DIT Broadstone Draft Planning Scheme
Broadstone Masterplan

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# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>4</td>
</tr>
<tr>
<td>Context Map</td>
<td>5</td>
</tr>
<tr>
<td>Design and Statement of Vision</td>
<td>6</td>
</tr>
<tr>
<td>Part A - Framework Plan</td>
<td>8</td>
</tr>
<tr>
<td>Chapter 1 - Land Use and Density</td>
<td>9</td>
</tr>
<tr>
<td>Chapter 2 - History and Heritage</td>
<td>10</td>
</tr>
<tr>
<td>Chapter 3 - Height and Visual Impact</td>
<td>12</td>
</tr>
<tr>
<td>Chapter 4 - Employment, Training and Education</td>
<td>13</td>
</tr>
<tr>
<td>Chapter 5 - Movement and Access</td>
<td>14</td>
</tr>
<tr>
<td>Chapter 6 - Open Space and Public Realm</td>
<td>16</td>
</tr>
<tr>
<td>Chapter 7 - Community</td>
<td>18</td>
</tr>
<tr>
<td>Chapter 8 - Sustainability</td>
<td>19</td>
</tr>
<tr>
<td>Part B - Development Briefs</td>
<td>20</td>
</tr>
<tr>
<td>Chapter 1 - Gateway and Technical Centre</td>
<td>22</td>
</tr>
<tr>
<td>Chapter 2 - The Residences</td>
<td>24</td>
</tr>
<tr>
<td>Chapter 3 - Commercial Hub and Family Residential Zone</td>
<td>26</td>
</tr>
<tr>
<td>Chapter 4 - Convention and Family Hub</td>
<td>28</td>
</tr>
<tr>
<td>Masterplan Map</td>
<td>30</td>
</tr>
</tbody>
</table>
Introduction

Site Location and Context

The DIT Broadstone draft master plan site is located at the former Broadstone Rail Terminal in the North Inner City. The site covers an area 106,000m² (10.6 hectares), is approximately 700 metres in length and 150 metres in width. The land is currently used by Dublin Bus and Bus Éireann as a bus lay over and maintenance depot.

The site is located adjacent to Grange Gorman SDZ (where the new DIT campus will be situated) and is bound by the N2 (Phibsborough Road) to the East, Phibsborough KDC (key district centre) to the North, and the Smithfield area to the South.

Analysis of the site's topography reveals that its land is not uniform and that it lies at a height compared to surrounding areas.

Broadstone is currently zoned as Z10 - “To consolidate and facilitate the development of inner suburban sites for mixed use development of which office, retail and residential would be the predominant uses”. The site’s current Z10 zoning, its close proximity to Phibsborough (designated as a KDC) and Grange Gorman (designated as a strategic development regeneration area) makes it a prime location for future residences, office space and retail units.

Profile of Surrounding Area

Prior to the drafting of the masterplan, an in depth analysis of the surrounding areas was carried out:

Land Use and Zoning - The site (zoned Z10) is located near Phibsborough’s KDC and the future DIT campus at Grange Gorman. There are various other opportunity lands zoned Z10 located near the proposed development (Mountjoy, Smurfit, Cross Guns, Dalymount, Mount Bernard Park)

Movement and Access - The area surrounding the site is already well served by public transport and within walking distance of the city centre. The construction of the LUAS cross-city line will deliver a high quality link from the proposed development to the city centre. Also, quality bus connections are already available adjacent to the site. Main routes to the site include the N2 (Phibsborough Road) and the North Circular Road.

Open Space - Broadstone is in close proximity to high quality open spaces such as Blessington Basin, Blessington Street Linear Park and the King’s Inns Park. It is located within walking distance of the Royal Canal Walk.

History and Heritage - The area in question is rich in history and heritage. The site itself holds four protected structures that reflect its industrial and transport heritage. The facade of the main Broadstone building is the most important protected structure within the confines of the site.

Retail and Employment - The environs of the site are characterised by two main retail clusters, these are located at the centre of Phibsborough and in the Smithfield area. Phibsborough’s designation as a KDC will attract more businesses to the area and in turn boost employment.
Context Map

Walking Distances
Phibsborough KDC - 800 metres
O’Connell Spire - 1.3 km
O’Connell Bridge - 1.6 km
Phoenix Park - 1.6 km
Design and Statement of Vision

General Vision

The general vision for Broadstone is to develop a successful and vibrant new city quarter, with emphasis on providing quality contemporary design of streets and spaces without compromising the history and heritage of the area. The overall aims encompass developing an area that is:

- A successful ‘transit’ zone into the future DIT campus at Grangegorman
- Family friendly
- Pedestrian and cyclist friendly
- Open to surrounding areas, particularly concerning use of facilities
- Characterised by a variety of high quality residential units, suitable for families, students and single people
- Sympathetic to its transport and industrial history

Strong Academic Links

The close proximity of the site to the future DIT campus at Grangegorman presents a valuable opportunity to create strong academic links. The technical hub will be located at the heart of the site (in the ex. rail terminal) and will provide top class facilities in the area of mechanical engineering.

In addition to the technical hub, the plan provides for high quality student accommodation and an “academic hotel”, which will house visiting academics.

Transport/Industrial Heritage

Broadstone is rich in buildings of transport/industrial significance. Apart from high quality contemporary architecture, the plan provides for the conservation of all protected structures.

The main “draw” to the new Broadstone quarter will be the refurbished Broadstone rail station, which will house a transport museum (as well as the technical centre). Other refurbished protected structures will house a range of retail and commercial uses.

Community Facilities

Broadstone will be characterised by a general openness to surrounding areas, particularly concerning its use of facilities. The community facility will be located at the east of the site and will house a community centre as well as other facilities.

Retail and Commercial

Broadstone will provide a small but adequate amount of retail and commercial facilities. The main retail area will be located at the east of the site, and will provide for uses such as restaurants, shops, small workshops and office spaces.

The placing of retail and commercial units in protected structures will enable their full retention and maintenance.

Variety of Housing Options

The predominant use of Broadstone will be residential in nature. The central aim of the residential strategy is to provide a range of housing options, from family living to one bedroom apartments.

An important objective of the plan is to make the area family friendly. This will be achieved by creating larger residential units and complemented by a network of open spaces and walking paths.

Movement, Access and Sustainability

The general vision for the Broadstone masterplan is to create an eco-quarter that has sustainable movement at core. The construction of the new LUAS cross-city line will provide a high quality connection to the city centre and Northern Suburbs.

Car access on the site will be restricted, with cyclists and pedestrians having priority. This will be achieved by the insertion of a comprehensive cycle and pedestrian network throughout the site.

From a sustainability point of view, the aim is to create an eco-quarter with use of renewable energy, materials, sustainable drainage systems and waste services throughout the site.

Open Space

Open space is an important factor in creating an “eco-quarter”. A linear park will run parallel to the LUAS line, containing various semi-enclosed playing and sitting areas. Also, there will be various pocket parks dispersed throughout the urban district, creating a sense of enclosure.

The main open space will be located in front of the Broadstone rail terminal. The constant flow of people from the Luas and Grangegorman will create a vibrant and busy gateway.

Images:

- “Île de Nantes”, - an example of industrial building re-use
- An example of medium-density family apartments
- An example of quality family sized apartments in a sound environmental context
Part A - Framework Plan
Chapter 1 - Land Use and Density

At present the Broadstone site is used as a bus depot for Dublin Bus and Bus Éireann but Dublin City Council have zoned the land Z10. To consolidate and facilitate the development of inner city and inner suburban sites for mixed-use development of which office, retail and residential would be the predominant uses.

Heuston South Quarter, Dublin a recently developed Z10 site achieving a quite high density.

This is an aerial shot of the Z10 site on Cork Street, Dublin. It has also been recently developed and its effect on lower density development surrounding it is noticeable.

The purpose of these photos is to illustrate what is permissible in Z10 zoning.

Creating a quantum for Broadstone D.I.T

Using Cabe 05 standards for an Urban Village 75 - 125 units per hectare. An average 75 u/ha (or a plot ratio of around 1.5) was chosen, as it is sympathetic to the built heritage on the site and family living. It was also noted under Dublin City Development Guidelines that ten percent of the land use must be used for open space (see Table 1).

Table 1: Quantum of Development

<table>
<thead>
<tr>
<th>Proposed Quantum of Development</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Floor Area</td>
<td>62500 - 64500m²</td>
</tr>
<tr>
<td>Residential Units</td>
<td>750 - 800 Units</td>
</tr>
<tr>
<td>Non - Residential Floor Area</td>
<td>48000 - 52000m²</td>
</tr>
<tr>
<td>Retained Buildings Groundfloor</td>
<td>24720 or 23% of the site</td>
</tr>
<tr>
<td>Open Space</td>
<td>10000 - 11000m²</td>
</tr>
</tbody>
</table>

Table 2: Types of Units and Density of Zones

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of Units</th>
<th>Dwelling size</th>
<th>Total area</th>
<th>Density in units per hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>240</td>
<td>100m²</td>
<td>24,000m²</td>
<td>190-220u/ha (South)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60-90u/ha (North)</td>
</tr>
<tr>
<td>Students</td>
<td>300</td>
<td>60m²</td>
<td>18,000m²</td>
<td>220-250 u/ha</td>
</tr>
<tr>
<td>Professionals</td>
<td>260</td>
<td>83m²</td>
<td>21,600m²</td>
<td>in same zone as students</td>
</tr>
</tbody>
</table>

Clancy barracks, Dublin is a good example of mid to high density development that makes good use of existing built heritage on site.

Eastern Harbour Amsterdam. These are high quality, innovative homes attractive to families but yet achieving a high density to suit their urban location.

Student housing in Vauban, Freiburg. As our site is beside Grangorma it will be a prime area for student housing.
Chapter 2 - Conservation and Heritage Strategy

Brief History

Broadstone derives from the stone of the Bradogue and the crossing of a stream. The area is very rich in history. Evidence from historic maps suggests that the site was just farmland until the 18th century. In 1789 the Royal Canal was built on Constitution Hill. In 1807 a boat service operated to Mullingar. By 1831 it was a fashionable place to live for the wealthy. In 1845-1920 the Midland and Great Western Railway Company (M&GWR) built the new railway to Mullingar along the canal. The area flourished since the mid 20th Century. Many traditional industries declined, factories closed and the area has suffered much from poor maintenance, neglect and economic decline. Much of it is now a degraded urban area although it has great potential.

Retained Buildings Or Partially Restored

The team proposes to retain or partially restore 11 other buildings on the site. It is felt that buildings to the South of the site should pay tribute to 1950's architecture. It is thought but not confirmed, that the three blocks of flats in the “family residential hub” are designed by famous architect Michael Scott.

Conservation Strategy

The strategy is to have a mix of uses on the site. These will include educational, residential, retail, social and community uses and facilities such as creches, restaurants and a hotel. It is proposed to retain all protected buildings on the site as well as an additional 11 buildings which are not protected. The anchor of the site will be the Broadstone building which is in the “Technical Hub” which may comprise of a Transport Museum and a technical school for DIT. The transport theme will be incorporated into as many aspects of the site as possible. It is proposed to use some of the old machinery, trains, buses etc. scattered throughout the sites as artistic or amenity features. This will include having small retail units in refurbished old trains at the “Broadstone luas station”.

Protected Buildings On The Site

There are four buildings on the site listed for protection in the Dublin City Development Plan. The most significant protected building is the Broadstone Building (1850) and three other buildings one of which is currently used by Dublin Bus for maintaining buses and the others are Bus Eireann offices.

Old tram built in 1910

Interior of the Broadstone building

Reused Bus which is used as a Pizza Restaurant

Protected Structures
Retained Buildings
Demolish
New public buildings, streets and meeting points will be named after individuals influential in the evolution of transport. Examples Dargan, Delorean, Dunlop, Blatner, Macmillan.

Dargan built Ireland's first Railway line and Dunlop the inventor of the pneumatic tyre.

It is proposed to convert the area to the South of the Site into a “Convention Hub” which will include an Academic Hotel for visiting academics and a convention centre. The Dublin Bus maintenance building is protected. Modern elements will be added to this building but a lot of care will be taken in order to carefully conserve the building and vistas which have stunning views of the city.

The south of the site is at a higher level to the Constitution Hill flats. So as not to negatively impact on the surrounding area, the height of new development there shall be limited to 4/5 stories. To pay tribute to 1950s architecture and Michael Scott. A series of mosaics will be applied onto buildings to the south the site. The theme of transport will be incorporated into these mosaics. This artistic theme will integrate the old with the new. All development will be of the highest quality and design.

### Current Building Uses

<table>
<thead>
<tr>
<th>Building Number</th>
<th>Footprint m²</th>
<th>Current Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4,500</td>
<td>Vacant</td>
</tr>
<tr>
<td>2</td>
<td>2,995</td>
<td>Storage and maintenance</td>
</tr>
<tr>
<td>3</td>
<td>680</td>
<td>Office</td>
</tr>
<tr>
<td>4</td>
<td>875</td>
<td>Office</td>
</tr>
<tr>
<td>5</td>
<td>1,040</td>
<td>Bus maintenance</td>
</tr>
<tr>
<td>6</td>
<td>1,890</td>
<td>Bus maintenance</td>
</tr>
<tr>
<td>7</td>
<td>8,878</td>
<td>OF offices</td>
</tr>
<tr>
<td>8</td>
<td>5,900</td>
<td>Dublin Bus maintenance garage</td>
</tr>
</tbody>
</table>
Chapter 3 - Height & Visual Impact

Overview

The site's building heights are informed by the wider environs and topography. The heights of structures that will be placed onto the Broadstone site will best reflect their wider surround built environment.

The Grangegorman Development Agency Scheme, located to the west of the Broadstone site, has permitted general heights of up to 12 storeys. A similar height structure for the Broadstone site will be emulated, however building heights will be fitted into the wider area and will be sensitive to the site’s built heritage.

The rest of the Broadstone site's surround built heritage comprises of predominantly low-rise established residential areas. The new buildings located on the site will need to be sensitive to these.

The Broadstone site may yield on average 5-6 storey heights, but in order to respect the site and its wider context buildings as low as 1-3 storeys will be located in more sensitive areas.

In the site’s more robust areas, building heights of 6-10 storeys will be located in order to the yield the required floor areas.

Figure 1: View No:1 as Indicated on Height Map (Figure 3) with Estimated Heights at the Broadstone Gateway

Figure 2: View No:2 as Indicated on Height Map (Figure 3)

The site and its adjacencies have a diverse topography and building heights. The north of the site is sunk below its immediate surroundings, whilst the south of the site is raised above its immediate surroundings. This results in a robust northern end of the site for taller structures, and a sensitive southern end, boasting wide views of the city scape.

Figure 3: Map Showing Building Height Zones and Views

Legend:
- 3-5 Storeys
- 4-6 Storeys
- 6-10 Storeys
- Views
- Luas Line
- Road network
- Pathways
Chapter 4 - Employment, Training & Education

Employment:

It was decided that non-residential uses would account for 50,000 sq. m of the Broadstone site. This quantum of development respects the uses, building heights and density requirements and also achieves a sustainable commercial aspect for DIT Broadstone. 30,000 sq. m of the 50,000 sq. m will account for commercial and retail uses. The majority of this will be represented in the Commercial Hub. 3,000 sq. m of the 30,000 sq. m will account for retail uses. This includes kiosks in the Gateway and other ancillary retail. This is sufficient to provide the surrounding community with their regular convenience requirements considering the fact that the district centre of Phibsborough is within 500 metres of both Broadstone and Smithfield.

The remaining 27,000 sq. m will comprise commercial uses, the majority of which will be located within the Commercial Hub. This is sufficient to accommodate HQ type uses which will increase the profile of Broadstone. It is also a suitable site for HQ type uses as it will be located next to the largest third level institute in Ireland, a major transport corridor and Dublin City Centre.

Training & Education:

The majority of training and educational facilities will be located in the Technical Hub where a technical institute will be based next to a transport museum. This institute can provide working space for students studying aviation and automotive technology. There will also be a small creche located in the Commercial Hub. Educational facilities account for approximately 8,000 sq. m of the 20,000 sq. m attributed to other non-residential uses.

<table>
<thead>
<tr>
<th>Location</th>
<th>Quantum in Gross Floor Area (GFA)</th>
<th>Proposed Use(s)</th>
</tr>
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<tbody>
<tr>
<td>Building 2</td>
<td>11,860 sq. m</td>
<td>Retail &amp; Commercial/Creche</td>
</tr>
<tr>
<td>Building 3</td>
<td>1,200 sq. m</td>
<td>Retail &amp; Commercial</td>
</tr>
<tr>
<td>Building 4</td>
<td>1,750 sq. m</td>
<td>Retail &amp; Commercial</td>
</tr>
<tr>
<td>Building 5</td>
<td>5,200 sq. m</td>
<td>Retail &amp; Commercial</td>
</tr>
<tr>
<td>Building 6</td>
<td>9,400 sq. m</td>
<td>Retail &amp; Commercial</td>
</tr>
<tr>
<td>Building 7</td>
<td>1,300 sq. m</td>
<td>Retail</td>
</tr>
<tr>
<td>Kiosks</td>
<td>100 sq. m</td>
<td>Retail</td>
</tr>
<tr>
<td>Building 2</td>
<td>2,965 sq. m</td>
<td>Community</td>
</tr>
<tr>
<td>Building 7</td>
<td>7,570 sq. m</td>
<td>Technical/Educational</td>
</tr>
<tr>
<td>Building 8</td>
<td>11,970 sq. m</td>
<td>Academic Hotel/Convention Centre</td>
</tr>
</tbody>
</table>

Table 1. Breakdown of uses

CHQ Shopping Centre, Dublin

Entrance to proposed retail mall, Broadstone

CHQ Shopping Centre, Dublin

Melbourne, Australia
Chapter 5 - Movement and Access

The Vision

The Broadstone site lies within the central administrative area of Dublin City council, just 1300m through the network (800M as the crow flies) from The Spire on Dublin’s O’Connell St. Given that it is located so close to the city centre and is highly accessible by Quality Bus links links walking, cycling and new links to come in the form of LUAS Cross City, the emphasis will be placed on creating a sustainable development designed to minimise the need for cars. The site design will also seek to minimise the impact of cars in the immediate and wider environment.

LUAS Cross City

LUAS Cross City will service the site on its completion in 2017 with one stop at the Broadstone Station building serving Grangegorman and a future proposed stop to the north of the site serving the Water Tower site and the Grangegorman Campus. The Cross City line will connect Broadstone with Broombridge heavy rail station on the Maynooth Line and Dublin city centre via Dominic St.

Cross City will represent a good opportunity for the Broadstone site to build a strong sustainable mode share for commuting and leisure trips. The addition of LUAS Cross City to the area will help reduce car dependency and reduce the total quantum of parking spaces required.

Modal Split for the Year 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>On foot</th>
<th>Bicycle</th>
<th>Bus, minibus or coach</th>
<th>Train DART or LUAS</th>
<th>Motorcycle or scooter</th>
<th>Car driver</th>
<th>Car passenger</th>
<th>Other</th>
<th>Not stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>45%</td>
<td>12%</td>
<td>12%</td>
<td>16%</td>
<td>0%</td>
<td>8%</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Bus

Broadstone is currently serviced by a limited Quality Bus Corridor and five Dublin Bus services; these are the 83, 46A, 39, 39A and 37. To ensure that the bus continues to offer a quality and competitive product, enhancing the Quality Bus Network in the area is seen as a priority. In order to achieve this a Bus gate through the Grangegorman campus will be provided for with access on the Broadstone site and providing for an enhanced QBC on Constitution Hill, Phibsborough and North Circular Roads.

Vehicular Access

Vehicle access will be provided through the Water Tower site in the north west and the Constitution Hill Flats in the south. These access points will form two separate orbital traffic cells one in the north and one in the south, with restricted connection link for delivers and emergency vehicles. The site will feature shared space to ensure passive traffic calming and the dominance of people over cars.

Walking and Cycling

It is envisioned that walking and cycling will form the largest percentage of mode share for the site. In order to encourage that these modes account for the majority of commuting and leisure trips the site will be linked to the city through strong high quality, segregated links.

The emphasis will be placed on creating an attractive network of cycle and pedestrian friendly routes throughout the site. This network will tie into the city’s Green Network thus offering an attractive and safe alternative means of transport than the private car.

Linking To the City

The site will form part of and help accentuate Dublin City Councils Strategic Green Network and public realm strategy, development will also facilitate QBC links and pedestrian links to the city centre. Given the close proximity of the Broadstone site to the city centre a strong emphasis will be placed on connecting to the city and surrounding area. This will be achieved by traffic calming the Constitution Hill and Phibsborough Roads, and the installation of pinch points, central median and level crossings.
Chapter 6 - Open Space and Public Realm

The Vision

The strategy for open space and public realm aims to design a legible urban district interconnected with the DIT Grangegorman Campus which will also enhance the urban quality of the surrounding neighbourhoods.

The design of the open space and public realm within DIT Broadstone forms a hierarchy of spaces based on the functions that they serve. All of these zones and spaces will be supported by a coherent network of green corridors.

Strategic Hierarchy of Zones

The Gateway - Primary Zone

A city scale plaza will be created in front of the Technical Hub, stretching from Constitutional Hill to DIT Grangegorman. The space will form a physical and symbolic gateway marking the entrance into DIT Grangegorman, highlighting the campus’ connection to the city centre and its relationship with the DIT Broadstone district.

Secondary Zones

Secondary open space zones of civic and local importance will be located within each functional hub to support its needs, these will be different for each hub.

Sub Zones

Sub Zones in the form of green open space, mixed recreational and hard surface squares will be dispersed throughout the site. These will also serve as incidental spaces to foster everyday social interaction within the public realm.

The hard surface squares will be designed to support a range of versatile cultural uses such as performance spaces and squares where markets and events can be held.
**Design Features**

The main zones of open space are based around the key areas of circulation, each one is identified as a node of movement and permeation within DIT Broadstone creating connections to significant city markers which lie outside of the site, in particular; DIT Grangegorman, Smithfield, Stoneybatter, Phibsborough and the City Centre.

A new connection to Morning Star Avenue at the southern point of the site will create a significant link to Smithfield.

A zigzagged pedestrian and cycle route is proposed for this entrance way to address it’s steep topology, highlight it’s significance as a link and to create a world class public space for the Convention Hub with views of the city.

**Art**

Materials and infrastructure reflecting the long history of technology at Broadstone from the Great Western Rail and CIE era’s will feature in public art, street furniture, paving and structures to engender the district with a sense of it’s history through the public realm.

**Green Vision**

Pocket parks dispersed throughout the urban district will create a more walkable, vibrant street scene encouraging people to stay in the urban areas for longer and have a fuller experience because of them. There small size supports a greater sense of enclosure and natural surveillance for night and day use.

A principal linear park will run along the centre of the site drawing activity through the site from the Gateway and other main entrances. Given the tight size and linear shape of the site the linear park will allow for a high proportion of green space to permeate the district.

The site is grouped into different hubs of function but these areas largely will overlap and the design of the public realm seeks to complement this interplay of uses.
Chapter 7 - Community

Overview

Facilitate involvement for people at different life-cycle and physical activity stages and of varying socio-economic status – including youth and senior oriented initiatives.

Promote the development of a strong arts and cultural community that builds upon local knowledge, history, and experience.

Encourage the development of public spaces that foster community involvement and interaction.

Surrounding Community

The development of Broadstone must take into account the surrounding environment and foster links with the surrounding residences and the centres of DIT Grangegorman and Phibsborough. By integrating these other residential areas into the facilities on site, Broadstone will become part of the wider area. This will ensure that the facilities offered on the broadstone development are used to their maximum potential.

Childcare Facilities

Will consist of approx 800 units. 240 of which will be designed to attract families. 260 professionals and 300 student units. It is vital that the site contains facilities that will benefit the lives of those will pre-school children. The guidelines on Childcare for family authorities advise one childcare facility for every 75 family units. 1 facility should provide care for a minimum of 20 children. That results in a need for 64 childcare places within the development. If each child require 5sqm of floor space for a child, a facility of at least 320sqm is required to provide for the needs of the future development.

“A good place for children” Report 2006 - developments that provide safe space for children to play will ultimately affect how attractive it will be for family living. It is important that childcare and safety is incorporated into the design the development of the site. This along with high quality Crèche and after school childcare facilities will result in creating a very attractive environment for families.

Community Centre

The development will include a high quality community centre to service the needs of families, young and elderly people living in the development.

The facility will include meeting places, office, kitchen and toilet facilities. The centre will look to accommodate community events, local meetings, youth groups and other activities to help foster integration among the people living in the development and create a sense of community to-

Apartment Design

Apartments will include
- Internal storage
- Personal laundry facilities
- Separate children play/study/living are
- Sizable balcony to accommodate table and chairs

The Design Standards for new apartments sets out that a:
- One Bedroom apartment Min floor space of 45sq m
- Two Bedroom apartment Min floor space of 70sq m
- Three Bedroom apartment Min floor space of 90sq m

Apartment complexes will contain varying types of apartments to ensure a mix of different residence. The mean floor space for apartments within the development is set out as 100sqm. Resulting in more spacious apartments making them even more attractive.

Student Accommodation

The development of Broadstone will provide high quality accommodation for the Students of DIT. The standard set by the award winning Broadstone Hall should be maintained in the design of the development.

Social rooms will be provided. Student rooms will include desk space and individually lockable. Facilities for security and porter staff will also be included in the design.
Chapter 8 - Sustainability Strategy

Broadstone’s development vision is to be that of a highly sustainable community. All aspects of the development must fit together and result in overall sustainability, in both tangible and intangible issues. Sustainability is to be achieved through creating a toolkit, like that in Clonburris. The is achieved through a number of indicators:

**Biodiversity:**
- Protect ecological features which are already in place on the site pre development where possible.
- Develop a Biodiversity Action Plan for the site.
- Fitting out new buildings with Greenroofs will allow for biodiversity to be introduced to the site, give an option of more residential open space and offer more room for composting.
- Encourage in building biodiversity, which will also increase natural light into buildings. This is best in commercial and public buildings rather than residential.

**Energy:**
- An efficient use of energy in homes, businesses and community facilities with a reduction in greenhouse gas emissions.
- Applying passive solar design principles to buildings, by using the sun’s energy to reduce Winter heating requirements, locating living rooms on the south side and avoiding overshadowing.
- Create buildings with a high thermal mass, which will store and release heat in winter and stops heat from penetrating the building in summer.
- Use special PV panels, like those used in Bedzed, for solar shading & electricity generation.
- Using super insulation, wind-drivers ventilation systems and water conservation systems, similar to those in Bedzed, will reduce energy demand to 25% of a conventionally built home.
- In situ renewable energy generation will cover at least 50% of total space and water heating energy needs.
- Promote the use of eco-labelled goods within units.

**Water:**
- Prolific use of Sustainable Urban Drainage Systems - primarily using natural SUDS where possible. This will be aided by creating a water management system aimed at increasing rainwater infiltration and reducing run-off.
- Impermeable ground surfaces should account for a minimum of 70% of the surface area. This will maximise the opportunities for re-use and recycling of rain water.
- Incusion of a water feature(s) for amenity, as well as water harvesting.
- Grey and rain water harvesting.
- Inclusion of greenroofs.

**Transport:**
- Ensure that Broadstone will be a pedestrian and cyclist oriented development with car usage strongly discouraged. Vauban, Germany operates a minimum 50% car free development, this number should also be applicable to Broadstone.
- Creating a development which is accessible to all.

**Waste:**
- Municipal waste recycling for residential, commercial and public waste.
- A minimum of 70% of waste in Broadstone is to be recycled.
- Create a Broadstone Recycling Strategy.
- Composting facilities to be provided.

Examples of greenroofs and internal planting leading into a roof garden in Malmo.

Examples of public recycling facilities and worm bins for composting

Examples of sheltered bicycle parking in Vauban, and pedestrian streets in Malmo.

Water saving examples in Malmo

Housing mix in Vauban

Photovoltaic solar panels (Vauban & Clancy Barracks). Homes with a high thermal mass and dual aspect.
Gateway and Technical Centre

<table>
<thead>
<tr>
<th>Area Name</th>
<th>Gateway and Technical Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Character</td>
<td>A vibrant and busy square linking Broadstone to Grangeorgan and the City Centre, characterised by a technical Centre, transport Museum and quality retail units</td>
</tr>
<tr>
<td>Min/Max Total Development</td>
<td>8000 - 9100 m²</td>
</tr>
<tr>
<td>Min/Max Retail</td>
<td>1000 - 1300 m²</td>
</tr>
<tr>
<td>Min/Max Open Space</td>
<td>9000 - 12000 m²</td>
</tr>
<tr>
<td>Key Access &amp; Movement</td>
<td>LUAS station connecting the site to City Centre and Northern Suburbs. Clearly marked pedestrian crossings to Constitution Hill. Slab paving to delineate major pedestrian routes.</td>
</tr>
<tr>
<td>Key (Open Space + Landmark)</td>
<td>Linear parks to run parallel to major pedestrian desire lines, featuring kiosks, sitting areas and informal exercise areas. Landmarks to include transport heritage monuments.</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Linear parks to add a more natural element to an otherwise hard urban square.</td>
</tr>
</tbody>
</table>

Movement and Access

Masterplan
Urban Design Indicators

1. Retention and re-use of the historic Broadstone Rail Terminal to be used as a rail museum, technical centre and small scale retail area.

2. Creation of a large pedestrian plaza with three main pedestrian crossings across Philsborough Road

3. Use of a variety of paving throughout the square: grey slab paving to delineate major pedestrian desire lines an cobble paving to mark general pedestrian areas

4. Use of linear parks with sitting and recreational areas, to include fixed bikes for exercise and contemporary bench styles

5. Placement of a life size replica of a piece of transport heritage to act as the open space’s focal point, with major paved pedestrian routes radiating out of it

6. Placement of a stylized statue in front of the Broadstone Terminal to act as a secondary focal point

7. Use of vintage trams as convenience kiosks and vintage buses as restaurants
Broadstone Residences

<table>
<thead>
<tr>
<th>Area/Name</th>
<th>The Residences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Character</td>
<td>Contemporary arc-shaped party professional and student accommodation, creating a vibrant mixed-use residential area.</td>
</tr>
<tr>
<td>Min/Max Floor Area</td>
<td>12,12 - 13,33 m²</td>
</tr>
<tr>
<td>Min/Max Total Development</td>
<td>40,000 m²</td>
</tr>
<tr>
<td>Min/Max Residential</td>
<td>41,000 m²</td>
</tr>
<tr>
<td>Min/Max Commercial</td>
<td>N/A</td>
</tr>
<tr>
<td>Min/Max Retail</td>
<td>N/A</td>
</tr>
<tr>
<td>Min/Max Open Space</td>
<td>3,250 m² / 6,600 m²</td>
</tr>
<tr>
<td>Min/Max Height</td>
<td>0 - 19 Storeys</td>
</tr>
<tr>
<td>Min/Max Units</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Key Access & Movement
The Residences will be accessed via pedestrian and cycle movement through a central circulation area at the primary entrance. The area will feature a main way trafficcell which will merge with the LUAS line along the eastern border.

Type of Use
The Residences will comprise approximately 240 permanent residence units and 390 student accommodation units. Parking for the Residences will be accommodated in a Park House in the adjoining Family and Residential zone.

Key (Open Space + Landscape)
The Residences will place emphasis on mixed-use public spaces incorporated into the design. The spaces will comprise a mix of smaller pockets and larger open spaces throughout and at larger open spaces in the adjoining Family and Residential zone. Each local area will feature one or more characteristic buildings and the transport infrastructure running throughout the site.

Key (Social + Community)
Restricting the access of cars and vehicles will emphasize smaller pedestrian and cyclist spaces throughout the site and generate pedestrian and cycle circulation. An area should create a comfortable public realm where the focus is located on the activity of people and not automobiles.

Sustainability
- Maximising the energy use of all structures is minimised by addressing the busin current building technologies such as passive solar gain and rainwater harvesting. The Residences will also incorporate Sustainable Urban Drainage Systems and provisions of the LUAS line allowing for rainwater permeability. The development will also focus on ensuring the use of sustainable transport modes and public transport for commuting needs.

Map Showing Movement within the Residences

Layout Map for the Residences
Key Urban Design Indicators

1. Modern Contemporary Design
   Distinctive contemporary architecture will be used to contrast and complement the protected structures on site.

2. Shared Surfacing
   Shared Surfacing using sandstone paving will suit the minimal contemporary feel of the area while providing traffic calming measures. Beige asphalt will be used to complement the surrounding architecture. The incorporation a grass running surface along the Cross City LUAS line will reduce the noise impacts and create an inviting pedestrian green route along the site boundary.

3. SUD’s, Landscaping and Native Tree planting
   Landscaping will be integral part of the design process to enhance the area. It must incorporate Sustainable urban Drainage Systems and native tree planting.

4. Emphasis on Small Open Space (Pocket Parks)
   The emphasis will be on an array of intimate Pocket Parks that will cater for various different pursuits.

5. Transport Theme through Street Art
   Sculpture and street paintings will have a transport theme to further help with branding. They will be created and renewed by a combination of the community and art department of DIT.

6. Incorporating Landmark in South Central
   Incorporate a contemporary landmark building of 10 stories or more in the south central Broadstone Residences site to complement the Broadstone Gateway concept, thus creating a strong sense of place in this transition area.

7. Distinctive Bike Parking with Passive Surveillance
   Distinctive bike parking with passive surveillance throughout the Residences site will place the emphasis on this sustainable mode of transport.

8. Contemporary Street Furniture with Blue Lighting
   Use modern street furniture and blue lighting throughout Broadstone Residences to tie in with the architecture.

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3D representation model of Broadstone Residences indicated in yellow, and Grangegorman in blue. View is taken from entrance of Kings Inns.
Commercial Hub & Family Residential Zone 1

<table>
<thead>
<tr>
<th>Area Name</th>
<th>Commercial Hub &amp; Family Residential Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Character</td>
<td>Medium density, high quality, spacious residential housing and high density commercial development</td>
</tr>
<tr>
<td>Mini/Max Plot Ratio</td>
<td>15-14</td>
</tr>
<tr>
<td>Mini/Max Total Development</td>
<td>65,000sqm - 67,260sqm</td>
</tr>
<tr>
<td>Mini/Max Residential</td>
<td>15,000sqm - 17,000sqm</td>
</tr>
<tr>
<td>Mini/Max Units</td>
<td>90 - 135</td>
</tr>
<tr>
<td>Mini/Max Commercial</td>
<td>32,000sqm - 37,000sqm</td>
</tr>
<tr>
<td>Mini/Max Retail</td>
<td>4,000sqm - 5,000sqm</td>
</tr>
<tr>
<td>Mini/Max Heights</td>
<td>3 - 5 storeys</td>
</tr>
<tr>
<td>Mini/Max Open Space</td>
<td>16,000sqm - 18,000sqm</td>
</tr>
</tbody>
</table>

Key Access & Movement

A pedestrian friendly area, with a number of access routes from the surrounding areas being provided. These pedestrian linkages easily and respectfully connect the family residential and commercial zones. Car access is provided through shared surfacing on the one major vehicular road on site, along with car access to the multi storey car park built.

Key (Open Space - Landmark)

There is a large quantum of open space on site. There is a large park, which lies in with the Residences zone, providing both passive and active open space for the inhabitants. All residences on site are served by easily accessible open space. In the northern part of the site, the red line boundary is proposed to be extended to include part of the Luas line - the Henele - so as to be a car on for open space which will be used as community gardens/allotments. This continuous linear park brings all of the northern part of the site together in a harmonious and family friendly way. The commercial hub also has an area mixing hard and soft urban open space.

Key (Social - Community)

The community gardens & allotments will provide areas for the inhabitants to interact with one another. The large park area will also allow for community gathering.

Look Into Sustainability

All new developments will make use of the most sustainable resources available. So too will the heritage buildings which are being retained, but updated. There will be Sustainable Urban Drainage Systems throughout.

Access and Movement

Block Layout
Urban Design Indicators

1. Shared surfaces based on home zone principles including a single carriage, one-way system, limiting vehicular access throughout the zone.

2. Sustainable residential family units in the form of loft apartments and own door units.

3. Barrier free spaces, change of use is expressed through a design features such as change of level or material.

4. Multiple access points for pedestrians and cyclists to avoid over concentration of pedestrian activity on a limited number of route ways.

5. Shared Park house placed at singular vehicle entrance for residential and commercial use.

6. High end, high activity commercial district to facilitate research and development sector, including a local retail and café district where the commercial zone connects to Phibsborough Road. A city scale urban square with a mix of hard and soft landscaping will create a focus for the commercial core.

7. Strong connections to destinations within and outside of the site are at the heart of the block orientation reflecting natural desire lines for pedestrian movement.

8. A strong focus on a variety of usable open space spread throughout with a mix of hard and soft surfacing making the transition between the Commercial district and the Family Residential district.

9. A series of green open spaces links to form a local park running from the adjacent Residences zone through the Northern Family Residential neighbourhood and continues into a proposed green line along the Luas path.
Urban Design Indicators

1. View towards the mountains has been protected to add visual value to the Academic Hotel and apartments.
2. Link to Smithfield a potential social centre and the city centre to connect the site with the wider city.
3. Water/Open Space feature to add amenity value to the space.
4. Shared surfacing around the site to emphasize the precedence for pedestrians and cyclists.
5. New Developments will be influenced by the retained and refurbished apartments on site.
6. Link to Gateway Zone/Grangegorman.
7. Clear Pedestrian and Cyclist Route to allow for easy movement into and around the site.
8. Levelling of the site will give some distinct prominence to the Academic Hotel with steps leading up to it.