



Chapter 4:

Nature And Extent Of Proposed Development

4

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 as an evaluation for future planning applications to be made under the Special Development Zone (SDZ) designation.

Contents

- 4.1 Overview of Development
- 4.2 Site Layout
- 4.3 Deriving the Urban Form
- 4.4 Design Principles
- 4.5 Landscaping and Public Realm
- 4.6 External Connections and Internal Circulation
- 4.7 Land Use Zones and Quantum of Development
- 4.8 Transport Infrastructure
- 4.9 Flexibility of Planning Scheme

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);

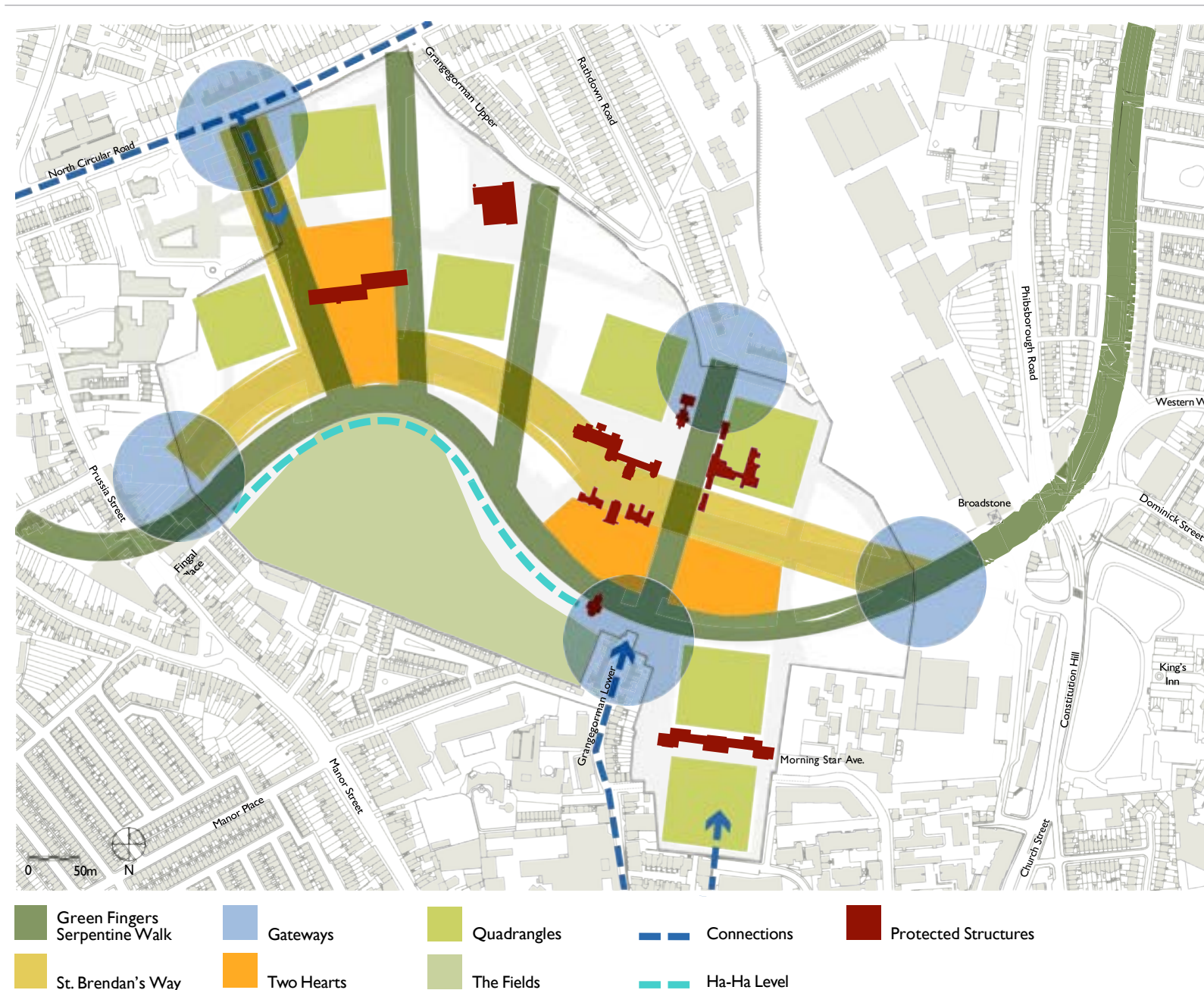


Fig 4.1 Key Structuring Principles

- | External Connections and Internal Circulation⁸ (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

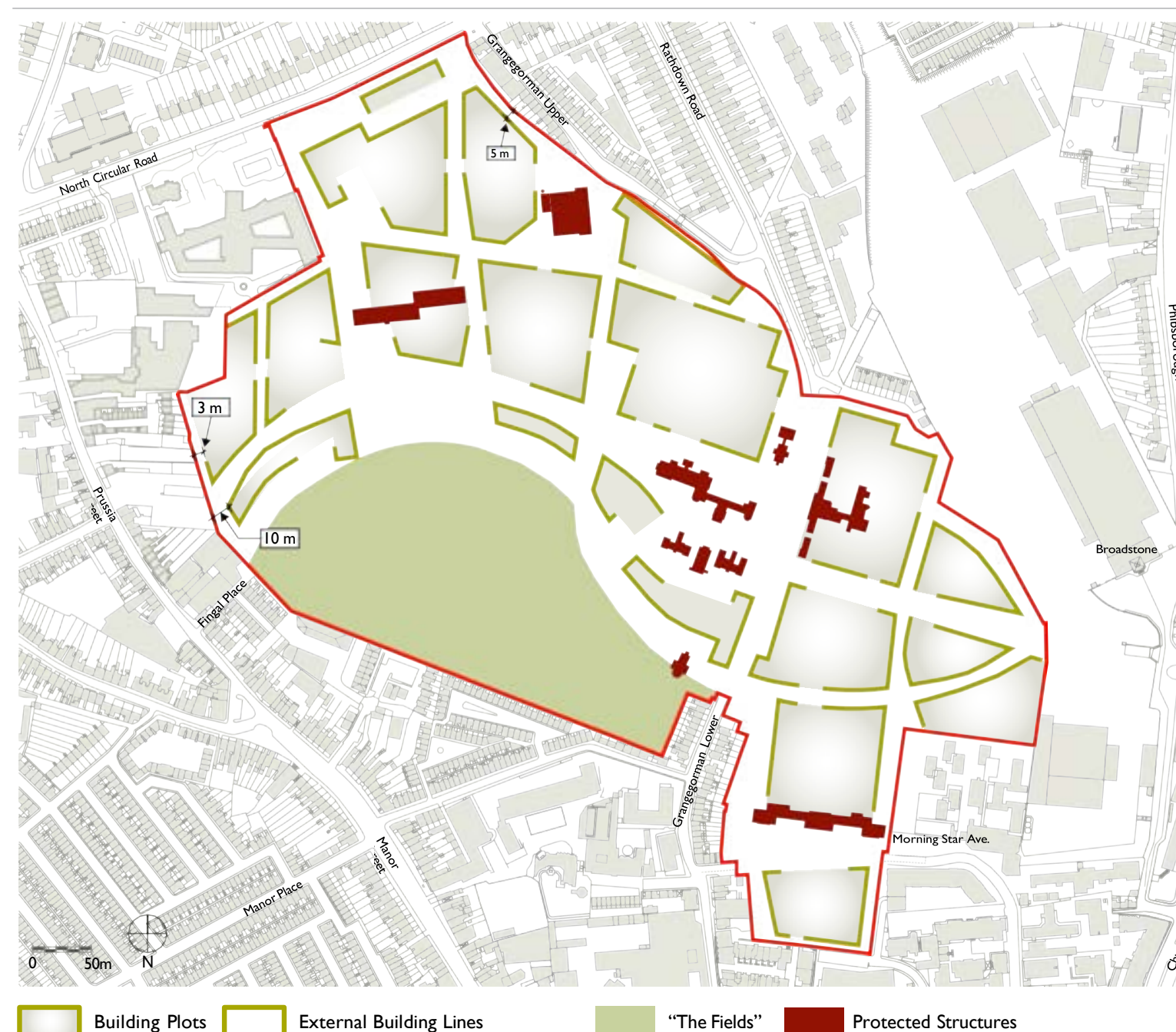


Figure 4.2: The Urban Form

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 pavilion design will be allowed in the Fields.

431 Protected Structures

The Dublin City Development Plan lists 11 Protected Structures on the site, including parts of the boundary wall⁹, 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.

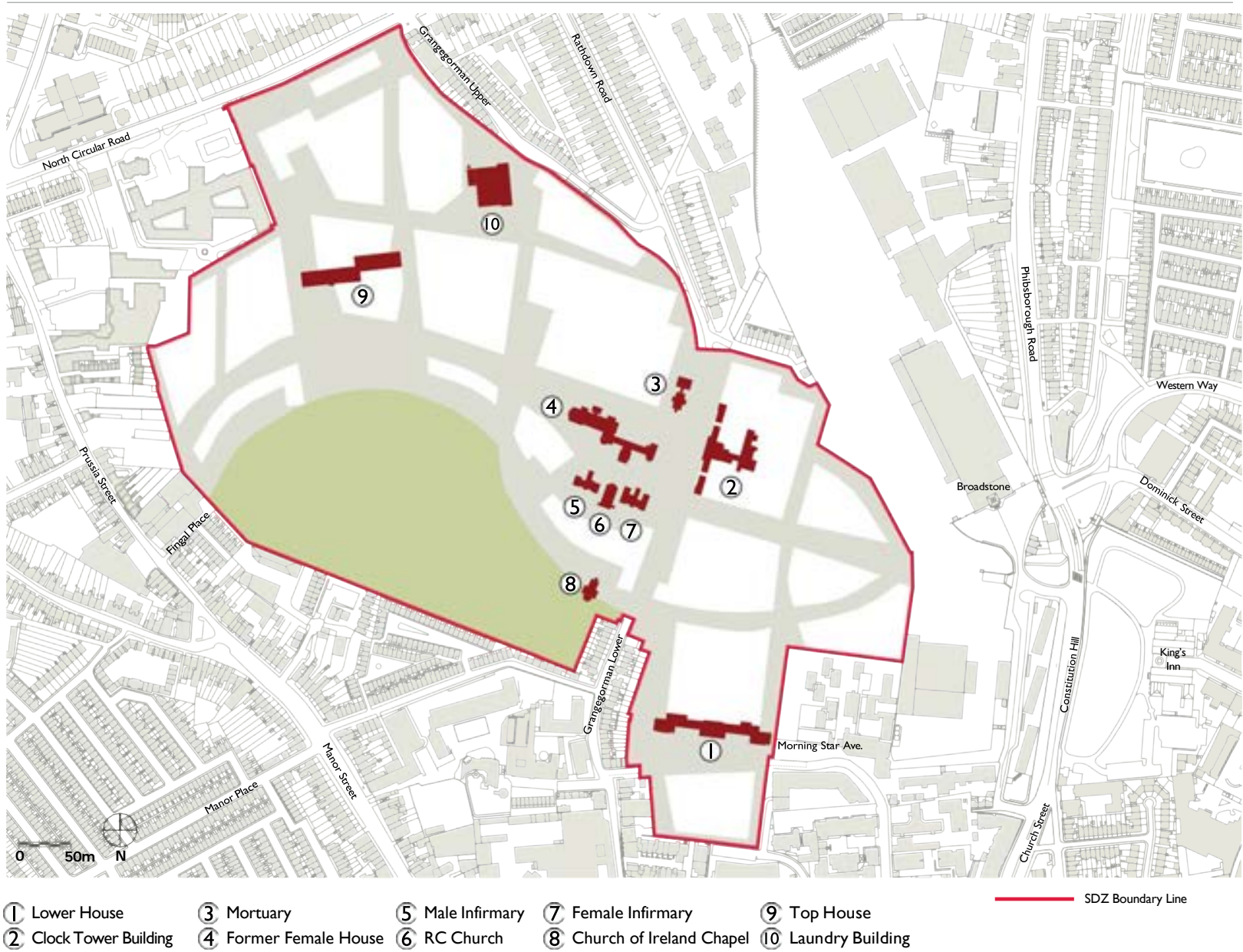


Figure 4.3: Protected Structures

⁹ Dublin City Development Plan 2011-2017 Vol 3

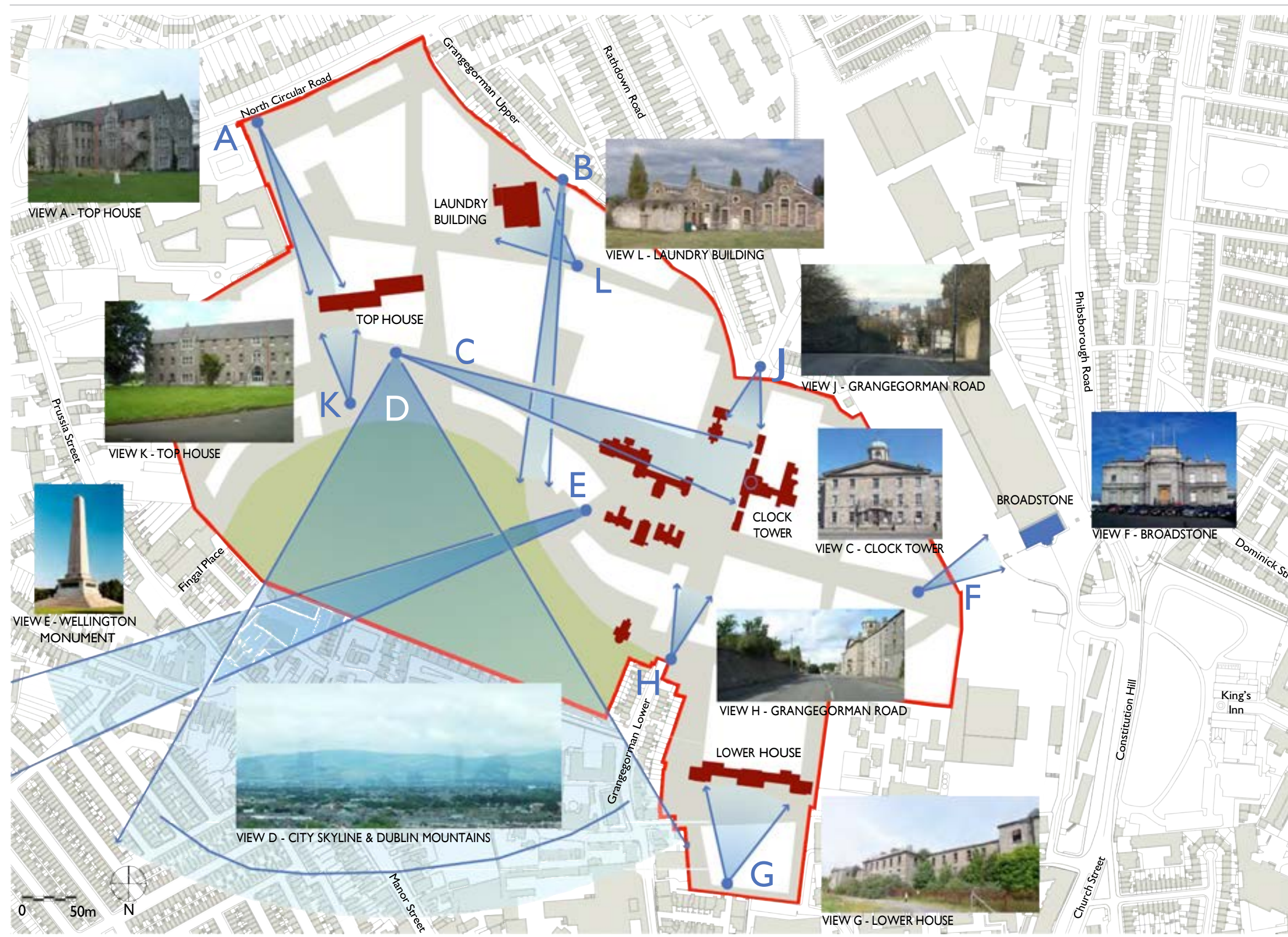


Figure 4.4: View Corridors

432 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



<p>View A</p> <p>from North Circular Road looking south to the Top House:</p>	<p>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</p>	
<p>View B</p> <p>from east of former Laundry looking south through proposed new scheme to the Dublin mountains beyond:</p>	<p>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.</p>	

Table 4.2 View Corridors Description and Characteristics




<p>View C</p> <p>from south of the Top House looking east to the Clock Tower Building:</p>	<p>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).</p>	
<p>View D</p> <p>from the Top House looking south across the Upper Terrace to city the skyline and mountains beyond:</p>	<p>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.</p>	
<p>View E</p> <p>from the Student Hub / Cultural Heart looking across the playing fields to the Wellington Monument beyond:</p>	<p>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.</p>	

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.

4.1 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

442 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.

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

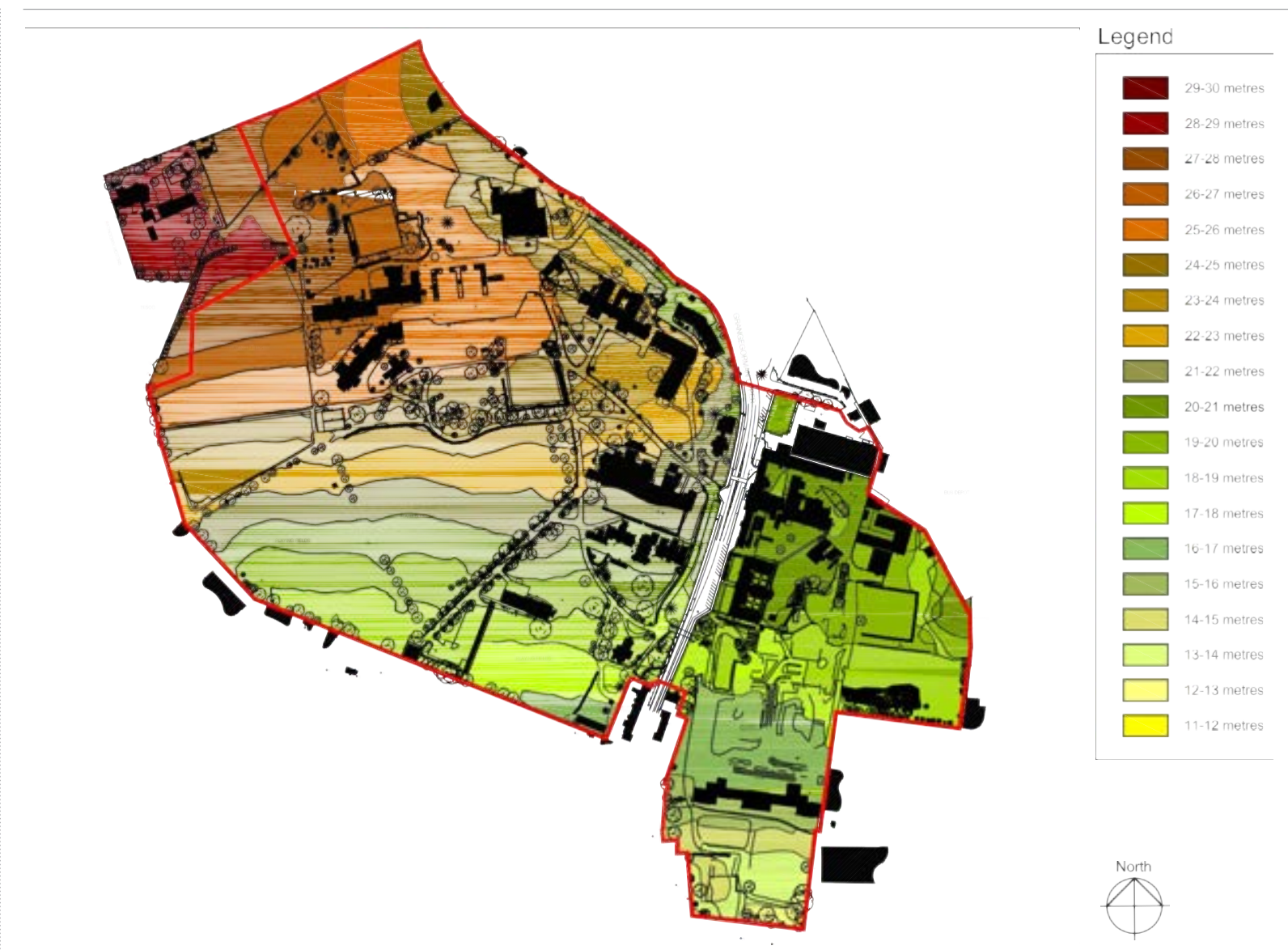


Figure 4.5 Existing Topography of Site

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 accommodate 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 car parks 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, 4½ - 6½ 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 metres¹⁰. The mid-rise structures will comply with 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 integrity 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.

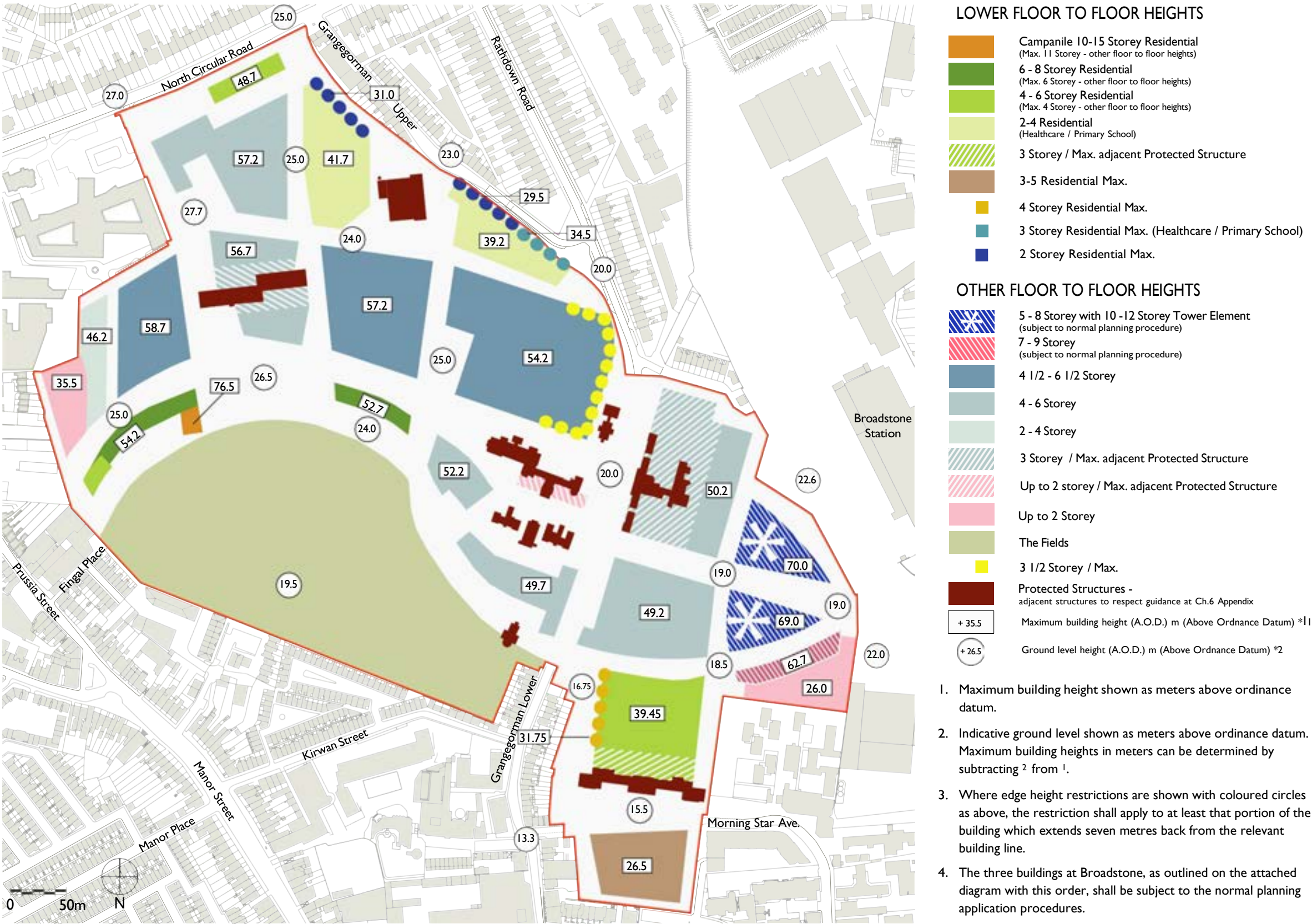


Figure 4.6 Minimum and Maximum permissible building heights

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 throughout 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

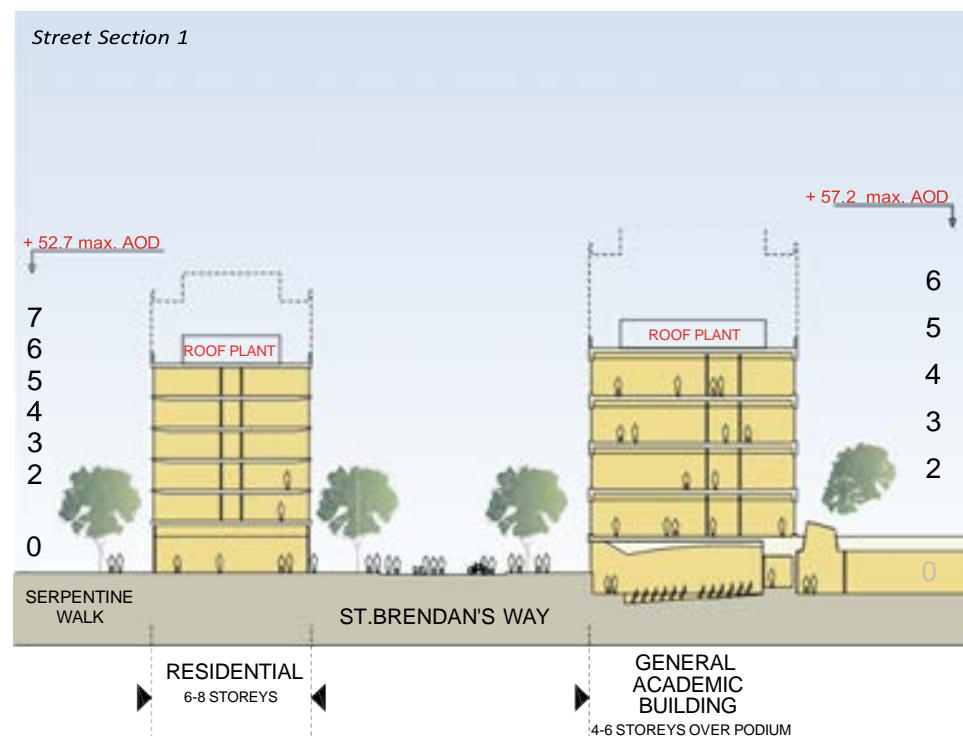


Figure 4.8 Section 1 illustrates a section along St Brendan's Way, through a 6-8 storey building, (if in residential use), or a 6 storey building maximum (if non-residential use), and a general academic building of 4-6 storeys over podium. The buildings will be a maximum of 52.7 and 57.2 metres above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

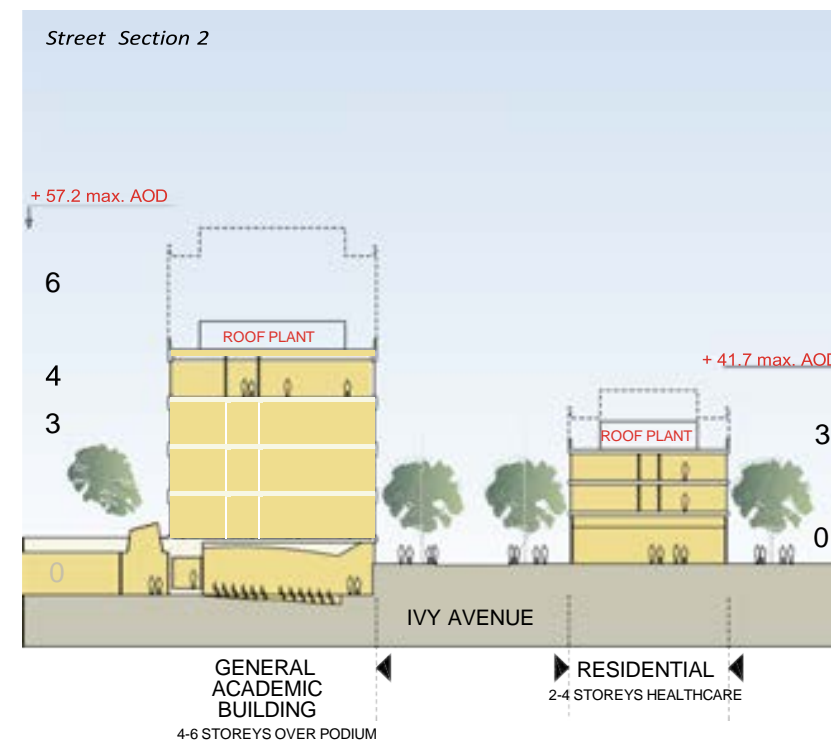


Figure 4.9 Section 2 illustrates a section along Ivy Avenue, again through the general academic building shown in Figure 4.8 and a 2-4 storey healthcare building on the north side of the Avenue. Figure 4.6 establishes that the buildings will be a maximum of 57.2 and 41.7 metres above ordnance datum respectively,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

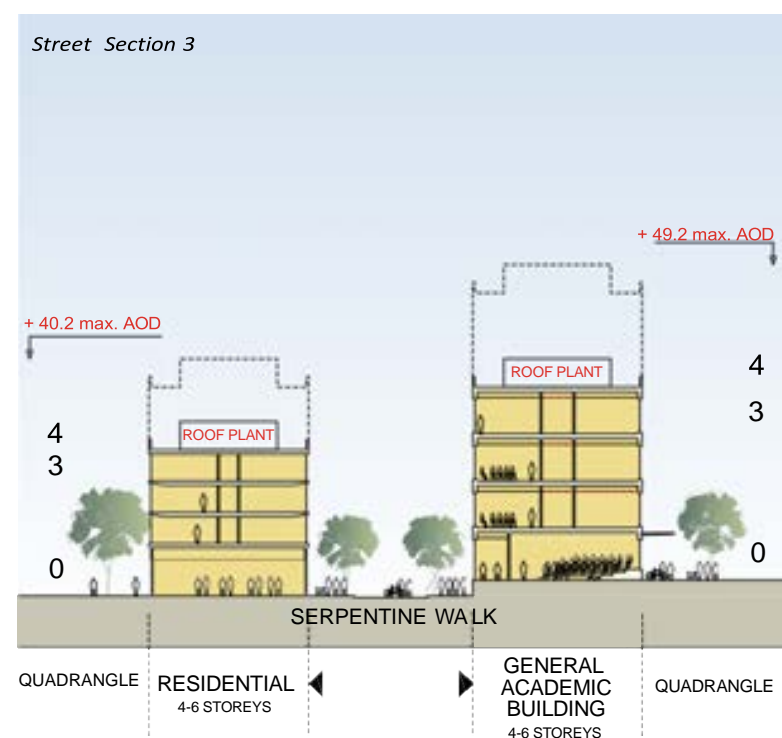


Figure 4.10 Section 3 illustrates a section along Serpentine Way through a 4-6 storey building (if in residential use) or a 4 storeys maximum building (if in non-residential use) and a general academic building of 4-6 storeys. Figure 4.10 establishes that the buildings will be a maximum of 39.5 and 49.2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

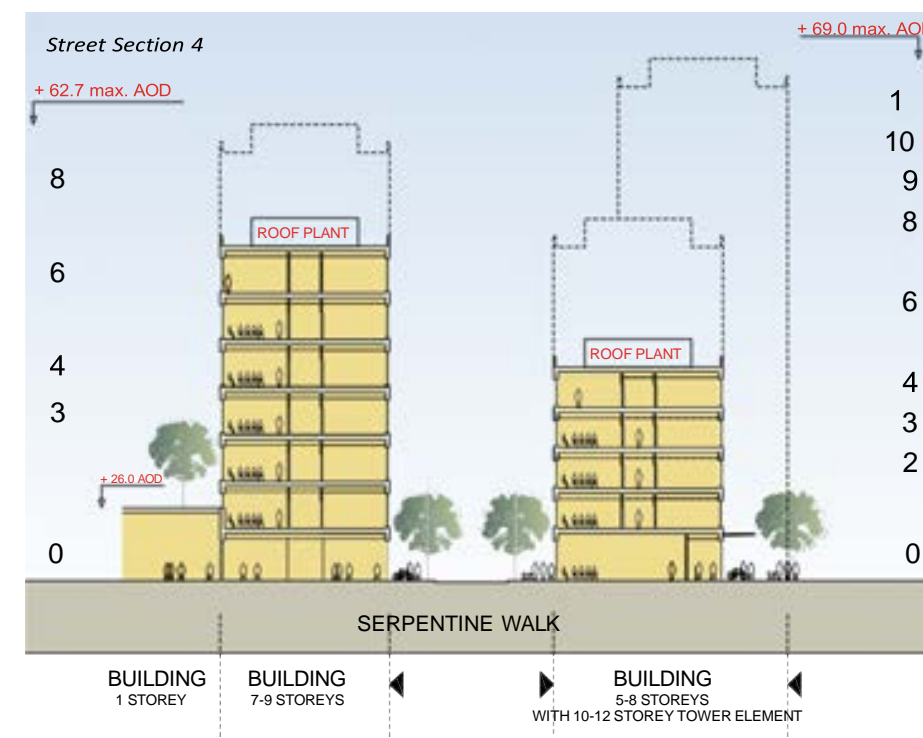


Figure 4.11 Section 4 illustrates a section along Serpentine Way at Broadstone Gate. The buildings are 7-9 storey on the south side of the route and 5-8 storey in height with 10-12 storey tower element on the north side. Figure 4.6 establishes that the buildings will be a maximum of 62.7 and 69.0 metres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

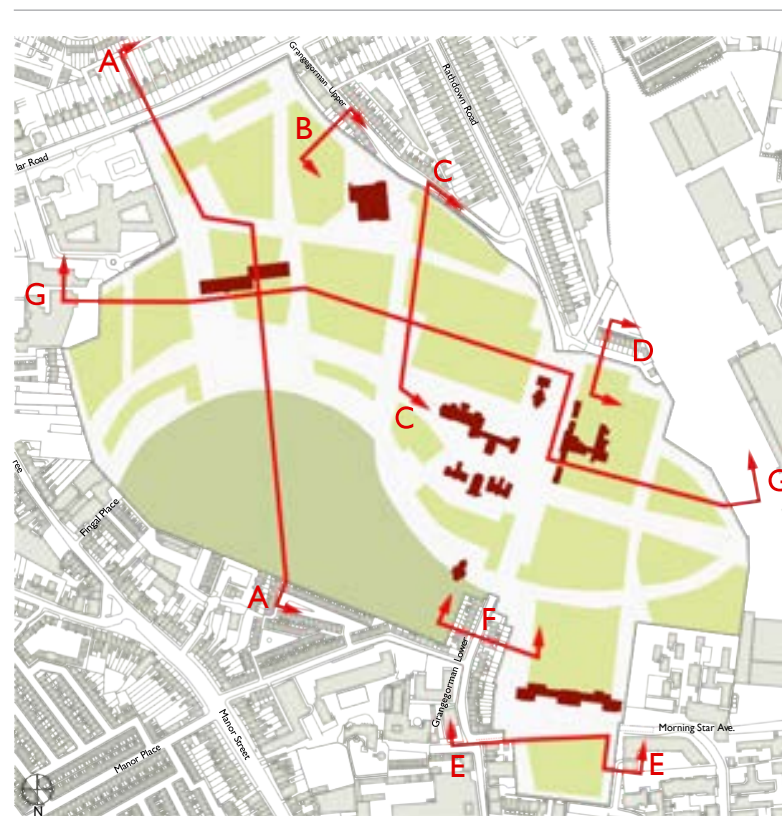


Figure 4.12 Location of site sections

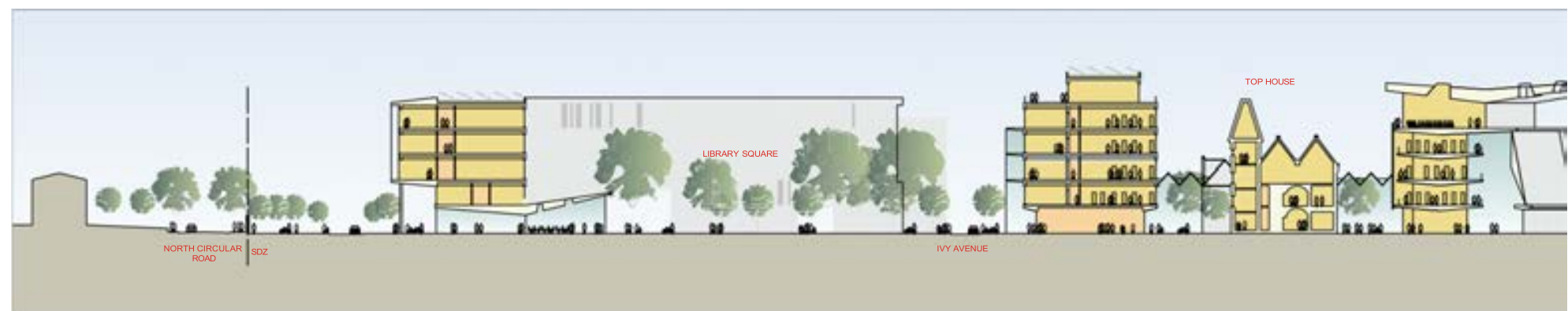


Figure 4.13 site section A



Figure 4.15 site section C



Figure 4.19 site section G

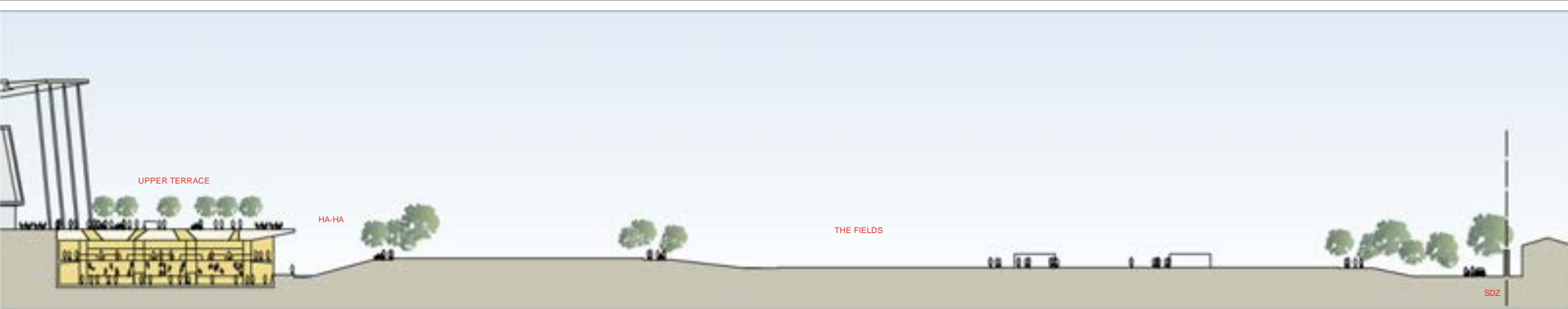


Figure 4.13 site section A (continued)

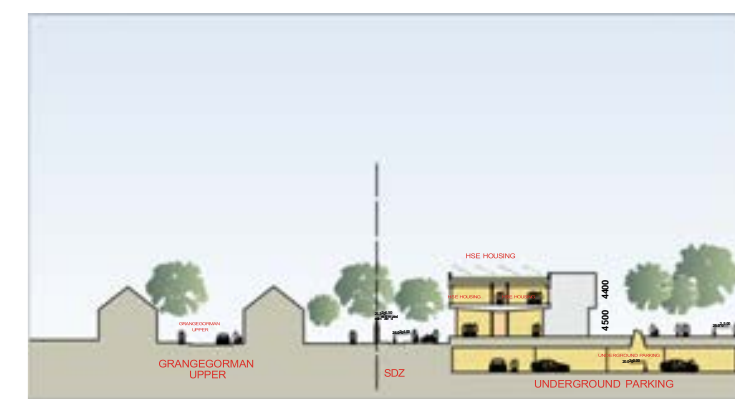


Figure 4.14 site section B



Figure 4.16 site section D

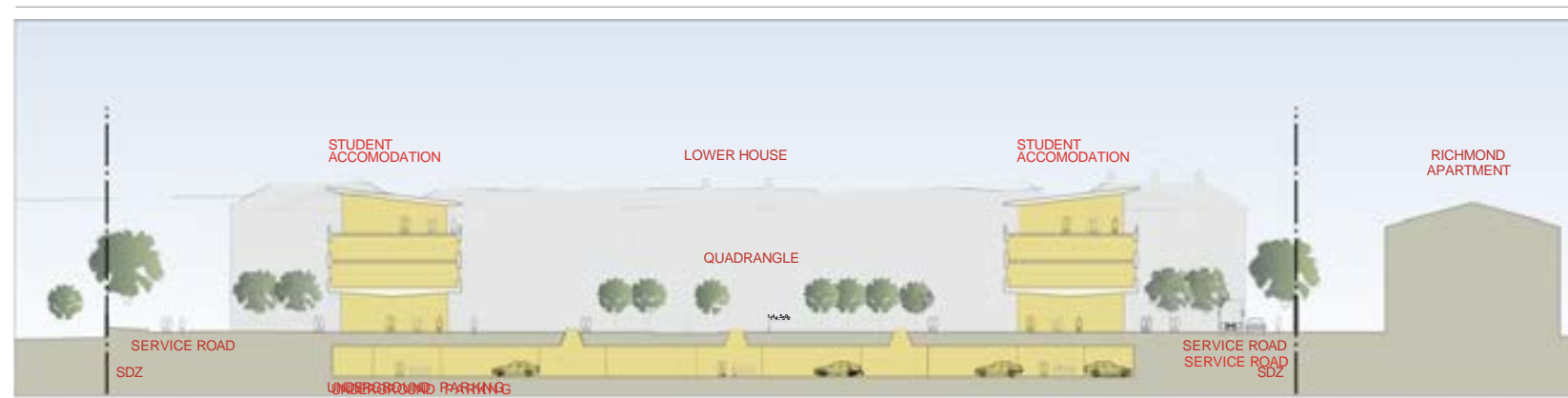


Figure 4.17 site section E

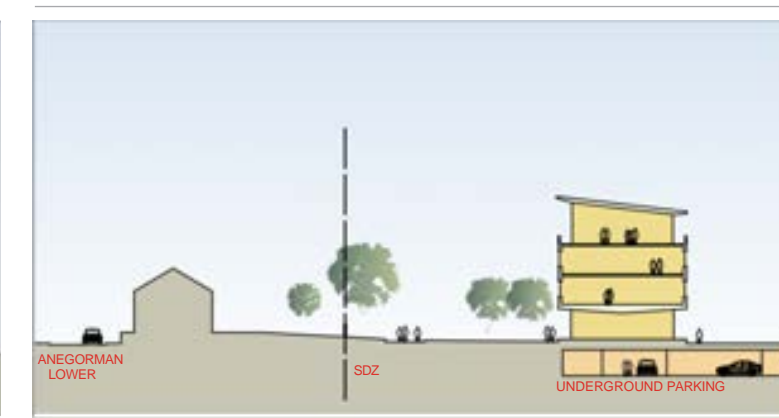


Figure 4.18 site section F



Figure 4.19 site section G (continued)

444 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.

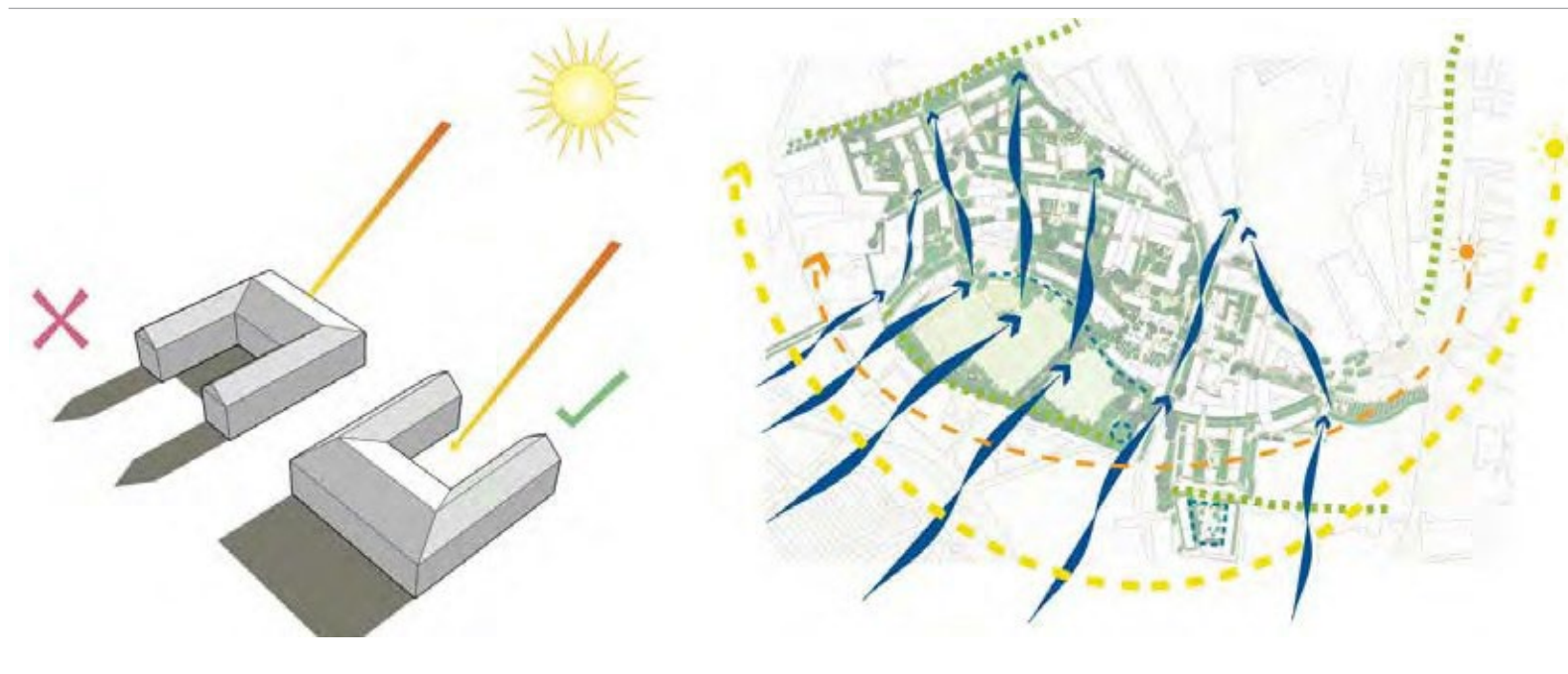
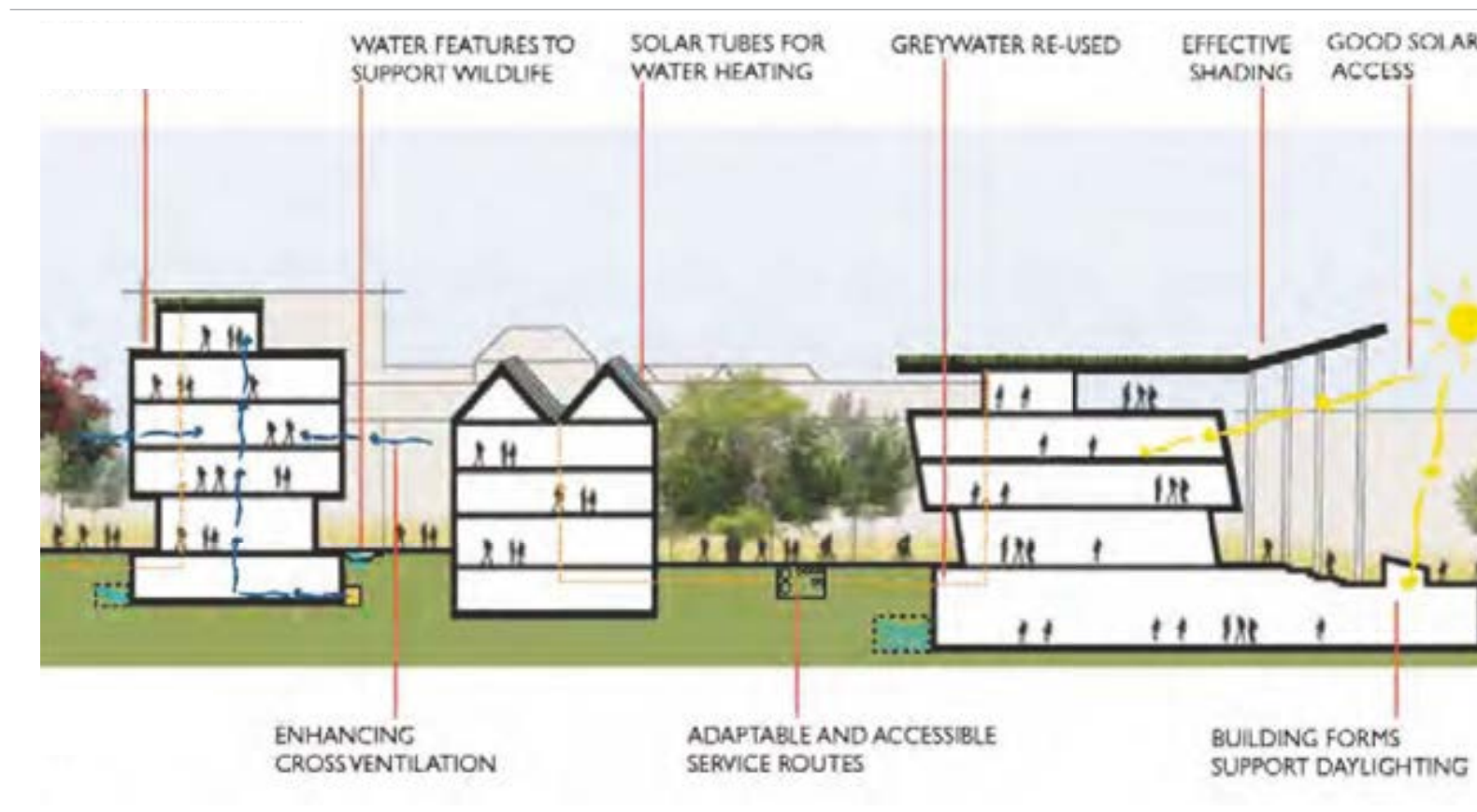
Individual building design will have regard to the provisions of the Dublin City Development Plan 2011-2017 regarding guidelines for appropriate daylighting.

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 than three times its height above the window.

Where visual impact sensitivities are identified a full visual impact assessment 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 NO_x emissions are minimised and flue/ exhausts effectively dissipated as follows:

- | The dry NO_x 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.

445

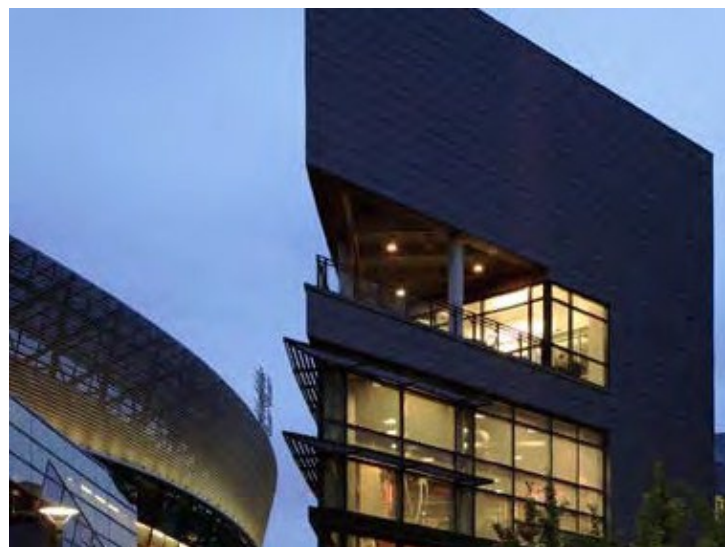
Colours and Materials

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

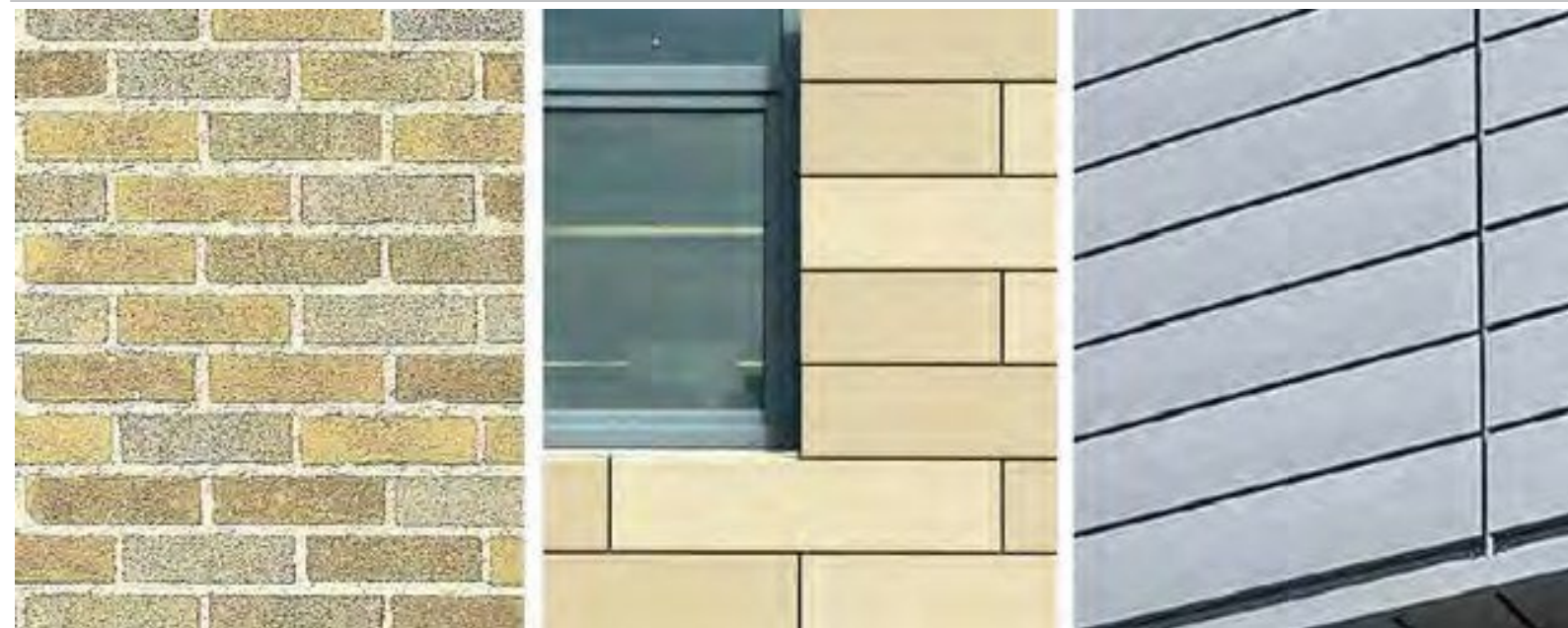
Where brick is proposed for external walls, rich, ochre-like colours that best reflect the light will be promoted. The selection and application of larger brick or stone panels may be considered. The use of intense red, grey and dark brick colours will be discouraged.

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:

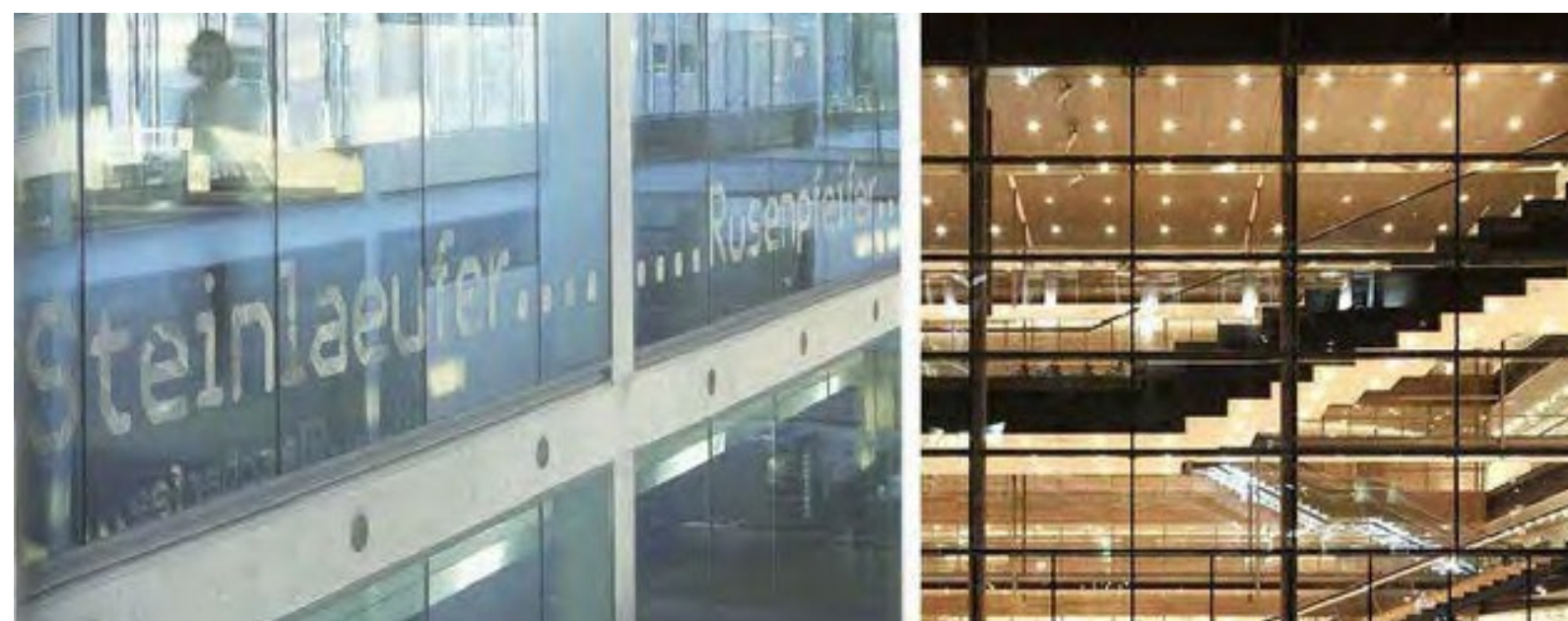
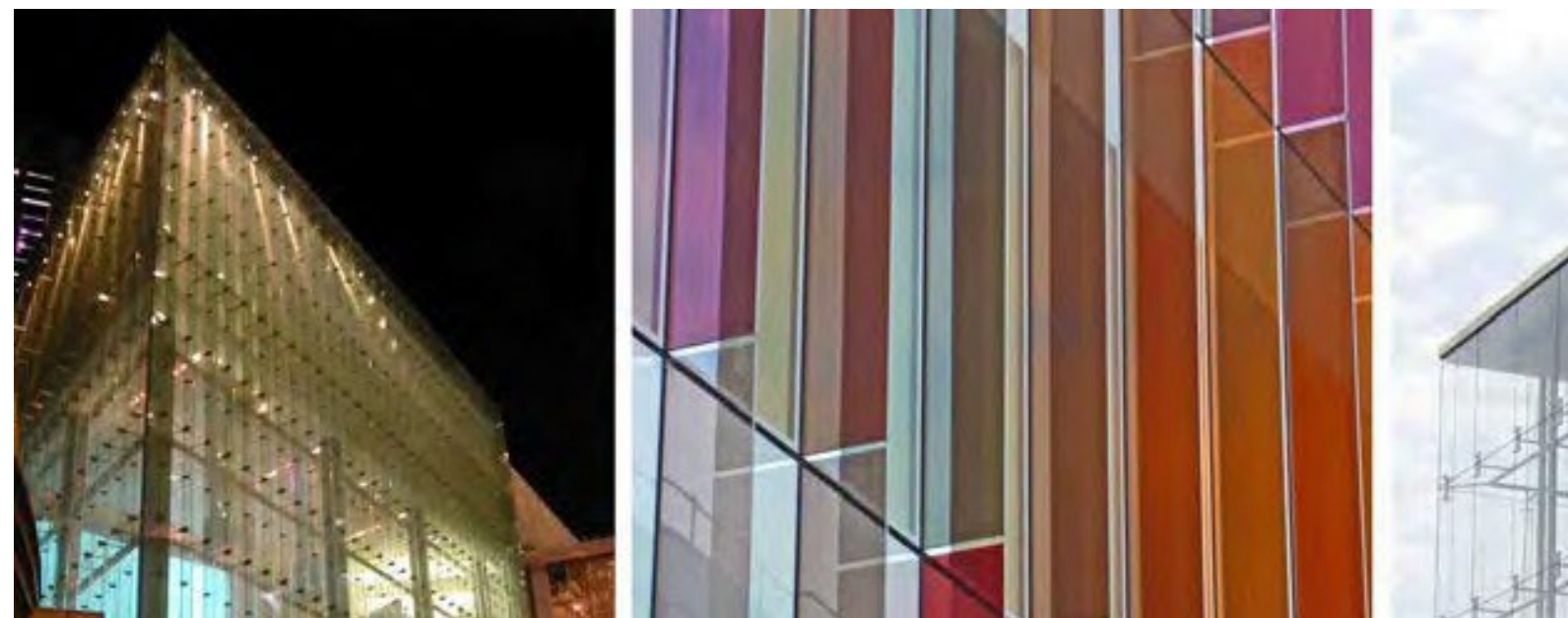
- | Care should be taken in the sizing and composition of the frames, mullions and transoms of the windows in order to provide a varied but harmonious effect.
- | Windows are important for the internal workings of buildings and bringing light into interior spaces and should therefore be generously dimensioned.
- | 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.



446 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.

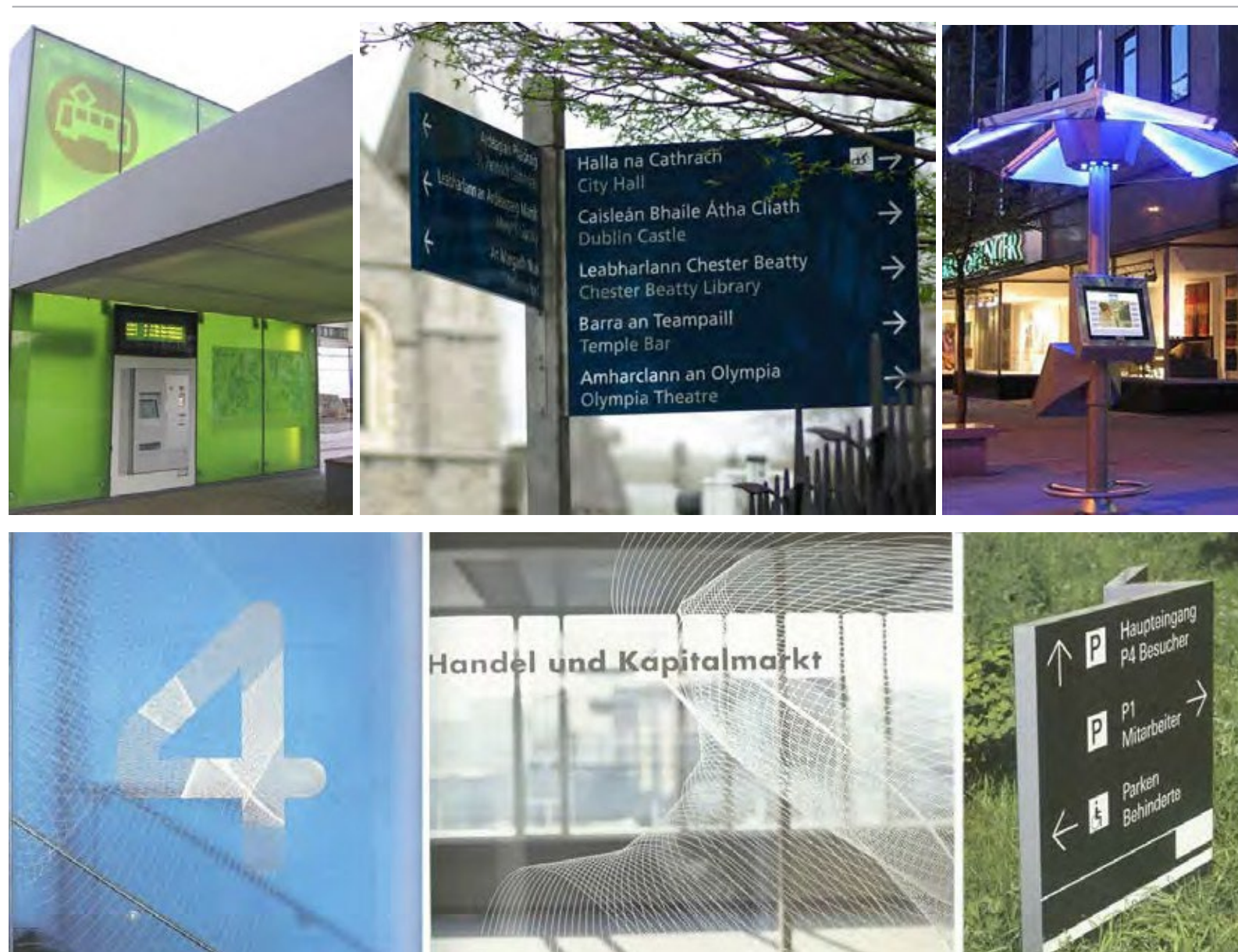
Signage, street furniture and public art will be designed with reference to the city council's pedestrian wayfinding system and as well as to current Development Plan policies on culture in the public domain¹¹. Dublin City Council's Arts Office will be consulted by the GDA prior to commissioning public 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;

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



- I 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.
- I At other locations, climate-protection elements can form arcades and canopies in a contemporary interpretation.
- I 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).



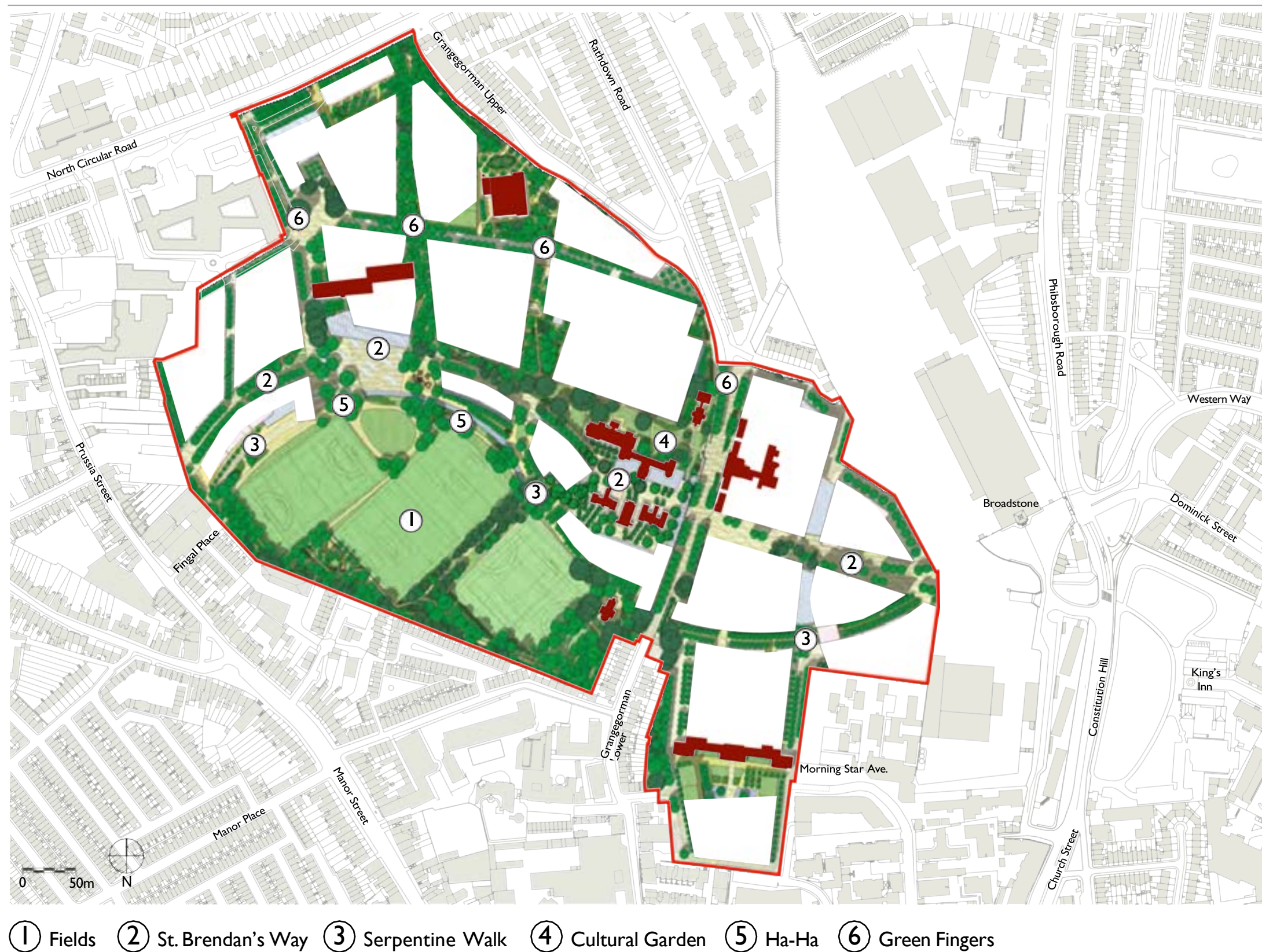


Figure 4.20 Overall Landscape Concept

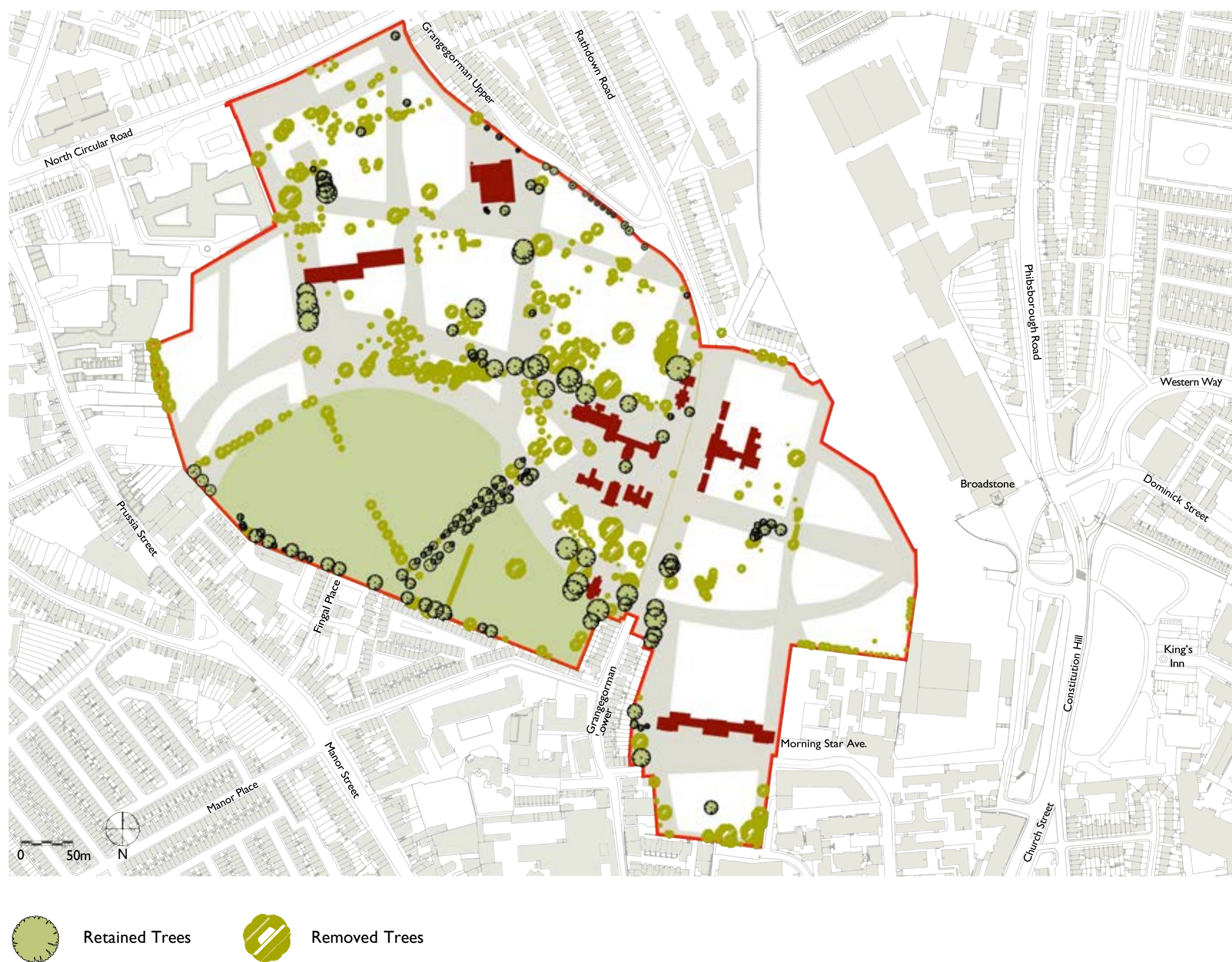


Figure 4.21 Trees to be retained and trees to be removed



Figure 4.22 Retained and Proposed New Trees

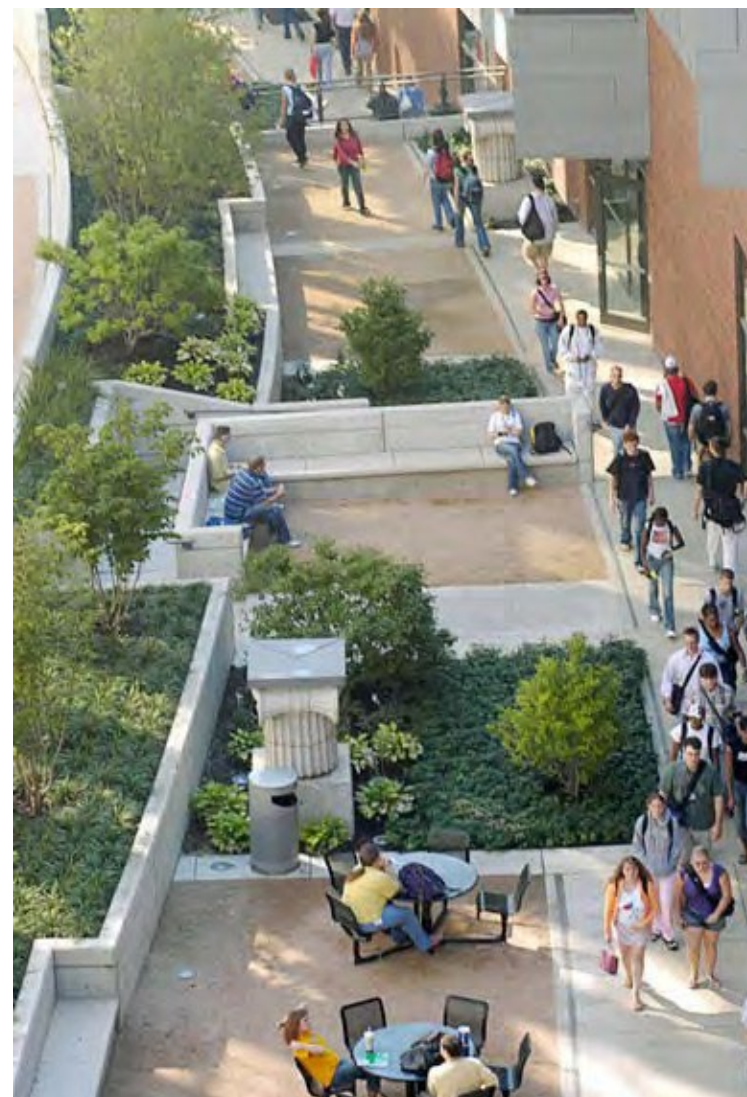
45.1 St Brendan's Way, the Serpentine Walk and Ivy Avenue

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 appropriate 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.

452 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

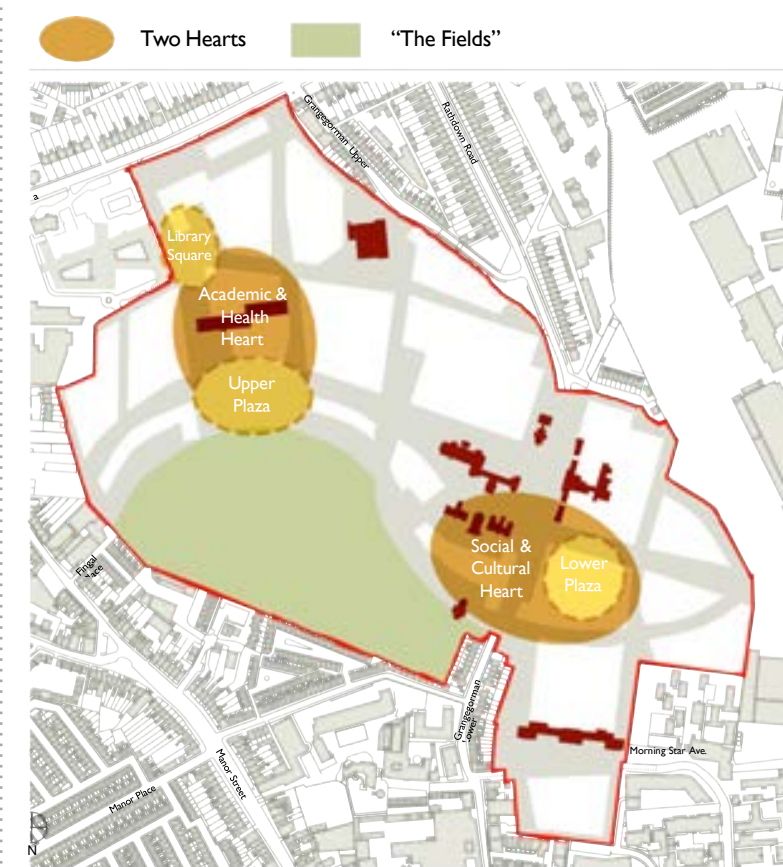


Figure 2.24 Two Hearts including Public Plazas

453 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

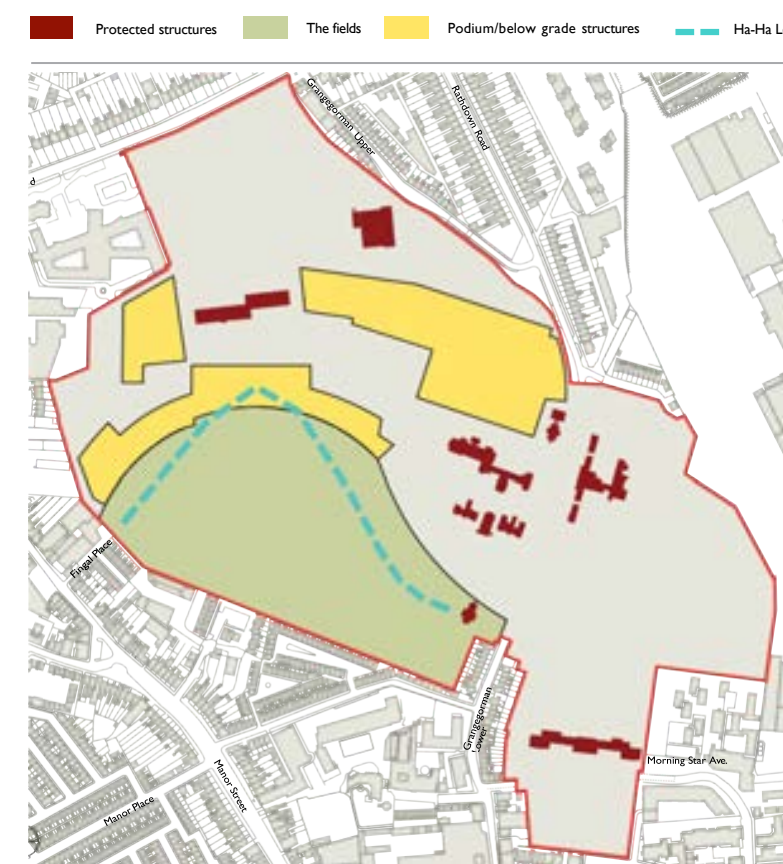


Figure 4.25 Location of the fields and Ha-Ha

454 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.

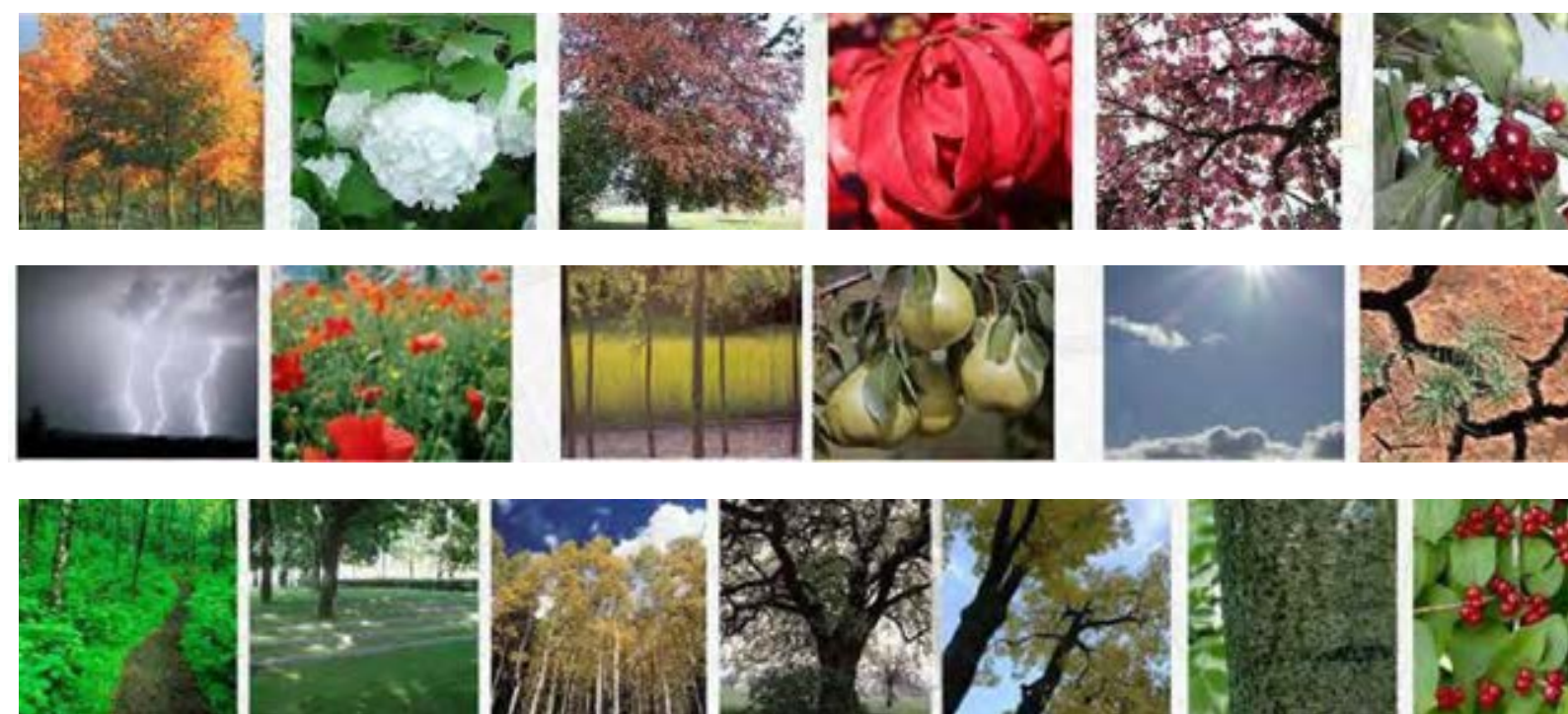
The overall Green Fingers landscape concept represents a series of landscaped public routes which run generally north-south and offer a rich sequence of pedestrian paths for the community to access St. Brendan's Way and the Serpentine Walk and the sports and amenity spaces beyond.

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

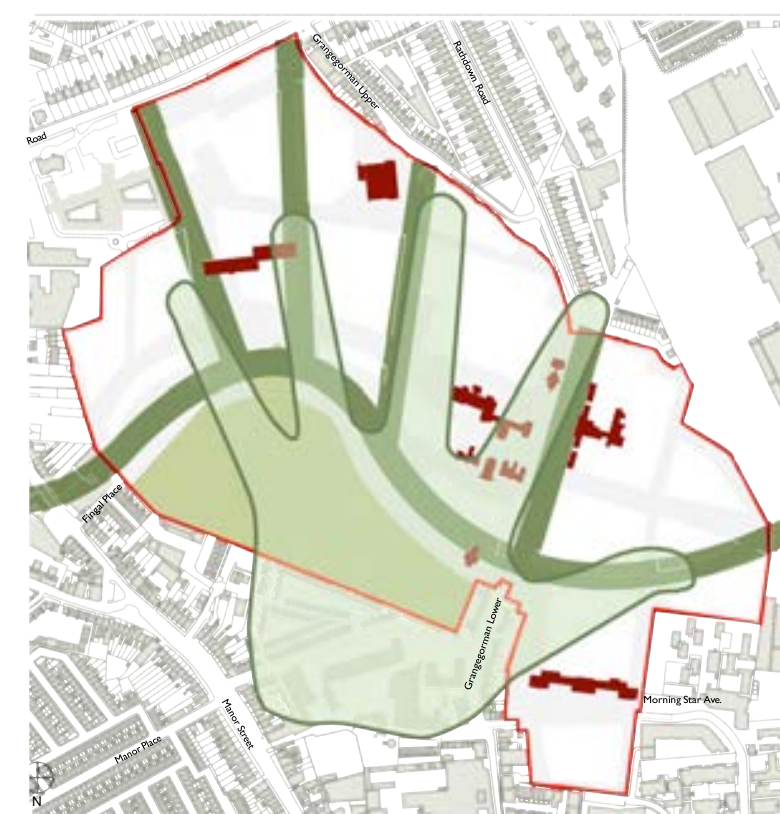


Figure 4.26 Location of Green Fingers

455 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 Cultural Garden



Part Plan of Cultural Garden

456 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



Indicative view of quad space

the design and access strategy and address the challenges of Universal Access.

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 campus. These are spaces that enhance and facilitate learning opportunities for students.

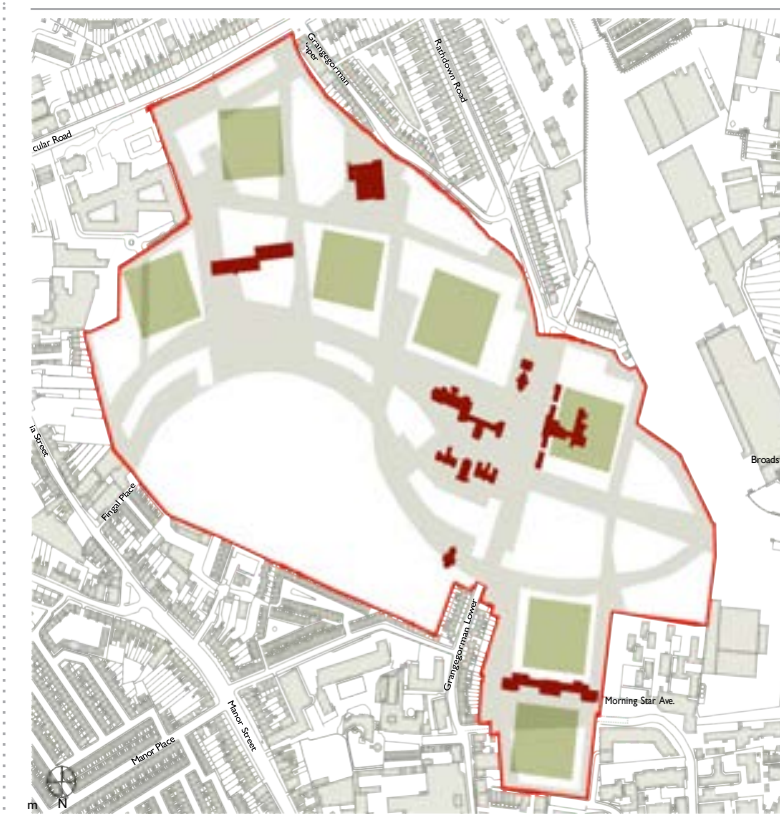


Figure 4.27 Location of the Quadrangles

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 of cultural activities 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.

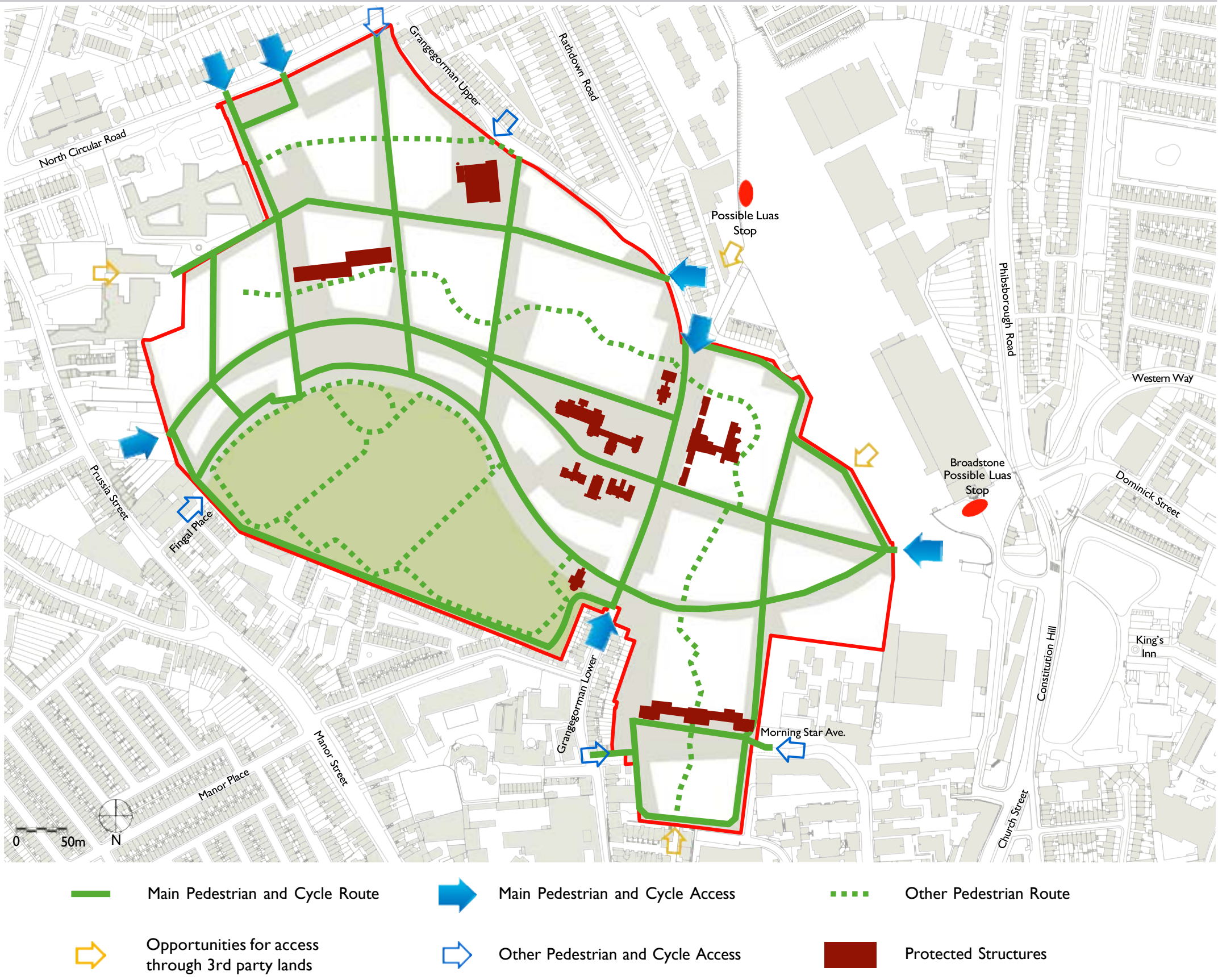


Figure 4.29 Pedestrian and Cyclist Access Routes

462 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.

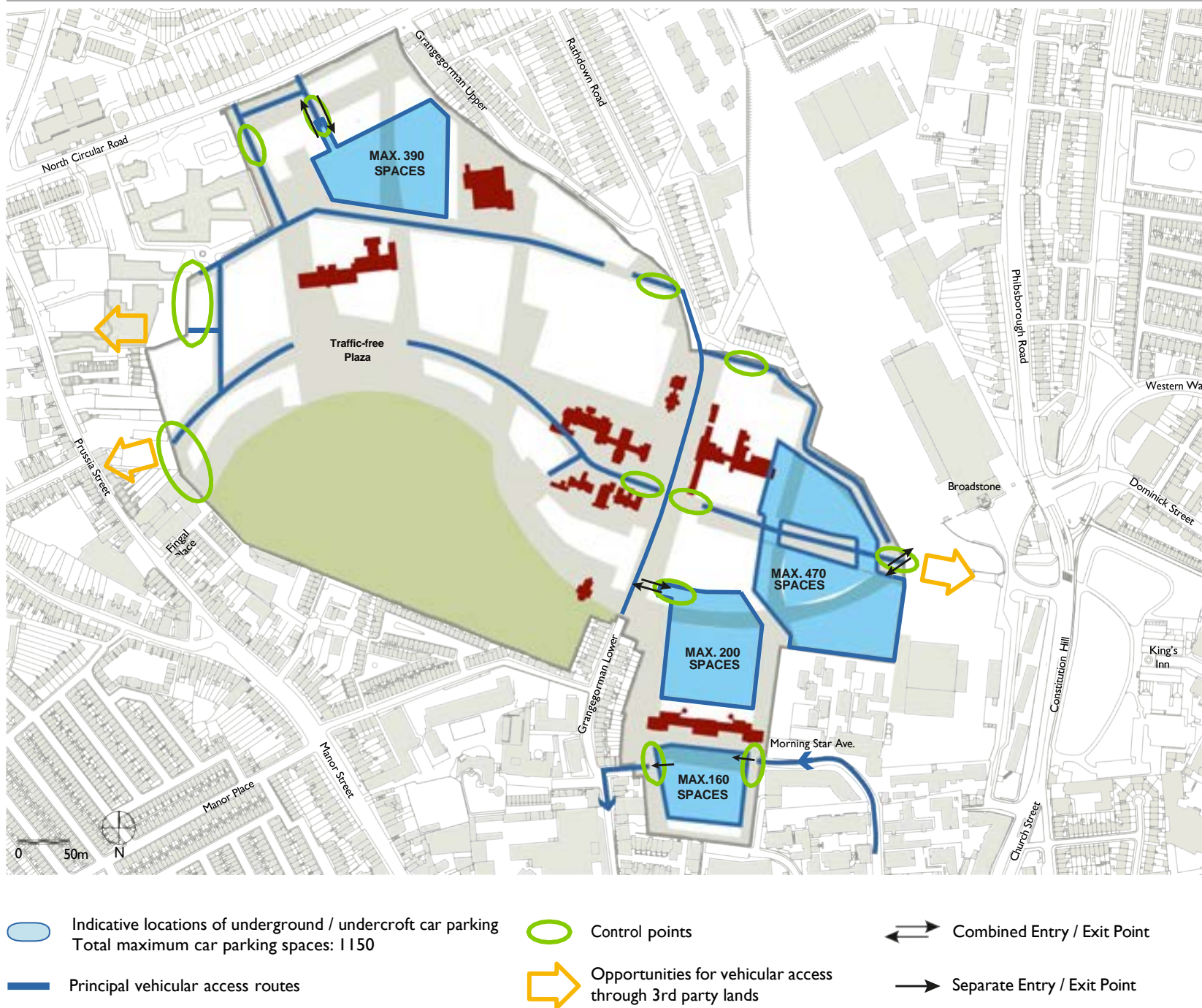


Figure 4.30 Vehicular Access and Indicative location of parking

463 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.

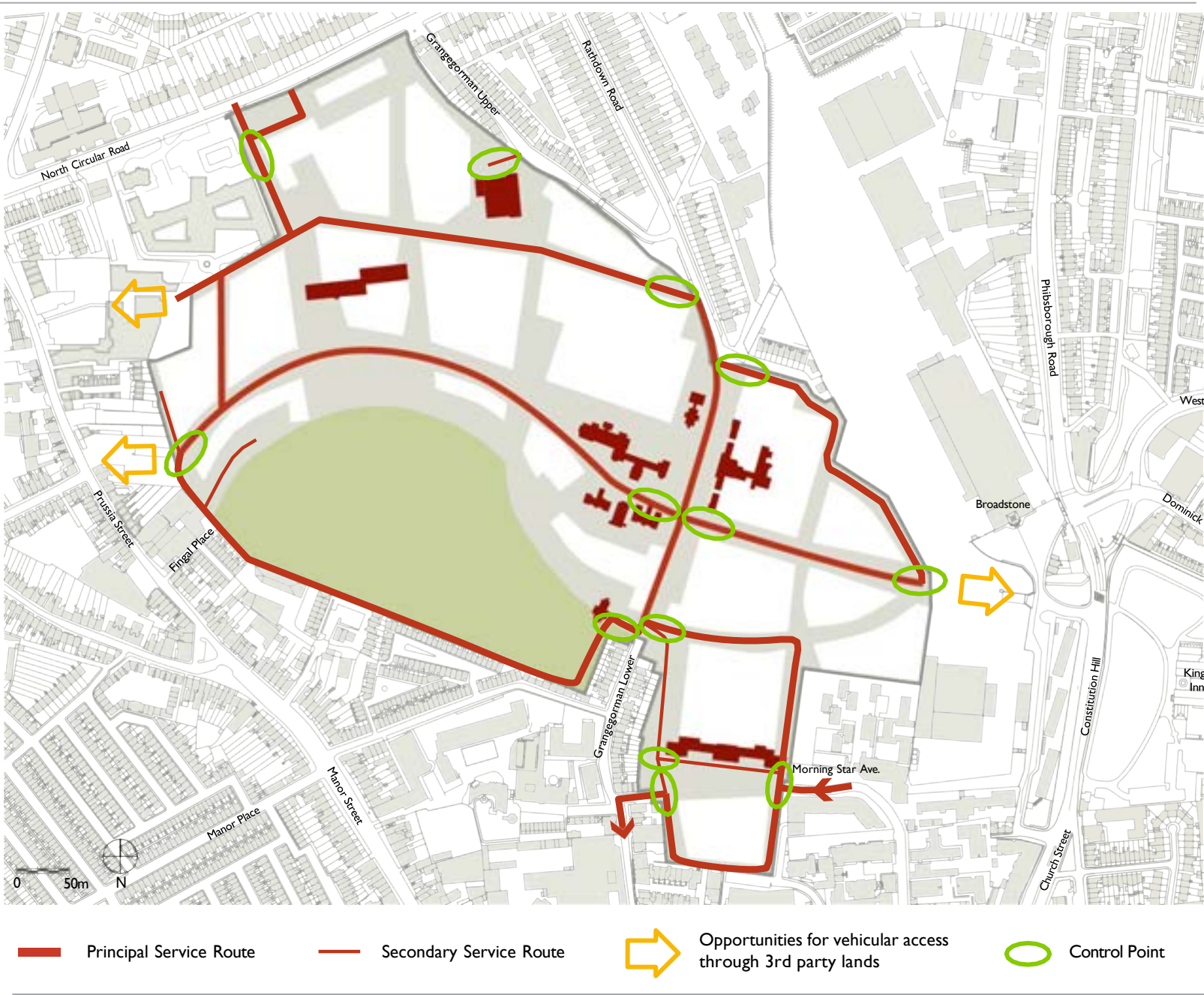


Figure 4.31 Service Access routes

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 Healthcare 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.

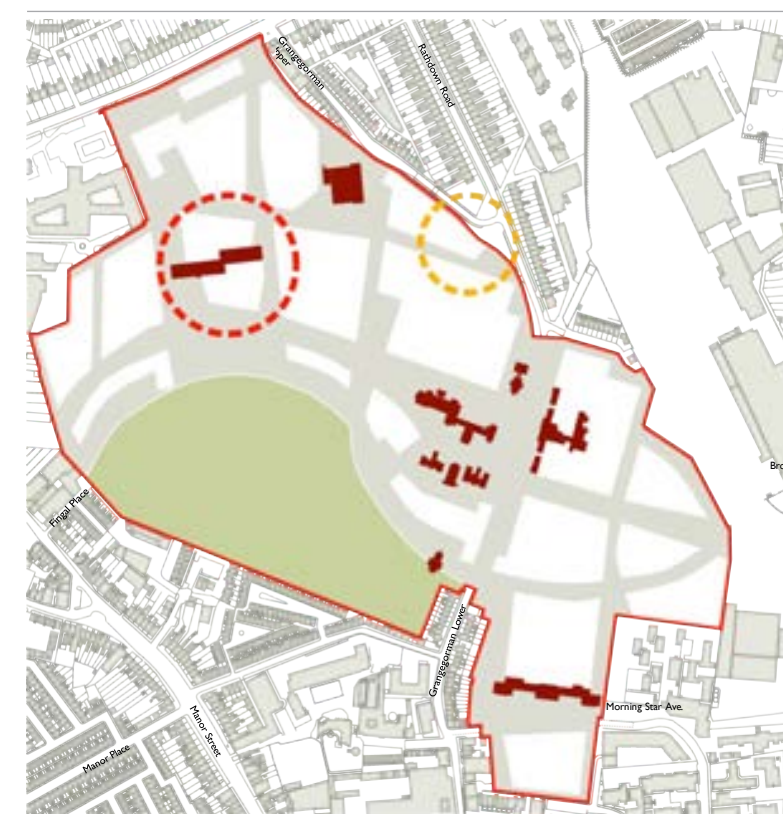


Figure 4.33 Location of Library and Primary School

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).

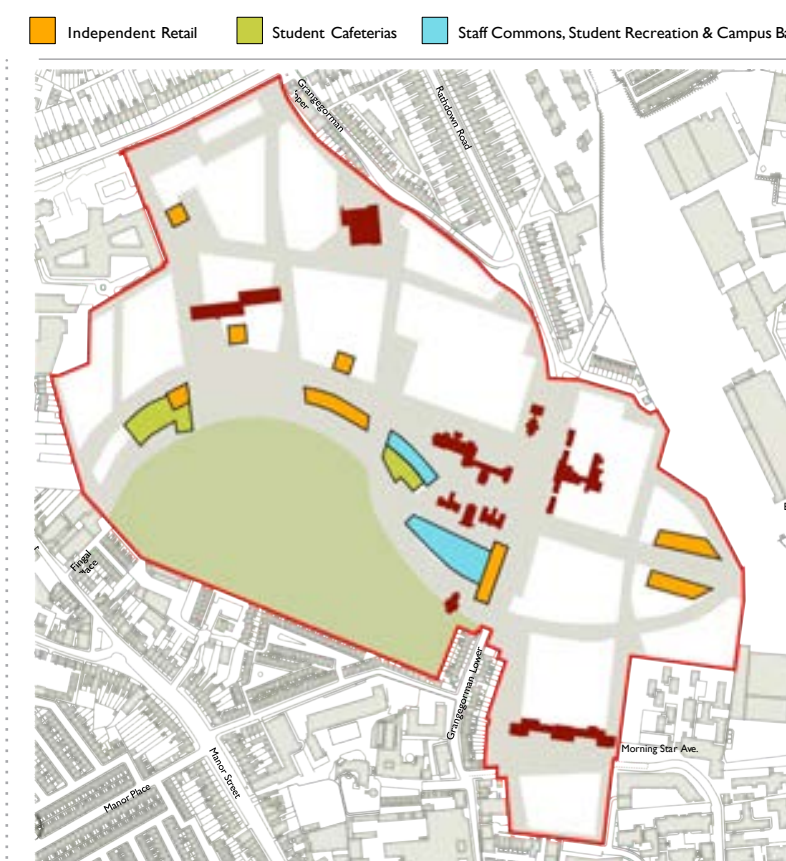


Figure 4.34 Indicative locations for retail and non-retail services.

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 I) 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