps the only area with potential to contain elements of the historic landscape core and a small number of trees could be associated with the designed open space shown in the Ordnance Survey map of 1869. A number of trees present in this area are possibly associated with this landscape core. Trees adjacent to the conference centre and the Church of Ireland chapel are visible on the 1907 Ordnance Survey map therefore should be considered older than this date.

Both the H.S.E. and St. Brendan's Hospital lands contain native and non-native species planted for ornamentation and screening. Areas which have been abandoned or overgrown with giant hogweed (Heracleum mantegazzianum) contain greater concentrations of shrub with Sycamore (Acer pseudoplatanus) and Willow (Salix alba) the primary species.

Existing Alley of Trees

The dominant trees within the H.S.E. lands are the large mature deciduous and evergreen species on the boundary with Grangegorman Upper, individual mature trees scattered throughout the site, internal linear plantings and a grove of Holm Oak (Quercus ilex) within the more central area of the site. The southern and western boundaries also contain relative high numbers of mature deciduous trees including Sycamore (Acer pseudoplatanus) and Horse Chestnut (Aesculus hippocastanum).

Management of trees has been minimal to date however the condition of the trees throughout the site is generally good though inevitably some individual trees were identified as being of poor quality with recommendations made for their removal. There is a high incidence of Bleeding Canker (Pseudomonas syringae) on Horse Chestnut (Aesculus hippocastanum) throughout the site which is ultimately leading to the demise of this species. There is little opportunity available to treat this pathogen therefore it should be expected that this species will be lost to the site over time.

As the lands incorporating St Brendan's Hospital on the eastern section of the site are largely derelict the condition and mix of tree species present with some notable exceptions is a reflection of this. A planting of Lombardy Poplar (Populus nigra var 'italica') on the eastern and

southern boundaries with Broadstone is in a state of decline due to neglect and construction damage. A number of very high quality mature deciduous trees are located within the southern section of these lands close to the Lower House and there are also a number of very high quality trees on the western boundary with Grangegorman Upper to the south of the former nurse's home. The remainder of the trees on this section of the site could be described as self-seeded scrub and of limited arboricultural or landscape value.

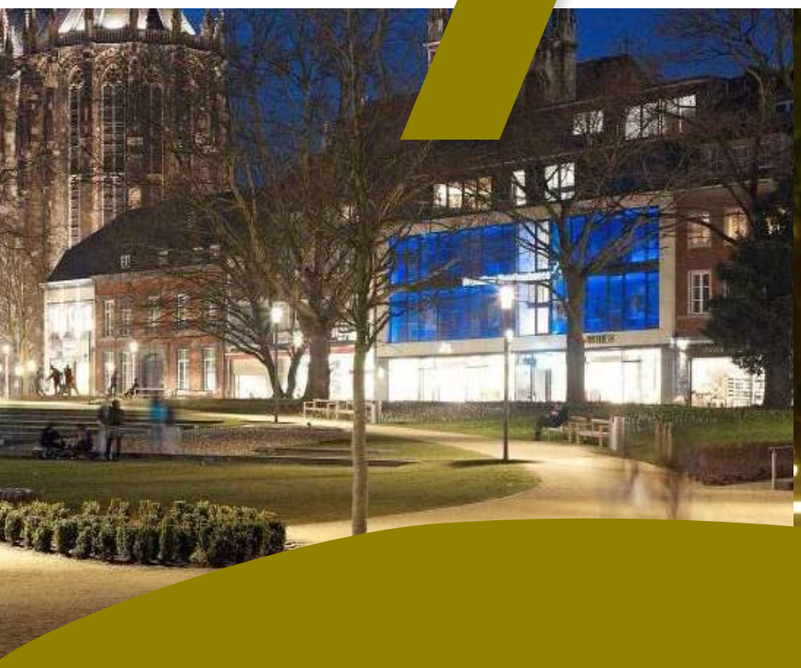
6.10.2 Impact of Development on Trees

A primary design consideration was the retention of as many high quality trees as possible. However given the nature of the development and the high concentrations of trees in certain areas it was inevitable that some trees of note would be lost. The proposed development will primarily impact on those trees within the interior of the site and those which fall within the footprint of the proposed buildings and infrastructural components of the development. With some notable exceptions including the central grove of Holm Oak (Quercus ilex) the impact of the loss of most trees is of limited arboricultural importance. Two trees are proposed for removal from North Circular Road. It is considered that the loss of these trees will not have a strong detrimental impact on the overall structure of the streetscape as the trees are distanced from each other by trees which will be retained.

A number of trees have been retained in close proximity to buildings and it is intended that measures will be put in place to protect these and all other retained trees following the guidelines contained within BS5837 Tree in Relation to Construction (2005).

7 Planning Scheme
Grangegorman

Provision of Services



Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

Purpose and Layout of this Chapter

This purpose of this chapter is to identify the existing availability of infrastructural services to the site and details the measures necessary to develop these services to provide adequate capacity for development of the site.

Contents

7.1 Sanitary Services – Water Supply, Foul and Surface Water Drainage

7.1.1 Introduction

This chapter identifies the existing public water supply and drainage infrastructure in proximity to the SDZ site and identifies if there are any enhancements required to this infrastructure to ensure adequate capacity for the proposed development on the SDZ site.

The development of the Grangegorman Site will require the implementation of an internal site infrastructure scheme to distribute and collect all the wet services throughout the site in an orderly and coordinated manner. As the development is proposed to be gradually implemented it is envisaged that upgrading of elements of the public infrastructure outside the site will be required as the development progresses, Refer to Chapter 8 for details of Phasing and Implementation.

The proposed upgrading of the public infrastructure envisaged is based on preliminary calculations of the demand and volume of wastes generated by the development on the site and the indicative capacity of the public water supply and drainage infrastructure information received at the time of preparation of the Planning Scheme from Dublin City Council Drainage and Water Service Division. Alternative options for the upgrading of the public water supply and drainage infrastructure have been identified and are outlined in this section of the Planning Scheme, though the final solution will require more detailed assessment and co-ordination with Dublin City Council Drainage and Waste Water Service Division.

7.1.2 Services Infrastructure

The foul and surface water sewerage and watermain systems in the vicinity of the site and surrounding areas have been identified and studied. Engineering constraints were identified in the course of this study in relation to the proposed development of the site and, in consultation with Dublin City Council, measures to upgrade the local infrastructure to accommodate the development have been identified.

Both the existing and proposed arrangements are set out separately in general terms here for the Foul Drainage, the Surface Water Drainage and the Water Supply.

7.1.3 Existing Foul Drainage

The following Dublin City Council combined sewers are in the vicinity of the Grangegorman site. Please see Fig 7.1 for information on existing and proposed foul drainage.

- 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 Upper and flows into a1150 x 770mm sewer on Grangegorman Upper which forms part of the Bradoge River Culvert system. This sewer diverges at the junction of Marne Villas and Grangegorman Upper into a 600mm pipe discharging through the eastern section of the site before connecting to the 1500mm sewer on Brunswick Street North and a 375mm sewer routed down Grangegorman Upper, then southwards down Grangegorman Lower before connecting into a 1010 x 600mm sewer at the Stanhope Street junction.
- A 300mm sewer on Kirwan Street which drains both westwards to the 1350mm sewer on Manor Street and eastwards to the 300mm sewer on Grangegorman Lower.
- A 1030 x 610mm sewer on Prussia Street which drains southwards to the 1350mm sewer on Manor Street.

The existing foul drainage from the SDZ Site is divided into two areas. The SDZ site west of Grangegorman Lower discharges eastwards to the Dublin City Council combined sewers on Grangegorman Lower and the SDZ site east of Grangegorman Lower discharges both eastwards to the 600mm diameter Dublin City Council foul sewer (Bradoge River Culvert) and westwards to a 1010 x 600mm brick sewer on Grangegorman Lower.

Existing foul drainage from the SDZ site west of Grangegorman Upper/Lower is drained on a combined system with five outfall points to the Dublin City Council sewer on Grangegorman Upper. Four of these outfalls discharge to a 1150 x 770mm brick sewer and the fifth to the 375mm diameter sewer on Grangegorman Lower.

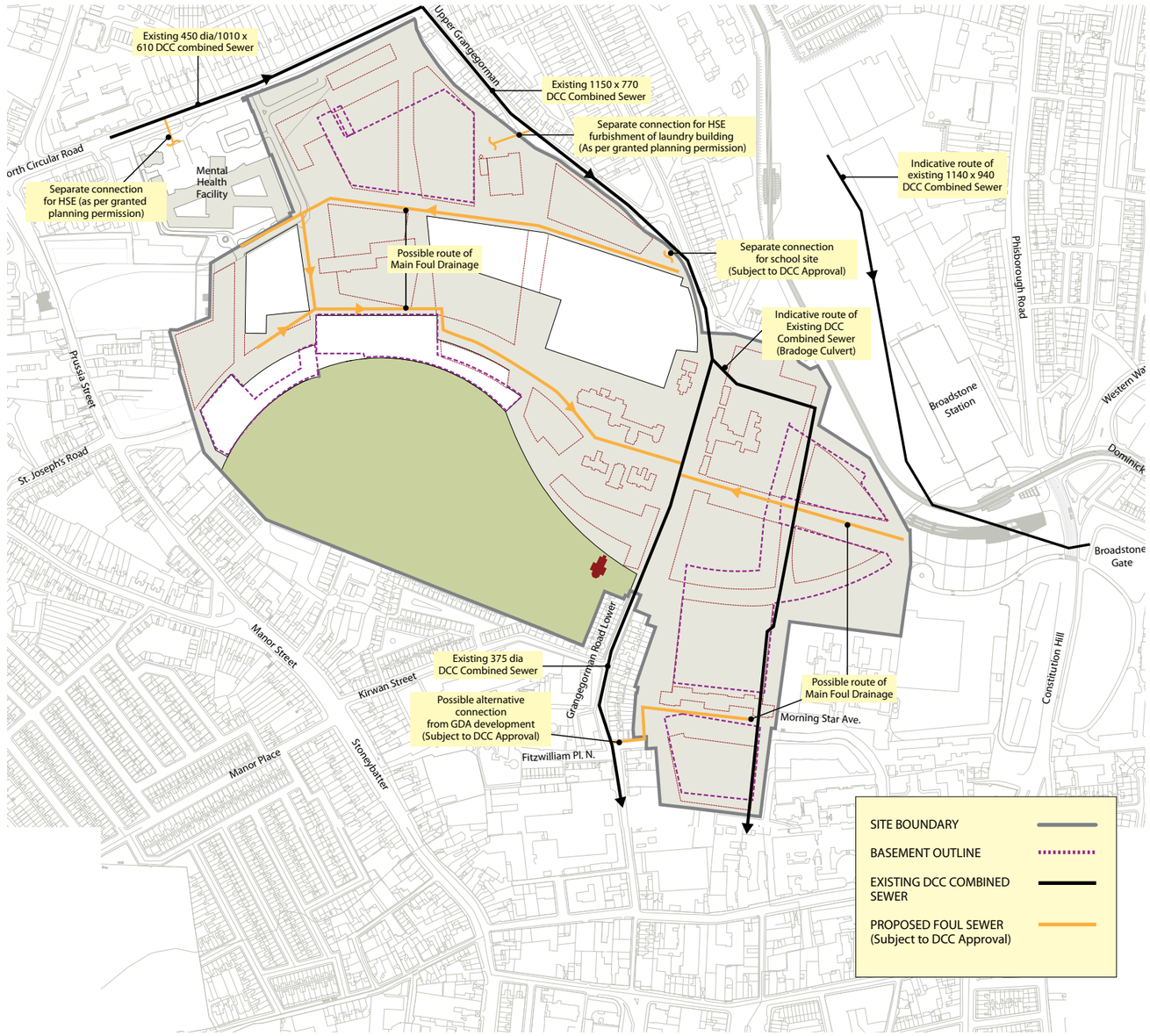


Figure 7.1 Existing Combined Sewer and Proposed Foul Sewer

Existing foul Drainage from the SDZ Site east of Grangegorman Lower 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 Lower.

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

7.1.4 Existing Surface Water/Sewerage

There are currently no Dublin City Council separate surface water sewers in the vicinity of the Grangegorman site. All collected surface water from the Grangegorman site currently drains into 'combined' sewers surrounding the site.

The Bradoge River runs southwards to the River Liffey through Grangegorman and has been integrated into the Dublin City Council sewerage system. It is understood that an objective of Dublin City Council is to restore this culverted river to the stormwater system in due course. See Fig 7.2 for information on existing and proposed surface water drainage.

7.1.5 Existing Watermains

The following Dublin City Council Watermains are in the vicinity of the Grangegorman site

- An eighteen inch and a seven inch diameter main on the North Circular Road.
- A five inch diameter main on Grangegorman Upper which changes to a six inch main on Grangegorman Lower. The five inch main connects into both the eighteen inch and seven inch diameter mains on the North Circular Road.
- A four inch and a nine inch diameter main on Prussia Street continuing down into Manor Street.
- A 150mm diameter main on Kirwin Street connecting to the six inch main on Grangegorman Lower and the nine inch main on Manor Street with a connection to a larger 300mm also on Manor Street.
- A 250mm and an 800mm diameter main on Brunswick Street North.
- A nine inch main on Phibsboro Road running into Constitution Hill.

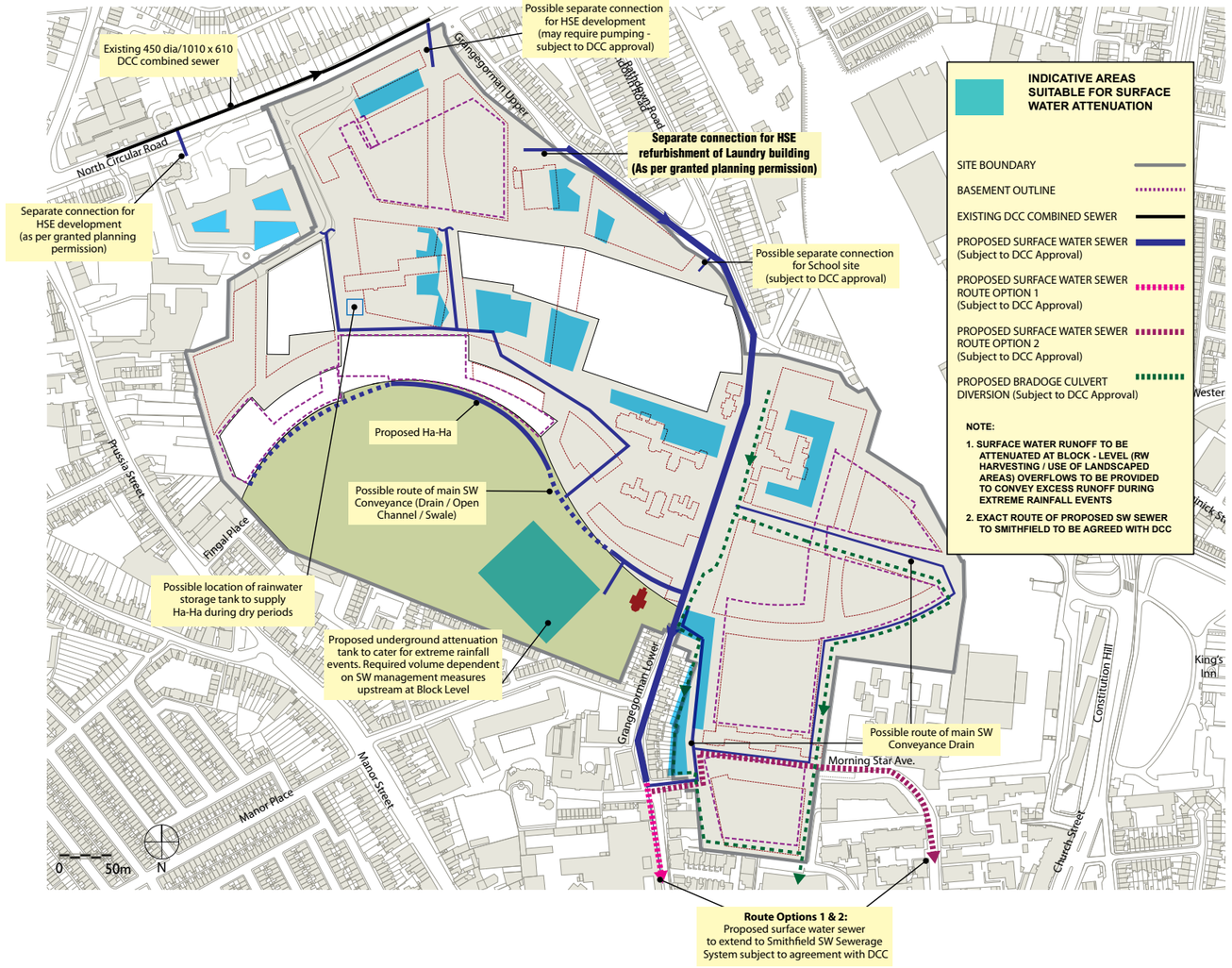


Figure 7.2 Existing and Proposed Surface Water

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

Both east and west sides of the site are served off the existing Dublin City Council six inch diameter water main on Grangegorman Upper and Lower. There are two existing metered connections to the west and 2 metered connections to the east, with the Nurses Residences connection the only one in use on the east side.

7.1.6 Proposed Foul Drainage

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

It is proposed that, subject to agreement with Dublin City Council, the existing 375mm diameter combined sewer on Grangegorman Lower will be utilised as the proposed foul sewerage outfall from the development to the 1500mm diameter foul sewer on Brunswick Street North. This sewerage system will be utilised for waste water connection only from the Grangegorman site.

The removal of existing surface water run-off, from the existing buildings and other hard-standing areas within the Grangegorman site, from the existing DCC combined sewer system will assist in reducing impacts of the proposed foul waste water system from the redeveloped site. In addition, the current practice of discharging foul sewer from Grangegorman site to the Bradoge will be discontinued with the redevelopment of the Grangegorman site.

The number of connections to the combined sewer from the site will be kept to a minimum.

It is intended that all drainage within the Grangegorman Site will be privately controlled. All drainage lines running along the main circulation routes within the Grangegorman Site shall be constructed to the following standards:

(i) Part H of the Building Regulations 1997,

(ii) Proposed waste water and surface sewers shall be a minimum of 225mm diameter

(iii) Sewers shall comply with Dublin City Council Drainage Division's (DCCDD) "Code of Practice"

(iv) Sewers and manholes shall be constructed to be equal or equivalent to the specification of Dublin City Council.

A disconnecting manhole shall be provided at each site boundary and shall be constructed to Dublin City Council Drainage Divisions requirements. Reference can be made to Arup's technical note on proposed wet services for further information.

7.1.7 Proposed Surface Water Drainage

At the time of submitting the Planning Scheme there was no separate DCC surface water sewer in the vicinity of the Grangegorman site. It is therefore intended that the construction of a new surface water sewer between the closest existing surface water sewer, which is located in Smithfield Plaza, up to Grangegorman Upper, subject to agreement with Dublin City Council and site surveys, will be required. The sewer will be constructed at an early stage of the proposed development as required to serve the phased implementation (see Chapter 8).

Surface water drainage from the proposed development of Grangegorman Site shall be drained on a completely separate system with separate foul and surface water drains to be designed from each building 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 Drainage Systems (SuDS) techniques will be incorporated into the development. The drainage strategy developed for the site will also take due cognisance of the objectives of the Flood Resilien City Project, an EU-funded project which promotes an integrated approach to sustainable flood risk management. This project promotes 'Awareness, Avoidance, Alleviation and Assistance' when considering pluvial flood management.

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. Each individual building package, in addition to the Public Realm within the site will be required to incorporate these principles.

The following drainage design SuDS measures shall, where feasible, be incorporated into the development in line with appropriate sustainable drainage practices;

- Infiltration systems including infiltration trenches, infiltration basins, permeable paving, soakaways and green roofs (roof gardens);
- Filtration systems including swales, bioretention systems and filter strips;
- Retention systems including retention swales;
- 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.

Surface water drainage from the proposed redevelopment shall be discharged (post Attenuation) by gravity to the proposed new public surface water sewer in Grangegorman Lower at the appropriate greenfield run-off rate.

Preliminary landscape design of impermeable/permeable surfaces for the full Grangegorman development indicate that the total storage volume required for the 1 in 100 year event based on a site discharge of 21/sec/Ha is estimated at 6,600m^3. The 1 in 1000 year event under the same flow conditions equates to an attenuation volume requirement of approximately 13,000m^3. Design and construction planning shall incorporate suitable and best practice actions to reduce the risk of groundwater pollution and meet the requirements of the Groundwater Directives.

We propose to provide a range of Sustainable Urban Drainage System (SuDS) measures at all stages of the surface water drainage in line with best practice, starting at the outfall and working upstream, these will include the following:

- New 600mm dedicated surface water sewer to be provided connecting site to existing surface water at culvert Smithfield Plaza.
- Flow control provided at the outfall manhole restricting the surface water discharge from the site to the appropriate equivalent green field run-off rate.
- Underground geo-cellular storage sized to cater for the 1 in 30 year event. The unit will be situated under the southern most playing field.
- Engineered earth mounds will be constructed around the perimeter of the southern most playing field. This will then act as a detention basin, providing contained storage for events greater than the 1 in 30 year event.

- A Ha-Ha is to be constructed with capacity to store storm volume while also providing amenity.
- Engineered swales and bio-swales are to be provided throughout the public realm spaces to provide drainage for run-off from impermeable surfaces.
- Where practical, permeable surfacing is to be implemented throughout public realm spaces. Ground levels to be contoured to facilitate over-ground flow to storm gullies during extreme events.
- Within each building plot the following SuDS measures will be considered and implemented appropriate – rainwater harvesting, green roofs, pond storage, swales, permeable surfacing. Each individual building plot will be required to control discharge to the equivalent green run-off rate for that site and provide appropriate attenuation storage within that site.
- Flood routing within the site will be such as to contain flood volumes for at least up to the 1 in 100 event within the site. Flood routing external to the Grangegorman Development to be considered for events that cannot be contained within the site. Detailed surface water drainage design including flood routing internal and external to the development to be submitted together with the public realm planning application.

The Bradoge River, which was originally a surface water system, is currently used by DCC as a combined sewer. A section of the Bradoge traverses the Grangegorman site. The GDA acknowledges the obligations imposed on DCC by the Water Framework Directive and the Eastern River Basin Management Plan concerning the environmental status of the Liffey and it's tributaries such as the removal foul flows from the Bradoge. The GDA will work with DCC to assist it achieve its objectives for the Bradoge. As a first step, a joint study on Water Framework Directive compliance as regards the Bradoge will be carried out by DCC and the GDA. This joint study will also consider the flood attenuation requirements of the Bradoge and the GDA will favourably consider the accommodation of in-line and off-line attenuation within the development. The final configuration of the outdoor playing facilities may assist in this regard.

A Flood Risk Assessment has also been carried out by the GDA to identify historical flood issues and to assess any strategic flood risks and necessary mitigation measures. The report concludes that the Grangegorman site has no known historic flooding issues, lies in a zone of low flood risk, and with the implementation of appropriate on-site sustainable drainage and flood management systems, will pose minimal risk to the catchment downstream of the site. This assessment report is available as a reference document from the GDA.

7.1.8 Proposed Watermains

Based on discussions with Dublin City Council a new trunk watermain, to be funded and constructed by the GDA, between the North Circular Road and Brunswick Street North, Constitution Hill is envisaged to allow the Water Division to locally balance the supply to the North Inner City area. To facilitate this new trunk main and also to provide a good resilient supply to the Grangegorman development, the Grangegorman Development Agency proposes to incorporate a proposed trunk watermain route through the SDZ site which will be taken in charge by DCC. Alternative route options for this trunk watermain are shown in Fig 7.3 which offers opportunities for linking the existing high pressure 800mm watermain on Brunswick Street North (which runs up to Constitution Hill) to the existing eighteen inch diameter high pressure water main on North Circular Road. The design details, including the size and preferred route of the proposed water main are to be agreed with DCC Water Division, however, preliminary design work indicates that a 450mm diameter link main is required. Some of the route options also traverse third party lands which will require agreement of wayleaves with said parties. The GDA has secured a high level agreement in principle from CIE for routing through their property at Broadstone.

A new distribution watermain network is to be constructed within the Grangegorman site. Proposed Building Packages will be served by ring mains with sluice valves and fire hydrants located to the requirements of Part B of the Building Regulations and DCC standards. A minimum number of connections for the Grangegorman site are to be made from the proposed trunk watermain.

Sustainability proposals for reducing water consumption for the overall development will be promoted by the Grangegorman Development Agency. The GDA will develop a sustainability strategy for the entire site development to include water conservation proposals and each of the individual building packages will be evaluated in the context of this strategy. Where incorporated water conservation measures will be in accordance with the Dublin City Council Water Division Guidelines. Measures to be considered, where feasible, include grey water recycling, rain water harvesting, low flush appliances etc.

In addition, for the public realm areas, the feasibility of rainwater harvesting for any irrigation systems proposed for use associated with the playing fields, gardens and landscape areas including any fountains and water features etc will be explored. Grey water recycling and re-use for cleaning and maintenance will be investigated with a view to reducing the overall mains water demand.

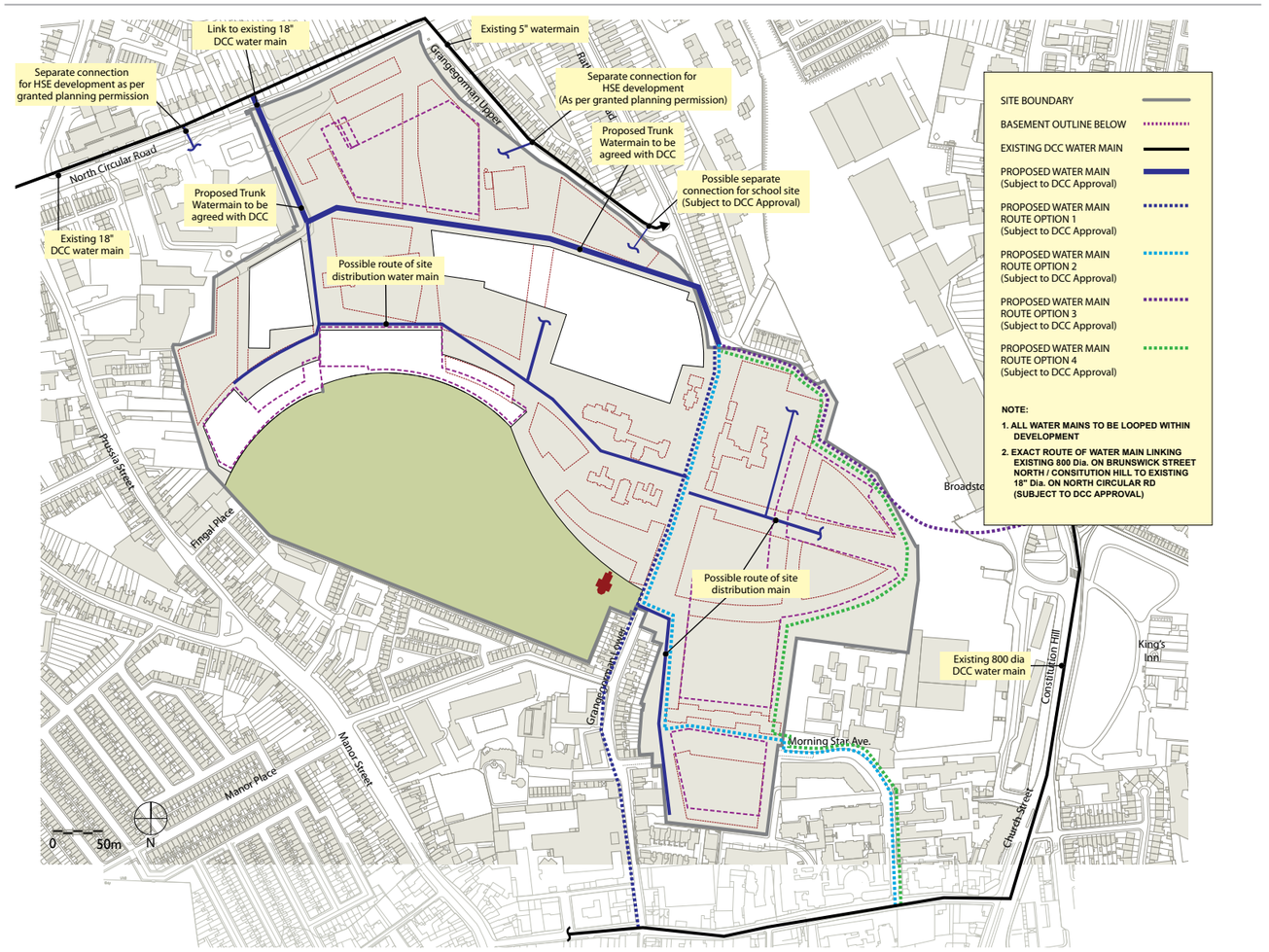


Figure 7.3 Existing and Proposed Watermains

7.1.9 New Infrastructure Design

All new site and public water supply infrastructure will be designed in accordance with the relevant requirements of Dublin City Councils Water and Drainage Divisions including the "Specification for the Laying of New Water Mains in Private Property", and will be located within the public realm, with the appropriate wayleave clear of basement structures and not in large open green spaces. Fire fighting requirements of Dublin City Council Fire Brigade will be accommodated. Testing will confirm the suitability of the existing mains system and will determine the need if any for pressure boosting.

7.2 Mechanical and Electrical Services Infrastructure

7.2.1 Introduction

The Grangegorman Development Agency proposes a Central Energy Centre, incorporating a Central Heat Generation plant, Electrical Main Switchroom and adjacent to a Data Centre will be provided for new and refurbished buildings within the SDZ area.

The Grangegorman Campus will be developed in phases, with the Central Energy Centre currently scheduled for construction within the earlier phases. There will be a requirement to provide interim solutions for the provision of heat, power and telecommunications to those phases that are completed prior to the Energy Centre.

7.2.2 Gas

Bord Gáis Éireann Networks (BGE) have confirmed that there is currently sufficient capacity within the existing city network to serve the proposed Grangegorman campus.

The existing gas network within the St Brendan's Hospital site would be made redundant and removed as part of the site excavations.

Prior to the completion of the Central Energy Centre a temporary 'packaged' boiler plant may be installed local to the Phases completed before the Central Energy Centre.

Bord Gáis Éireann Networks (BGE) record drawings indicate an existing 25mbar gas connection to Connolly Norman House. There are no other below-ground gas pipes within the phase 1 site indicated on BGE drawings. However, an electromagnetic survey would be carried out on the site prior to the commencement of any excavations.

7.2.3 Heating

Heating will be provided to the new and refurbished buildings within the PS area on a centralised basis, served from the Central Energy Centre. It is proposed that this will be located at the western end of zone 2b, along with any associated fuel storage, such as wood chips. An in-ground distribution network for this heating system will form part of the initial infrastructure applied for as part of the public realm application.

The campus heating energy strategy may involve utilising a combination of Combined Heat and Power (CHP), Solar Water Heating, Biomass and high efficiency Gas Boilers. Solar water heating could be provided locally to the buildings. The potential for utilising direct geothermal heating is also being reviewed.

The base heating load could be delivered by the CHP unit and when available, roof mounted solar collectors could meet the domestic hot water requirements. The supplementary heating demand would be met with the use of modulating boiler plant.

In advance of the Energy Centre being completed (and where some development has been constructed and occupied), 'packaged' boiler plant could provide heat to the buildings on a temporary basis.

7.2.4 Cooling

The GDA aims to naturally ventilate the buildings as far as possible. The associated demand for cooling would therefore be minimised. Achievement of this natural ventilation strategy in lieu of mechanical cooling will be a key focus of individual building design.

Certain buildings such as laboratories and IT facilities will have particular cooling requirements. All other anticipated cooling loads will be minimised through low energy building design.

The provision for cooling will be limited to individual buildings, it is envisaged that cooling would be provided locally as appropriate for individual buildings.

7.2.5 Electrical/ Power

The site area will be connected to the ESB 10KV network via a medium voltage 10kV connection. Separate dedicated connections will be provided for the various principal occupying organisations.

Electricity demand will be met by a combination of external supply and locally generated power.

The MV ring networks will provide power to the buildings via a series of electrical sub-stations. These substations will comprise of MV switchgear, MV transformer and low voltage switchroom for local power distribution to each building. This MV ring will be capable of being extended for provision of power to future phases of either campus as required.

MV Power will be distributed by a cable network contained within buried PVC ducts. Power from the substations will then be distributed throughout the buildings and externally within buried PVC ducts. The power distribution network will be designed in accordance with current IEE regulations.

Other elements of the development (not part of DIT/ HSE networks) requiring power will be distributed via the ESB infrastructure and supplied to the end user at Low Voltage (LV- 400V).

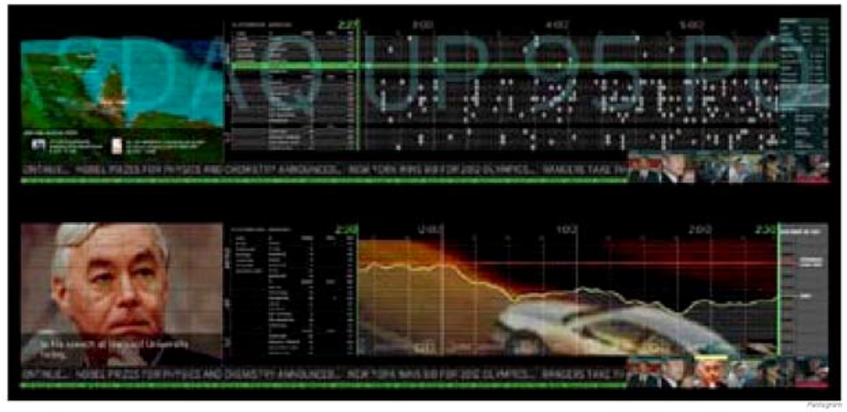
The current ESB infrastructure within the St Brendan's Hospital site will be decommissioned and removed as part of the excavation works. Any existing buildings affected by the decommissioning which require power during the enabling work will have their point of supply redirected.

To supplement power imported from the ESB network, Power generation is also planned to occur on-site via the use of the following:

- Combined Heat and Power (CHP) Plant
- Photovoltaics

7.2.6 Telecoms/Cable Television Distribution

The complete Planning Scheme area will be supported by a site-wide IT infrastructure. A network of in-ground ducts will distribute telecoms and cable television cabling required throughout the site to each building's communications rooms and distribution frames.



Typical IT and telecommunications services contained within buried duct network are Eircom main trunk routes, cable television services and any potential Wide Area Network (WAN) services which may be required. From the outset, the above ground telecommunications infrastructure will conform to a campus wide design approach, to ensure the quality of the built environment is not diminished.

Local telecoms connections will be required for the interim operation of the initial phase buildings as the main distribution infrastructure will not be in place. These initial phases will be connected directly to the existing service providers' network as an interim measure and will be re-connected to the main distribution infrastructure upon completion.

Any existing telecoms network on the St Brendan's Hospital site would not be suitable for use with the new campus and will be de-commissioned prior to any construction.

7.2.7 CCTV and Security Installation

It is intended that an integrated digital based CCTV and security system will eventually be installed throughout the site. It will be possible to link any building's CCTV and security system monitoring stations together through a network of buried ducts to allow complete site monitoring.

The CCTV systems associated with HSE Phase 1 will be operational in advance of any campus wide system and be monitored and controlled locally. This may be transferred to a possible future central site monitoring and recording facility at a later date.

Any existing CCTV network on the St Brendan's Hospital site would not be suitable for use with the new campus and will be decommissioned and removed.

7.3 Waste Management

7.3.1 Introduction

A separate waste strategy has been prepared for the site. This section summarises the waste strategy. The strategy sets out the management framework for waste generated during the demolition of existing buildings on the site, construction wastes and also operational wastes generated on a daily basis when the redevelopment is complete. The plan takes into account the requirements of the relevant national, regional and local waste policies.

7.3.2 Future Waste Regulations

The Department of the Environment, Heritage & Local Government (DEHLG) have issued the Waste Management (Food Waste) Regulations. This statutory instrument will require the producers of organic waste to separate this material out from the mixed waste stream. These Regulations have been taken into account in this waste strategy.

7.3.3 Construction and Demolition Waste Policy

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

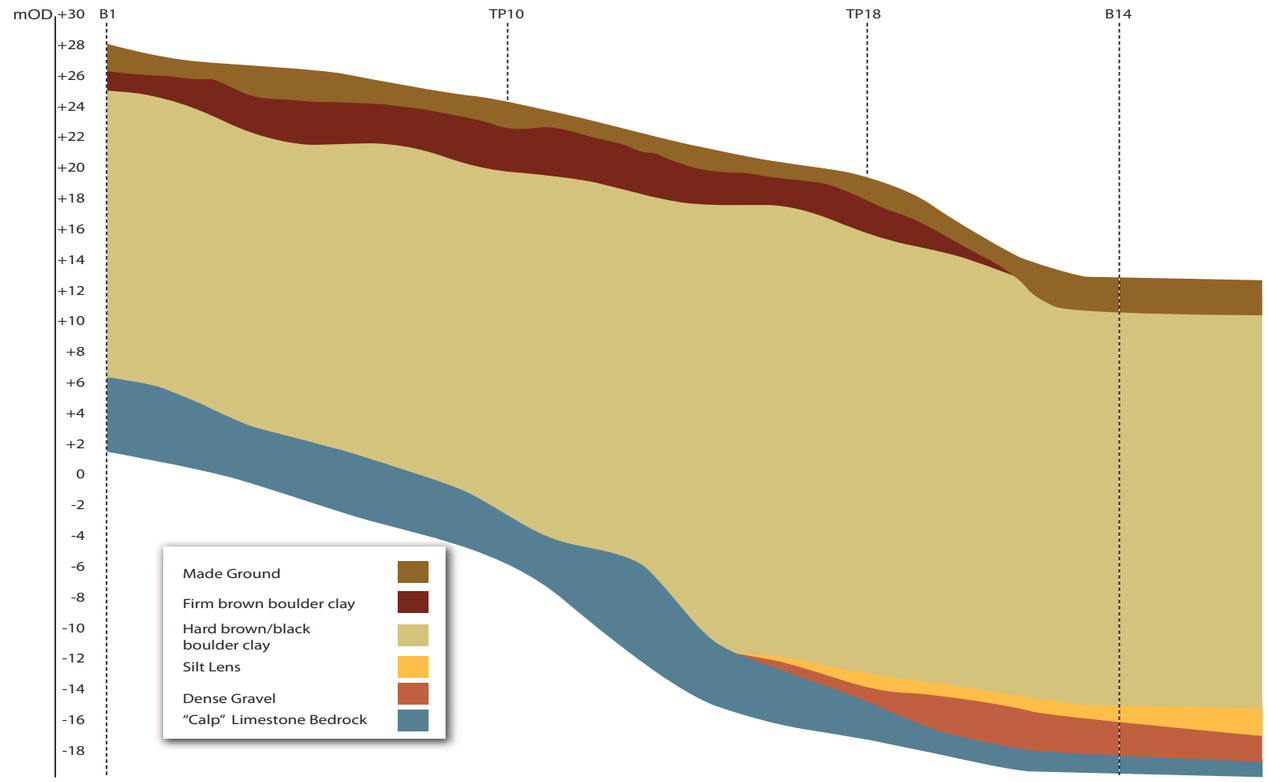
7.3.4 Management of Excavation & Demolition Waste

Best practices will be utilised for maximising the resource value of all materials generated during the excavation and demolition works at the Grangegorman site. This potential will be realised using the various methods highlighted in this section.

7.3.4.1 Sustainable Management of Excavation Materials

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

ground conditions



Indicative Geological Cross Section

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

Clean Excavation Material- Topsoil, Subsoil

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

It is planned to maximise the reuse on-site for all quantities of excavated topsoil and subsoil, provided that the material is suitable. Excavated material should be stockpiled with topsoil and subsoil and stored separately for subsequent re-use on-site and off-site.

Topsoil is a valuable resource which can be used for landscaping purposes and it is important the material is source separated and kept clean. Potential on-site applications for reuse of topsoil and subsoil include:

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

Contaminated / Made Ground

Initial site investigation works carried out on-site have found some pockets of contaminated ground requiring disposal off-site after excavation. The plots identified seem to be localised and do not extend across large areas of the site. Material suspected to be contaminated with heavy metals or hydrocarbons will be segregated from cleaner stockpiles and stored at a dedicated processing area on the Grangegorman site. Samples of materials will be taken and removed for testing at an approved laboratory. The material will be tested for a suite of parameters including heavy metals and organics. Based on the results from the laboratory this material will be removed off-site for disposal at a licensed landfill facility. If the material is unsuitable for landfill disposal a competent contractor will be employed to remove and transport the material to a specialist treatment facility as required. Material found to be contaminated with heavy metals or hydrocarbons will not be processed or made available for reuse.

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

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

Figure 7.4: Structures to be demolished

Hazardous Materials

Hazardous materials have not been identified during the initial site investigation works carried out. However, considering the age of the site, it is possible that some may be encountered. Any hazardous materials encountered during the excavation process will be segregated out from the mixed waste and placed in a sealed container/skip and taken off-site for storage. Hazardous waste will not knowingly be stockpiled or processed at the processing site. The hazardous waste container will be removed by a specialist contractor as required and recovered or disposed of at a licensed facility. Due to the age of some buildings there may be potential for encountering asbestos containing materials, further information on this is provided in Section 7.3.4.5.

7.3.4.2 Sustainable Management of Demolition Wastes

A number of existing structures have been earmarked for full or partial demolition on-site. Figure 7.4 details the structures to be demolished as part of the site clearance works for the planned Grangegorman development.

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

- Selective demolition/deconstruction
- Material reprocessing
- Segregated storage.

7.3.4.3 Asbestos Materials

Due to the age of some of the buildings to be demolished or refurbished there will be a need to undertake an asbestos survey of these existing premises at the site. The aim of the survey will be to determine the presence of asbestos containing materials (ACMs) in the buildings.

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

7.3.4.4 Approvals

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

7.3.4.5 Summary

The implementation of sustainable practices for the management of excavated and demolition materials at the Grangegorman site will deliver high levels of reusable materials. Appropriate controls will need to be put in place as required for the reuse of such materials.

7.3.5 Management of Construction Waste

Sustainable practices will be employed on-site when managing each of the following materials and wastes generated during construction:

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

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

7.3.6 Managing Operational Wastes

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

The waste strategy for the Grangegorman development must comply with policy objectives of the Dublin Waste Plan and the Dublin City Council Bye-laws in relation to storage, source separation and presentation for collection of both household and commercial waste. The site will also include a Bring Centre for local residents, in lieu of the existing facility which is to be removed. This will be appropriately sized to accommodate waste generated on the site and from local residents.

The strategy deals with waste generation, waste storage and waste collection for all elements of the Grangegorman development when operational.

The proposals set out in the Strategy are designed to follow the policy objectives of the Dublin Waste Plan. This approach prioritises the waste management options higher up the waste hierarchy. The Waste Strategy for Grangegorman seeks to minimise the generation of waste and to maximise the level of reuse and recycling of resources generated.

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

Each building or cluster of buildings of similar type will accommodate a temporary collection area where waste from the building(s) will be collected before being transferred to a central storage area. The Strategy proposes two central storage areas based on the natural division of the site and the layout of the development, which means there will be two main (waste) activity centres on the site.

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

8 Planning Scheme
Grangegorman

Phasing and Implementation

Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

Purpose and Layout of this Chapter

This chapter describes in broad terms the intended delivery of the Grangegorman Project, including the principle phasing of the development and construction strategy.

Contents

8.1 Phasing

8.1.1 Introduction

The GDA was established by Government to manage the planning and development of the SDZ site which is subject to this Planning Scheme. The SDZ area includes an area of HSE owned land (at the North Circular Road end of the site) that the HSE will develop itself in line with the overall project vision and design guidelines.

The timing of each individual project on the SDZ site involves a number of contributing factors including;

- procurement method adopted,
- approval from the relevant sanctioning Authority,
- the prevailing economic conditions and;
- availability of suitable funding streams.

In addition, phasing of parts of individual building blocks may be required in order to allow for their planned expansion or to respond to new educational/ health/ enterprise initiatives which come on-stream. For these reasons, a degree of flexibility in phasing is required.

As described in the earlier chapters, a number of different stakeholders will be provided for throughout the development and operation of the site, including the local community, the HSE (clients, residents, staff and visitors) and DIT (students, staff and visitors).

8.1.2 Grangegorman Strategic Plan 2011

The strategy for the procurement of the Grangegorman campus is set out in the Grangegorman Strategic Plan 2011, which is a statutory document. The Strategic Plan has identified a suite of packages for the delivery of the Grangegorman development. While indicating a possible framework for delivery of the development, it also allows for a degree of necessary flexibility to take into consideration the factors discussed above.

The Strategic Plan shows the clustering of packages together in distinct zones to allow for an efficient delivery of site infrastructure and the public realm and to establish completed areas within the overall development at the earliest opportunity.

8.1.3 Guiding Principles for Phasing of Development

Overall guiding principles for the phasing of the Planning Scheme have been developed by the GDA to progress the orderly delivery of development and associated infrastructure and facilities across the site and as necessary external to the site. It will be a priority of the GDA that that the development of the site takes place in a well-managed phased manner such that:

- The environmental impact to the local community of construction activity is minimised.
- Development is incremental and balanced, with complementary uses occupying the site as the development is rolled out.
- Delivery of supporting infrastructure and public realm takes place in tandem with, or in advance of, the development of the campus.

8.1.4 Summary of Phasing

In broad terms, table 8.1 outlines the principle steps that will be taken by the GDA in the delivery of the Grangegorman project following adoption of the Planning Scheme. The phasing and ordering of development shall generally reflect the suite of packages as set out in the Grangegorman GDA Strategic Plan, 2011.

8.1.5 Specific Phasing Objectives

The following specific phasing objectives will govern the implementation of the Planning Scheme:

8.1.5.1 Existing Residents of St Brendan's Hospital

The GDA is in the process of developing in advance of works proposed for the SDZ site, a replacement HSE mental health facility on a site immediately adjacent to the SDZ site. This will provide high quality residential accommodation for existing residents of the site. It will also allow the SDZ site to be vacated prior to the commencement of its development.

8.1.5.2 Transport

A transport assessment for the overall development of the Planning Scheme area has been prepared and is summarised in Chapter 5 of the Planning Scheme. A possible development scenario for the site is also included in Chapter 5. The GDA will continue to work with relevant transport bodies and Dublin City Council on the provision of transport services and access to the site, and will continue discussions with third party landowners on potential additional access routes to serve the site.

8.1.5.3 Services infrastructure

It is intended that development on the SDZ site will take place in tandem with the delivery of necessary infrastructure. The GDA will closely liaise with Dublin City Council and the relevant utilities providers to ensure that the capacity of the local infrastructure can support the quantum of development to be delivered. The following infrastructure services will be provided as part of the site infrastructure network to coincide with the delivery of the first phases of development on the site; water supply, surface water drainage, foul drainage, gas, electricity, telecoms, security, heating network and site lighting.

The GDA acknowledges regional capacity constraints with respect to wastewater and water treatment plants and notes that DCC is working with the Department of Environment, Heritage and Local Government and the other Dublin Local Authorities on works programmes to increase capacity at these plants. The current Water Services Investment Programme contains significant provisions for these expansions and improvements.

The GDA will work closely with DCC on the early phases of development in particular to facilitate GDA and DIT in establishing critical mass on the new campus as dictated by normal operational requirements for educational establishments, and being cognisant of holistic needs of a new urban quarter in Dublin City.

It should also be noted that as part of this Planning Scheme, it is proposed that the Planning Authority reserve the power to make its own independent determination of the adequacy of water and waste water infrastructure and to refuse or phase development as it deems appropriate.

Table 8.1 Summary Phasing Table

Step	Item	Note
1	**Planning - Infrastructure and Public Realm** ▌ In agreement with Dublin City Council, upgrade water services infrastructure serving the site as required ▌ Lodge planning application(s) for required infrastructural work within the SDZ site and externally as required ▌ Lodge planning application(s) for required public realm work including streets, pathways, landscaping, public spaces, play spaces, parkland, sports pitches, etc	▌ Planning applications relating to infrastructural elements must be co-ordinated and agreed with Dublin City Council and / or relevant service providers prior to lodgement. ▌ An Environmental Impact Statement to be prepared and submitted where required under EIA Directive (85/337/EEC) as amended by Directives 97/11/EC and 2003/35/EC. ▌ Preliminary Construction Management Plans, Transport Assessments and Mobility Management Plans must also be prepared and submitted for relevant planning applications (including buildings).
2	**Planning - Buildings** ▌ Lodge planning applications for relevant buildings / quads / etc. as required	▌ The GDA will work closely with DCC in regard to the development of the site.
3	**Construction** ▌ Following receipt of necessary relevant planning permissions, statutory approvals etc., and completion of required procurements, commence construction work on – ◗ Water services infrastructural upgrades (on and off site) ◗ Infrastructural and public realm works ◗ Buildings on a rolling basis	▌ New replacement mental health facility to be in occupation prior to commencement of substantial infrastructural works that directly impact on the existing facilities. ▌ All details must be agreed with Dublin City Council for all necessary water services and road network upgrades prior to commencement on site of such works. ▌ A Construction Management Plan must be prepared and updated appropriately to ensure co-ordinated and effective site practices are utilised in order to minimise impacts on the local community.
4	**Occupation** ▌ Once the necessary relevant infrastructure (including water services and transport / access) and public realm is in place, and the relevant statutory requirements are met, occupation of the site will commence. This will include for public access to and across the site.	▌ All necessary relevant infrastructural upgrades (including all water services and transport) must be in comissioned prior to occupation of each building. ▌ Appropriate levels of public realm must be delivered in parallel with each particular building. It is envisaged that public access to and across the site and at least one major sports pitch will be delivered in parallel with the opening of the first substantial educational building. ▌ Attractive and secure temporary screening arrangements of as yet undeveloped sites within the SDZ lands shall be agreed with and installed prior to occupation of the site.

The first phase, which will require both works to upgrade infrastructure, and the lodgement of a planning application for the public realm, will need to address in detail the provision and management of water for the SDZ site. The first phase shall include with the first planning application a full surface water management plan incorporating the management of flood risk, which will have a bearing on the detail of the form and layout of the public realm.

The public realm application shall include detailed design of the proposed water main and will be required to be delivered and commissioned prior to completion of the first phase of buildings on the SDZ site.

Detailed design of the proposed surface water and foul drainage infrastructure: the design must demonstrate how this infrastructure will not cause any deterioration through increase in CSO discharges to existing water quality in River Liffey.

While it is recognised that the SDZ site is located with a low risk area for flooding, it is appropriate that the surface water management strategy incorporates a site specific detailed flood risk assessment as defined by and in accordance with the DoEHLG and OPW Guidance, "The Planning System and Flood Risk Management- Guidelines for Planning Authorities", and the associated Technical Appendices.

Additional infrastructure described in Chapter 7, including an energy centre and district heating system, will be delivered when the quantum of development reaches a critical mass that will ensure that the provision of such infrastructure is sustainable and economically viable. The inclusion of a distribution network for the district heating system, medium voltage power, telecommunications and other systems requiring underground ducting shall form part of the infrastructure planning application.

8.1.5.4 Public Realm

Nearly 50% of the site can be defined as public realm, which consists of the circulation spaces for pedestrians, cyclists and vehicles in addition to recreational lands, all of which will be publicly accessible.

The proposed development will require the early delivery of the majority of the public realm elements in order to allow for access to buildings and recreational areas and for legible permeability across the site. The major elements

to be developed initially shall be St. Brendan's Way from Broadstone to Prussia Street on an east-west axis and linking north to the North Circular Road. In addition, Ivy Avenue will also be delivered at this initial stage to allow for access and servicing to the sites on both sides of this road.

The GDA intends that the sections of public realm required for access to the development packages and any early connections across the site are completed to a finished standard to coincide with delivery of buildings. It is critical that the quality of the experience of the public realm is of a high standard. The aim of the GDA will be to provide legible public realm from the outset of the opening of the campus.

The GDA will promote the advanced delivery of landscaping of the site. New trees will be planted as early as practicable to allow them to mature as the development progresses. The use of tree nurseries on or near the site will also be considered.

Where necessary, and as the development progresses across the site, temporary transitional arrangements will be incorporated into the public realm design. These could include temporary landscape works or screens to help establish a sense of enclosure to the public realm and to maintain visual amenity.

8.1.5.5 Recreational and Community Facilities

The GDA will seek to advance the early delivery of recreational facilities associated with the public realm, including elements of the playing fields, walking tracks and play spaces. Public access to these recreational and sporting facilities will be available once developed and safely accessible.

The delivery of the primary school in its permanent location is a priority of the GDA and it must be in use prior to completing the eastern portion of the site. The school is currently accommodated in temporary premises south of the Lower House.

The incorporation of the Dublin City Council Public Library into the Dublin Institute of Technology Library complex is also a priority of the GDA. Its delivery will require agreement with Dublin City Council Library Services.

8.1.5.6 Ancillary Facilities

It is important for the effective operation of the campus that ancillary facilities which enhance the experience of students, staff, residents and the public are developed, as appropriate, in tandem with educational and healthcare core facilities.

In terms of the student experience, the library, student union, welfare and catering facilities, of appropriate scale, will be available from the outset of the operation of the campus. The DIT library will be open to the public on a managed basis.

Recreational and sporting facilities, either on-site or elsewhere, will be available from the outset of the operation of the campus, or will be available to existing users, students, staff (DIT and HSE), residents and the public.

Delivery of additional complementary retail and catering facilities, to be provided with the private sector, will be actively promoted by the GDA. The early delivery of student residential accommodation, which it is anticipated will be delivered with the private sector, will be actively promoted by the GDA.

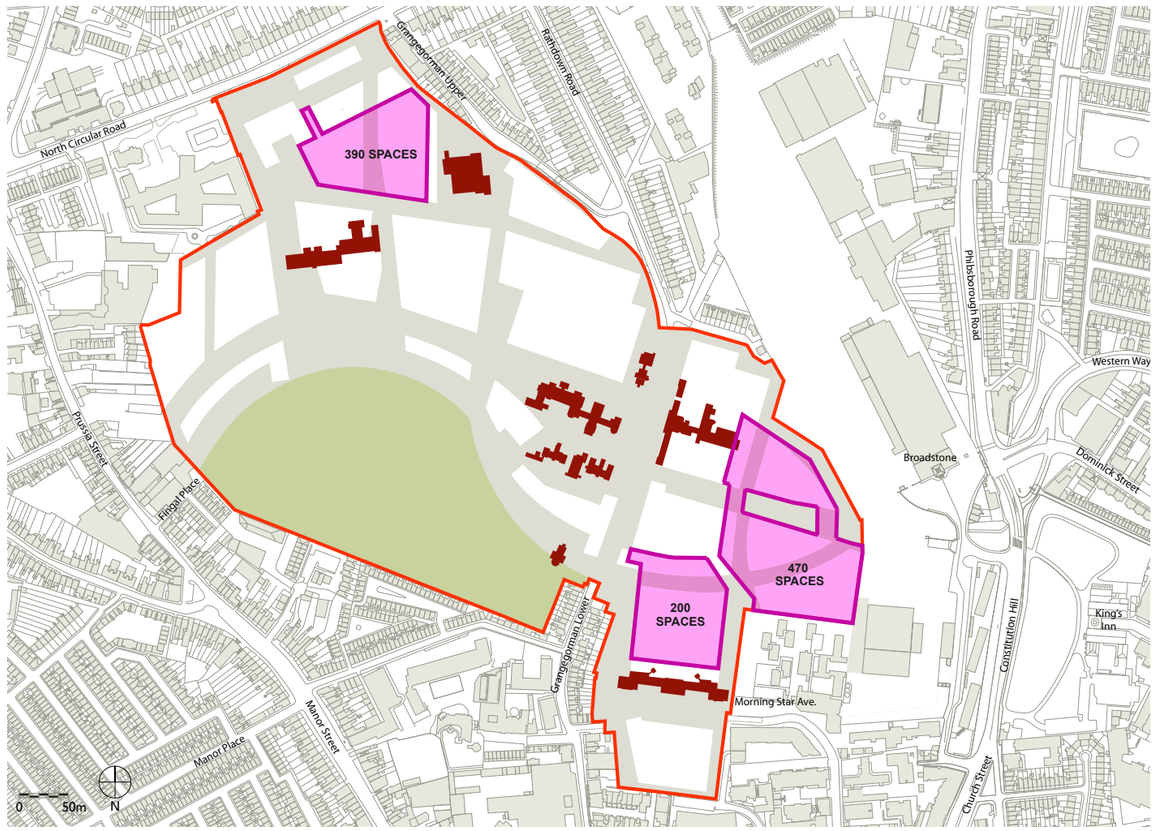


Figure 8.1: Temporary surface carparking

8.1.5.7 Phasing of Car Parking

The quantum of carparking to be provided on the site during the phased implementation of development will be commensurate with the quantum of occupied development on the site at that time and the maximum number of spaces permitted in accordance with the parking strategy developed in the Transport Assessment. In this regard, car parking spaces will not be utilised prior to the occupation of the relevant building or zones. The carparking spaces will also be apportioned between the east and west side of the site, in agreement with Dublin City Council, in order to evenly distribute the cars entering or exiting the site and minimise peak loading on the adjacent road network.

Dependant on the delivery and phasing strategy for the overall site, the GDA may develop interim surface car parking on or near underground/undercroft parking locations. The GDA will ensure that with any such interim parking, that the car park access arrangements do not compromise the scheme's overall commitment to accessibility by walking and cycling or the achievement of a high quality public realm within the site and the environs of the site. Fig No. 8.1 provides an example of an interim on-grade parking solution. The surface carparking will be replaced with underground or undercroft car parking as development comes on-stream. Any interim arrangements will be subject to a traffic impact assessment to be submitted to Dublin City Council.

In addition to the carparking associated with the operation of the campus, temporary carparking and compounds will be necessary during the construction phases. The location and access to these construction compounds and carparks shall be consistent with to the principles established in the overall access strategy developed for the site and will be subject to consultation with Dublin City Council as the development progresses.

8.1.5.8 Protected Structures

The Protected Structures on the site are a valuable and important resource. They add character, reflect the history of the site, create a sense of place and provide a unique setting for new buildings and uses. The GDA will safeguard the physical condition of existing Protected Structures on the site to prevent deterioration of the building fabric. It will also prioritise the early and appropriate re-use of the Protected Structures on the site, in recognition of the value of these structures to all stakeholders.

8.2 Implementation

8.2.1 Introduction

The overall project will be implemented by the Grangegorman Development Agency (with the exception of the small HSE area to the north of the site previously mentioned) in line with the Grangegorman Strategic Plan 2011 and as empowered by the Grangegorman Development Agency Act 2005.

The Strategic Plan contains key aims and objectives for the GDA that address implementation issues such as on-going consultation; disposal of DIT property to fund the development; decanting of HSE and DIT properties as appropriate; joint venture developments with the private sector; and estate management issues. These aims and objectives will be developed into actions as appropriate.

The GDA also have a number of specific goals relating to implementation that are important to the Planning Scheme. These include:

- GDA will create HSE replacement accommodation on a site immediately outside the SDZ area to allow the SDZ site to be vacated for the further development of the Quarter.
- GDA will work with HSE to develop a decanting strategy for current HSE and associated occupation of the site so as to minimise disruption to priority residential patients and visiting clients.
- GDA will work with DIT to develop an aligned decanting strategy, and to refine arrangements for faculty movements to ensure alignment of academic and construction programmes.
- GDA will develop a Construction Management Plan to ensure an integrated approach to construction logistics as well as manage local impacts and ensure effective application of GDA consultation principles.
- GDA will plan the location of construction compounds and the boundaries of DIT construction sites to enable the expeditious delivery of the primary school.

- The GDA will assist in creating a Campus Liaison Committee. This committee will build on DIT's existing relationship with the community and will assist in the campus community interface. It will be made up of DIT staff, student union members, the HSE, local community representatives, local schools, community organisations, the Gardaí and others as issues determine.
- The GDA shall regularly monitor noise levels during construction and establish and communicate with the adjoining communities a point of contact for complaints regarding noise. Internal project management structures shall be in place to ensure the construction noise is managed and limited to acceptable and appropriate levels.

8.2.2 Design Procurement Strategy

As outlined in the GDA's Strategic Plan 2011, and by utilising the framework detailed in the Planning Scheme, the GDA will ensure that a consistent and coherent approach is taken to the overall design of the site and its facilities, while introducing a level of vibrancy and variety that will be needed for a world class urban quarter. Further to this, the masterplan design team have been retained to design the public realm and site infrastructure and to give oversight on the proposed designs of the various buildings and quads to ensure that the project vision and design guidelines are being adhered to. This will help ensure coherence and consistency. The GDA will also procure different design teams to work on the various building packages to give diversity and visual life to the built environment.

8.2.3 Construction Methodology Strategy

8.2.3.1 Construction Management Generally

It is expected a number of contractors will be working on site concurrently. GDA, either directly or through its agents, will pro-actively manage and co-ordinate all contractors on site by holding regular co-ordination meetings and constantly inspecting the site.

The site will be maintained in a neat and tidy condition and guarded by security to prevent unauthorised access. Traffic management will be a priority in the interests of safety. All contractors will be required to maintain the adjoining road network in a safe and clean state particularly during the early stages of construction. This will include sweeping and cleaning road surfaces during activities such as excavation of soil and concrete deliveries to ensure they are kept free of dust, debris and loose material. GDA recognise the sensitivities of working within an existing community and in this regard will ensure the existing environment is actively maintained by minimising pollution in the form of noise, air and litter.

8.2.3.2 Compounds

A number of locations around the site have been earmarked for contractor compounds. The compounds will provide secure and safe refuge space for contractor facilities and equipment. Compounds will be strategically selected for proximity to key construction sites they will serve whilst also being readily accessible from the primary entrances to the site and also in locations where there will be minimal effect on residential amenities.

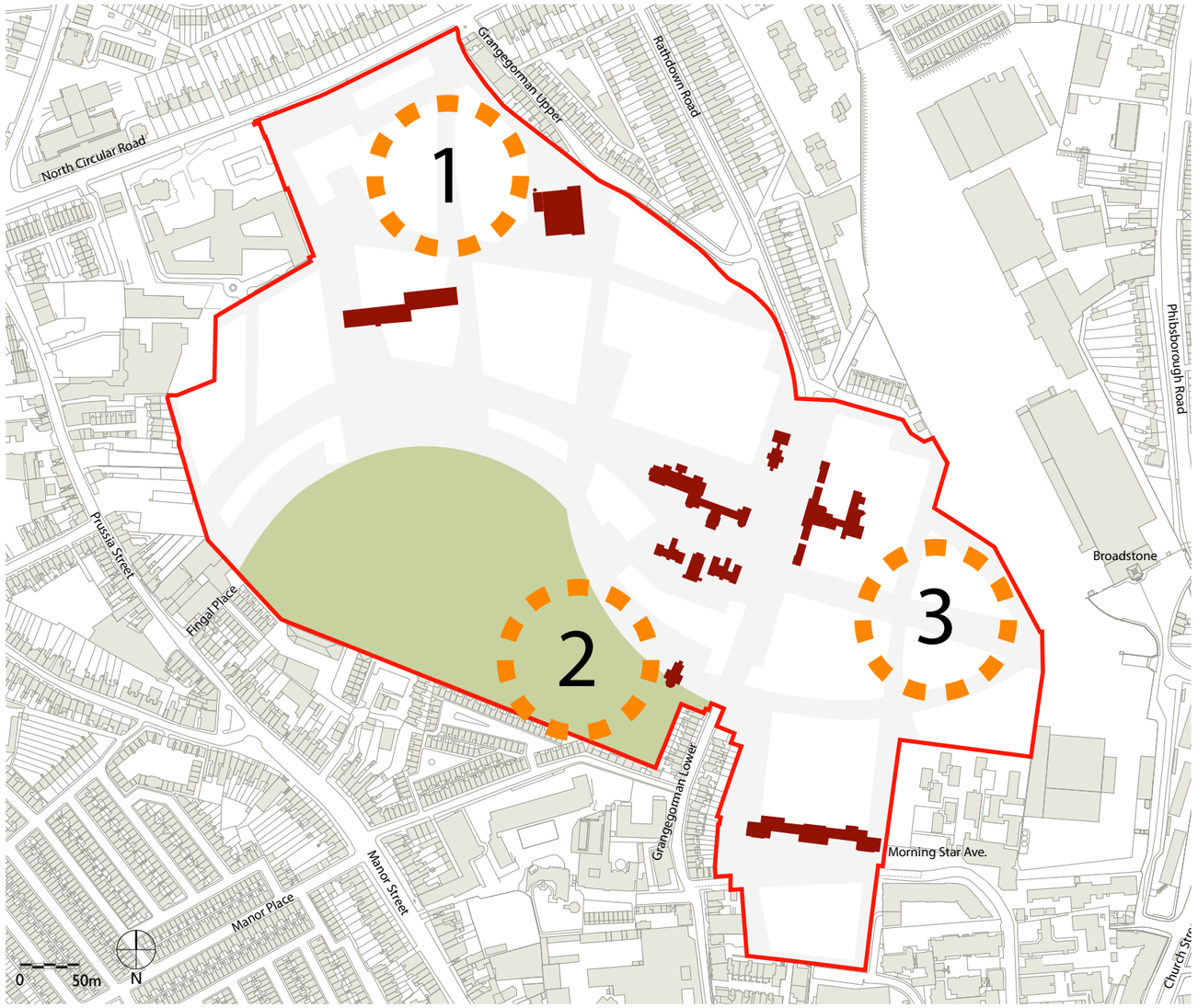


Figure 8.2: Anticipated location of construction compounds

The primary compound to serve development of the West side of the site is located to the North of the site. This compound will be accessed from the main North Circular Road entrance. Additional compound spaces will be provided to the South along the periphery of the parklands and to the East side of the site in the location of the future mixed-use development. These areas may be used as material staging areas, temporary car parking for construction workers, site offices and huts, storage of plant and equipment, etc. The compound to the South shall be located to minimise interference with the playing fields and to ensure these fields remain usable during the construction period. Please refer to Figure 8.2 which illustrates the anticipated locations of construction compounds.

8.2.3.3 Construction Traffic

It is proposed to use the new entrance off North Circular Road, which will be constructed as part of the HSE replacement accommodation, as the main construction vehicle access during site excavation and deliveries of materials, concrete, etc. Lorries and trucks will traverse the site along the access routes to be provided as part of the initial infrastructure.

Other opportunities for access may arise via Broadstone or Prussia Street which would be utilised as appropriate.

Light goods vehicles and cars will access the temporary car parks and compounds using the local road network, which will primarily include Grangegorman Lower/Grangegorman Upper or North Circular Road or Morning Star Avenue.

A project traffic management plan (revised and updated for each phase) for all stages of construction traffic will be prepared in accordance with the requirements of Dublin City Council before demolition, excavation and construction commences. The plan will detail access arrangements for labour, plant and materials and shall indicate the locations of plant and machine compounds.

8.2.3.4 Health & Safety

Health and Safety will be a key priority during development. In this regard, GDA have appointed a Project Supervisor Design Process (PSDP) to manage the health and safety aspects of the development concerned with design to date. However, additional PSDPs may be appointed for individual projects as they arise.

A Project Supervisor Construction Stage (PSCS) will be appointed prior to construction commencing on site. The strategy for appointing a PSCS has yet to be finalised and this will be contingent on the quantum of development being undertaken. However, one possible strategy would be the appointment of an independent PSCS who would retain overall responsibility and co-ordination for safety during construction. In addition, it is anticipated that at any one time, only one contractor will be appointed with overall responsibility for traffic co-ordination on site during construction works.

8.2.3.4 Environmental Issues

GDA take a proactive approach to issues concerning environment and sustainability. Environmental impacts during construction will be mitigated or reduced where possible.

In this regard, each contractor will be required to produce a construction management plan for GDA approval prior to commencing any works on site.

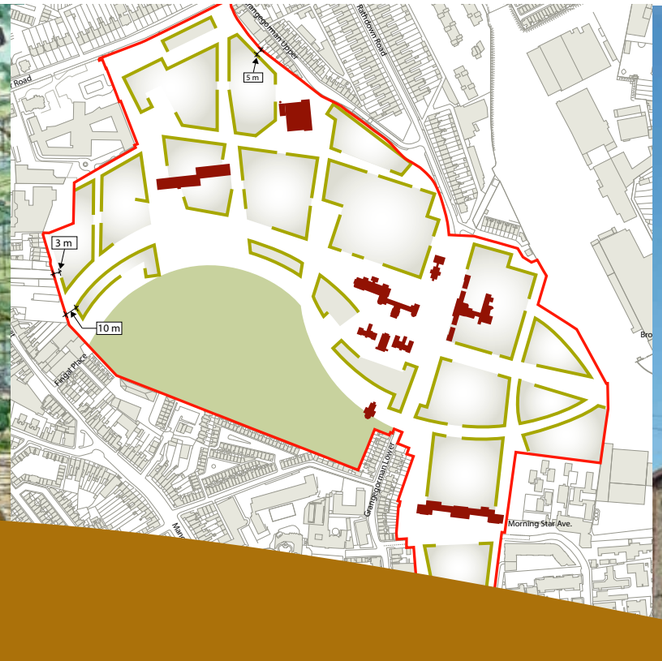
This plan will deal with issues such as noise and dust mitigation measures, hours of operation, traffic management, waste management, environmental management (including debris from construction traffic, noise, dust, air quality and the like), demolition, protection of trees, works to protected structures, etc.

9

Planning Scheme

Grangegorman

Environmental Impacts and Mitigation Measures



Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

Chapter 9:

Environmental Impacts and Mitigation Measures

Purpose and Layout of this Chapter

This Chapter summarises the environmental impacts of the Grangegorman Planning Scheme and proposed mitigation measures. The accompanying Environmental Report describes the Strategic Environmental Assessment (SEA) process carried out of the Planning Scheme. This Chapter summarises key findings of the Environmental Report in relation to environmental impacts and mitigation measures.

Contents

9.1 Impact of Grangegorman Planning Scheme on the Environment

The critical elements of the environment, or environmental receptors, of particular importance for the redevelopment of the Grangegorman site are as follows: biodiversity, flora and fauna; population and human health; landscape; air quality; climatic factors; cultural heritage -architecture; cultural Heritage – archaeology; and material assets - infrastructure.

A description of how each of the environmental receptors will be impacted by the policies contained in the Grangegorman Planning Scheme is provided below.

9.1.1 Biodiversity, Flora and Fauna

The Grangegorman Planning Scheme will have an overall neutral to positive impact on biodiversity, flora and fauna in the Grangegorman SDZ site. In particular the removal of the invasive plant species identified on site, the appropriate disposal of the removed plant material and the high quality added landscape features will have a positive impact. The new urban Quarter will incorporate a variety of landscaped gardens with an emphasis on the use of native species which will also have positive impacts on the biodiversity, flora and fauna on site.

Grangegorman Development Agency has carried out a comprehensive bat survey. Despite the site's apparent favourability for bats, only a single species, pipistrelle Pipistrellus pipistrellus, was observed within the study area and this was in low numbers.

As all bat species in Ireland are protected under both national legislation – (Wildlife Act, 1976, as amended in 2000) and European legislation – (Habitats Directive (92/43/EEC)) and should time elapse from the bat survey undertaken to construction commencing on site, the GDA consider it important that further assessment of impacted buildings identified as having potential to harbour bats will be undertaken immediately prior to works. This is to safeguard any animals which may colonise structures in the interim.

9.1.2 Population and Human Health

The Grangegorman Planning Scheme provides for the redevelopment and opening up of the Grangegorman site. It will also result in a significant regeneration of the surrounding area which will provide a substantial boost to the socio-economic status and quality of life for the local residents. The regeneration provides for an unprecedented volume of health and educational facilities to service a local, regional, national and international population. There will also be significant community facilities, sports facilities, public open space, a library and a school which will improve the overall quality of life for the local residents as well as the future student population. As a result the Grangegorman Planning Scheme will have an overall positive impact on population and human health.

9.1.3 Landscape

The Grangegorman Planning Scheme will have an overall neutral to positive impact on the natural and historic landscape features within Grangegorman. It will result in the transformation of Grangegorman's closed compound into a new urban quarter which will form an integral part of the City. The project provides an opportunity to maximise the existing natural and architectural landscape features into a new urban landscape and this has been utilised within the Grangegorman Planning Scheme with proposals to provide the highest standards in urban design and landscaping. Included are proposals to articulate the historical, social, urban and architectural values of Grangegorman and to ensure that they are suitably incorporated into the overall development. There will be a transitory negative impact during the construction and initial operation phase which will be short-lived as the urban quarter emerges.

9.1.4 Air Quality

The main impact on air quality as a result of the implementation of the Grangegorman Planning Scheme relates to transport and the Planning Scheme will have an overall neutral to positive impact on air. The Grangegorman Planning Scheme has placed emphasis on the achievement of a sustainable transport system. The implementation of the Planning Scheme will inevitably result in emissions to air in the local area as a result of developing a medium density scheme at a location which is currently occupied at an extremely low density. However the Planning Scheme contains proposals which support the use of public transport, together with facilitating and promoting walking and cycling. In addition, the opening (and potential opening) of new entrances in the perimeter wall will facilitate pedestrian movements traversing the site which would previously have required the use of a motor vehicle to travel around the site. The level of car parking to be provided on site will be curtailed to ensure that it does not encourage a reliance on the private car by certain individuals using the site.

9.1.5 Climatic Factors

The Grangegorman Planning Scheme places a strong emphasis on sustainability and in particular sustainable energy production within the Grangegorman quarter. This will have an overall neutral to positive impact on climatic factors as much of the energy to be required is currently being consumed in a less efficient manner on the current DIT and HSE sites spread across the city. The provision of public transport should also result in positive impacts with respect to climatic factors.

9.1.6 Cultural Heritage – Architecture

It is expected that the project will have an overall neutral to positive impact on the architectural heritage of Grangegorman. While there will be a requirement to demolish some structures on site to facilitate the development, this will be limited to structures which have not been designated for protection.

Structures to be removed fall into two broad categories, i.e. those that have some architectural merit or historical significance (but are not on the record of Protected Structures) and all the remaining structures (not protected) that do not have such merit and are relatively commonplace and undistinguished. Guidelines on matters such as drawn or photographic recording, and possible reuse of elements of materials are set out where appropriate.

Many of the important structures on site have fallen into a poor state of repair and would deteriorate further should the current situation continue. The Grangegorman Planning Scheme will result in the preservation and reuse of these buildings and the restoration of architecturally important features.

While the overall impact is likely to be neutral to positive there exists an element of uncertainty with respect to the impact of buildings which have yet to be designed, on the architectural heritage of protected structures. For example the Planning Scheme contains proposals for most buildings to be between 4-6.5 stories, suited for their intended use, and a number of taller ('mid-rise') buildings are proposed in line with the provisions of the Dublin City Development Plan 2011-2017.

Although individual buildings have not yet been designed, their external building lines and maximum and minimum heights have been determined in this Planning Scheme. Careful attention has been paid to building height in the vicinity of protected structures. Any new development will be guided by principles set out in the Planning Scheme.

9.1.7 Cultural Heritage - Archaeological Heritage

The redevelopment of a historical site such as Grangegorman, which has been relatively undisturbed in recent times, is likely to result in some impacts on any previously undiscovered archaeological remains that may be on site. However the Grangegorman Planning Scheme contains policy to establish and articulate the historical, social, urban and architectural values of Grangegorman and this will require that all archaeological remains found on the site during the redevelopment will be appropriately dealt with.

The overall impact of the development on any potential archaeology on site will be generally neutral. Notwithstanding the carrying out of exploratory investigations, knowledge of the archaeology on site will only be evident when works commence.

9.1.8 Material Assets - Infrastructure

The Grangegorman Planning Scheme supports the provision of infrastructure which will support development in this area of the city. The provision of a separate storm water sewer as originally proposed in the Strategic Plan, and now the Planning Scheme, will be of particular significance as it will result in the removal of a substantial volume of surface water from the sewer network reducing pressure on wastewater treatment facilities for the city area. Conservation of water is a strong theme through the scheme encouraging the reuse, recycling and conservation of water.

9.2 Mitigation Measures

The following mitigation measures will be carried out as part of the Grangegorman Development Agency Planning Scheme:

9.2.1 Biodiversity, Flora and Fauna

Re-surveys of habitats, flora and fauna shall be undertaken, as considered necessary, prior to redevelopment works, possibly at the planning application stage, in order to ensure that an up-to-date record of the ecological environment is maintained.

Implementation of the Grangegorman Planning Scheme will result in the removal of invasive plant species including Giant Hogweed and Japanese Knotweed. These highly invasive alien species are of no ecological value. The plant material removed will be disposed of in such a manner so as to ensure that these species are not spread to other locations.

The baseline study on Biodiversity, Flora and Fauna identified the need for information on bats located in the Grangegorman site. Despite the site's apparent favourability for bats, a comprehensive bat survey undertaken in July 2009 identified only a single species, pipistrelle Pipistrellus pipistrellus, which was observed within the study area in low numbers. The GDA will undertake annual surveys of the SDZ lands to identify habitats of protected species and in particular bats, and minimise interference with these habitats. For key buildings that are particularly suitable for bat roosting, applications for works to these will include a recent bat survey. The results of these surveys will be included in the annual monitoring report as part of the implementation of the SEA.

However, should time elapse from the bat survey undertaken to construction commencing on site, the Grangegorman Development Agency considers it important that further assessment of impacted buildings identified as having potential to harbour bats will be undertaken immediately prior to works. This is to safeguard any animals which may colonise structures in the interim.

As part of the statutory planning process, the Grangegorman Development Agency will cooperate with Dublin City Council in the implementation of their Biodiversity Action Plan 2008-2012.

The landscaping plan will provide planting, predominantly with native plant species which would in turn attract a variety of native bird and animal species. Landscape materials will be based on retaining existing significant plantings where possible, augmented by the use of native species. Many of the mature trees on the site are to be retained, with the exception of those which must be removed to facilitate key structuring principles and urban form or which are physically unsound. Existing parkland with playing pitches will be substantially retained and enhanced, to become the main green lung of the new quarter.

On a site as sparsely developed as Grangegorman, any development will have impact on the existing biodiversity. The overall development benefit is however considered to be a net positive impact as a result of the implementation of the Planning Scheme. The Grangegorman Planning Scheme contains specific proposals for the retention of existing significant plantings where possible, augmented by the use of native species.

- The existing parkland with playing pitches will be substantially retained and enhanced, to become the main green lung of the new quarter, characterised by a park-like feel, rather than a simple collection of playing pitches;
- The overall Green Fingers landscape will link the site with the immediate community, as well as Dublin's greater urban context, planted with native species and existing large trees will be integrated into them;
- The eastern portion of Serpentine Walk will be a heavily planted, tree-lined route between mixed use and student residential development to allow for privacy of those living and working along this portion of the route;
- Lighting will strive to deliver the following key objectives:
  - Create a district that is lively and well used both day and night;
  - Provide a safe, secure and accessible environment for pedestrians and other users;
  - Avoid disruptive glare, sky glow and lighting overspill;
  - The lighting design will be closely integrated with the design of the landscape and urban spaces to create a clear and legible hierarchy of light levels and effects;
  - Energy efficient fittings will be utilised.

- Secondary pedestrian routes such as the Green Fingers and other connecting paths will require adequate lighting for safety, but no strong pattern of lights is desired; and
- Carefully designed focused lighting, including flood lighting, will be required to support outdoor sports activities.

9.2.2 Population and Human Health

Any negative impacts on population and human health identified in the baseline study relate primarily to the rapid influx of a large number of students to a previously, almost vacant site. However there are predominant positive impacts associated with the development of the education, health, commercial and community facilities on the Grangegorman Quarter which significantly improves both the socio-economic standing and the quality of life for the local population and for the wider national community. As such it is considered that these are sufficient to mitigate any negative impacts on the local population as a result of the increase in activity in the general Grangegorman Area.

The Grangegorman Planning Scheme contains a broad range of proposals which will improve population and human health indicators in the area. These include proposals to provide for a primary school, public library, open access to parks and public open spaces, access to DIT indoor and outdoor sports facilities, access to education and health services as well as opportunities for complementary commercial businesses and employment opportunities.

In order to mitigate any potential negative impacts on the local population, consultation will continue throughout the lifetime of the redevelopment process and will result in the identification and mitigation of any negative impacts on the local population as issues arise.

9.2.3 Landscape

The baseline study identified the threats to the landscape as those which would be typically associated with any new development within a historic landscape. The key concerns relate to the visual impact, overshadowing, loss of character, impact on scenic amenity, loss of existing structures and sections of the boundary wall.

The Grangegorman Planning Scheme contains a number of proposals providing for the conservation of the historical landscape of the Quarter including the following:

- A limit on development quantum (regardless of the theoretical capacity of any enhanced transportation infrastructure), with the remainder of development quantum dependent on access and public transport upgrades;
- Only sports/recreational buildings of single storey pavillion design will be allowed in the Fields;
- Protected Structures will be retained and integrated within the overall development of the site;
- View corridors through the site to connect the site to the surrounding natural and urban environment and focus views on prominent surrounding landmarks and natural features (the corridors also help to break down the scale of the overall development and to integrate the site into the existing urban fabric);
- Materials will be inspired by precedents of historical buildings in the City, being durable, of good appearance over time and which will contribute to the general appearance of the campus;
- To plan and design for the multitude of streetscape elements, including signage, public art, furniture, receptacles and other such devices used by people in their everyday lives, and to organise and locate these items in a clear, coherent and rational way that will facilitate an appropriate level of public access throughout the site (Dublin City Council's pedestrian wayfinding system, current Development Plan policies on culture, consultation with Dublin City Council's Arts Office);
- To integrate the historic structures of significance within the Grangegorman Development Agency Planning Scheme in a manner which ensures that they contribute to the generation of spaces and places-both in terms of physical layout and character;
- To identify opportunities where history in-built and memory-form can influence design in a way which enhances sense of place and, in so doing, enables distinctiveness of place and identity; and
- A Landscape and Visual Appraisal has been prepared as part of Grangegorman Planning Scheme In keeping with the Landscape and Visual Appraisal, a set of criteria has been developed in the Planning Scheme to mitigate against serious negative visual impacts. These may include
  - Setback floors
  - Rooftop plant may be inappropriate;
- Particular attention may be required to building articulation and surface material selection;
- Particular attention may be required to placement and orientation of windows to mitigate against overlooking;
- Particular attention may be required to landscaping measures.

9.2.4 Air Quality

The impact on air quality arising from the Grangegorman Planning Scheme relates to transport and the potential increased traffic generation as a result of the implementation of the Planning Scheme. The Planning Scheme facilitates sustainable transport modes and the use of walking, cycling and public transport for trips to and from the site and internally within the Grangegorman site.

The Grangegorman Planning Scheme makes provision for a limited volume of car parking within the site (1,150 No. car parking) provided mainly underground/undercroft (with limited provision for surface parking). In order to minimise any negative impacts as a result of an increase in traffic in the area the Grangegorman Development Agency has limit the development quantum as follows:

- c. 238,000 sq m of core HSE, DIT, community and ancillary elements can be supported by the existing transport infrastructure (subject to improved access and some upgrades to existing transport infrastructure as outlined in the Planning Scheme); and
- c. 380,000 sq m is the quantum consistent with the design philosophy of the Planning Scheme and is developable as additional public transport capacity becomes available. This figure is regardless of whether a higher theoretical quantum could be sustained by additional public transport capacity. This proposed staging allows for development of the most critical elements initially, while providing for appropriate expansion in due course, so that the overall development can capitalise on its strategic location in terms of proximity to the city and proposed public transport investments.

A public transport facility will be permitted at Broadstone Gate. With the introduction of Luas onto the Broadstone Station site, some displacement of existing adjoining bus

operations may be necessary, in particular bus parking/ servicing and bus turning. In addition, the Grangegorman Planning Scheme undertakes to promote the provision of and access to sustainable modes of transport including public transport. These proposals include inter-alia the following:

- The opportunity to create a gateway through Broadstone, opening up the new quarter to this part of the community and linking with the City Centre;
- Grangegorman Upper and Lower bisecting the site will be the only available through-route for external traffic, traffic-calmed by means of a shared surface sections and landscaped.
- Service access to the site will be controlled by means of control points with service vehicles to be allowed to transit from one side of the site to the other during restricted service access hours, depending on internal and external traffic conditions.

9.2.5 Climatic Factors

Heat and energy demands are expected to be the primary sources of greenhouse gas emissions associated with the implementation of the Grangegorman Planning Scheme and the redevelopment of the Grangegorman Quarter. In order to minimise electrical energy associated with lighting and give building users sufficient access to daylight in order to enhance their experience, the design of the building footprints, heights and layouts will be developed to allow maximum daylight to enter buildings, minimise overshadowing of each other, of existing neighbouring buildings, and of landscaped areas, as well as to ameliorate existing wind conditions on site. In addition, the use of sustainable energy will be promoted and the built environment will be used as a key learning tool to promote sustainable objectives.

The following proposals are highlighted:

- Important social gathering spaces are orientated to take advantage of southern light and warmth, generally open to the south to prevent the overshadowing of exterior landscaped space by buildings;
- Buildings will be principally located on the northern portion of the site, positioned to take advantage of natural daylight thereby reducing the need for artificial light and allowing the existing open space to the south to remain an appropriate landscaped space;
- Building widths will be predominantly narrow to assist the penetration of natural light into the interior spaces;
- The Grangegorman Development Agency has introduced specific proposals with the objective of reducing the emissions associated with energy production and include the following:
- Buildings will be predominately naturally ventilated (unless activity requirements of the building dictate otherwise) and will incorporate the flexibility for future conversion of air-conditioned/mechanically ventilated buildings to a natural ventilation strategy;
- Building will be designed to ensure that both NOx emissions are minimised and flue/ exhausts effectively dissipated.
- Materials associated with the construction process will have a low embodied carbon content and will be obtained from sustainable sources, with efforts to secure locally to minimise transportation impacts.
- Buildings will be designed to minimise the CO2 emissions associated with their operational energy consumption over their lifetime, with a view to moving towards carbon neutral status.

9.2.6 Cultural Heritage – Architecture

The Grangegorman Development Agency is to establish strategies for repair, intervention, adaption and extension to the protected structures and this shall include a detailed conservation plan or strategy. These will include both general and specific strategies and will also include approaches and objectives for upgrading of protected structures for increased thermal efficiency and other initiatives to achieve objectives for greater energy efficiency and sustainable development. It will further provide proposals for the retention, restoration and enhancement of features of architectural merit within the new quarter at Grangegorman.

Implementing the Grangegorman Planning Scheme will require the demolition of some structures within the Grangegorman site; this will however be limited to structures which have not been designated for protection within the Dublin City Council Development Plan 2011-17. Negative impact on the architectural heritage will be compensated for by the positive impacts on the remaining structures. Design Briefs for all building projects within the Planning Scheme area will direct design teams to have regard to existing architectural heritage assessment and research.

The Grangegorman Planning Scheme incorporates proposals which will promote the conservation and restoration of the architectural heritage on the site. These proposals will also include a requirement for the appropriate reuse of these structures and include the following:

- A condition survey of the existing structure should accompany any planning application for the re-use and development of the buildings to be retained.
- Submitted design drawings should include an appropriate level of detail to allow for a full and proper assessment of proposals and clearly show the existing situation and details and describe in drawing and text formats the rationale behind the proposal, how any new works relate to or are informed by the existing architecture, and relation to conservation strategies and general and specific guidelines.
- Where material alterations are proposed to protected structures or where it is proposed to demolish an existing structure, the structure should be fully recorded in photographic and drawing format prior to alteration or demolition.

9.2.7 Cultural Heritage - Archaeological Heritage

Exploratory archaeological investigations have been already carried out throughout the site. Archaeological remains have not been found on the site in any investigations to date.

The redevelopment of a historical site such as Grangegorman, which has been relatively undisturbed in recent times, is likely to result in some impacts on any previously undiscovered archaeological remains that may be on site. However, to mitigate this, archaeological monitoring during the excavation and construction stage of development on the Grangegorman site will be undertaken by a suitable qualified and licensed archaeologist and any artefacts found will be dealt with in an appropriate manner.

The overall impact of the development on any potential archaeology on site will be generally neutral. Notwithstanding the carrying out of exploratory investigations, knowledge of the archaeology on site will only be evident when works commence.

In addition, to ensure the appropriate strategy is followed, the Grangegorman Development Agency will ensure that pre-development archaeological testing, surveying monitoring and recording is carried out as appropriate, at planning application stage.

9.2.8 Material Assets - Infrastructure

The proposed development of the Grangegorman site will significantly improve the provision of infrastructure in the area and in particular the provision of storm water, sewerage and potable water infrastructure.

The Flood Risk Assessment carried out for the site in March 2011 concludes that the redevelopment of the site will present no significant increase in risk of flooding either within the site or downstream of the site. The site has no historic flooding issues, lies within an area of low flood risk, and, with the implementation of appropriate on-site sustainable drainage and flood management systems, will likely pose minimal risk to the catchment downstream of the site.

Currently the area around Grangegorman is serviced by a combined sewerage system. The redevelopment proposes to separate the foul and surface water lines and create two new separate systems that will connect independently into Dublin City Council's surrounding drainage system. This will necessitate the provision of a storm water drain connecting the Grangegorman site to the Dublin City Council network.

The provision of this separate system will result in the removal of a substantial volume of surface water from Dublin City Council's waste water treatment system. This removal will mitigate the impact of the redevelopment on this treatment system. The Grangegorman Development Agency has included the following proposals in order to reduce any negative impacts of the Planning Scheme on the storm water and wastewater infrastructure, with a subsequent "net gain" effect on Dublin City Council's waste water treatment system:

- Drainage from the proposed development shall be completely separated; and
- Separate foul and surface water drains to be designed from each building before connection to separate foul and surface water sewers in the existing or new internal access roads throughout the redevelopment.

In relation to the demand for drinking water as a result of the implementation of the Planning Scheme, the following proposals are outlined:

- A new trunk watermain between the North Circular Road and Brunswick Street North or Constitution Hill is envisaged to allow the Water Division to locally balance the supply to the North Inner City area;
- Alternative route options for a new trunk watermain are presented and offer opportunities for linking the existing high pressure 800mm watermain on Brunswick Street North to the existing 450mm high pressure watermain on North Circular Road; and
- A new distribution watermain network is to be constructed within the Grangegorman site.
- Sustainability proposals for reducing water consumption for the overall development will be promoted by the Grangegorman Development Agency and include:
- Exploring the feasibility of rainwater harvesting for any irrigation systems proposed for use associated with the playing fields, gardens and landscape areas including any fountains and water features etc.; and
- Grey water recycling and re-use for cleaning and maintenance will be investigated with a view to reducing the overall mains water demand.

9.2.9 Monitoring

A monitoring programme to be implemented by the Grangegorman Development Agency in conjunction with the implementation of the Grangegorman Planning Scheme. The GDA will be responsible for collating the monitoring data and will be responsible for preparing a Monitoring Report and implementing any corrective measures where required. A non-technical annual report summarising the results of the monitoring undertaken as part of the SEA will be prepared and published by the GDA and made available to the public.

Grangegorman Draft Planning Scheme ***Development Proposals***	**Environmental Protection Objectives**												
	Protect and enhance biodiversity, flora and fauna on the Grangegorman SDZ Site.	Enhance the overall socio economic profile and economic attractiveness of the Grangegorman Neighbourhood.	Improve the quality of life for the community based on the provision of accessible employment, recreational, educational, medical and other facilities.	Provide, maintain and improve access to public open space.	Preserve and enhance the natural and historic landscape features within the Grangegorman SDZ Site.	Retention of existing good quality trees.	Limit adverse impacts on air quality and in particular traffic generated air emissions.	Limit adverse impacts on climate through use of sustainable energy sources.	Protect, conserve and enhance the architectural heritage on the Grangegorman SDZ Site.	Identify, protect and conserve or document the archaeological heritage on the Grangegorman SDZ Site in accordance with Best Practice Principles.	Provision of separate foul and surface water drainage to service the Grangegorman Neighbourhood.	Provision for the reuse, recycling and conservation of water.	SEA Team Comments
Project Vision													
Create a vibrant, high quality and legible urban quarter, with a clear sense of place.	0	+	+	+	+	-	0	0	-	0	0	+	Overall Neutral / Positive Mitigation in Place regarding Trees and Heritage
Deliver the requirements of the HSE (health care) and DIT (educational) in an integrated fashion.	0	0	+	0	0	0	0	0	0	0	0	0	Overall Neutral / Positive
Respect and celebrate the heritage of Grangegorman.	+	+	+	0	++	+	0	0	++	++	0	0	Overall Positive
Reach out to and embrace the existing local community and the future students, service users and staff of Grangegorman.	0	+	++	+	0	0	0	0	0	0	0	0	Overall Neutral / Positive
Sustainability is a core requirement and the quarter must be both responsive to its current context and development needs, and adaptive to its future context and development needs.	++	0	++	+	0	0	+	++	+	0	+	+	Overall Positive
Be a centre for innovation and creativity.	0	+	+	0	0	0	0	0	0	0	0	0	Overall Neutral / Positive
Contribute to the regeneration of the inner city.	0	0	++	+	+	+	0	0	0	0	+	+	Overall Neutral / Positive
Provide a dynamic new economic engine for the city and region.	0	+	0	0	0	-	0	0	0	0	0	0	Overall Neutral Mitigation in Place regarding Trees

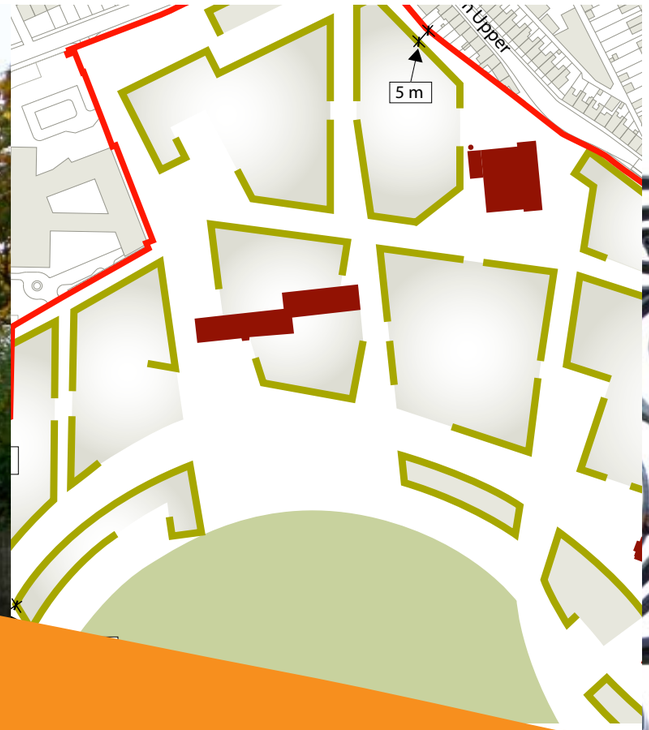
KEY	Neutral	Very Positive	Positive	Negative	Very Negative	Uncertain
	0	++	+	-	--	?

Table 9.1: Summary of Environmental Assessment of Grangegorman Planning Scheme

Appendix 1

Planning Scheme
Grangegorman

PS Compliance Matrix



Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

Purpose and Layout of this Appendix

The individual chapters in the Planning Scheme have set out parameters with regard to the nature and extent of the development proposed by the Grangegorman Development Agency at Grangegorman.

The Planning and Development Act, 2000 (as amended) requires that development within a Strategic Development Zone be in accordance with the relevant Planning Scheme and that any proposed development which is deemed to comply with the Planning Scheme must be granted planning permission.

In light of this provision, and for the avoidance of doubt, the following table (Table A1.1) sets out the minimum standards required to comply with this Planning Scheme.

TABLE A1.1 Planning Scheme Compliance Matrix		
Quantum of Development	Quantum of Development	Development proposals in excess of the maximum quantum set out in Table 4.1 will contravene this Planning Scheme. Each application for new buildings shall include a schedule detailing the quantum of development already permitted.
	Phasing and delivery of Infrastructure	The quantum and phasing of development will have regard to the availability of external transportation, water and wastewater infrastructural capacity (refer Chapters 5, 7, and 8). The renovation, restoration and reuse of protected structures shall take place in tandem with the development of new floorspace.
Site Layout and Urban Form	Layout and Urban Form (4.2, 4.3, 4.5)	The form of development must be consistent with principles set out in Figure 4.1 (Key Structuring Principles). All planning applications will be assessed in relation with compliance to the Urban Form diagram (Figure 4.2). The key concept here is that the intervening spaces, referred to as Public Realm (i.e. Green Fingers, Brendan's Way, Serpentine walk etc) are clearly defined, either by a building line or a landscape feature, and, it addition, that the intervening spaces are respected by the building lines (see 4.3, 4.5). It is envisaged that some urban blocks will be developed in phases and that initial applications will be considered with only partially completed urban form (i.e. a two or three sides of an urban block). If this is applicable then the application will need to demonstrate that the development will not impede the completion of the urban block at a future date. Single storey ancillary buildings will be allowed in the area of the Fields, provided any such structures are related to sports and recreation. Minor ancillary structures are permissible within the public realm areas (as shown in Figure 4.2) provided these fall within the limits set out at 4.3, 4.5 and sub paragraphs of 4.5.
	Protected Structures (4.3.1 and Chapter 6)	All Protected Structures (Figure 4.3) must be retained and integrated into the overall redevelopment. In particular, the layout and form of any proposed structures must respect the setting of Protected Structures as set out in Figure 4.2 and Section 4.3.1 Interventions in Protected Structures must comply with the Building Specific Guidance contained in Appendix 3a. Interventions to Protected Structures, other than interventions indicated in Appendix 2a. Urban Form and Figure 4.5 Building Height, will be limited to 1 or 2 storey extensions and will be subject to the Building Specific Guidance contained in Appendix 2a. Internal modifications to the Protected structures to accommodate a change of use will be permitted only if considered by Dublin City Council to be a change that can be undertaken in an appropriate and respectful manner.
	View Corridors (4.3.2)	The View Corridors set out in Figure 4.4, as described in Table 4.2 will be preserved. Any proposed development which significantly intrudes on a View Corridor will not comply with this Planning Scheme. Examples of development which may be permissible within View Corridors include public seating, rain shelters, bicycle parking, public art, security kiosks or landscape features that are incorporated into the public realm space. Any such structures must be sited so as not to diminish the characteristics of the view corridors.

TABLE A1.1 Continued		
Project Design	The Three Design Principles (4.4)	It is important that each development has full regard to the three design principles of Connectivity, Collegiality and Cohesiveness, as expressed at Section 4.4.
	Urban Grain (4.4.1)	The Urban Grain must support the range of scales, activities and movement as described in Section 4.4.1. A significant degree of permeability, leading pedestrians to and through a range of distinct, discoverable spaces is a core requirement of the Scheme.
	Building Form and Orientation (4.4.2)	Building widths will vary but shallow floor plates will be preferable where appropriate to provide opportunities for natural ventilation and the penetration of natural light into the interior spaces. Some specialised buildings, such as laboratories, may be wider due to their specific functional requirements. Roof Plant where incorporated shall be screened by louvred panels or other appropriate panels and set back from the external façade by a minimum of 4.0m. Exceptions to this will only be permitted by demonstration of compliance with the aspirations entitled Visable Systems in section 4.4.5
	Building Heights (4.4.3)	Every development proposal must comply with the general building heights set out at Section 4.4.3 and illustrated in Figure 4.6. Building heights must not seriously diminish the setting of Protected Structures and must be consistent with Figure 4.6. The proposed taller buildings at Broadstone will be subject to normal planning application procedures. Proposed taller elements at Broadstone and the Campanile must demonstrate architectural merit, including achievement of an appropriate slenderness ratio (3:1 or more), and must demonstrate they will not create an adverse visual impact when viewed from sensitive locations either within or outside the site. All rooftop plant will not be counted as a storey but must fit within the overall maximum heights set out in Figure 4.6. Roof Plant shall not exceed 2.7 m above adjacent roof level. Items such as exhaust stacks that may exceed the 2.7 m height shall be clustered and setback from the external facades, to minimise visual impact.
	Environment, Energy, Sustainability (4.4.4)	All design proposals must reflect the environmental design principles set out at Section 4.4.4. All planning applications will include proposals to comply with SUDS objectives detailed in Section 7 including maximising opportunities for rainwater and grey water in buildings. Building design will utilise best practice sustainable building technologies and Green roofs and/or solar panels will be encouraged where appropriate. All planning applications for the scheme must demonstrate that they have had regard to the guidelines on sunlight and daylight set out in the Dublin City Development Plan 2011-2017. Where the sunlight/daylight study (included as a reference document to the Planning Scheme) indicated potential sensitivities, building designs will require refinement to minimise the loss of daylight and sunlight to the adjacent residential developments:
	Colours and Materials (4.4.5)	Colours and Materials must comply with the guidelines set out at Section 4.4.5. The Materials pallet is given as indicative and alternative materials will be considered as long as they are complementary to the suggested palette. It is envisaged that each of the urban blocks will be completed with the same palette of materials and also that each of the different urban blocks will have their own specific character which will be derived from the combination of material selection available within the palette. Building frontages at ground level addressing St. Brendan's Way will be provided with architectural devices to activate the street edges for pedestrians. The major public, iconic buildings, including those located in the two 'hearts' and at the gateways may contain stone elements to provide a more substantial character.
	Wayfinding, Street Furniture, Public Art (4.4.6)	Wayfinding proposals will have regard to Dublin City Council's Pedestrian Wayfinding System. Individual application for planning permission must demonstrate that any proposed Street Furniture is of a suitable quality for use in a public space and compatible with Street furniture design outlined the Dublin City Council draft Strategy for Public Realm. The Public Realm within the SDZ will include a significant range of public art, including pieces reflective of its particular history. All proposals for public art will be discussed in advance with Dublin City Council's Arts Office.
	Lighting (4.4.7)	The overall lighting hierarchy will be as set out in Section 4.4.7. All planning applications must address the issue of potential adverse impacts on existing amenity, in terms of disruptive glare, sky glow and lighting overspill.

TABLE A1.1 Continued

Landscaping, Mature Tress and Public Space	Overall Landscaping Concept (4.5)	The Overall Landscaping Concept for the site must be consistent with the concept identified in Figure 4.20. Significant trees will be retained or removed with reference to Section 6.10.1 and in accordance with Figures 4.21 and 4.22
	St Brendan's Way , Serpentine Walk and Ivy Avenue (4.5.1)	St. Brendan's Way must provide a high quality of surface materials, street furniture and lightning, in order to establish a clear understanding of the importance and hierarchy of this major organising structure and circulation space. The surface of St Brendan's Way must be shared, with a clear priority to pedestrian (including mobility impaired) and cyclist movement and access. The surface of the Serpentine Walk must be shared with a clear priority to pedestrian (including mobility impaired) and cyclist movement and access. Ivy Avenue's function is to complement the more pedestrian and shared nature of St. Brendan's Way with a more traditional street character, with greater vehicular use allowed and greater separation between vehicular traffic and pedestrians.
	The Hearts and Public Plazas (4.5.2)	The Hearts and Plazas are conceived as public gathering spaces and people will be encouraged to linger by provision of appropriate seating, shelter, lighting and public art and by appropriate adjacent uses. Only minor above ground structures will be allowed in the area of the Plazas (similar to the Fields).
	The Fields (4.5.3)	Flood Lighting to the playing pitches will be permitted subject to protection of adjacent residential amenities from light spill.
	Green Fingers (4.5.4)	The Green Fingers will have areas of permeable surfaces, and will be planted with diverse species, to improve biodiversity and amenity value, in line with DCC's Green Networks Policy. The only structures permissible within the Green Fingers would be of the nature of projecting external roofs or canopies, public seating, rain shelters, bicycle parking, public art, security kiosks or landscape features that can be incorporated into the public realm space
	The Cultural Garden (4.5.5)	The Cultural Garden will be landscaped to interpret the cultural history of the site in accordance with a detailed landscape strategy to be agreed with the Planning Authority. It will contain one or more pieces of public art which should be reflective of the particular history of the site.
	Quadrangles (4.5.6)	Quadrangle spaces within the buildings will be designed as landscaped spaces with a combination of hard and soft landscaping. Only minor structures will be allowed in the courtyard areas of the Quads excluding podium structure which will be below the Landscape Quadrangle level. Examples of what may be permissible include projecting external roofs or canopies, glazed atriums, public seating, rain shelters, bicycle parking, public art, or landscape features.
	Playspaces (4.5.7)	Playspaces are primarily intended to provide amenity to the local community and visitors to the site. They will be accessible to all and will designed in compliance with Dublin City Council's "Principles for Designing Successful Playspaces" (Dublin City Development Plan 2011-2017, 17.16).

TABLE A1.1 Continued

Access		Control points must be established to limit vehiular access in accordance with Figure 4.30 and 4.31
	Universal Access (3.3.1)	Development proposals must demonstrate how everyone can reasonably access the site and move through it on equal terms, regardless of age or disability, including identifying convenient and safe locations of car parks and access routes.
	The Fields (4.5.3)	The Fields and playspaces will be open to the public during normal hours. The pitches will be available for games prior arrangement
	Pedestrian Access (4.6.1)	Pedestrian access must be provided and prioritised in accordance with Figure 4.29. All development proposals must indicate how they link in to the overall vision for pedestrian permeability as expressed in Figure 4.29.
	Vehicular Access (4.6.2)	Vehicle access to the site will be subject to control points. It will not be possible to transit from one side to the other save for service vehicles, and then only for a limited off peak period. Each application of relevance will set out how vehicular access will be controlled to comply with the above provisions and with Figure 4.30
	Service Access (4.6.3)	Service vehicle access will be controlled in the same way as other vehicle access. It may be possible for service vehicles to transit from one side to the other for a limited off peak period. Each application for development will set out how service vehicle will access the development to comply with the above provisions and with Figure 4.31
	Parking (4.6.2)	Parking will be in the indicative locations set out in Figures 4.30 save for exceptions as provided in Sections 4.6.2. A quantum of Parking will be permitted at grade as set out in Figure 8.1 during the initial phases of the development. This interim solution will only be permitted if appropriate Landscaping and or screening is included to the perimeter to minimise the visual impact of these and to define the edges of the public realm as set out in Fig 4.2 Urban Form The rollout of parking provision will mirror that of development requiring parking (i.e. parking will only be provided in respect of permitted development).
Land Use Zones	Primary Uses (Section 4.7.1, 4.7.2)	The uses as described in section 4.7.1 must be the dominant use for the relevant land-use zone (as per Figure 4.32). Any other uses which are considered appropriate for the zone will be limited in quantum and ancillary to the primary function of the zone.
	Associated Uses (Section 4.7.1, 4.7.2)	All associated and ancillary site development works, such as substations, waste collection points etc., will be permitted within each zone as necessary.
	Other Uses (Section 4.7.1, 4.7.2)	A use which does not fall into any of the principal uses identified in section 4.7.2 will considered on its own merits and, provided it is in keeping with the overall objective for the zone, as outlined in section 4.7.1, it may be considered acceptable.

Appendix

2a

Planning Scheme

Grangegorman

Conservation - Protected Structures

Innovative Urban Quarter | Contemporary Healthcare Facilities | Modern Education Hub | Accessible Public Spaces

Appendix 2a:

Purpose and Layout of this Appendix

Appendix 2a should be read in conjunction with Chapter 6. This Appendix considers each of the structures currently listed on the Record of Protected Structures and those further structures to be retained on site. Details are provided for each building and structure including specific guidelines relating to its retention and relevant design considerations for reuse and adjacent developments.

Contents

A2.a.1 Protected Structures

The following list comprises all structures that are currently listed in the RPS and their respective reference numbers.

- Lower House (Former Richmond Lunatic Asylum), including entrance features and entrance gate, piers, curved wall at Morning Star Avenue RPS Ref: 3334
- Clock Tower Building (Former Richmond Penitentiary) RPS Ref: 3336
- Catholic Church RPS Ref: 3328
- Church of Ireland Chapel RPS Ref: 3327
- Special Care Unit (Former Female House) RPS Ref: 3330
- Laundry Building RPS Ref: 3337
- Mortuary RPS Ref: 3332
- Top House (Former Male House) RPS Ref: 3329
- Sections of the Boundary Walls in addition to those listed under RPS Ref 3334 above, namely Entrance gates, piers and wall at Grangegorman Upper RPS Ref: 3331 and Stone wall along North Circular Road, RPS Ref. 3333

While the above list reflects the written RPS of Dublin City Council, this Planning Scheme has taken a view that both the Former Female Infirmary and the Former Male Infirmary form part of the curtilage of the Catholic Church (RPS Ref: 3328), the three buildings comprising a group which were designed and constructed together, c.1850, as an architectural ensemble and all three being designed by William Murray and Denny. This view reflects that taken in the Masterplan also.

Curtilage, Attendant Grounds and Setting

Generally the existing buildings do not sit within specific, individually distinct sites. Several, notably the Lower House, Former Penitentiary and Top House, are the remaining parts of once much larger structures or complexes that were subject to demolition and as such, create a particular difficulty in defining a current relevant curtilage. Previous Architectural Appraisals of the site prepared by Dublin City Council[17] and the GDA, define the curtilage of the protected structures as being within the immediate vicinity of these structures. For this Planning Scheme it is helpful

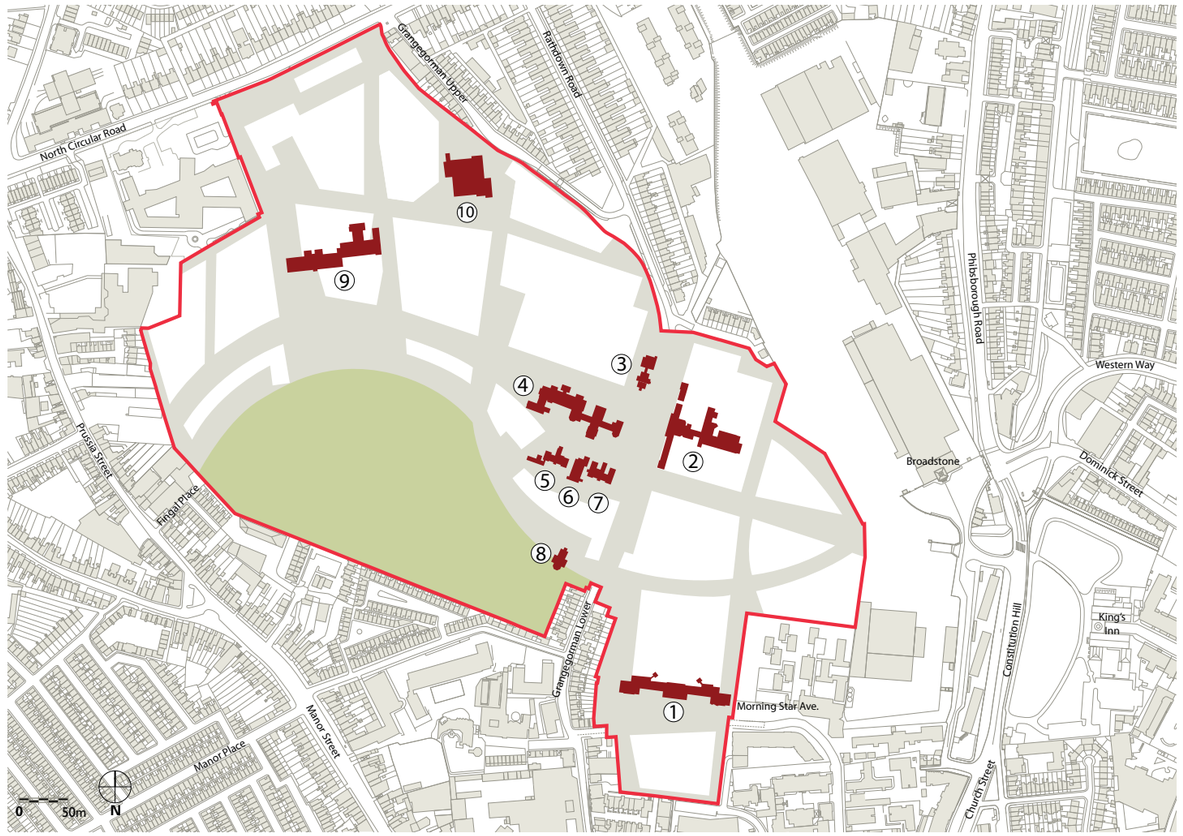


Figure A2a.1: Protected Structures

to distinguish between the legal definitions of 'curtilage' and the planning concept of setting. The DoEHLG Architectural Heritage Protection Guidelines state that 'curtilage can be taken to be the parcel of land immediately associated with that structure and which is in use for the purposes of the structure'. Figure A2a.2 describes the extent of curtilage for each protected structure and how this has been determined.

The DCC Architectural Appraisal document further indicated a suggested extent of attendant grounds (defined in the DoEHLG Guidelines as the 'lands outside the curtilage of the structure but which are associated with the structure and are intrinsic to its functions, setting and/or appreciation') for each of the protected structures. This was quite limited in area, relating directly to the individual buildings. However, this Planning Scheme has taken the entire lands of the SDZ area to comprise the attendant grounds of all the protected structures on the basis that the setting of the protected structures extends to the entire site.

With regard to 'setting' it is proposed that the overall SDZ area comprises the setting for the protected structures and therefore all development which takes place within this area needs to have regard to the setting of the protected structures. Equally, development within the SDZ area needs to have regard to the setting of protected structures adjacent to, but outside the SDZ area.

17. Architectural Appraisal St Brendan's Hospital Grangegorman, Dublin 7, dated February 2006 and carried out for Dublin City Council by Paul Arnold Architects

In this context, the Grangegorman Development Agency Act 2005, which sets out the statutory objective to redevelop the lands at Grangegorman to accommodate a variety of uses, and which underpins the overall objectives of the Masterplan and Strategic Plan, predicates a significant alteration to the curtilages and settings of the protected structures. Study of the historic development of Grangegorman reveals that this has been a continually evolving landscape since the early 1800's, developing, without an overall masterplan or architectural vision, to a vast complex of generally unrelated individual buildings of varying architectural merit.

Definitions

The notion of 'curtilage' is taken to be the parcel of land immediately associated with a protected structure and which is (or was) in use for the purposes of the structure. It is defined on a case-by-case basis by the Planning Authority following guidance set out in The Architectural Heritage Protection Guidelines for Planning Authorities (Section 13.1.5).

The 'attendant grounds' of a structure is that which forms an intrinsic part of the setting and may include land outside the curtilage of the structure. The attendant grounds could include land or features which were originally within the curtilage of the structure and which through change of ownership or subdivision of the site have been separated from the building. They might potentially include land historically associated with that structure.

The 'setting' of a protected structure uses the definition developed by English Heritage as: "Setting is an established concept that relates to the surroundings in which a place is experienced, its local context, embracing present and past relationships to the adjacent landscape. Definition of the setting of a significant place will normally be guided by the extent to which a material change within it could affect (enhance or diminish) the place's significance".

The development of the various institutions at Grangegorman occurred over several phases which are reflected in the varying characteristics of the site, in particular between the lands to the east of Grangegorman Lower and those to the west of this road. The earlier phase occurred to the east and is characterised by relatively dense development with little open space or landscape features. The open nature of the lands here today are a result of building demolition rather than considered landscape design and little features of such type exist. The west side of the site, however, is distinguished by its more open landscape character with individual buildings set within the landscape, or in small groups, reflecting the Victorians' concerns with access to clean air, ventilation and separation between buildings as a guard against spread of contagious diseases. While there is no overall designed landscape set-piece here, there are a number of mature specimen trees of note including the tree lined allée.

Within this overall landscape are a small number of architectural and landscape set-pieces, which comprise the allée of trees; the group of Murray and Denny buildings of 1850—male and female infirmaries, St. Laurence's Chapel and the former Female House—and the formal arrangements of the two Johnston buildings which no longer remain in their entirety. In addressing the issue of curtilage and setting, the proposed development seeks to retain the set-pieces noted above and to ensure the altered setting, following development, will integrate the historic structures and the new buildings in a way which provides for an overall architectural and urban coherence. This is achieved through the formal relationships between new buildings, the retained historic buildings and the proposed landscape and public realm treatment.

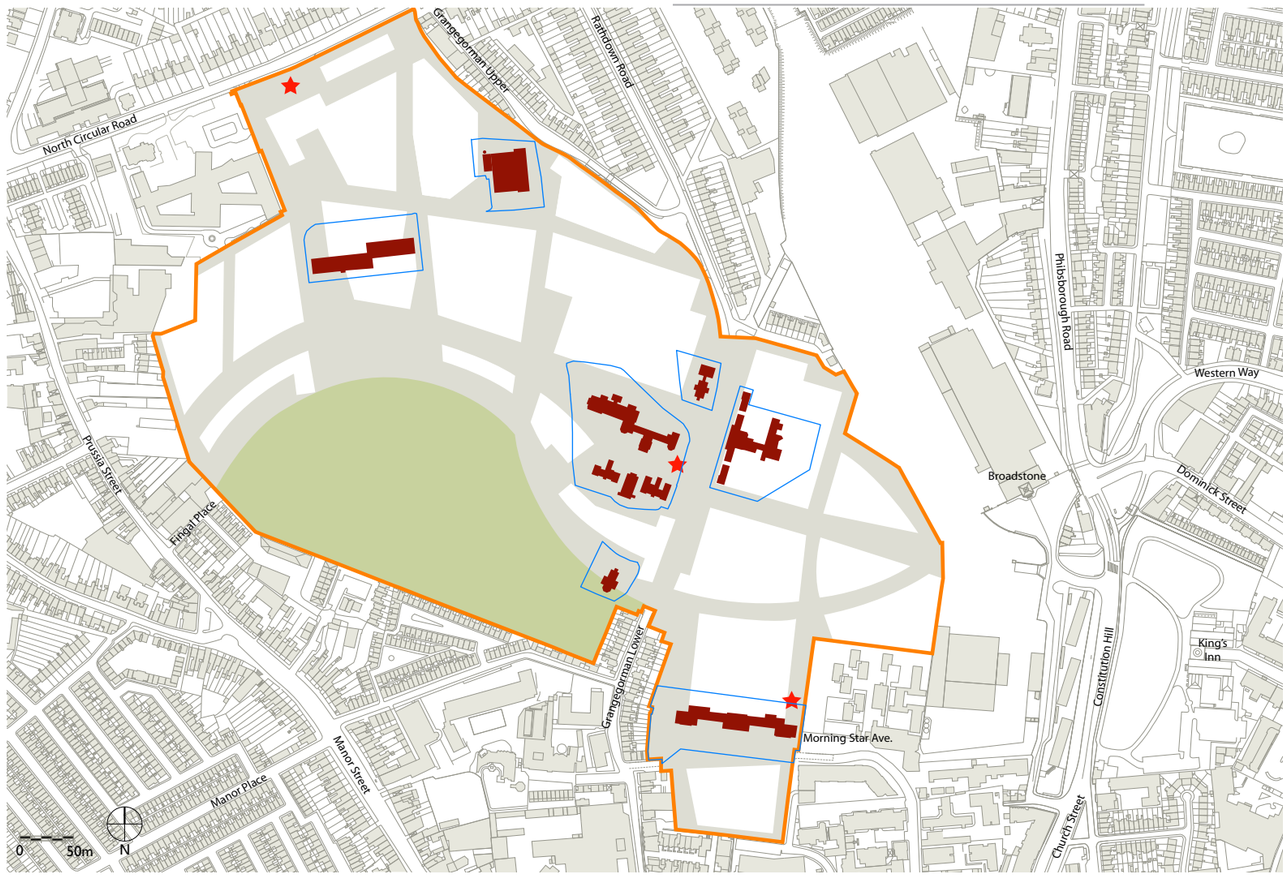


Figure A2a.2: Proposed extent of curtilage for the protected structures within the SDZ area

Former Richmond Lunatic Asylum (Lower House) 1810-15

This structure is the surviving south wing of a formerly much larger structure. The extent of the curtilage to the north (where the building once extended) was determined by the approximate location of a corridor which linked the east and west wings and divided the courtyard within the block. Such a physical division would typically have been related to use in a building of this kind; it is therefore considered that this represents a reasonable curtilage for a fragmentary structure of this nature.

To the south there is a large open space which is overlooked by the south/front elevation of the building. While certainly relating to the structure of the Lower House, this area can also be considered to be a distinct 'garden' in its own right, and in the early 1900s it was indeed enclosed, with a separate section from the east to west gateways and extending northwards providing access to the building. It is the extent of this access area that provides the basis for the curtilage on the south side.

Former Richmond Penitentiary (The Clock Tower Building) 1812-1816

The structure comprises part of the west (front) range and west-east spine of a building formerly of radial plan. The curtilage has been determined to extend to the north as far as the C20th single-storey structure which now extends parallel to the west-east spine. To the south, the curtilage is determined to extend south-west along the diagonal boundary of the grassed area and westward towards Grangegorman Lower, forming a shape which is generated by the original radial plan layout.

The Female Infirmary, The Male Infirmary, The Roman Catholic Church C.1850

The three structures together comprise a formally arranged group. The curtilage of these buildings is considered as a single entity which extends from the edge of the raised paved entrance forecourts in the south-east, follows the boundary of the forecourts along the south and continues to meet the pathway on its western boundary, the main point of access to this assembly of buildings. These extents take in the grassed area to the west of the Male Infirmary which historically formed part of the formal setting of the buildings.

To the north, these three buildings also historically formed a further assembly with the Female House, and the northern extents of the curtilage is deemed to run into the curtilage of this structure. This is entirely appropriate, as the buildings collectively formed a garden and therefore, it could be said that their curtilages essentially overlapped.

A2a.2 Lower House (Former Richmond Lunatic Asylum)

Constructed: c.1810-15

Architect: Francis Johnston (with modifications and extension by William Murray in 1822)

Protected Structure:
Dublin City Development Plan RPS Ref: 3289

Special Interest Categories: Architectural; Historical; Social

Original Use: Lunatic Asylum

Current Use: Unused / Derelict

Brief Description:

This structure is the surviving front (south) wing of a former quadrangular complex. The surviving wing is a detached, three-storey, twenty-six bay structure, composed of a central six-bay breakfront incorporating a two-bay central projection and with advanced four-bay ends which include central, two-bay breakfronts. Walls are snecked rubble Calp limestone with dressed granite details including window and door surrounds. Decoration is minimal, reflecting the building's purpose; the Richmond Coat of Arms, located above the principal entrance providing the only sculptural element. The roof, which is partially collapsed, is a hipped ended, double pitch, having a slated finish. The chimneys are brick with diagonally laid chimney stacks. Internal access was not possible due to the condition of the building which is extremely poor such that the building can be deemed to be 'at risk'.

Exterior of Lower House (former lunatic asylum) – North (rear) elevation

Exterior of Lower House (former lunatic asylum) – south (front) elevation

Building Specific Guidelines:

- It is evident that the fabric of the Lower House, even without detailed condition survey information, is in grave danger of further serious deterioration if some immediate action is not undertaken. The structure has no roof, and remains open to the weather. It is currently fenced off from the surrounding area and is obviously in a dangerous condition (see above). If it is left in this state for much longer it is likely that valuable historic fabric will be lost. The Lower House is one of the most significant existing structures within the Grangegorman complex, being to the design of Francis Johnston and the earliest surviving building (1810).
- The Lower House building should read prominently within the proposed surrounding courtyards, particularly approaching from the south as this will form the main route from the city via Smithfield. The relationship between any new development in the open lands south of this building, should ensure that a reading of the long south façade is maintained.

- The relationships in height between the proposed new buildings that form the quadrangles to the north and south require careful consideration –particularly with new structures immediately adjacent to the historical building. The new buildings should not physically overwhelm the historic building through their scale.
- Landscaping and public realm works to the proposed quadrangles to the north and south of the surviving range should reflect the formality of the historic building.
- Depending on specific use requirements, it may be appropriate to provide new build connecting structures onto the northern façade, using the historic plan form as a guide to the appropriate location for these connections. It is not considered appropriate to extend onto the front (south) façade.
- While little if any of the roof structure may be salvageable, it is recommended that the historic roof profile be retained as part of any restoration and that replacement slates match the existing in type, colour, texture, size and grading.
- The organisation of the spaces and uses on the ground floor of the historic structure should allow for movement through the building as part of the north-south route through this section of the campus towards St. Brendan's Way.
- While it is not necessary to reinstate the historic plan form of the surviving front range, the internal layout should ensure an ordered and coherent relationship with the external elevation, in particular the window and door openings.
- Penetration of the historic roof profiles for services etc., should be avoided or, where necessary, these should be minor in scale (for example a lift enclosure or plant room at roof level would be unacceptable whereas an overflow pipe from an attic tank may be considered acceptable) and located discreetly to minimise any negative visual impact. Where possible these should be integrated within any new build elements.

Suitable Uses: This building is suitable for a range of uses, subject to satisfying the general guidelines, including office, administrative, education, cultural. Due to its significance, it is recommended that the use would facilitate some public access to the interior.

Richmond Coat of Arms which is located in the central breakfront of the principal (south façade).

North elevation of surviving southern wing–showing the truncated western return wing of the original quadrangle complex. This photograph also illustrates the poor condition of this structure.

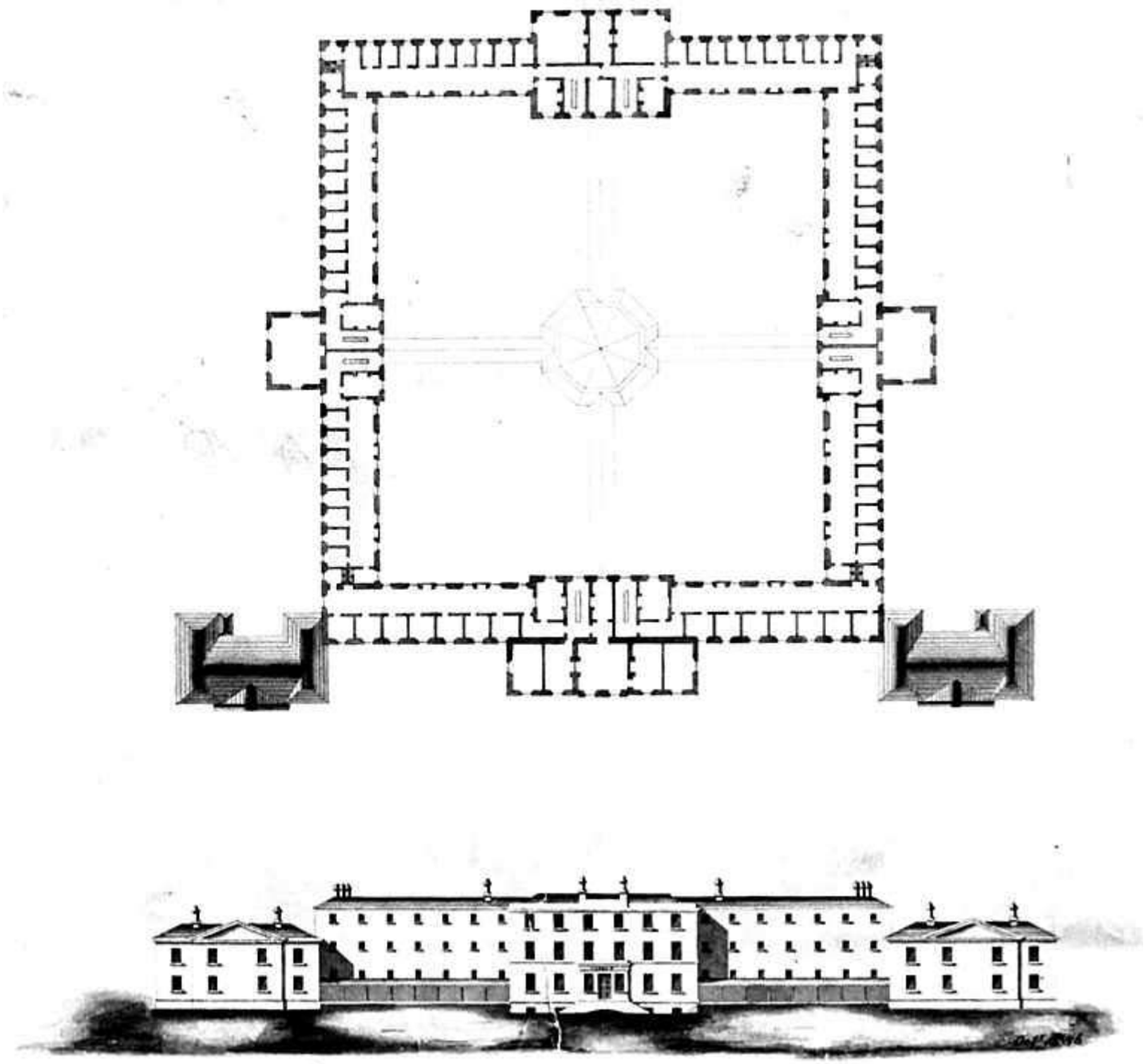


Figure A2a:3 Original plan and elevation drawings of the Lower House (Former Richmond Lunatic Asylum).

A2a.3 Clock Tower Building (Former Richmond Penitentiary)

Constructed: c.1812-1816

Architect: Francis Johnston

Protected Structure:
Dublin City Development Plan RPS Ref: 3288

Special Interest Categories: Architectural; Historical; Social

Original Use: Penitentiary

Current Use: HSE Offices (partially)/ partially unused

Brief Description:

This building is a substantial survival of the former radial plan Richmond Penitentiary complex. The radial plan arrangement was a typical layout adopted in penal architecture in the early 1800's. Christine Casey (in The Buildings of Ireland 'Dublin'; Yale University Press, 2005) has compared it to the early polygonal gaols designed by William Blackburn in England in the late eighteenth century. The surviving front range originally housed the governor's rooms, offices and apartments and is now partially occupied by the HSE, and is partially empty—this section is in poor condition. The front (west) principal façade, is a seventeen-bay, three storey composition with a pedimented central breakfront of five-bays, topped by a copper domed clock tower and with breakfronted end bays. The walls are snecked Calp limestone with decorative articulation limited to a plain first floor string course and the pediment cornice. The central spine of the original plan which extends from the rear (east) of the front block also survives—and includes the Chapel with its rib-vaulted ceiling and, partially, its gothic style windows—, as does, partially, the north wing extension off this central spine. There are also some later extensions to this original fabric which are of little architectural merit. A feature of some significance is the surviving entrance to the rear courtyards off Grangegorman Lower, which also includes the timber gate which sits flush within the recessed stonework of the entrance when open.

The clock and clock mechanism are in generally good condition with the clock operational, although not keeping exact time. The clock is maintained on a regular basis.

Exterior of Clock Tower Building (former penitentiary) – west elevation to Grangegorman Lower

Internally, the southern end of the front range has been altered with most decoration removed. The central rooms and vaulted stairhall retain much of their original features. The northern end is probably little changed from the original. Currently unused, it is in poor condition with signs of water and pigeon ingress. The central spine to the rear also contains high, vaulted, circulation spaces in addition to the Chapel with its rib vaulted ceiling. Internal access was limited to areas currently in use.

Building Specific Guidelines:

- The original plans survive and indicate which surviving structures pertain to the original Francis Johnston building. While it is appropriate to remove the later additions, the original surviving structure should be retained.
- New buildings adjacent and/or connected to the historic building should conform to the building heights and scale of the historic buildings. New forms should be clearly legible from the historic. Proposals which seek to reflect the original courtyard layout of the former penitentiary through the siting of new buildings and extensions, should have regard to the Masterplan.
- Any proposed extensions to be added east of and parallel with the north and south ranges of the southern formal entrance range, as indicated on the Masterplan layout plan, should be kept back off the existing building, and should not exceed the height of the existing southern range and should not extend beyond the existing north and south gable ends.

The manner in which such extensions are connected to the existing building should be in line with the General Guidelines outlined in Chapter 6.

- Internal partitions which are later to the building may be removed to facilitate the specific use requirements of the brief.
- The surviving vaulted internal spaces should be retained with the vaulted ceilings presented.
- Sound surviving historic joinery, decorative plasterwork, stairs and windows, should be retained and repaired.
- The first floor former Chapel should be restored to its original volume and any historic decorative paint schemes retained.
- The surviving historic gateway and gate which survives on the north end of the main front entrance range will be retained. Consideration should be given to removing the modern intervention to the southern gateway along this range (which matched the northern entrance described above), which has been altered to provide an internal space, in such a manner which allows a clear reading of the original purpose of the gateway and the surviving architectural features.
- Penetration of the historic roof profiles for services etc., should be avoided or, where necessary, these should be minor in scale (for example a lift enclosure or plant room at roof level would be unacceptable whereas an overflow pipe from an attic tank may be considered acceptable) and located discreetly to minimise any negative visual impact. Where possible these should be integrated within any new build elements.

Suitable Uses: This building is suitable for a range of uses, subject to satisfying the general guidelines, including office, administrative, education, cultural. Due to its significance, it is recommended that the use would facilitate some public access to the interior.

Central stair hall in front (west) principal range

Central first floor room in front (west) principal range

Vaulted ceilings in central spine extending from rear of front range

Rib vaulting to Chapel ceiling

Figure A2a:4 Ground floor plan of Clock Tower Building (former penitentiary) as existing from survey

Entrance from Grangegorman Lower (at north end of principal wing) with surviving timber gate opened back into recess

Exterior of Clock Tower Building (former penitentiary) – courtyard to east

A2a.4 The Female Infirmary

Constructed: c.1850

Architect: William Murray

Interpreted as a Protected Structure in this Planning Scheme as being in the curtilage of RPS Ref: 3284

Special Interest Categories: Architectural; Historical; Social

Original Use: Female Infirmary of Richmond Lunatic Asylum

Current Use: Occupational Therapy Unit of St. Brendan's Hospital

Brief Description:

Matching the Male Infirmary on the opposite side of the Catholic Church, this two storey building of snecked Calp limestone walls with dressed flush and chamfered limestone surrounds to window and door openings, has advanced two storey gable ends with central gable porch. The gabled end bays extend to the rear, with a lower range extending centrally to the rear and also gable ended. This is a charming Tudor style building with light filled interiors which retain original features and, to a large extent, the original layout.

Building Specific Guidelines:

- Historic plan form to be utilised in layout of interior.
- Where extensions are required, these should be modest in scale and generally subservient to the existing building form. They should also be designed such as not to detract from the balanced composition of this group of buildings which also includes the Male House and the RC Church.
- Careful consideration to be given to treatment of landscaping and setting around the cluster of buildings which comprises the Female House, RC Church and Male Infirmary. This should distinguish this grouping of historic buildings which also includes the Female House to the north, while retaining coherence with the public realm treatment of adjacent public spaces and routes.
- Particular attention to be paid to establishing entrances on north (originally rear) facades of these buildings which are likely to be required to facilitate entry from St. Brendan's Way.
- Height and distance of proposed new structures to south and east to be managed to ensure excessive overshadowing does not occur.
- The proposed user offers the possibility of extending café functions onto the adjacent public spaces and routes, namely St. Brendan's Way and the space to the south which enjoys a sunny orientation.
- Penetration of the historic roof profiles for services etc., should be avoided or, where necessary, these should be minor in scale (for example a lift enclosure or plant room at roof level would be unacceptable whereas an overflow pipe from an attic tank may be considered acceptable) and located discreetly to minimise any negative visual impact. Where possible these should be integrated within any new build elements.

Suitable Uses: This building is suitable for a range of uses, subject to satisfying the general guidelines, including office, administrative, education, cultural, retail (e.g., bookshop), cafe. Due to its strategic location along the proposed St. Brendan's Way, it is recommended that a public nature use be accommodated. Accommodation of student/staff facilities which would assist in animating the adjacent public realm would be a suitable form of use.

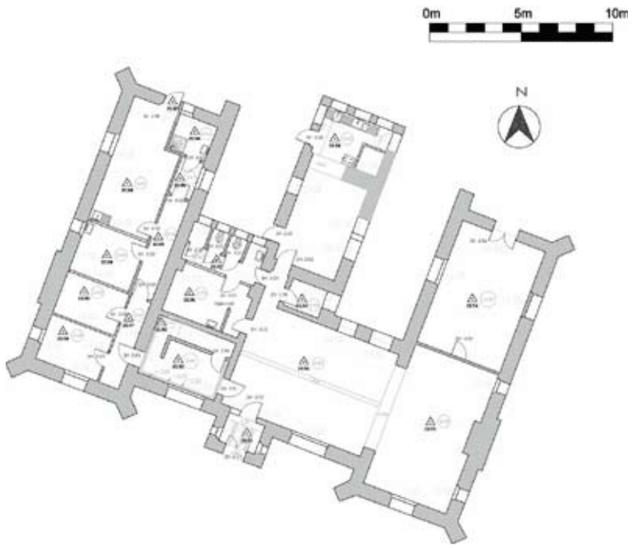


Figure A2a:5 Ground floor plan of female infirmary as existing from Survey

Exterior of female infirmary–south elevation

Interior of female infirmary

North elevation of female infirmary from roof of clock tower opposite–Catholic Church and male infirmary in background, together forming overall assembly of buildings

A2a.5 The Male Infirmary

Constructed: c.1850

Architect: William Murray

Interpreted as a Protected Structure in this Planning Scheme as being in the curtilage of RPS Ref: 3284

Special Interest Categories: Architectural; Historical; Social

Original Use: Male Infirmary of Richmond Lunatic Asylum

Current Use: Unused

Brief Description:

Matching the Female Infirmary on the opposite side of the Catholic Church, this two storey building of snecked Calp limestone walls with dressed flush and chamfered limestone surrounds to window and door openings, has advanced two storey gable ends with central gable porch. The gabled end bays extend to the rear, with a lower range extending centrally to the rear and also gable ended. This is a charming Tudor style building with light filled interiors which has been altered to a greater degree internally than its partner to the east. There is a modern single storey extension to the west which is of little architectural significance.

Building Specific Guidelines:

- Late C20th extension to west to be removed.
- Where extensions are required, they should be modest in scale and subservient to the existing building form. They should also be designed so such as not to detract from the balanced composition of this group of buildings which also includes the Male House and the RC Church.
- Careful consideration to be given to treatment of landscaping and setting around the cluster of buildings which comprises the Female House, RC Church and Male Infirmary. This should distinguish this grouping of historic buildings which also includes the Female House to the north, while retaining coherence with the public realm treatment of adjacent public spaces and routes.
- Particular attention to be paid to establishing entrances on north (originally rear) facades of these buildings which are likely to be required to facilitate entry from St. Brendan's Way.

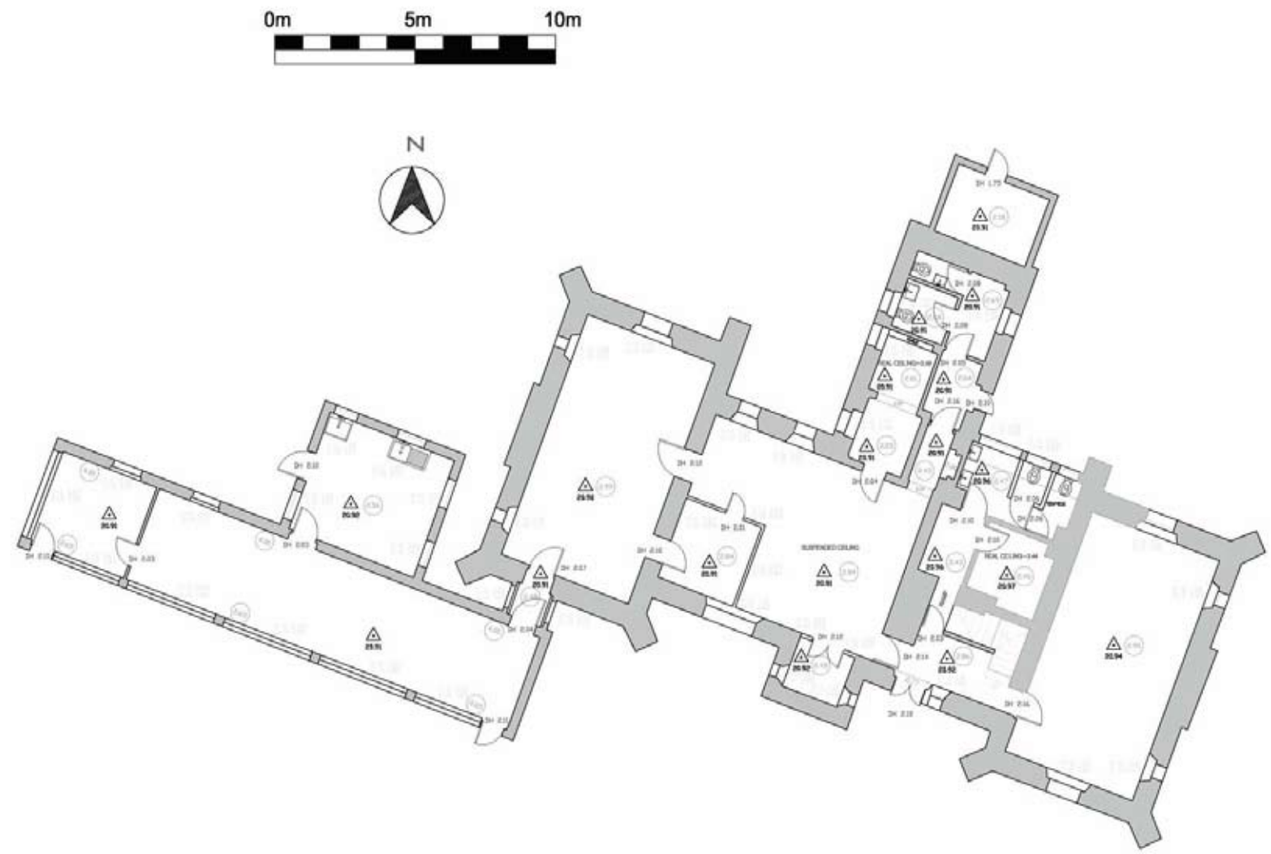


Figure A2a.6: Ground floor plan of male infirmary as existing from survey

- Historic plan form to be utilised in layout of interior—the existing plan form should suit office/student services uses.
- Height and distance of proposed new structures to south to be managed to ensure that excessive overshadowing does not occur.
- Penetration of the historic roof profiles for services etc., should be avoided or, where necessary, these should be minor in scale (for example a lift enclosure or plant room at roof level would be unacceptable whereas an overflow pipe from an attic tank may be considered acceptable) and located discreetly to minimise any negative visual impact. Where possible these should be integrated within any new build elements.

Suitable Uses: This building is suitable for a range of uses, subject to satisfying the general guidelines, including office, administrative, education, cultural, retail (e.g., bookshop), café. Due to its strategic location along the proposed St. Brendan's Way, it is recommended that some public nature use be accommodated. Accommodation of student/staff facilities which would assist in animating the adjacent public realm would be a suitable form of use.

Exterior of male infirmary–south elevation

Exterior of male infirmary–south elevation with Catholic Church in background

Exterior of male infirmary–part of north elevation

A2a.6 The Roman Catholic Church (Chapel of St. Laurence)

Constructed: c.1850

Architect: William Murray with sacristy addition by W.H. Byrne (1898)

Protected Structure: Dublin City Development Plan RPS Ref: 3284

Special Interest Categories: Architectural; Historical; Social

Original Use: Roman Catholic Church

Current Use: Roman Catholic Church

Brief Description:

Designed in a pared down Tudor style, as part of the group which comprises the adjacent Male and Female Infirmaries, this is a six bay single volume hall space of snecked Calp limestone walls and flush dressings to window and doors opes, with a steep gable ended roof with bell cote and bell at the shallow chancel end and with east and west porches flanking the entrance gable. Buttresses articulate the corners and the window bays to the side walls. Simple lancet windows—alternating single and paired— with original cast iron bars and quarry glazing to the flanking walls, the gable windows being triple lancets. The interior is simple with gallery at the entrance end and a king post roof.

Building Specific Guidelines:

- Careful consideration to be given to treatment of landscaping and setting around the cluster of buildings which comprises the Female House, RC Church and Male Infirmary. This should distinguish this grouping of historic buildings which also includes the Female House to the north, while retaining coherence with the public realm treatment of adjacent public spaces and routes.
- As it is proposed to retain this building in its current use, it is not envisaged that any new entrances will be formed off St. Brendan's Way to the north of the church building. However, any requirement to provide a more accessible arrangement onto St. Brendan's Way should incorporate the existing entrance to the vestry, rather than altering the chancel/altar end of the historic building.

Interior of RC Church—view towards altar

- Height and distance of proposed new structures to south to be managed to ensure excessive overshadowing does not occur.

Suitable Uses: Most suitable use is to remain in church use as a place of public workshop. Other suitable uses would be cultural/ performance uses for small scale events.

A2a.7 Former Church of Ireland Chapel

Constructed: c.1860

Architect: George Wilkinson

Protected Structure: Dublin City Development Plan RPS Ref: 3285

Special Interest Categories: Architectural; Historical; Social

Original Use: Church of Ireland Chapel

Current Use: Unused / Derelict

Brief Description:

This former Church of Ireland Chapel is nestled within mature planting and this landscaped setting forms a significant part of the overall character of the building. The building is a detached, four bay, single storey structure of cruciform plan with an apsidal chancel. Walls are snecked Calp limestone with single lancet windows with limestone hood moulding and decorative lapel stops to the flank walls, and triple lancet chancel window to the gable ends. The roof is steeply pitched and slated with limestone bell cote (bell has been removed) marking the entrance end with projecting gable fronted porch. The centralised plan and the timber scissors roof truss with exposed purlins and rafters add a distinctive spatial quality to the fine interior. The building is in poor condition with water ingress. Currently the building is used to house unused furniture and hospital equipment.

Building Specific Guidelines:

- Historic plan form to be utilized, where possible, in layout of interior—single large volume. This is likely to be appropriate for the suitable new uses suggested below. The existing setting of the building is particularly evocative; due care should be taken in the landscaping treatment of the surrounding area and in the immediate vicinity of the structure. Stands of mature trees to be retained where possible/appropriate.
- Where extensions are required these should be modest in scale, subservient to the existing building form and should ensure a legible reading of the historic building. It is likely such extension may be required for toilets, kitchen, storage accommodation to serve the proposed building use.

View of bellcote of Church of Ireland chapel

View of Church of Ireland chapel in its thickly wooded setting

Interior of Church of Ireland chapel

- Penetration of the historic roof profiles for services etc., should be avoided or, where necessary, these should be minor in scale (for example a lift enclosure or plant room at roof level would be unacceptable whereas an overflow pipe from an attic tank may be considered acceptable) and located discreetly to minimise any negative visual impact. Where possible these should be integrated within any new build elements.
- A guide is to be provided which identifies any particular constraints on use and intervention to the historic fabric and this is to be used in assessing the appropriateness of any proposed event or activity.

  Suitable Uses: This building has potential to be used as an unprogrammed space for display, exhibition and/or presentation by the various faculties within DIT or other appropriate users.

A2a.8 The Top House (The Male House)

Constructed: 1848-54

Architect: Murray & Denny

Protected Structure: Dublin City Development Plan RPS Ref: 3282

Special Interest Categories: Architectural; Historical; Social

Original Use: Male Wards of Richmond Lunatic Asylum

Current Use: Unused

Brief Description:

The Male House, or Top House consists of a three-storey seventeen bay structure with attached two-storey eight bay block to the north-east. A slightly taller three-storey French Gothic style tower is located at the junction between the two ranges. The roofs are steeply pitched with natural slate coverings. The building is constructed of dressed Calp limestone with dressed granite detailing. Generally in sound condition, although there are indications of water ingress due to damaged flashings and rainwater goods.

Building Specific Guidelines:

- The external form of the protected structure should generally remain readable. In particular the view from the new North Circular Road entrance (Planning Reference No. 3112/09) into the site should include a part view of the Top House, as indicated on the Master plan.
- New additions should not compromise the overall legibility of the historic building form.
- The historic open plan layout should generally be retained. Internal layouts should work with the historic plan form—using large volume spaces.
- Upper floor southerly views from the western end of this building which look across the open space towards the south side of the city (which the obscure glazing denied to previous occupants) should be reinstated.
- Glazed roof links should be detailed to avoid historic building details, connecting below eaves level and so avoiding any disruption to the roof profiles.

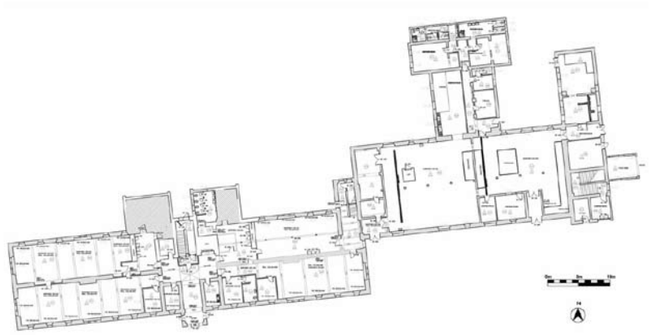


Figure A2a.7 Ground floor plan of male house as existing from survey

Exterior of Top House - View from North West

Exterior of top house—view from South East

Interior of top house—second floor room

- The shallow vaulted entrance hall and connecting stairs in the western wing should be retained with the vaulted ceilings presented.
- The present windows should be replaced with a more appropriate window style which allows for natural light penetration, views out and larger opening sections to maximise natural ventilation.
- Penetration of the historic roof profiles for services etc., should be avoided or, where necessary, located discreetly to minimise any negative visual impact. Where possible these should be integrated within any new build elements.

Suitable Uses: This building is suitable for a range of uses, subject to satisfying the general guidelines, including office, administrative, education, cultural. Due to its significance, it is recommended that the use would facilitate some public access to the interior. The envisaged library use (as identified in the Masterplan) would be particularly suitable for this building, due to its location within the heart of the site.

A2a.9 The Female House

Constructed: c.1866, remodelled by W.H. Byrne in 1898 and extended between 1907 and 1936

Architect: Original architect unknown.

Protected Structure: Dublin City Development Plan RPS Ref: 3283

Special Interest Categories: Architectural; Historical; Social

Original Use: Female Wards of Richmond Lunatic Asylum

Current Use: Special Care Unit, St. Brendan's Hospital

Brief Description:

This two storey with partial attic building of snecked Calp rubble walls and dressed limestone quoins, runs parallel to the Tudor trio of Murray designed buildings. It is a detached structure built in two phases the 1866 being the earliest phase, which forms the eastern part of the existing range, having a central advanced breakfront flanked by five-bay ranges with advanced three-bay end pavilions with wide canted bays to the south. The later phases, added to the west, north and south of the original building, were constructed sometime between 1907 and 1936. These comprise a two-storey, three-bay addition to the south and a single/part two-storey addition to the north side of the central breakfront. To the west a larger two-storey four-bay range was added. Further additions in 1970 are of little architectural value. While the building is now entered from the north, Paul Arnold's report has identified that the original entrances were from the formal garden to the south as indicated on the 1876 and 1907 maps. It is also worth noting that the central part of the original structure is located on axis with the Catholic church opposite, which indicates a carefully considered original positioning of this building which followed the Murray group by 16 years. The building also follows the Tudor style of its neighbours with steeply pitched slated roofs, which are double pitched with gable and hipped ends and chamfered limestone window and door surrounds (although later window modifications have brick upper surrounds). The only surviving chimney stack is the projecting stack to the end bay at the north-east corner. Internally, the plan layout comprises a range of spaces, including small cellular rooms and larger open spaces, most notable the large dining room within the central block which contains a series of chamfered timber trusses and central lantern. Decoration is generally plain with some original surviving, such as the rounded and chamfered corners, other surviving elements may be concealed by modern finishes.

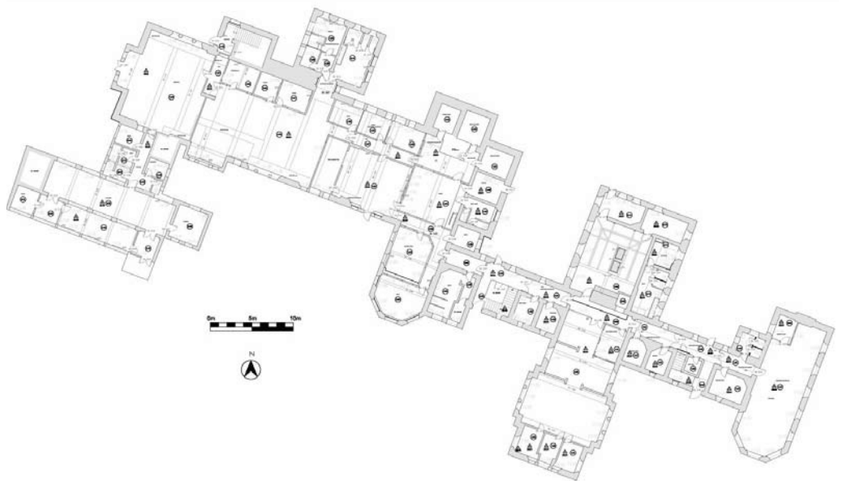


Figure A2a.8: Ground floor plan of female house as existing from survey

Exterior of female house–part of south elevation

Part of exterior (north) of female house

Building Specific Guidelines:

- The historic plan form should be utilised, where possible, as part of a new use layout.
- Careful consideration to be given to treatment of landscaping and setting around the cluster of buildings (including Female House, RC Church and Male Infirmary).
- The relationship between the public realm and entrances—south façade to be re-established as main elevation on to St. Brendan's Way; north façade opening to Cultural Garden.
- Retention of specific mature trees within Cultural Garden will enhance the setting of the building.
- The removal of late circa twentieth century accretions and the earlier addition to the north side of the original central breakfront will provide an opportunity to strengthen setting and clarify hierarchy of entrances.
- Location, scale and architectural expression of any extension to accommodate a theatre use (see below under suitable uses) requires careful consideration in terms of impact on the protected structure and the spatial qualities of the public space surrounding it. Such a new extension can assist in animating and shaping the external spaces and should be contemporary in expression to provide a clear reading of historic layers.
- Penetration of the historic roof profiles for services etc., should be avoided or, where necessary, these should be minor in scale (for example a lift enclosure or plant room at roof level would be unacceptable whereas an overflow pipe from an attic tank may be considered acceptable) and located discreetly to minimise any negative visual impact. Where possible these should be integrated within any new build elements.

Suitable Uses: This building is suitable for a range of uses, subject to satisfying the general guidelines, including office, administrative, education, cultural. Due to its location with regard to St. Brendan's Way, at the centre of the overall complex and within the potential student hub, which the Masterplan proposes, other uses such as retail, public house/student bar, entertainment, theatre, would be appropriate.

Exterior of female house - North elevation

Exterior of female house

A2a.10 The Laundry

Constructed: 1895

Architect: W.H. Byrne

Protected Structure: Dublin City Development Plan RPS Ref: 3287

Special Interest Categories: Architectural; Historical; Social

Original Use: Laundry

Current Use: Unused/small NW section remains in use as laundry. It should be noted a planning permission has been granted for the carrying out of works and adaptation to new office use (Planning Ref No. 2114/09)

Brief Description:

The former laundry comprises a single storey multiple bay structure, constructed of ashlar limestone with yellow brick openings and detailing. There are four bays running east-west and an additional adjoining range to the east running north-south which is divided into three main spaces. The main spaces within these ranges are large single-volume top-lit rooms with fine wood block floors of a distinct and pleasant character.

Building Specific Guidelines:

- It is a key opportunity within the masterplan to re-use this building and its characteristic spaces and volumes as they currently exist. Any subdivisions should ensure the existing volumes remain legible and should be reversible.
- The setting of the building should be carefully considered, in terms of the surrounding new buildings and spaces.
- The distance to any new building to the west, and the height and materiality of this new neighbouring structure will require careful handling to ensure satisfactory scale relationships and to minimise any negative impact on daylight and natural ventilation within the historic building.
- Maintaining open space to the east, south and north will provide appropriate 'breathing room' for this single-storey building.

Figure A2a.9 Ground floor plan of laundry as existing from survey

- The stub of the original chimney still survives and is now replete with vegetation. Consideration may be given to retaining this feature as an historic fragment which could be incorporated as part of the landscaping. The current planning permission allows for work to the existing chimney.
- The use of landscaping techniques and materials in the immediate environs of the building should reflect its status as a protected structure and may include the use of stone, brick or similar natural materials and/or material salvaged from elsewhere within the site.

Suitable Uses: This building is suitable for a range of uses, subject to satisfying the general guidelines, including office, administrative, education, cultural.

Laundry Exterior

Laundry Interior

A2a.11 The Mortuary

Constructed: c.1900

Architect: W.H. Byrne

Protected Structure: Dublin City Development Plan RPS Ref: 3286

Special Interest Categories: Architectural; Historical; Social

Original Use: Mortuary

Current Use: Clinic

Brief Description:

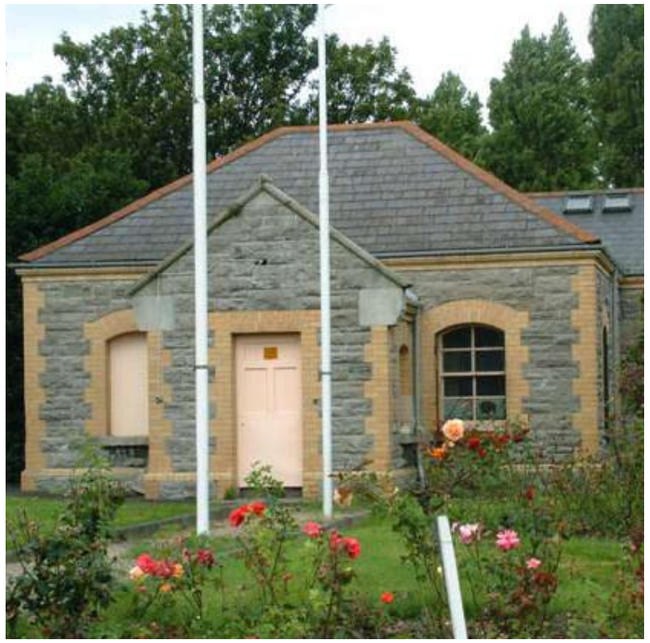
Detached, single-storey structure composed of two and three bay gabled ranges extending from a common lower range. The entrance pavilion to the south is hipped and all roofs are slated. External walls are rusticated limestone with painted brick quoins and window and doors surrounds and painted granite sills. There is a flat roofed extension to the eastern façade. Timber four over four sash windows mostly survive. The building contains an electrical sub-station to the south and the mortuary is housed in the centre. The remaining portion currently accommodates offices. Original plain interior joinery survives with exposed timber purlins in some rooms.

Building Specific Guidelines:

- The relationship between this low single storey structure and any neighbouring new structures requires careful design of the transitions of scale.
- It may be necessary/appropriate to extend the mortuary (depending on use). There may be an opportunity to utilise the step in section that exists at Grangegorman Lower in order to achieve an interesting design.
- There should be a clear relationship between the Mortuary and the surrounding public spaces and gardens, in terms of landscape design and use.
- Any new use should ensure the layout relates to the external envelope and façade arrangement of the existing building, thus availing of the opportunity for dual and triple aspect rooms. The building is too small for the existing spaces to be reduced in size.

Suitable Uses: This building is suitable for a range of uses, subject to satisfying the general guidelines, including office, administrative, education, cultural.

Figure A2a.10: Mortuary survey plan



Exterior of mortuary–south elevation and entrance

Exterior of mortuary–east elevation from Grangegorman Lower

A2a.12 Boundary Walls

Constructed: Built in phases from the early nineteenth century with additions and modifications continuing throughout the twentieth century.

Architect: Not identified

Protected Structure: Dublin City Development Plan RPS Ref: 1674 (Steon wall along North Circular Road, St. Brendan's Hospital complex) ;3281(Entrance gates, piers and wall at Grangegorman Upper); 3289 (entrance features and entrance gate piers, curved wall at Morning Star Avenue are all included within the listing of The Lower House)

Special Interest Categories: Architectural; Social

Original Use: Boundary Walls, gates

Current Use: Boundary Walls, gates

Proposed Use: Boundary Walls, gates.

Brief Description:

This comprises boundary walls of Calp limestone rubble walling construction, with sections of high quality snecked coursing, limestone entrance piers and the eighteenth century (1780) wrought-iron entrance gates and granite gate piers relocated from Santry Court to their current position c.1940. The walls form the boundary to the site and are overall in sound condition, however in places sections have been lowered, rebuilt in concrete block and are overgrown with vegetation. Not all walls are of historic significance.

Structure Specific Guidelines:

- A number of former openings in the boundary which provided access into the site and have been closed off/ blocked up in modern times, are to be reopened. Careful removal of infill should be carried out and any architectural features—piers, arches, decorative lintels, reveals, etc., retained and repaired.

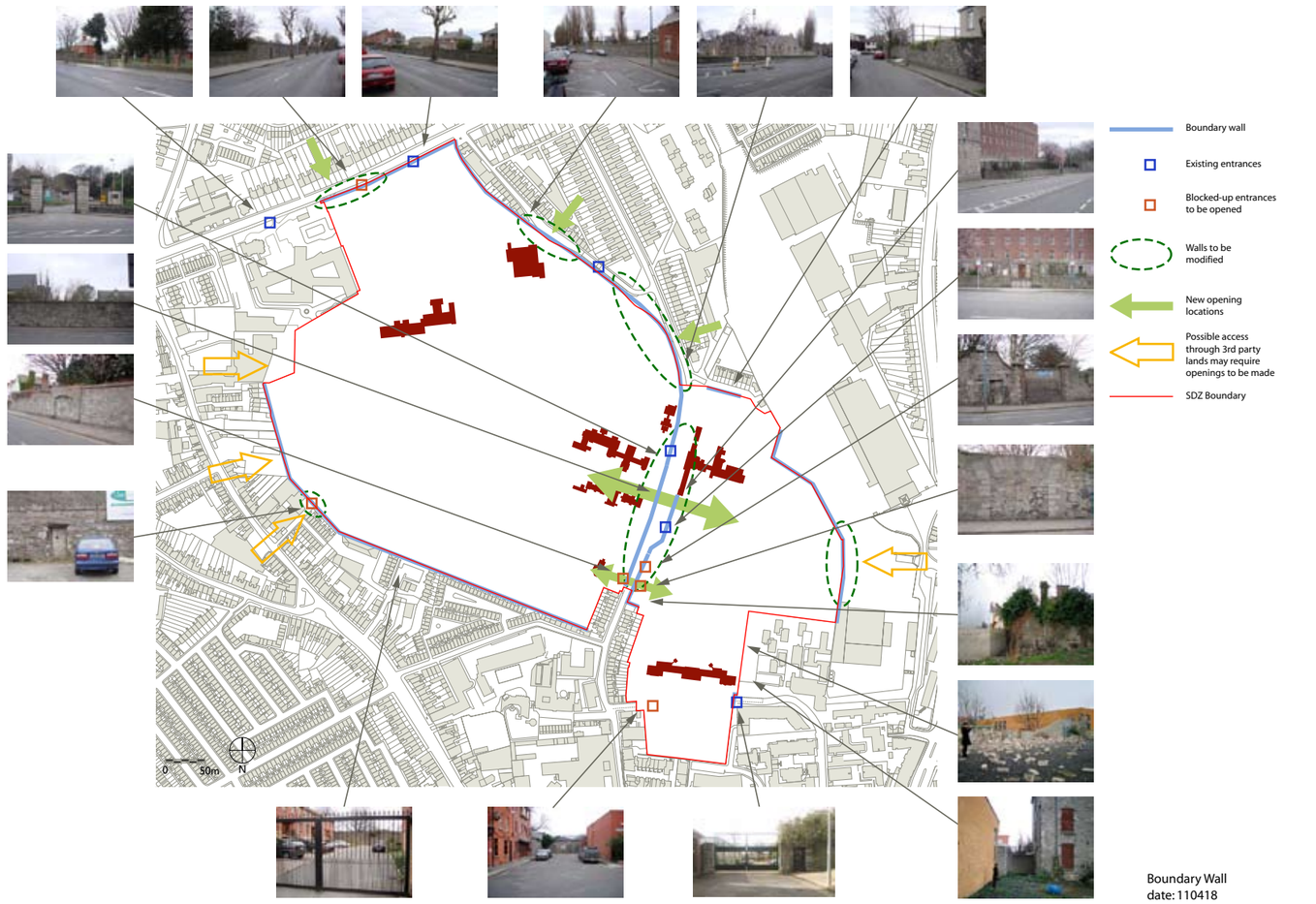


Figure A2a.11: Map of Grangegorman site indicating extent of existing boundary walls

- New openings in the boundary wall, including those sections which are included on the RPS, will be required to facilitate access and movement as set out in the Masterplan proposals. Planning permission has been granted (Planning Ref No 3112/09) for a new opening/entrance to the site from the North Circular Road. Another significant opening will be required in the boundary wall to the western part of the site along Grangegorman Lower. The location of this, and any other necessary openings, should be determined based on a careful study of the walls so that any existing architectural features of note are carefully considered and integrated into the overall design. The use of traditional elements such as piers, arches, railings should be introduced with careful attention to detail, junctions and material specification. Considered contemporary interpretations may be appropriate. The extent and size of any openings should be guided by consideration of the overall character and legibility of the wall, which should remain following the intervention.

- A condition survey of sections the boundary walls where interventions are proposed, will be carried out to inform detail works, including repairs, alterations and interventions. These areas of the historic boundary walls will be subjected to a full measured survey. This would include dimensional information on the walls including length, depth, height and relative levels. Elevations identifying the various construction materials and the locations where changes in these materials occur are to be provided. Any special features such as blocked-up entrances, including stone/brick piers, arches etc will be identified and surveyed in detail by rectified photography.

- The above described survey will provide an accurate and up-to-date record of the boundary walls where interventions are proposed. It will inform the detailed strategy and design for removal and making-good of the walls where this is required and will also provide detailed information which will be required to determine the approach to re-opening (with possible enlargement) of existing openings.

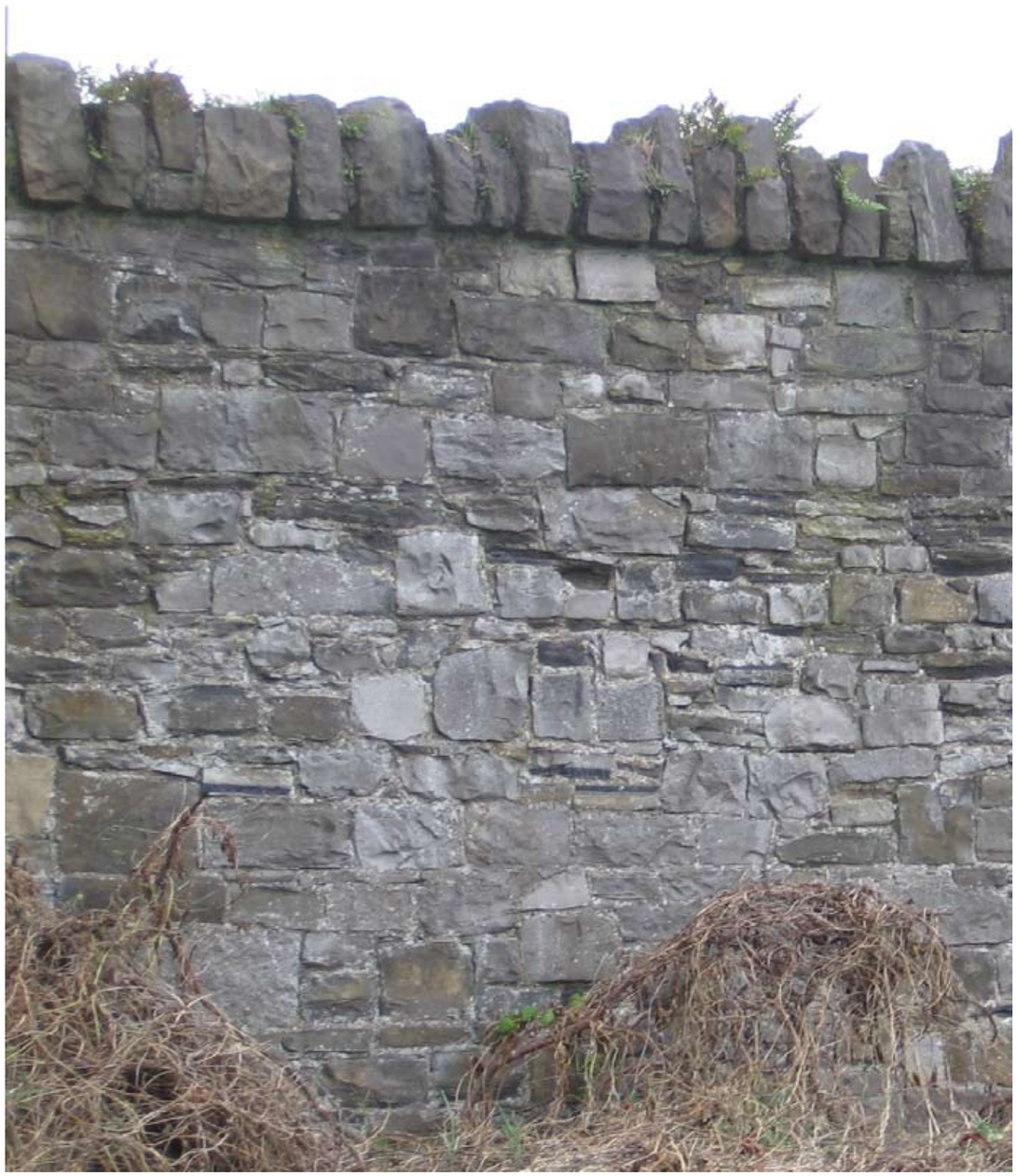
Access gate from Morning Star Avenue

Arched entrance from Grangegorman lower to rear of surviving section of Lower House

Main Entrance gates and piers

(above and left) Main Entrance gates and piers

Snecked Calp Boundary wall to Grangegorman Lower



Calp wall enclosing Eastern Boundary wall to Grangegorman Lower

A2a.13 Tunnel running under Grangegorman Lower, linking east and west sections of Grangegorman Lands

Constructed: c.1836

Architect: not known

Protected Status: Not protected

Special Interest Categories: Social

Original Use: tunnel for secure and discrete movement of patients

Current Use: derelict

Brief Description:

A significant architectural feature is the tunnel that runs beneath the road at Grangegorman Lower, connecting the eastern and western sections of the site. It is believed that this tunnel was originally constructed to move patients/inmates from one part of the complex to the other. Although not a protected structure, it is an interesting feature that is to be retained and should be presented in an appropriate manner within the landscaping plan.

Building Specific Guidelines:

- Retention and presentation/reuse of the tunnel is generally desirable.
- To facilitate detail proposals for presentation and reuse of the tunnel, it will be necessary to carry out a survey. Careful clearance of overgrown vegetation (with any significant planting or landscape features identified and protected in advance) and debris is necessary to facilitate this survey.
- Any additions required to service temporary uses, or secure the tunnel, should be reversible and allow for viewing of the tunnel, if full access is considered inappropriate.
- Any interpretation displays should be kept to a minimum and not distract visually from the site. As such, the tunnel space may spark personal enquiry and imagination.

Entrance to tunnel at west side of Grangegorman Road– while currently overgrown access to the tunnel is still possible from this side.

Detail view from east side, showing stones to tunnel entrance arch. Opening is filled with concrete block.

- It may not be appropriate, or necessary, to signpost or illuminate (other than for safety reasons or for a particular use) the tunnel—such a place may be better found 'by accident'.
- Guidelines to be prepared to outline the types of activities/events which might take place here and constraints on intervention and protection of fabric from damage.

Suitable Uses: Subject to its availability for re-use, this landscape feature/historic piece of infrastructure would be suitable for use for temporary events and exhibitions.

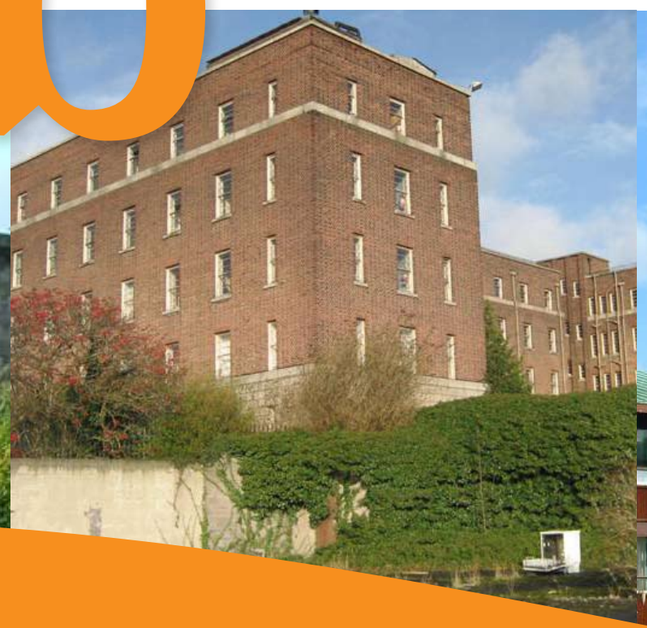
Appendix

2b

Planning Scheme

Grangegorman

Conservation - Removal of Structures



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Appendix 2b:

Purpose and Layout of this Appendix

Appendix 2b should be read in conjunction with Chapter 6. This Appendix lists the structures to be removed and provides structure specific guidelines for the removal of these structures.

Contents

A2b.1 Structure Specific Guidelines—Removal of Structures

The following is a list of the buildings which are proposed to be removed:

1 Former doctor's houses at 226, 228 & 230 North Circular Road

2 St. Elizabeth's Court

3 GDA offices (part of former Richmond District Lunatic Asylum)

4 Administration Building/Orchard View[18]

5 Handball Alleys

7 Transport Depot

8 Residential Wards (1970s)[19]

9 Outpatients Building (1970s)

10 Recreation buildings (1970s, 1980s)

11 DCC Cleansing Depot (1970s)

12 Supplies Dept. (1970s)

13 Nurses Home (1938)

14 Stores (1970s)

15 Administration building (1980s)

16 Nos. 1-5 Orchard View (1930s)[1]

While most of the structures are of little architectural value, five have been identified in the previous architectural appraisals as being of architectural merit. These are the surviving fragment of the former Richmond District Lunatic Asylum (currently the GDA offices), the 1938 Nurses Home (currently part occupied by the HSE) and the 3 No 1936 former doctor's houses (nos. 226,228 & 230 North Circular Road). In addition the cultural value of two handball alleys has been identified. In light of this, the background context to their proposed removal and structure specific guidelines for their removal are set out within this Appendix.

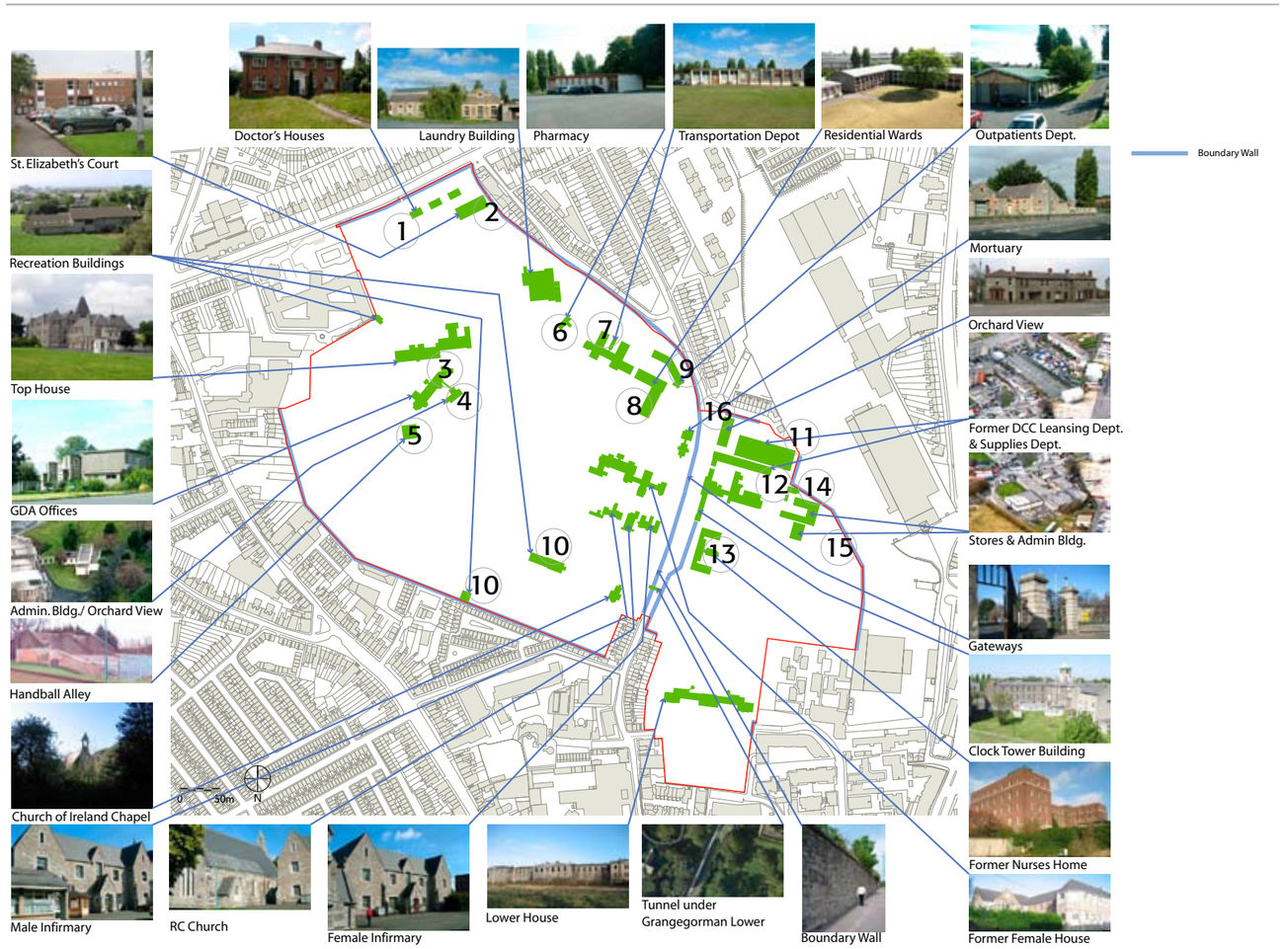


Figure A2b.1: Key plan identifying structures on site

[18] *A planning permission for replacement development and demolition of the currently vacant and boarded up residential properties has been granted (Planning Ref. No. 1125/06)*

[19] *A planning permission for replacement of and demolition of portion of these residential wards has been granted (Planning Ref. No. 3112/09)*

A2b.2 Guidelines and procedures for removal of structures:

- Record drawings and photographs of existing structures are to be prepared prior to commencement of removal works.
- Dismantle using methods which allow for re-use of elements and materials
- Identify strategy for re-use of building elements with on-site re-use prioritised.

A2b.3 Removal of the Nurses Home

The Nurses Home was constructed in 1938 to the designs of Vincent Kelly. It is not recorded on the Record of Protected Structures.

It is a detached seventeen-bay five storey structure with a flat roof on a U-shaped plan. The ground floor has a channelled granite-faced finish and upper floors are of red/brown brick laid in English bond. There is a granite cill course on the uppermost floor. Windows are of timber with sliding sashes and horizontal glazing bars. A feature of particular note is the main entrance door with its Art Deco style decoration. Internally the layout and decorative features remain mostly intact since construction and are in good condition (ref Paul Arnold Architectural Appraisal).

The removal of this structure is a required part of the Strategic Plan for the redevelopment of Grangegorman.

Nurses Home elevation

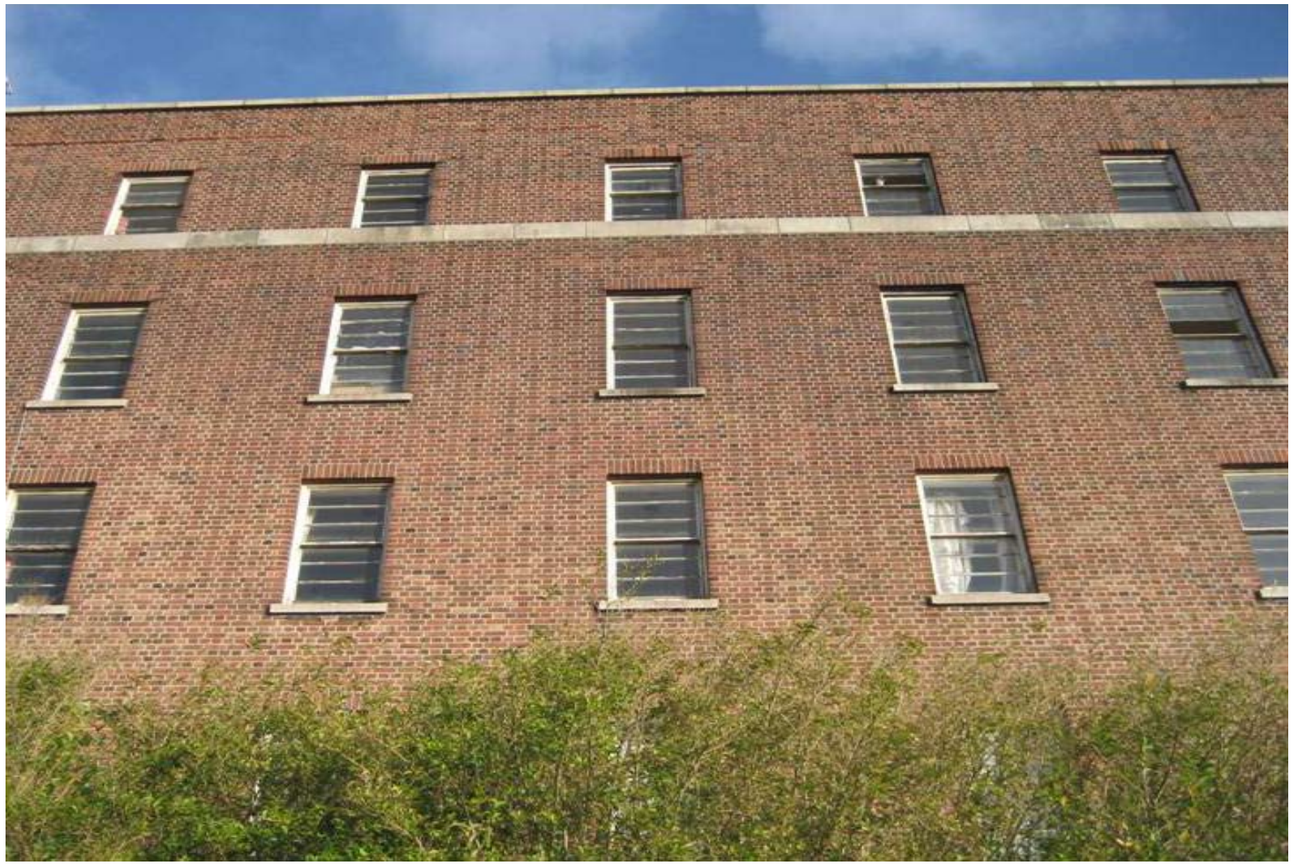
Nurses Home from south-east

This is primarily in order to achieve one of the key goals of the Masterplan design. A major element of this design is the creation of a route through the site (St. Brendan's Way) which links the two sides of the site, on the east and west of Grangegorman Upper and also connects back into the existing urban fabric that surrounds the area. To make this connection successfully the most appropriate location is immediately south of the Clock Tower Building (Former Penitentiary) where the Nurses Home is located. This allows the route to weave through the centre of the site and between the cluster of existing buildings (all Protected Structures) on the western side of Grangegorman Upper thus integrating these structures into the overall scheme. Thus, the removal of the Nurses Home forms an integral part of the overall urban strategy for Grangegorman.

Also despite the fact that it is a building of certain architectural interest in relatively good structural condition, it would be challenging to adapt it successfully to acceptable modern standards appropriate to a new use without considerable compromise of the internal layout, due primarily to the fact that it appears the internal load-bearing walls (which are reinforced concrete) are of very short spans (c. 3.5m). To make use of this cellular layout would involve significant, costly, internal demolition, essentially 'gutting' the interior.

The structures that will replace this building, and the other buildings which are proposed to be removed, will be designed to a high standard and the quality of the new quarter overall will be superior to that which it replaces, in all aspects of design.

Features of significance from the Nurses Home, such as the sculpture above the door case, will be retained and, where possible and appropriate, re-used elsewhere within the scheme, retaining traces of what went before.



Nurses Home, front elevation.

A2b.4 Removal of the GDA building (fragment of former Richmond District Lunatic Asylum):

This structure comprises essentially a surviving fragment from the early twentieth century extensions to the Richmond District Lunatic Asylum of the mid-nineteenth century. The majority of the structure, which is set at an angle to the earlier section, was built as one of two wings added c. 1910 to the original District Asylum which was built in 1851 and substantially demolished in 1986. It is not listed in the Record of Protected Structures.

It comprises a two-storey building, now flat-roofed with original pitched-roof removed. Walls are of calp ashlar with dressed limestone to window opes and two-stage buttresses located on the corners and on the elevations. Many of the windows retain their original timber sashes. Internally some original features remain but significant modernisation has taken place. Paul Arnold's Architectural Appraisal Report suggests that this structure may date either to 1909 additions by George Tighe Moore or later works carried out in 1928 to the designs of Patrick John Fitzgerald Munden.

The removal of this building is necessary to achieve the plan of a central library complex (incorporating the Top House, a Protected Structure) and academic hub plaza which, with its associated outdoor space overlooking the playing fields and cityscape beyond, will form the main congregation space and principal civic space, in this new city quarter and university campus. Its significance derives from its use as the central library (incorporating a local authority branch library for the surrounding community), its location at the intersection of St. Brendan's Way (the main east-west route through the site and the extension of the historic eighteenth century city spine), the entrance avenues from North Circular Road and the open parkland playing fields to the south of the site and, the integration of the historic Top House at the core of this 'heart'.

The structure which survives today is a fragment of a later addition to the original structure. While the building contains materials and construction of high quality, its architectural integrity has been greatly compromised.

GDA building–to be removed.

Were it to be retained, the location of the building and its compromised architectural form would impact in a severely negative manner on the major urban design strategies of the Masterplan.

Therefore, it is considered appropriate to remove this structure following the general principles and guidelines laid down in the report. The structure should be carefully dismantled in order to conserve as much of the material, intact as building elements, as possible for re-use. Good quality materials, some of which are no longer readily available (such as Calp Stone), were used in the construction of this building and every effort should be made to salvage as much of these as possible.

A2b.5 Removal of Former doctor's houses and day care centre at 226, 228 & 230 North Circular Road

These three houses are essentially identical structures, comprising detached two storey, five bay brick houses with hipped , slated roofs. Dating from 1936 they are currently in medical use. While these houses are in good condition and are typical of the residential architecture of their time, they are not listed on the Record of Protected Structure and, in light of the broader Masterplan objectives to allow for new health care accommodation in this part of the site, which will serve the local community as well as specialist needs, and also to enable residential apartment uses, the removal of these buildings is justified in accordance with the Masterplan layout and proposals.

As detailed above, these structures should be fully recorded, dimensionally and photographically, prior to their removal.

226 North Circular Road–former doctor's house. Nos. 228 & 230 are essentially identical structures.

A2b.6 Removal of handball alleys

The removal of the handball alleys will be necessary to achieve the Masterplan proposals. This structure is an example of a type that would have been typical of its time (c.1900). It is not included on the Record of Protected Structures and its central location overlooking the playing fields represents a key position on the site and therefore its removal can be justified in the interests of achieving the best redevelopment plan for the site as a whole. The design as envisaged by the Masterplan requires that this area forms part of the most important outdoor meeting/civic space at the junction of the main east-west route through the site and the principal north-south axis from the North Circular Road. There will also be a sizeable basement sports complex located adjacent to the existing handball alleys.

As detailed above, the structures should be fully recorded, dimensionally and photographically, prior to removal.

Handball Alleys (1890s to 1907) - to be removed

A2b.7 Removal of buildings identified as being of no architectural heritage significance

The Planning Scheme for the Grangegorman site proposes the removal of several buildings which have been assessed previously (ref. Arnold Report, Mandal Report) as being of no architectural merit and which are not included on the Record of Protected Structures. These include the residential wards and outpatients building constructed in the 1970s, the recreation building dating from the 1980s and the transport depot which dates from the 1920s. All such structures, prior to demolition, will be recorded fully in dimensional/ measured format and also photographically. These records will be retained by the GDA and also will be lodged with the Irish Architectural Archive, Dublin City Archives etc for future reference, all as per the general guidelines for removal of structures. Permission for demolition of the Residential wards buildings has been granted (Planning Ref. 3112/09).

Residential wards (1970s) - to be removed

Outpatients (1970s) - to be removed

Appendix 3

Planning Scheme
Grangegorman

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Appendix 3

Sources and References

The following list of documents and references relating to the history and development of Grangegorman does not include documents produced as part of the current/recent Masterplan process, nor statutory documents that may have been commissioned by Dublin City Council or other state agencies, such as Local Area Plans or the Dublin Development Plan (past or present).

Primary Sources

Maps

- Dublin 1756 by John Rocque
- Dublin 1811 by Thomas Campbell
- Dublin 1816 by Taylor
- Dublin 1821-22 by William Duncan
- Ordnance Survey 6 inch to 1 mile map of Dublin, Sheet 18, 1837
- Ordnance Survey 6 inch to 1 mile map of Dublin, Sheet 18, 1849
- Ordnance Survey 6 inch to 1 mile map of Dublin, Sheet 18, 1876
- Ordnance Survey 6 inch to 1 mile map of Dublin, Sheet 18, 1907-08
- Ordnance Survey 25 inch to 1 mile map of Dublin, Sheet 18-6, 1936
- Ordnance Survey 1:1000 map of Dublin, Sheet 3197-23, 1970
- Ordnance Survey 1:1000 map of Dublin, Sheet 3197-24, 1970

Drawings

- Johnson, F. (1814, 1815-17): Richmond Lunatic Asylum; Irish Architectural Archive, Murray Collection, nos. 411-419
- Johnston, F. (1810-12): Richmond Penitentiary; Irish Architectural Archive, Murray Collection, nos. 424-433
- Murray and Denny (1849): Richmond Lunatic Asylum, Tudor revival chapel and infirmary; Irish Architectural Archive, Murray Collection 92/46, nos. 436-449
- Murray and Denny (1854): Richmond Lunatic Asylum, Laundry; Irish Architectural Archive, Murray Collection 92/46, nos. 423
- Hodson, G.F.J. (1855): Richmond Lunatic Asylum, Design for entrance lodge; Irish Architectural Archive, Hollybrooke Drawings Collection Acc. 87/55.29/1

  There are also some records within the OPW archives relating to the construction, extension and maintenance of lunatic asylums (for which the OPW assumed responsibility in 1835), including the Richmond District Lunatic Asylum. See Guide to the Archives of the Office of Public Works by Rena Lohan (1994) published by The Stationary Office.

Secondary Sources

Published

- Boyd, G.A. (2006): Dublin 1745-1922 Hospitals, Spectacle and Vice; Four Courts Press, Dublin; pp. 174-176
- Brady, J., Simms, A. [eds.] (2001): Dublin through space and time; Four Courts Press, Dublin; pp. 183-4
- Casey, C. (2005): Dublin; Buildings of Ireland series, New Yale Press, New Haven and London; pp. 256-260
- Falvey, J. and O'Shea, B. (1984): 'History of St. Brendan's' in Psychiatric Nursing, Vol. 2, No.8
- Reynolds, J. (1992): Grangegorman, Psychiatric Care in Dublin since 1815; Institute of Public Administration, Dublin
- Lennon, C. (2008): Dublin Part II, 1610 to 1756; Irish Historic Towns Atlas No.19, Royal Irish Academy, Dublin
- O'Dwyer, F. (1981): Lost Dublin; Gill and Macmillan, Dublin; p. 133
- Sweeney, C. (1991): The Rivers of Dublin; Dublin Corporation
- Numerous references in The Builder/Dublin Builder/Irish Builder to works under construction, advertisements for contractors, invitations to tender etc., for various structures under Grangegorman/Richmond Lunatic Asylum; see Irish Architectural Archives catalogue

Unpublished

- Arnold P. (2006): Architectural Appraisal, St. Brendan's Hospital, Grangegorman, Dublin 7 commissioned by Dublin City Council Planning Department
- Burke, N. (1972): Dublin 1600-1800: a study in urban morphogenesis, Ph.D. thesis, Trinity College Dublin
- Mandal, R. (2007): Framework Architectural Conservation Strategy for the existing buildings on the lands of Grangegorman, Dublin 7 commissioned by the Grangegorman Development Agency

Appendix

4

Planning Scheme

Grangegorman

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Appendix 4

Reference Documentation

Reference Documentation available on request for the Grangegorman Development Agency or alternatively available for viewing on the GDA website.

Title	Author	Issue date
Transport Assessment	Aecom	April 2011
Mobility Management Strategy	Aecom	March 2011
Landscape and Visual Impact Appaisal	Mitchell + Associates	April 2011
Daylight and Sunlight Review	BRE	March 2011
Tree Survey	Mitchell + Associates	April 2011
Waste Management Strategy	RPS	Oct 2009
Wet Services Assessment - Technical Note	Arup	March 2011
Flood Risk Assessment	Arup	April 2011