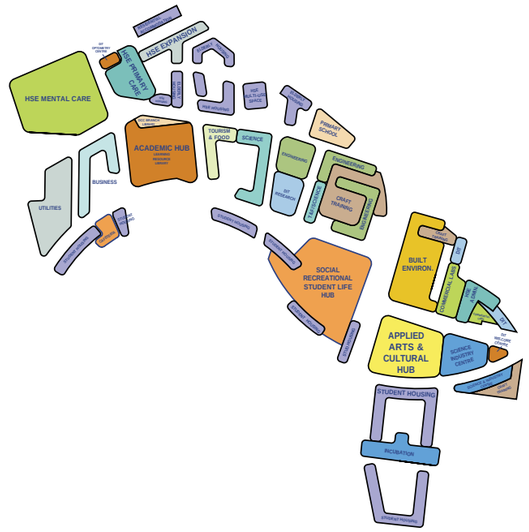
03_masterplan principles

social gathering spaces

green finger landscape concept

view from campanile

view from DIT library



programmatic adjacencies

grangegorman hearts

grangegorman masterplan principles

The Masterplan provides for a framework incorporating key principles, strategies and objectives to drive a vision of a sustainable, thriving quarter for the Dublin Institute of Technology, the HSE and the city. The urban structure of the Masterplan establishes a series of six academic centres for DIT and several distinct courtyards for HSE, each with individual physical identities of buildings and landscaped courts. These academic centres are arranged across the site in a continuous array: Business, Tourism & Food, Science, Engineering, Built Environment, and Applied Arts. In addition, the DCC Library and Primary School will provide key benefits for the community.

The format of the buildings, and the layout of the district spaces they frame, emphasise a modular flexibility of uses. Buildings vary in height and number of stories, with the most public/shared educational spaces—lecture halls, classrooms, workshops and studios—at the lower floors, and faculty suites, seminar and conference facilities, and departmental administration on upper floors.

Design Principles

There are 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 serve to establish consistency throughout the development of the Grangegorman site, and ultimately contribute to a unique identity for the district.

Connectivity

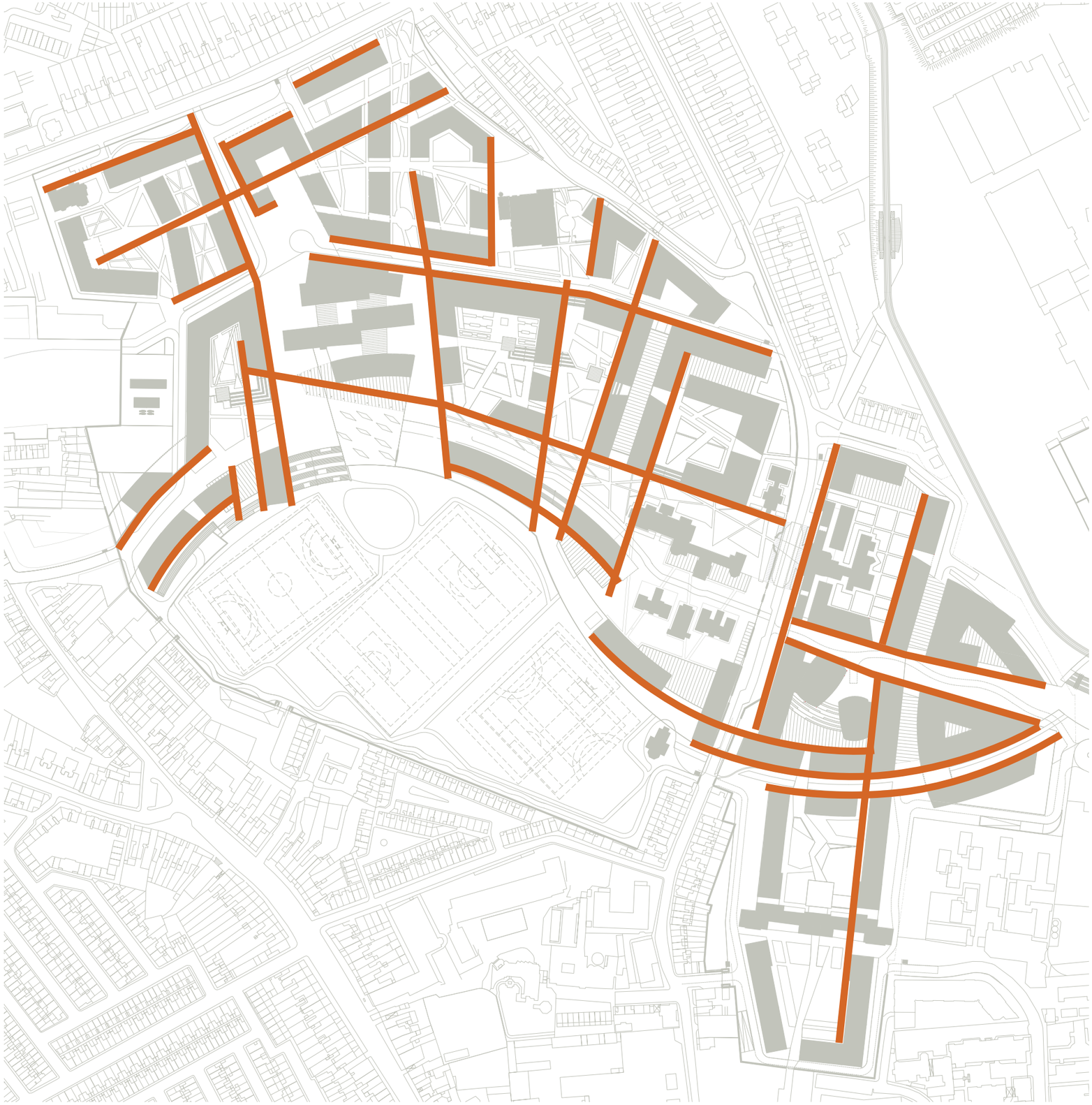
Both physical and visual connections are encouraged on the site to facilitate movement across the Quarter as well as to foster a sense of district unity. A contiguous network of interconnecting open spaces, including plazas, quadrangles, gardens and interconnecting passageways, serves to physically link buildings throughout the Quarter. This predominantly pedestrian landscape serves as an alternative to pavement circulation along vehicular streets and offers 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

The Masterplan supports a hierarchy of communal spaces that encourage collective interaction among users. These spaces are organised around specific program clusters, orienting individuals in classrooms, laboratories, residences, offices and other facilities to larger communities within the respective Quarter neighborhoods. These communal spaces, in turn, are visually and physically connected to larger, more collective district spaces. These communal spaces also serve to reflect a favorable sign of Grangegorman academic, health services and research-oriented life to the surrounding area and community.

Cohesiveness

Cohesiveness is aimed at promoting visual consistency among architecture and landscapes within the masterplanner's control over the course of development of the Grangegorman Urban Quarter. Collectively, adjacent buildings maintain similarity by abiding to a prescribed massing and basic vertical organisation. All buildings conform to a range of specified materials and colours as well as a particular method of surface articulation. The district landscape also maintains cohesiveness through the consistent use of specific planting types, paving materials and lighting. Cohesiveness among buildings and open spaces enhances the legibility and identity of the entire Urban Quarter.



critical alignments

A network of established building lines determines the physical siting of buildings on the Grangegorman Urban Quarter. These building lines ensure that open spaces on the site are maintained during the course of development, and that the predetermined grid of view corridors and streets is preserved. The alignment of building edges contributes to the creation of a cohesive environment throughout the District.

Organising Axes

The fundamental organising ideas for the proposed Grangegorman Urban Quarter are depicted in this diagram. Development is organised around clear open spaces, pedestrian and service circulation systems. The primary organising axes—St. Brendan's Way and the Serpentine Walk running east to west, and the north-south landscape fingers—establish the basic ordering system and provide a clear framework onto which each increment of development can be attached. These prominent axes will establish the identity of the Grangegorman Quarter, defined over time by each increment of development that fronts onto each spine.

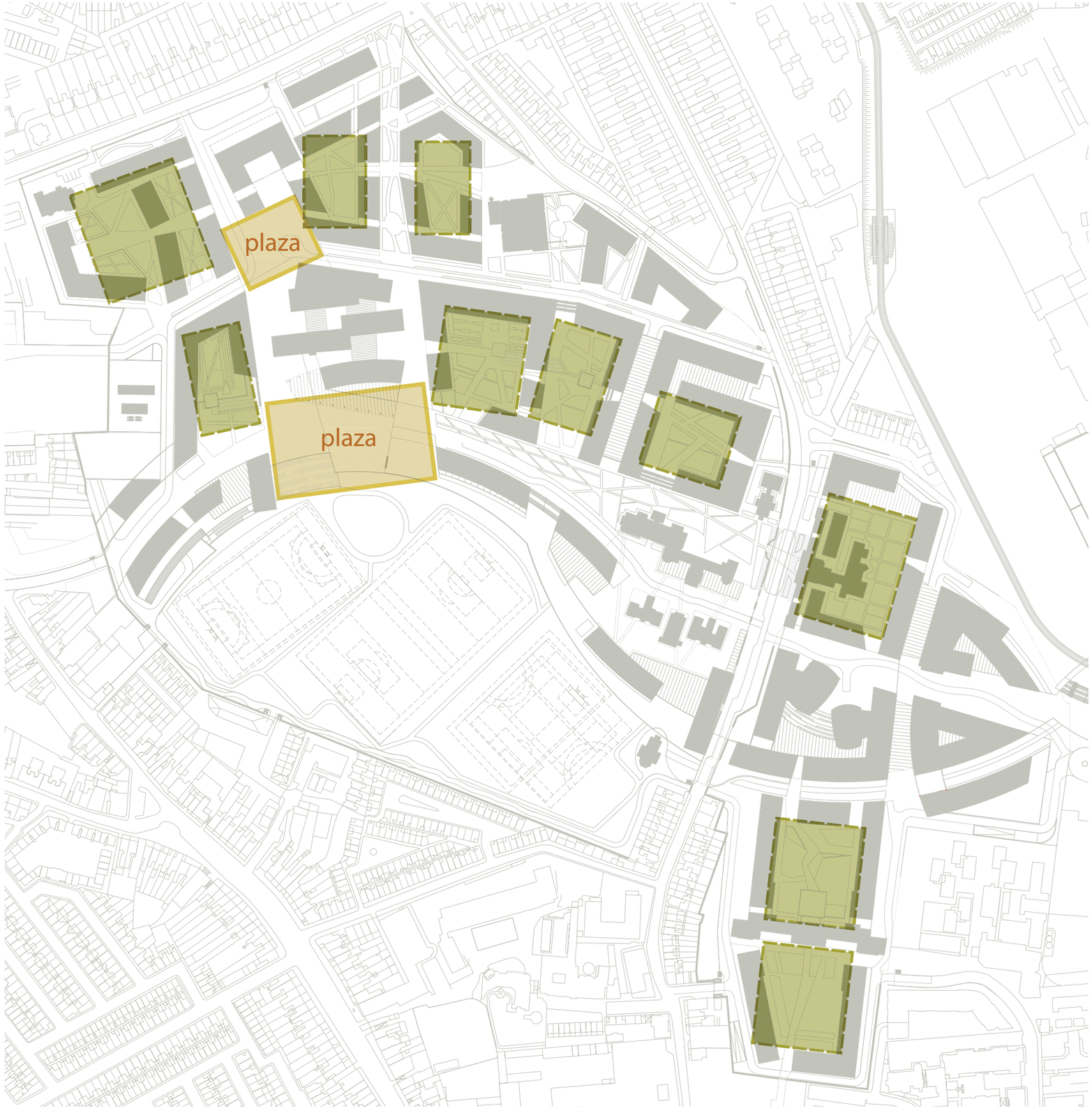
Strong Quad Edges

Each Quad maintains perimeter building lines which determine the absolute limits for buildings located on that Quad. The Masterplan advocates that building along Quad perimeters strictly observe the building lines in order to create definitive edges along Quarter paths and open spaces, and ensure that adjacent buildings align throughout development. Furthermore, these lines contribute to the formation of significant open spaces such as Upper Terrace, Broadstone Gate and the Arts Centre.

Flexible Quad Interiors

Whereas building mass should strictly adhere to perimeter Quad lines, building edges that fall within the Quad interior maintain some flexibility to accommodate unanticipated programmatic needs. These zones of dimensional flexibility can occur along the edges of interior Quad courtyards and connective passageways.

The standards suggested by the Masterplan for building footprints and massing are based upon the basic functional requirements for each building type. The suggested size and location of academic and HSE buildings, for example, meets the basic height and width requirements for multiple-story classroom and healthcare buildings. These standards are subject to some variation, and change may be accommodated within specific zones in each Quad.



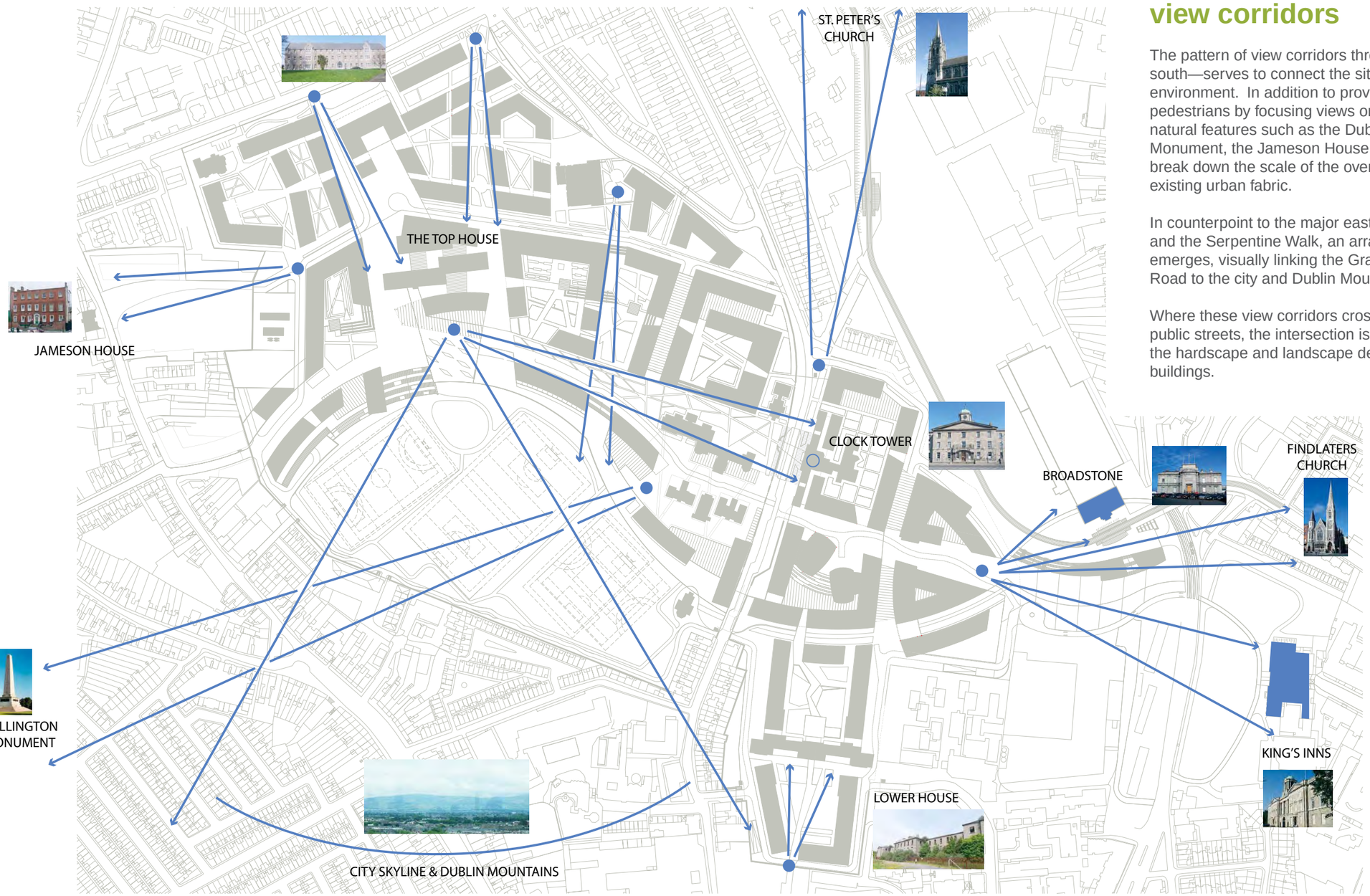
quadrangles

The open space network in the Grangegorman Urban Quarter is shaped by the places that buildings make and the pathways that connect those places. The inherent variety of places within the proposed District is designed to accommodate a wide variety of specific functional, aesthetic and recreational needs. The proposed network of open spaces also seeks to provide a common ground that links these specific needs and brings a broad range of academic, healthcare and community components together.

The “Critical Alignments” structure that establishes the development increments at Grangegorman, and accommodates the future quad build-outs, also sets in place the open space network and hierarchy throughout the District. Within each prototypical District build out “parcel,” a landscaped quadrangle is provided. The particular needs of specific faculties and users will allow for great variety in the expression and character of each open space.

Several quadrangles can form clusters of quads, and a shared open space once again marks the character and nature of this specific grouping. The expression of this larger space—for example, the Cultural Garden and the Library Square—addresses a broader cross-section of the Grangegorman Quarter and creates the common ground for the individual quads that make up each cluster.

At the overall scale, the quads are linked by the primary north-south and east-west axes that move through the site—St. Brendan’s Way, the Serpentine Walk, the north-south landscape fingers—as well as the grand plazas at Broadstone Gate, Arts Centre and Upper Terrace. These major axes and open spaces, primarily given over to pedestrian and light service circulation, are the ones that establish the most common ground for the entire District and could accommodate the strongest expression of Grangegorman’s character and identity.

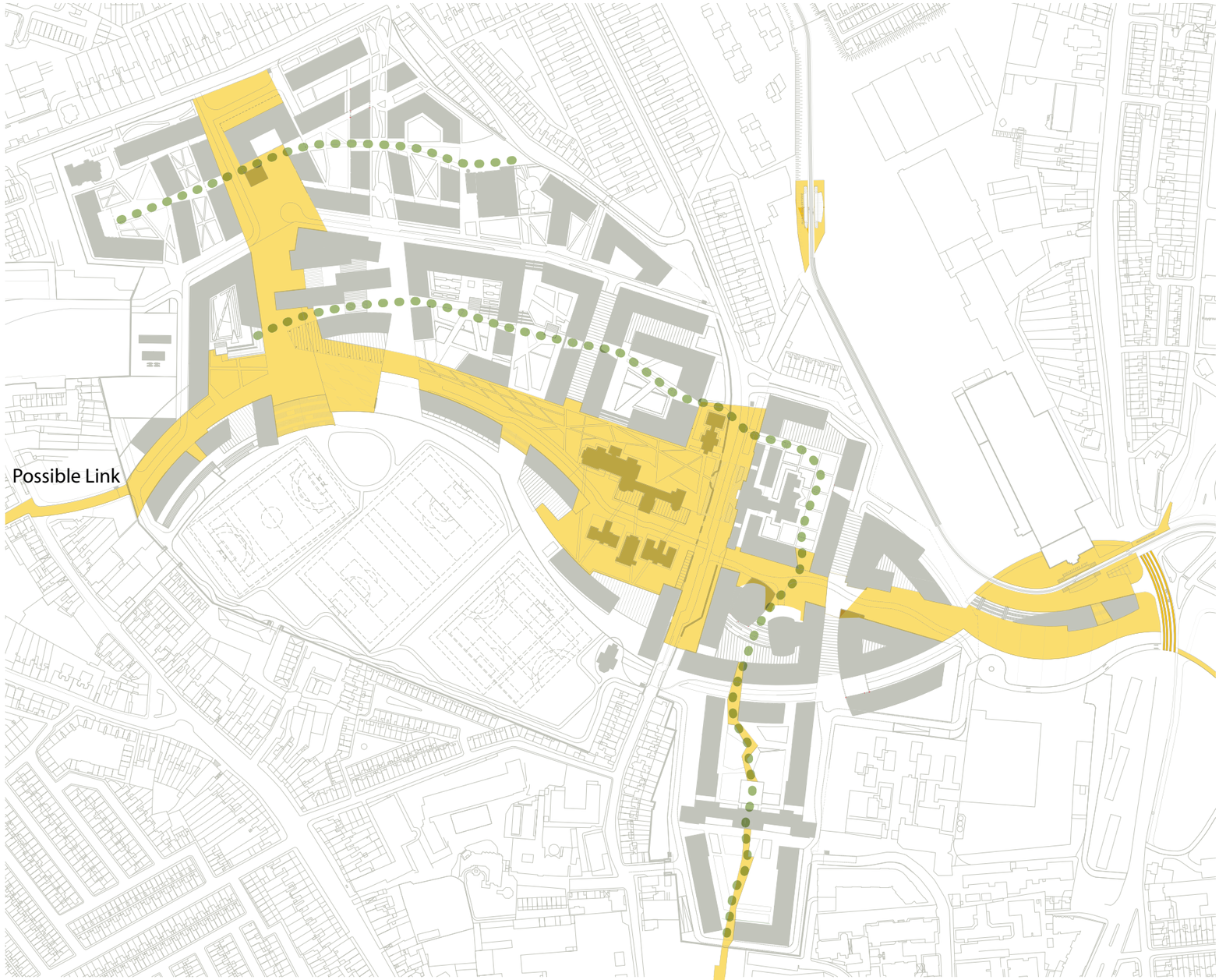


view corridors

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 King's Inns, the Wellington Monument, the Jameson House, and the Fields, the corridors also help to break down the scale of the overall development to integrate the site into the existing urban fabric.

In counterpoint to the major east-west connections along St. Brendan's Way and the Serpentine Walk, an array of north-south landscaped view corridors emerges, visually linking the Grangegorman Quarter from North Circular Road to the city and Dublin Mountains toward the south.

Where these view corridors cross major internal circulation spines or adjacent public streets, the intersection is celebrated and marked with a change in the hardscape and landscape design, or through the massing of adjacent buildings.



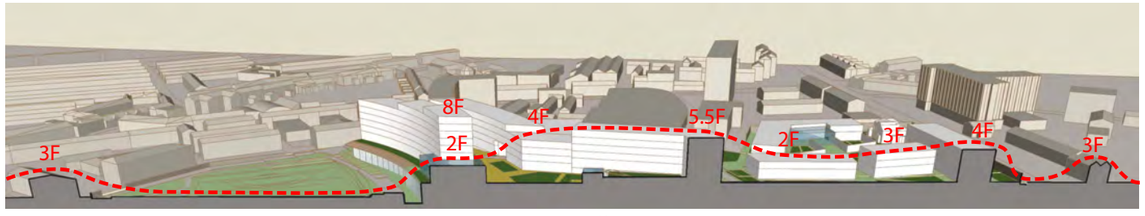
urban pedestrian zone and pathways

The Grangegorman Urban Quarter proposes a clear, strong urban pedestrian zone in order to achieve the following key urban design objectives:

- Strengthen a sense of character, identity and continuity for the District.
- Optimise the quality, adaptability and diversity of the public realm within the site.
- Create major connections to significant features in the surrounding urban fabric, including North Circular Road to the northwest, Broadstone Gate and King's Inns to the east, and a possible link to Prussia Street to the west.
- Modulate the height and density of buildings along the pedestrian zone to relate to the scale of the buildings on the Record of Protected Structures as well as the existing buildings in the surrounding urban context.
- Reinforce a lively sequence of public spaces that are defined and enclosed by means of building mass, landscaping and planting to create a well-used, day-and-night District.

8 Floors

Smithfield Housing



Kirwan Street | Sports Fields | St. Brendan's Way | Business | Ivy Avenue | HSE Mental Care | North Circular Road

7 Floors

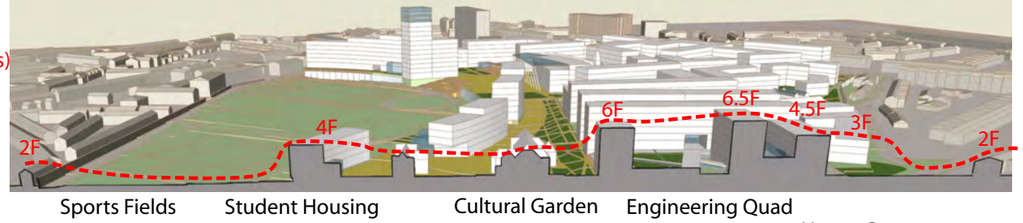
Park House on North Circular Road

HEIGHT DIAGRAM A - A

42 meter (Approx. 13 Floors)

4 -5 Floors

Smithfield :Old Jameson's Distillery & Chimney



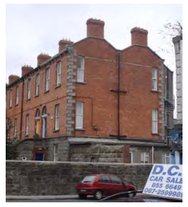
Kirwan Street | Sports Fields | Student Housing | St. Brendan's Way | Cultural Garden | Engineering Quad | Upper Grangegorman Road

3 -4 Floors

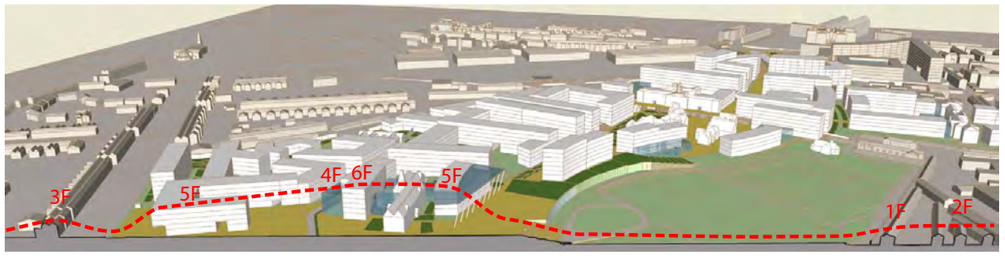
Housing on North Circular Road

HEIGHT DIAGRAM B - B

3 -4 Floors



Housing on North Circular Road



North Circular Road | HSE Primary Care | Ivy Avenue | Library | St. Brendan's Way | Sports Fields | Kirwan Street

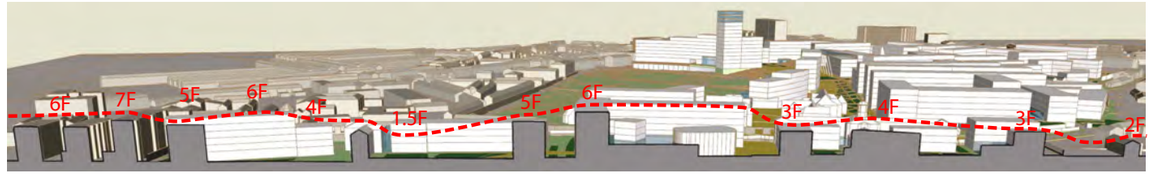
13 Floors

Smithfield Housing

HEIGHT DIAGRAM C - C

7 Floors

Smithfield Housing



Science And Industry Centre | Student Housing Quad | Brendan Behan Arts Centre | Built Environment Quad (Richmond Penitentiary) | St. Brendan's Way

60 meters (Approx. 20 Floors)

St. Peter's Church

HEIGHT DIAGRAM D - D

building heights

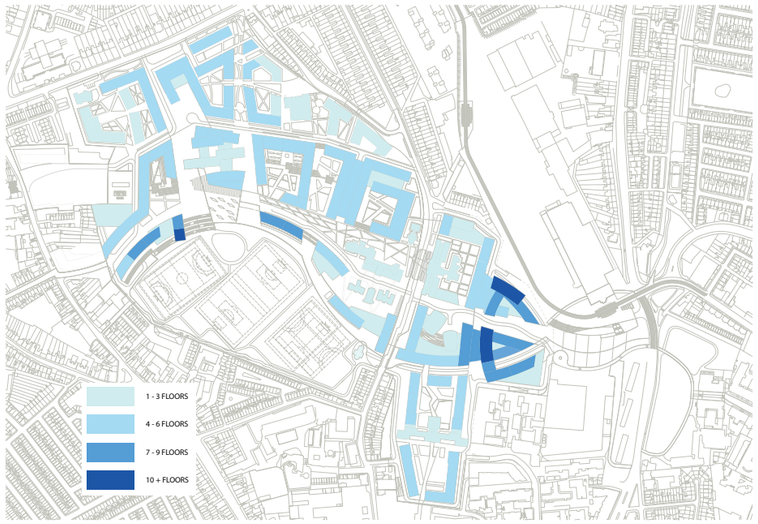
The massing strategy for the building heights is shaped by the needs of DIT and HSE, the response to sunlight and wind conditions, and by the relationship with the neighbouring buildings on the edges of the site. The massing steps up to be the densest and highest toward the major public opens space at Broadstone Gate, and steps down to be lower around the site boundaries in order to relate to the surrounding community.

While the buildings are generally between 2 and 8 floors bar the Broadstone area, the Masterplan proposes one high element located along the student housing curve at the edge of the Upper Terrace and the Fields. This landmark element serves as a "campanile," similar to various precedents around the world—a viewing tower for the public, at the top of student housing, to come and view the Grangegorman Urban Quarter and surrounding city, and establishing a "marker" to set the Grangegorman area in its urban context.

This strategy contributes to the cohesive appearance of the Grangegorman Urban Quarter, providing a measure of consistency and District identity that is simultaneously harmonious and distinct from the surrounding context.

The massing of buildings is defined by the expression of simple volumes that promote a basic level of conformity among adjacent buildings while accommodating a range of possible architectural solutions and building types. This approach also offers flexibility to accommodate unanticipated modifications in individual building programs and functions. Moreover, the clearly delineated edges of building volumes contribute to the formation of streets and positively shaped open spaces within the Grangegorman Urban Quarter.

Build-to lines and setback requirements will govern key alignments of all buildings on the Grangegorman Urban Quarter. These lines have been determined as defining major pedestrian paths and crucial view corridors for the entire development, in order to create a cohesive series of open spaces on the site.



Building Heights diagram

building heights

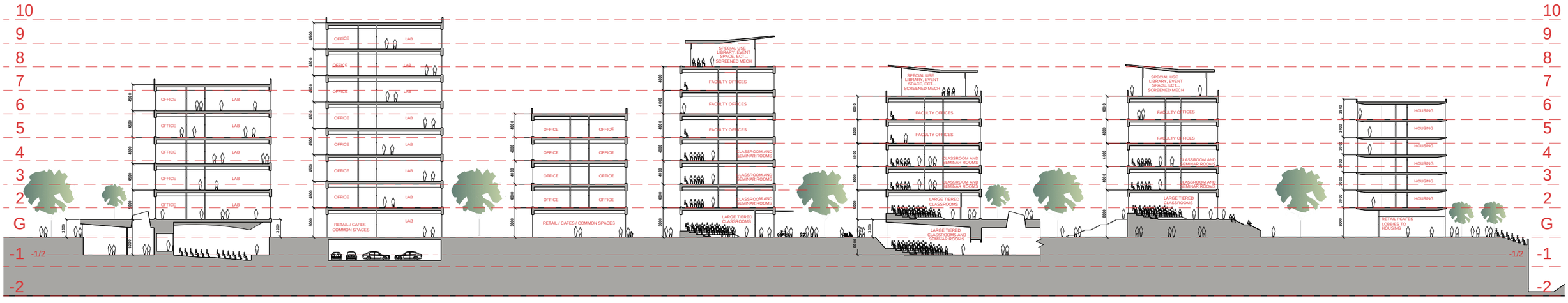
The Masterplan enlarged plans show the number of stories allocated per building volume. The heights of these volumes will vary depending on the building type because building types generally require different floor-to-floor heights for various reasons. For example, housing units may have lower floor-to-floor heights than academic or institutional buildings for economic reasons. Laboratory and research buildings may need greater floor-to-floor heights to accommodate larger floor areas and raised floor or ceiling systems used for ventilation, gasses and other piping and lighting needs.

Building types such as Performance Venues, Sports Courts, Museums, Libraries, etc... generally do not conform to specific floor-to-floor requirements because of their specialised nature but guidance can be given for some of the building types planned for the site.

Laboratory and Research Buildings	4.5 meters floor-to-floor max.
Administrative and Office Buildings	4.0 meters floor-to-floor max.
General and Academic Buildings	4.0 meters floor-to-floor-max.
Housing	3.0 meters floor-to-floor max.

Several buildings planned for the site are located over a podium level that is situated half way above and below grade. The podium level is typically 3 meters above the adjacent grade and is sometimes pulled away from the building to allow natural daylight to enter habitable spaces.

Some buildings may have a higher (5 meter) floor-to-floor height at the top floor to accommodate special uses such as conference spaces. Setbacks are encouraged at the ground and top levels for rain protection and view balconies as well as to add rhythm and modulation to the building facades. All buildings on the site have a ground floor-to-floor height of 5 meters to accommodate large area public uses, retail and restaurant spaces and to introduce a level of aesthetic consistency and horizontal datum.



LABORATORY AND RESEARCH BLDG
OVER A 1/2 LEVEL PODIUM
4.5 M FLOOR TO FLOOR

LABORATORY AND RESEARCH BLDG
ON GRADE
4.5 M FLOOR TO FLOOR

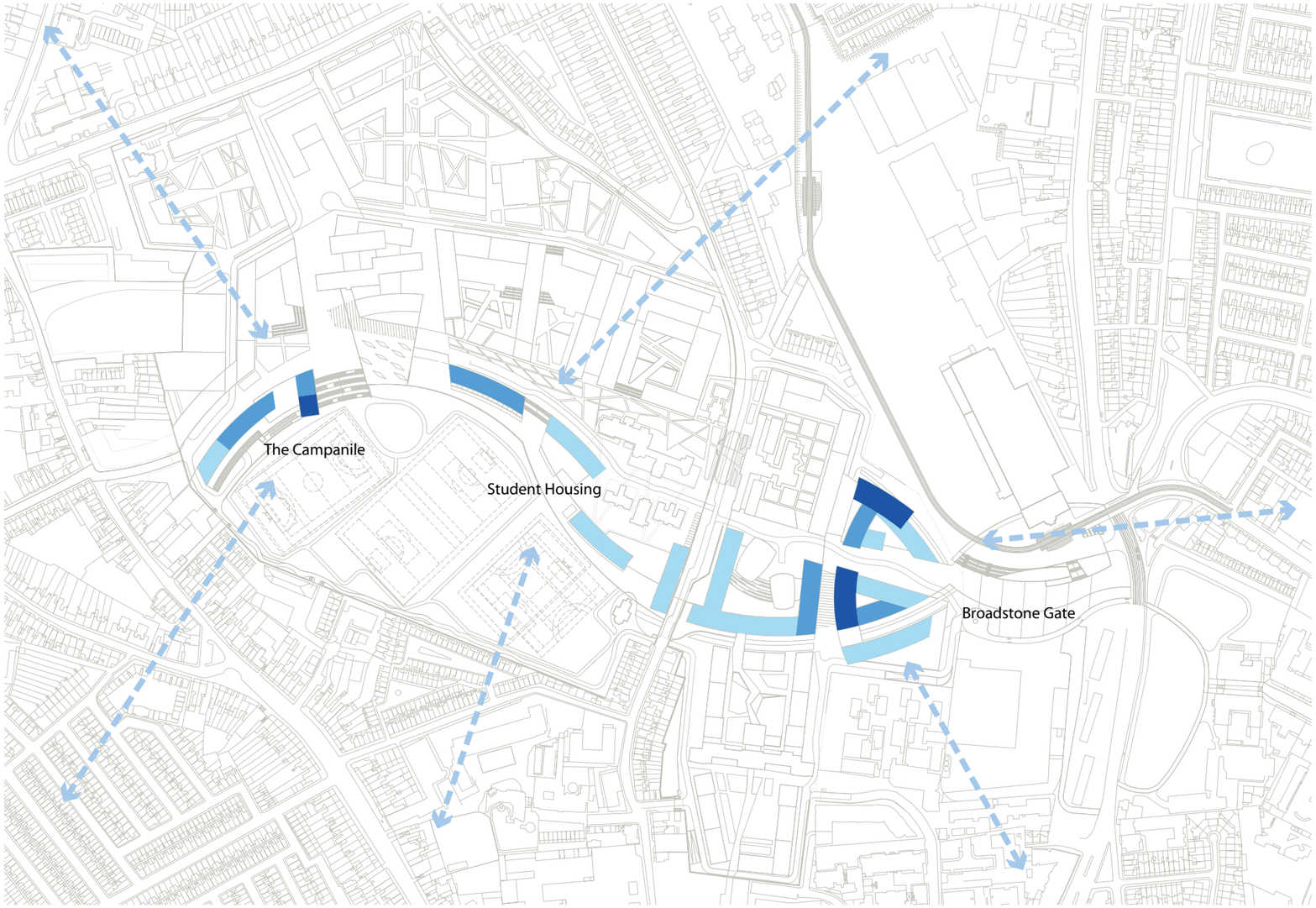
ADMINISTRATIVE AND OFFICE BLDGS
ON GRADE
4.0 M FLOOR TO FLOOR

GENERAL ACADEMIC BLDGS
ON GRADE
4.0 M FLOOR TO FLOOR

GENERAL ACADEMIC BLDGS
ON 1/2 LEVEL PODIUM
4.0 M FLOOR TO FLOOR

GENERAL ACADEMIC BLDGS
ON GRADE AND ATTACHED TO PODIUM LEVEL BLDG
4.0 M FLOOR TO FLOOR

STUDENT AND OTHER HOUSING
ON GRADE
3.0 M FLOOR TO FLOOR



higher elements

In general, the building heights in the Grangegorman Urban Quarter have been set between 4 and 6 storeys to respond appropriately to the education and health uses which they will provide and to relate to the surrounding Dublin city context. At the edges of the district, these building heights step down to be lower, particularly along the North Circular Road and Grangegorman Upper Road.

An important strategy in the Masterplan provides three special places with increased heights to create a strong identity for the Grangegorman Urban Quarter. These three higher elements have been positioned in central locations to give the district a distinctive presence when viewed from around the site and the city. Their locations have been selected to ensure that they would not have a direct impact on the existing residential neighbourhoods.

The Campanile

The most prominent element, the “Campanile,” is located along the student housing curve on the north edge of the Fields, at the Upper Terrace, to give expression to this significant public space and establishing a “marker” to set the Grangegorman area in its urban context. Inspired by the numerous slender towers and spires in Dublin, this 15-storey landmark provides an elevated viewpoint for the public, while also helping to orientate users and pedestrians within the Quarter itself. This “campanile” typology can be found in various other urban and campus settings around the world.

Student Housing

The student housing buildings are set in a series of curves along St. Brendan’s Way and Serpentine Walk to define the northern edge of the Fields. They step up and down between 4 and 8 storeys to offer a compelling image when viewed from the city, providing a dynamic sense of movement much like the natural landscape. These buildings reinforce the curved geometry to shape a vibrant street realm along the spine of St. Brendan’s Way and Serpentine Walk for pedestrians and users, ensuring that these spaces will be socially activated.

Broadstone Gate

The massing of buildings on the Grangegorman Urban Quarter steps up toward the major entry gateway, transport hub and public open space at Broadstone Gate. The buildings in this location strengthen the identity of the public-oriented spaces accommodated in this area, including the Science & Industry Centre, DIT Research Center, and HSE administration. Ranging between 5 and 12 storeys, with the highest elements at 10 and 12 storeys, the buildings create an appropriate, significant urban marker that relates effectively to the greater city in this historically prominent location—especially with regard to the future LUAS line and stations nearby.

character of ivy avenue

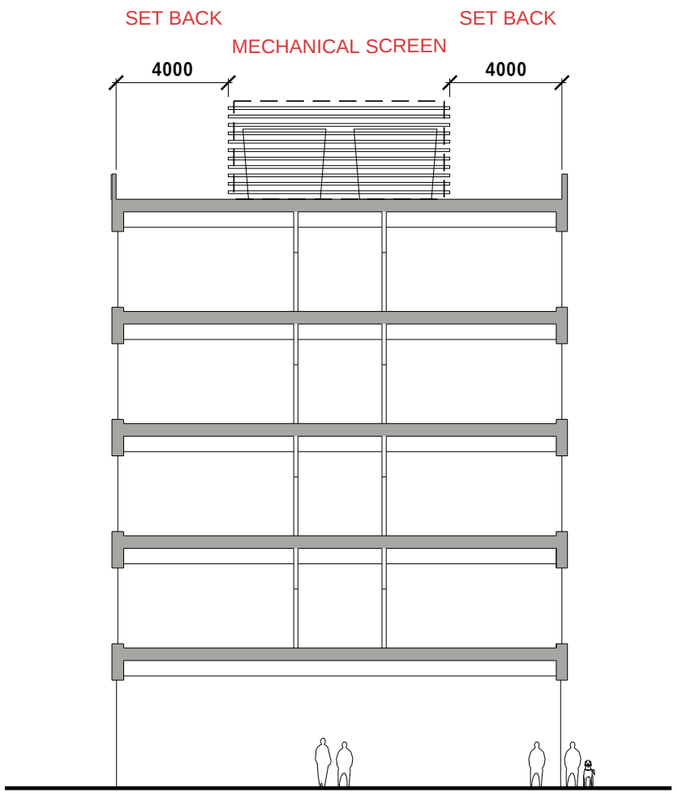
The character of Ivy Avenue on the north and south sides has been created to optimise solar orientation and shape architectural identity. The north (south-facing) side is more open, incorporating generous landscaping and breaks in the building line, in order to maximise sunlight access into the quads 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.

South Facing Quads

In general, the Masterplan configures the DIT and HSE Quadrangles so that their varied program will fit with sensitivity and richness into the site. The buildings and open spaces are developed in close dialogue with the topography and the light.

Open spaces, public gathering areas, pedestrian paths, views and buildings are organised in relation to the movement of the land and access to sunlight. Given Dublin's frequently cool and wet climate, orientation to the southern light and warmth is carefully shaped and enhanced for all of the important social gathering spaces—including the major public spaces (Upper Terrace, Library Square, St. Brendan's Way, landscape finger parks) as well as the individual quad courtyards. The connection of buildings, open spaces with the environment and exposure to daylight enhances the specificity of this place and gives expression to the culture and community of the Grangegorman Urban Quarter.



roofscapes

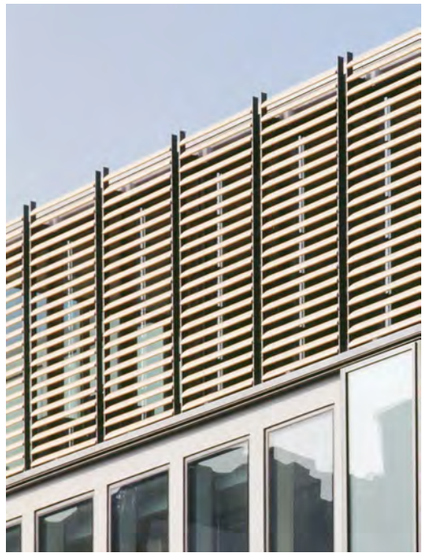
Roofscapes & Service Courts

The roofs of buildings and other large hard-surface courts are often prominently visible from surrounding taller buildings, particularly in the DIT and HSE areas. These areas should therefore be considered as a building façade with respect to all new building projects, and must be given appropriate design consideration, with particular attention to the treatment of mechanical systems and exposed elements. Green grass sod roofing should also be used whenever feasible.

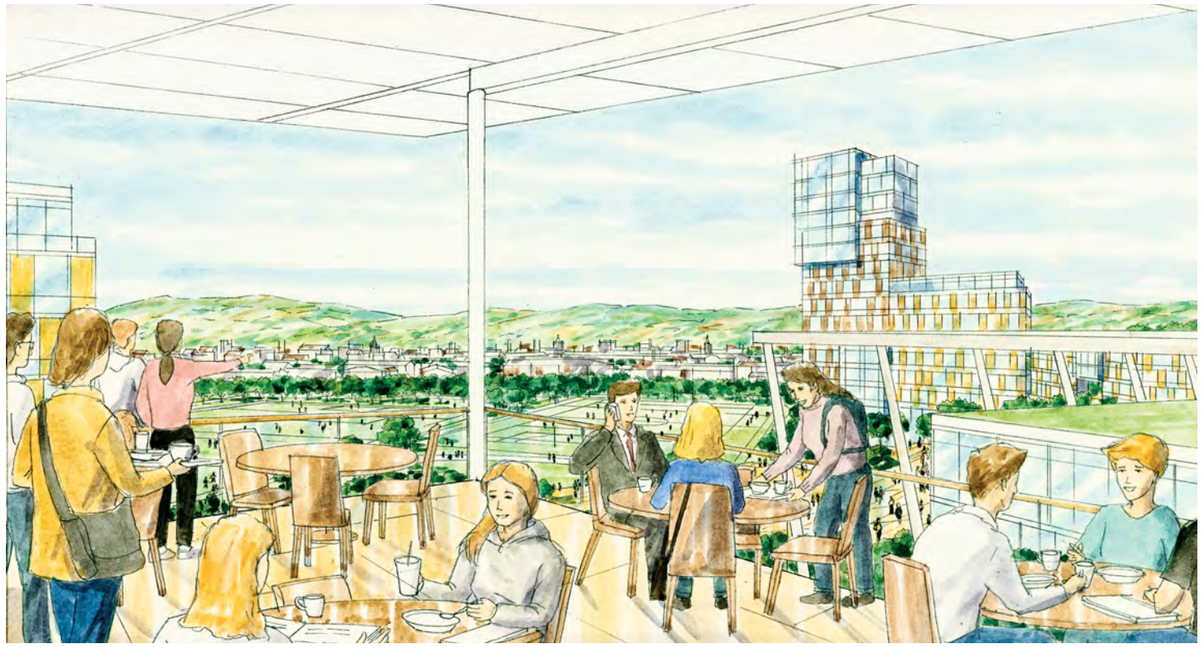
Rooftop Mechanical Screening

Approximately one-third of a typical lab or research building is devoted to rooftop mechanical equipment and exhaust stacks. Despite required setbacks that decrease the visible mass of the rooftop equipment, the visual impact of the exhaust stacks is still significant. In order to minimise the visibility of undesirable mechanical equipment, the Masterplan advocates that exhaust stacks should be clustered whenever possible and collectively screened within a series of simple forms.

Each building should have an organised and screened appearance for all rooftop equipment from prominent viewing angles, resulting in a collection of simple rooftop forms.



Examples of rooftop screening for mechanical equipment



Rooftop terrace view from the tourism and food quad

colours and materials

Introduction

Colours and materials play a significant role in creating a cohesive image for the Urban Quarter, while lending distinctive identities to various parts of the District. A harmonious palette of colours and materials is developed from the existing Dublin context, the local climate, as well as the design guidelines established for the Grangegorman development. The use of special accent colours and materials is reserved for areas of specific articulation such as important structures, gateways and entries.

- The overall palette of appropriate colours and materials has been selected to respond to the site's Dublin setting. The materials and colours are intended to look appealing and work well with the specific Irish climate and light. Materials are envisioned to be durable and have a good appearance over time, particularly in regard to the two significant conditions of Dublin's weather—abundant wet, and limited sunlight, particularly during the winter months.

- Materials are also inspired by precedents of historical buildings in the city. The Georgian brick and stone buildings have kept their engaging appearance despite their age. Having similar materials for the Grangegorman Urban Quarter will link the new District into the urban fabric of the city.

- The Masterplan strives to balance individuality and harmony in terms of colours and materials. While the Masterplan seeks to provide flexibility to the different architects in future phases to design the buildings, it recognizes the importance of achieving an harmony and integrity for the entire Grangegorman Quarter. For example, different faculties within DIT as well as the HSE could have individual identities within an overall unified character.

- All colours and materials will be reviewed and selected according to the highest possible standards regarding overall quality for texture, colour, consistency, durability, etc…) Quality control measures will be implemented to ensure the best possible results, including the preparation of full-size mock-up panels of colours and materials for review.

- It is important for the selection and application of colours and materials on buildings to follow a harmonious and integrated sense of proportion and scale, utilising rectangular unit modules and horizontal grids that complement the primary brick work.

- The transition between different types of colours and materials will be coordinated and treated in a well-articulated, meaningful way in order to achieve a cohesive unity of materials. The arbitrary or random application of multiple colours and materials on buildings will be discouraged.

- The selection and application of all colours and materials will respect the building height datum.

Brick, Stone and other materials

Where brick is used, the buildings on the Grangegorman Urban Quarter will have exterior brick in warm, rich, ochre-like colours that best reflect the light. 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" (Upper Terrace and Arts Centre), Broadstone Gate, North Circular Route and other gateways may contain stone elements to provide a more substantial character. The stone material will be a gray-green stone similar to Irish marble. For example, the buildings entries can be distinguished with textured stone panels.

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

Windows and Glazing

The windows will help to define the desired vertical and horizontal expression, and distinguish the solid and transparent areas of each building. At night, they will stand out as the visible and prominent features of the buildings.

- Care should be taken in the sizing and composition of the frames, mullions and muntins of the windows in order to provide a varied but harmonious effect.

- The windows are also important in terms of bringing light into the interior spaces and should therefore be generously dimensioned.

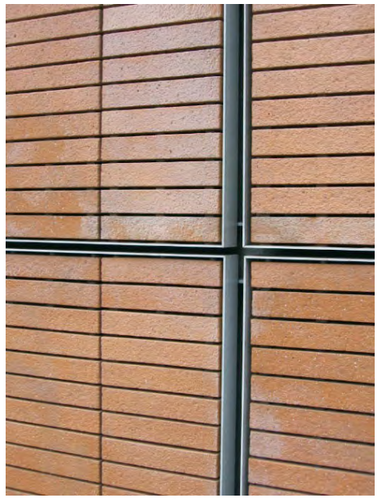
- All window mullions and other framing elements should have a light colour (white, off-white or silver) so that they stand out and can be seen against the glazing areas.

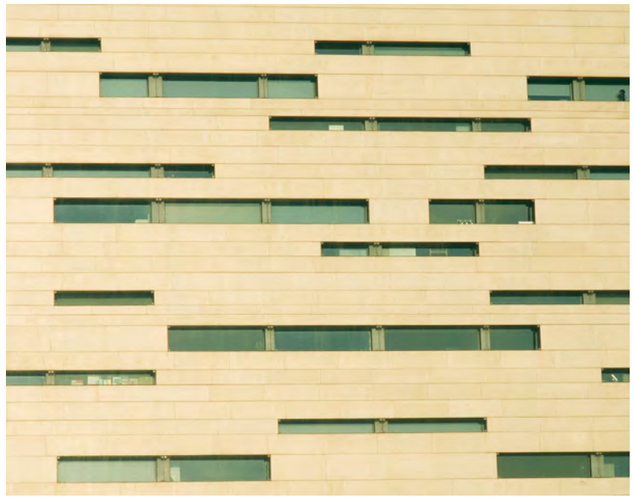
- Select high-performance, low-emissivity glass with high light transmittance.

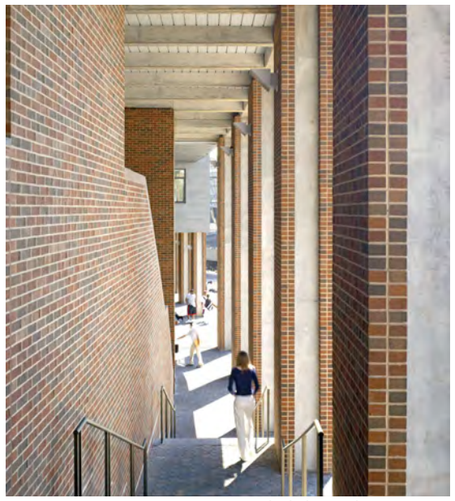
- Provide sufficient depth between the windows and the exterior wall surfaces by incorporating recesses or projections, in order to avoid a superficial, flat look in the elevations.

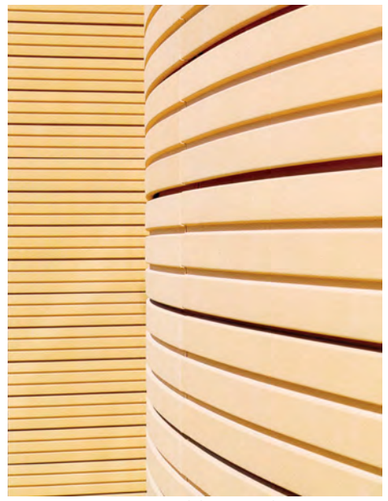
- The use of the following will be discouraged: dark-tinted glass, mirrored glass, dark mullions, or large/oversized panes of glass.


glazed wall


framed panel system


stone cladding


brick and concrete


architectural terra-cotta


metal cladding


point fixed glazing

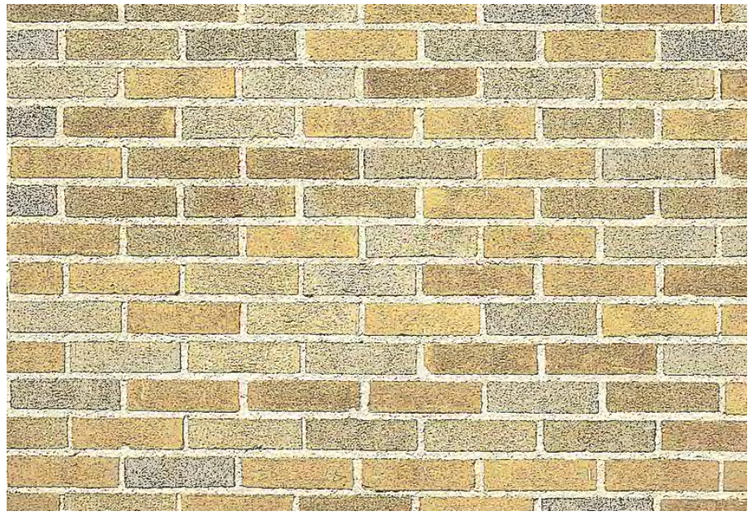

precast concrete panels

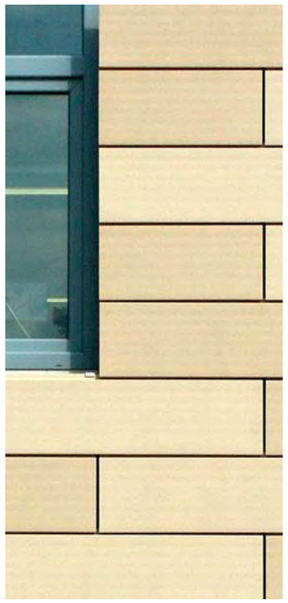
colours and materials

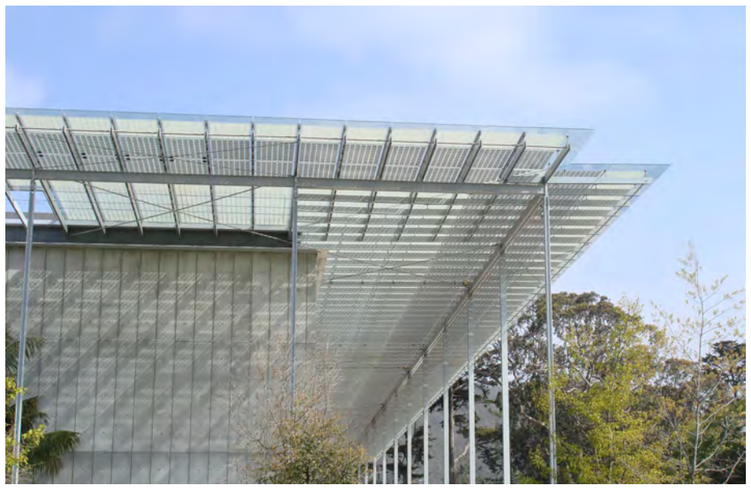
Secondary Materials for Building Envelope

Other secondary materials may be considered for selected buildings. These will be reviewed and approved on a case-by-case basis, and will be subjected to the same quality control measures as the primary materials, in order to ensure the highest-possible standards.

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



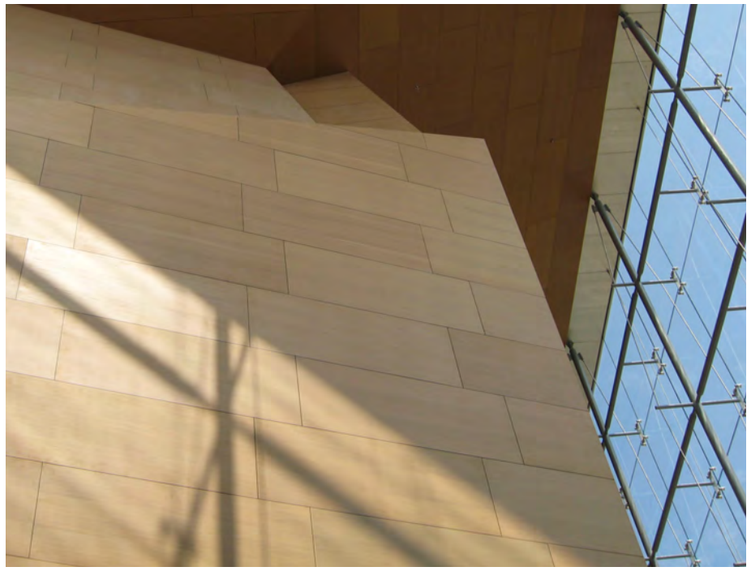




colours and materials

Urban

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 in order to maximise exposure to daylight.



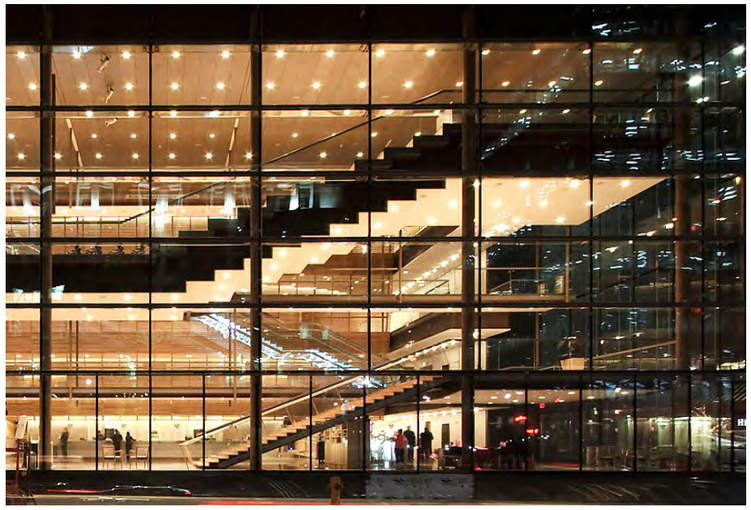
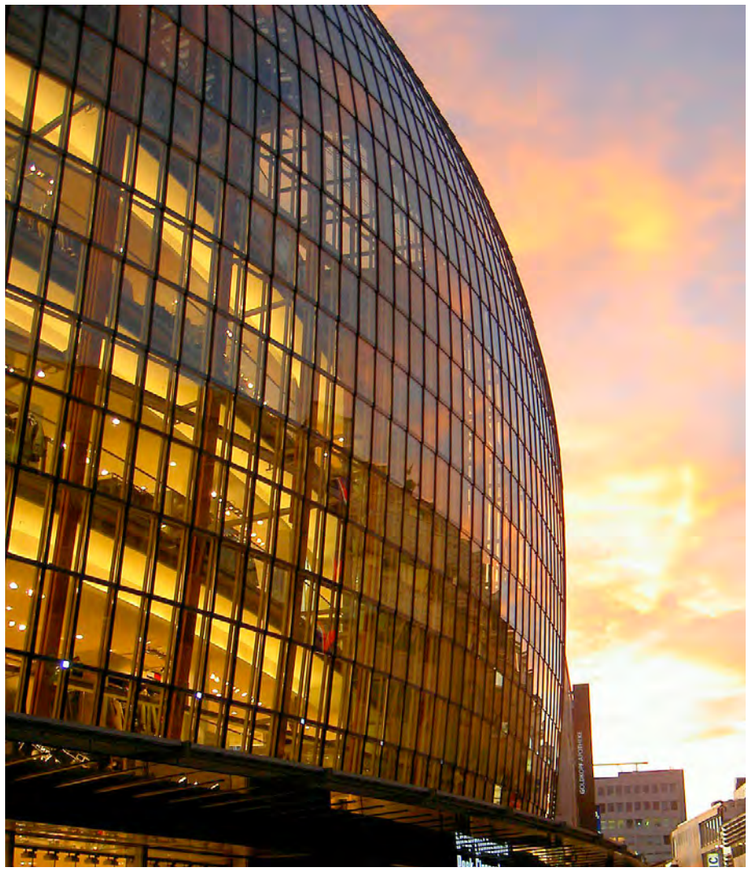


photo: Sam Javanrouh I Daily Dose of Imagery I wvs.topleftpixel.com I sam@topleftpixel.com

photo: Jon Cazenave



colours and materials

Hearts

The two hearts of the Quarter, Upper Terrace and Arts Centre / Student Hub and the special buildings surrounding them will be given the most significant colours and materials. The Arts Centre will have warmer, brighter and more intense colours to reflect their more public, friendly and informal character. Buildings at the Upper Terrace academic heart will have overall lighter and cooler colours to reflect their more elegant and formal status. Stone, metal and large expanses of glass are suggested as the predominant materials in these areas.

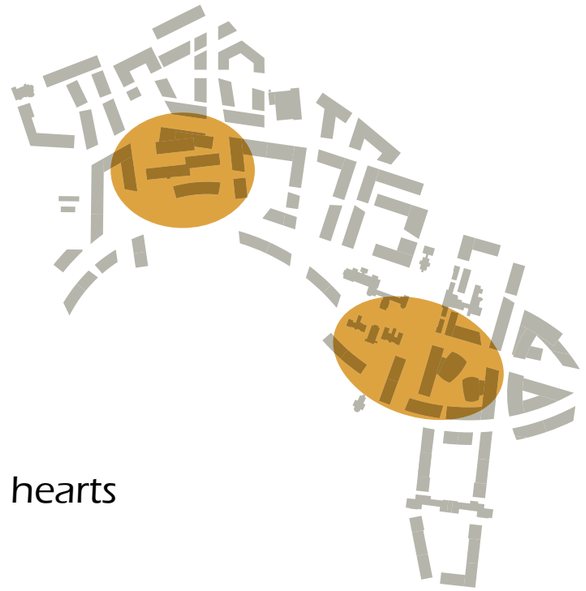
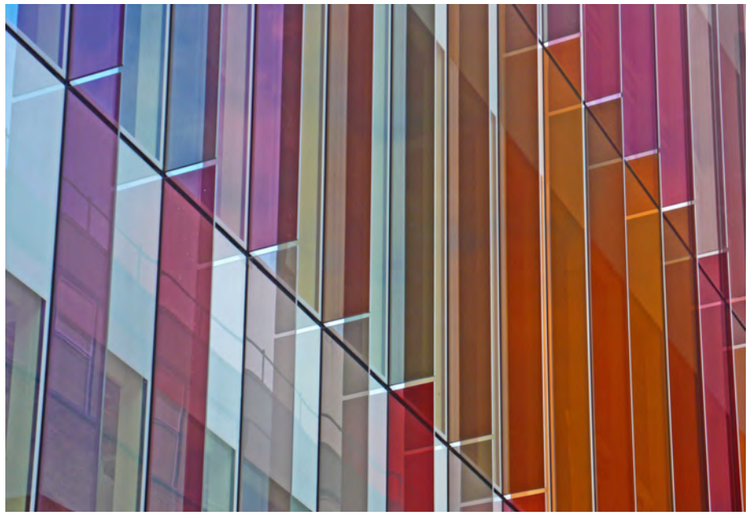


photo: Hester + Hardaway

photo: Roland Halbe



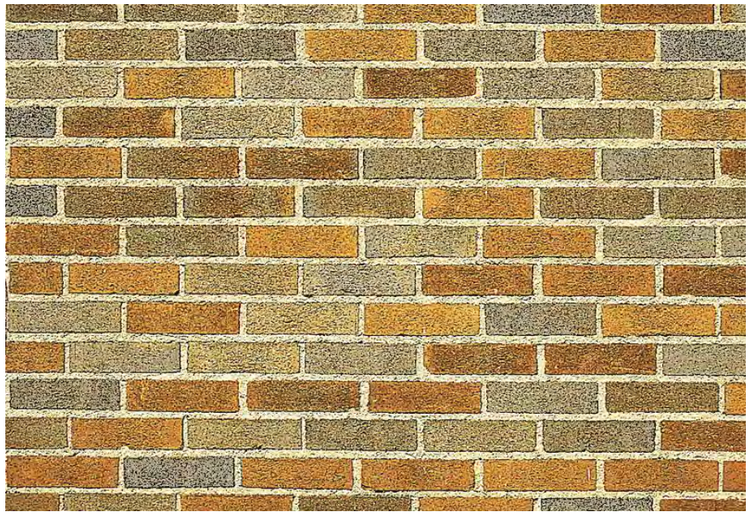
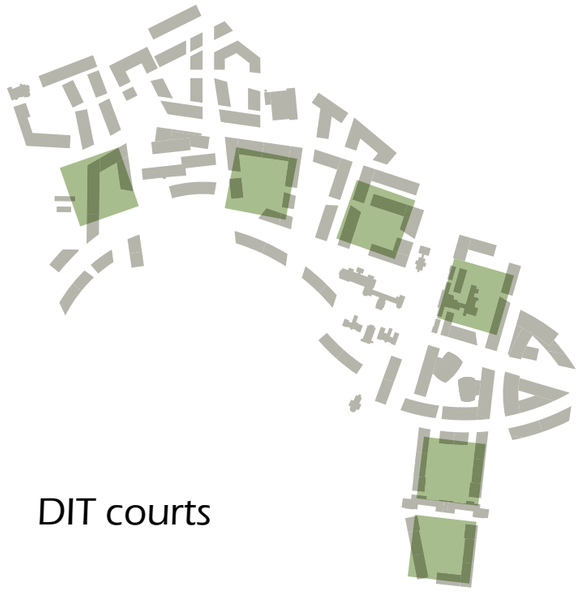


photo: f. holzherr, www.architekturfoto.net

colours and materials

DIT Courts

The courtyard and associated buildings within each Quad will have their own identity, based on the use and faculty accommodated. Individual entries and passageways within the courts can be more intensely coloured, symbolic of the vibrancy of the activity within, yet related to the overall palette of colours and materials for the buildings. The basic material is brick in an ochre colour, but the openings and gateways will have accent colours, using the precedent of colourful doorways on Georgian buildings around the city. The portions of accent colours are limited to only the areas around openings and entryways.



KieranTimberlake Associates

Kieran Timberlake Associates

photo: Masao Nishikawa

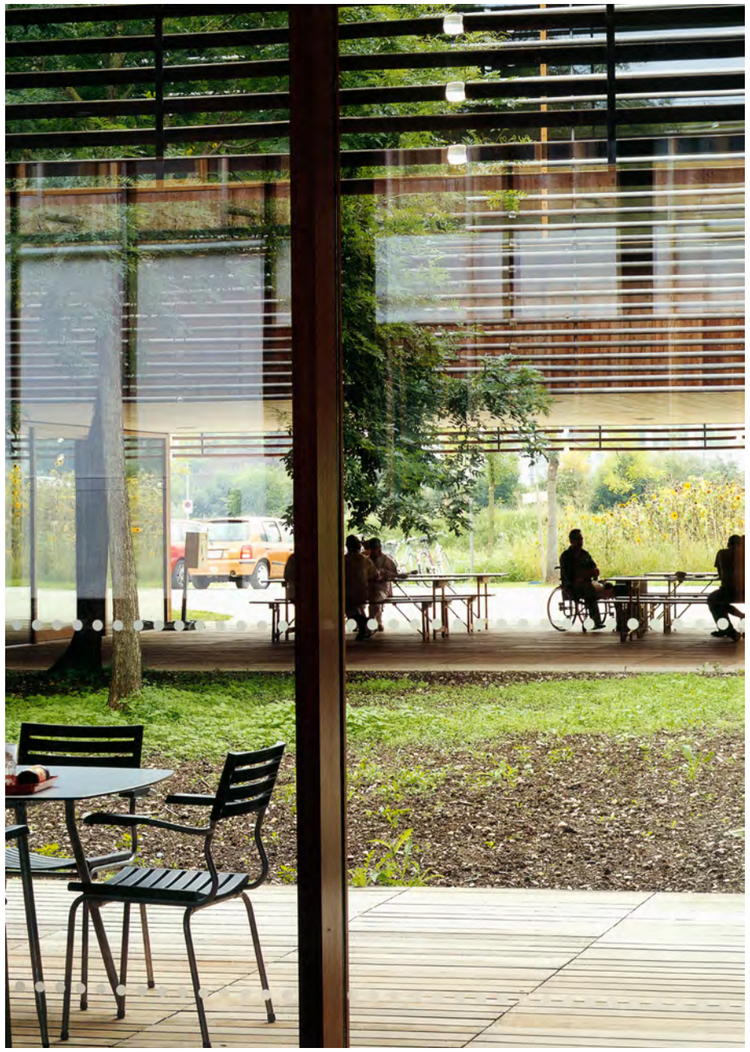
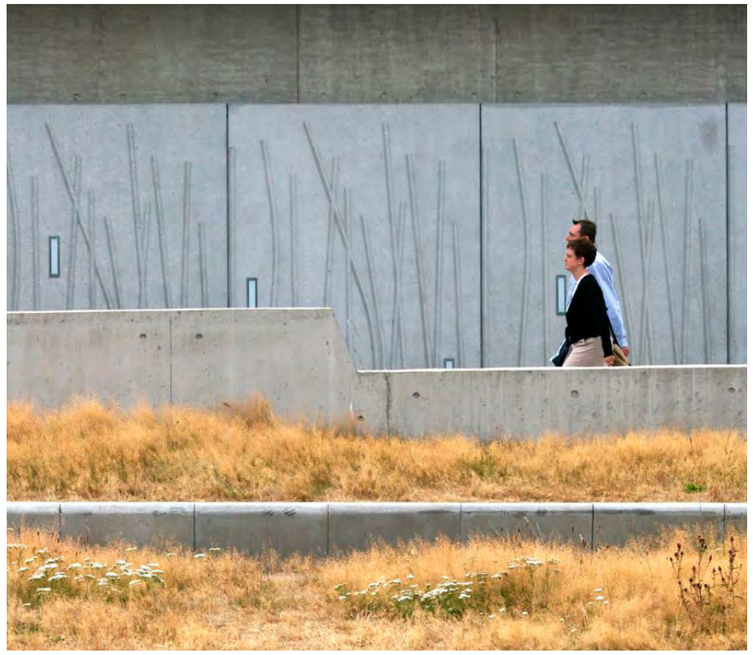


photo: Masao Nishikawa

colours and materials

HSE Courts

The exterior materials for the buildings within the HSE zone will be characterised by a softer and warmer palette of colours that are appropriate for health-related facilities. In addition to enhancing an engaging and inviting atmosphere for the HSE, these warmer tones will help in the psychological healing and therapeutic processes of the users and clients of HSE.



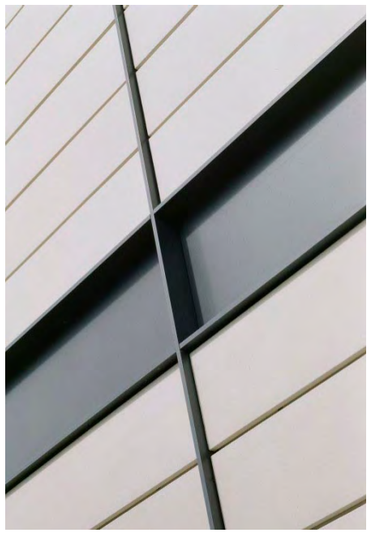
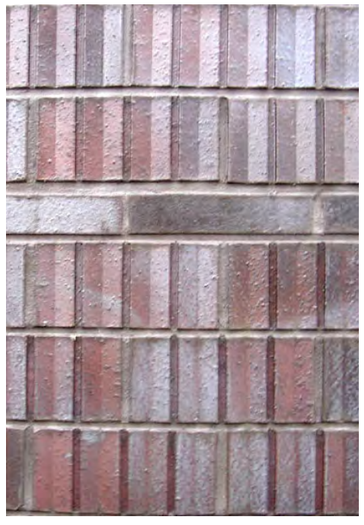


photo: Trevor Mein



colours and materials

Green

The colour and material palette for the open spaces and buildings along the Serpentine Walk and North-South landscape fingers is developed in close response to the landscape design of these major “Green” areas within the Masterplan. The buildings in these areas will carry a textured material to provide a background complementary to the strong, distinctive landscape elements in these locations.

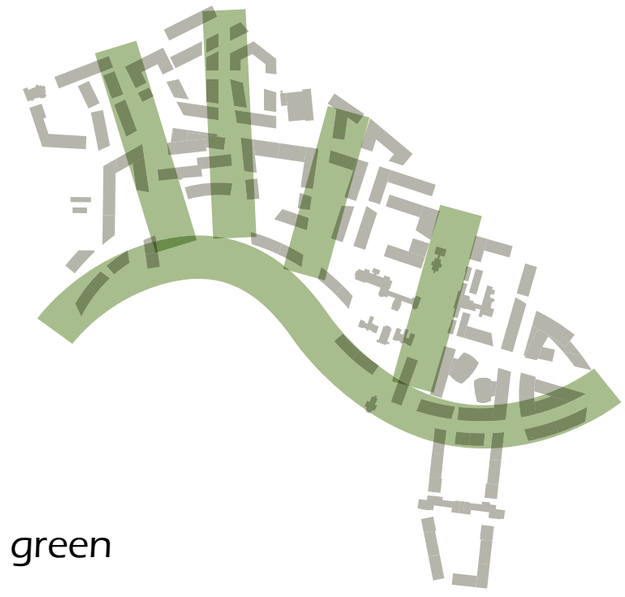


photo: Roland Halbe

University of Cincinnati Student Life Center, Moore Ruble Yudell Architects and Planners

colours and materials

Gateways

As a major focus of educational, healthcare and community life in North Dublin, the Grangegorman Urban Quarter will be distinguished with primary access points for pedestrian, vehicular and transit traffic at the periphery of the site.

Several primary potential gateways provide entrances and serve the east, northwest and southwest edges of the District. Specific landscape and architectural strategies mark these gateways, enhancing their legibility to pedestrian and vehicular traffic, as well as the surrounding communities.

- Broadstone Gate

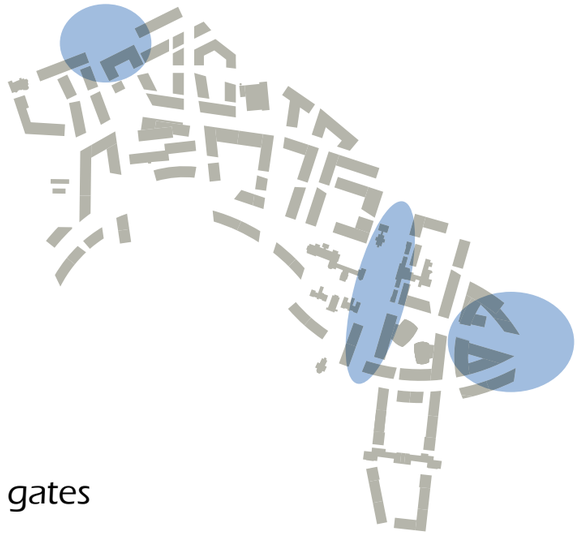
  At the east, the Broadstone Gate is the most significant symbolic and historic entrance to the Grangegorman Quarter. This will be the entrance used by most people to the District, with direct links to St. Brendan's Way—the major pedestrian spine through the District—as well as the future LUAS line.

- North Circular Road

  This will become an important symbolic and visitor entrance to the site from the northwest, especially for patients, employees and staff of the HSE. It is aligned with a strong view corridor toward the Fields to the south.

- Grangegorman Lower Road

  Grangegorman Lower Road itself presents two major gateways. Many people will access the district via this route from both north and south. With priority given to pedestrians, it occupies an important and central position directly adjacent to several landmark structures and well-used zones—the Clock Tower, the Arts Centre, the Cultural Garden and the Student Support Services "hub."



Behnisch Architekten

Andropogon Associates

Tango Housing, Malmo Sweeden, Moore Ruble Yudell Architects and Planners

Institute for Forestry and Nature Research, Behnisch Architekten, photo: Martin Schodder

colours and materials

Sustainable Materials

The building materials for the future Grangegorman Quarter will be selected according to the highest sustainable standards, in order to protect local ecosystems, conserve natural resources and energy, reduce building operation costs, enhance asset value and profits, promote superior indoor air quality, foster increased occupant health and productivity, and ensure long term serviceability for the buildings. Following are the key aspects of a sustainable strategy for materials:

High quality

- Select materials that have low life-cycle costs and require low maintenance, optimising the concept of "reduce-reuse-recycle" to help create buildings that have long and useful lives.

High performance

- Select materials that respond to Dublin's climate and natural context in a way that conserves resources and energy, and minimises the emission of heat and pollutants.

Healthy

- Enhance indoor environmental air quality, including use of non-toxic, low volatile organic compound (VOC) materials for paints, carpets, adhesives, etc…; elimination of CFC's, HCFC'c, and Halons; and permanent air monitoring systems.
- Implement an indoor air quality management plan during construction.

Environmentally responsible

- Select the use of recycled, recyclable materials and renewable resources whenever possible.
- Promote the use of healthy materials from local sources.
- Use woods for interior applications from certified sources.

Carefully processed

- Incorporate accepted sustainability standards in the manufacturing, transportation, fabrication and installation of the materials.
- Review materials for their use of non-renewable resources during their production, transport to the site and construction.
- Waste during the construction and operation of buildings should be reduced to a minimum and recycled.

Flexible

- Enhance adaptability and durability by adopting a flexible approach to building technology with the goal of ensuring 50- to 100-year buildings. Ensure that building detailing, systems and materials selections represent the very best building practices.
- Select materials that will accommodate low cost re-configuration in interior applications.

Robson Square, Vancouver British Columbia, Arthur Erickson, photo: Howard Davis

accessibility, security and safety

Accessibility

The Grangegorman Urban Quarter will be guided by the following principles regarding overall universal accessible design, site and building features:

- Maximise the ability of all potential users—particularly regarding issues of age, mobility, visually or hearing impaired—to enter the site, move around, enter the buildings and use the facilities.
- Design buildings to be logical, simple and obvious to use; to fit into and, where possible, improve surrounding movement networks; to link roads, footpaths and public spaces though and across the site.
- Ensure that building access is clearly and easily identifiable for visitors who may be unfamiliar with the area, and for persons of all abilities.
- Ensure that the movement network supports convenient, safe and appropriate travel, including good and safe principles with regard to the road and pathway design.
- Promote the use of cutting-edge technologies to achieve wayfinding strategies.
- Provide adequate access for emergency services.
- The proposed pedestrian paths throughout the Quarter will provide a good surface for wheelchair users, and roads will be free from kerbs to optimise access.
- Provide external sign-posting/way-finding elements that address the needs of persons with disabilities.
- Design internal way-finding to be effective, safe and efficient whilst minimising disorientation.
- Adopt best practice provisions regarding building and external spaces design (e.g. BS 8300:2001 or other standards/guidance).
- At all stages of the project, fulfill and exceed requirements stated in all relevant current and future regulations regarding accessibility, including up-to-date Accessibility Audits.

Security and Safety

A major goal of the Grangegorman Masterplan is to provide a safe environment at all times for students, clients, users, employees and visitors, by optimising the following measures:

- Ensure that the authorities and officers responsible for safety and security on the Grangegorman Urban Quarter are sensitive to the community.
- Strengthen existing cooperative relationships with the local police and fire protection personnel, public transport personnel, etc…
- Assist local authorities with public safety programs and public emergency response services at and near Grangegorman facilities.
- Implement strategies for optimising passive observation, openness and clear lines of vision, including the adoption of good urban design solutions and the use of CCTV cameras.
- Provide adequate security methods, including exterior lighting, particularly in parking and recreational areas, in order to enhance a safe environment on all Grangegorman sites. These security methods should be designed in a manner which is sensitive to the surrounding communities.
- Support local efforts to increase fire and security protection, especially in communities that may have a high incidence of crime.

Anti-social behaviour

- Implement all appropriate measures regarding police protection, DIT/ HSE administrative policy, community involvement and other regulations in order to discourage and reduce all forms of anti-social behaviour as much as possible—including behaviour associated with drug abuse and the excessive consumption of alcoholic beverages.
- To ensure safety and security for all pedestrians, provide sufficient street lighting throughout the District and surrounding streets.
- Provide special anti-graffiti coating on ground and wall surfaces in the pedestrian paths and gathering areas. Should graffiti occur anywhere, remove it as soon as possible to optimise ease of removal and to discourage “copycat” graffiti.
- Select sturdy materials in areas of high pedestrian traffic.
- Provide one or more designated skateboard area(s) or park(s) within the site on an artificial surface, in order to minimise damage and accidents from skateboarding.
- Implement “smart” design solutions in the hardscape and landscape areas as appropriate to prevent and discourage skateboarding, including the following: Use natural stone for surface materials and street furniture to create irregular surfaces, rounding off the edges of street furniture and kerbs, etc…