

DRAFT

GEORGE'S QUAY PLAN



Dublin City
Baile Átha Cliath

December 2008

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Executive Summary

The aim of the George's Quay Plan is to provide a co-ordinated urban design strategy for the future development of the area to ensure that that new development interacts positively with its local and the city-wide environment, whilst promoting an environmentally and socially sustainable city quarter. The Plan seeks to enrich the existing public space and street network, to create new routes and spaces to enhance the permeability of the area, to achieve a greater mix of uses with vitality and diversity at street level and to create an attractive city area with a sense of place. In summary, the Plan proposes an urban design strategy to guide future sustainable development within the George's Quay area, based upon the following strategic objectives:

- **A re-establishment of the Custom House set piece:** The Plan seeks to strengthen north-south connections, particularly between Custom House and south to Pearse Street, Trinity College and beyond; the scheme also seeks to strengthen the link between the Custom House and the rest of the city, particularly between Moss Street and Tara Street in the immediate vicinity, St. Stephen's Green and Grafton Street areas to the south, Dublin Docklands to the east and Dublin's historic core/city core to the west of the George's Quay area;
- **A strengthening of the base datum along the Liffey corridor:** The strengthening of the base datum along the River Liffey, between George's Quay and Townsend Street, to assist in enhancing continuity and character along the river corridor and within the city centre. The location of the study area is mid-way along the length of the River Liffey defined by the inner city limits and can be described as "Midtown". An opportunity exists to create both an identity and destination point at the George's Quay area along the Liffey corridor, which can "unlock" existing blockages to cityscale movement;
- **A response to the cityscape:** The Plan seeks to identify, strengthen and invigorate the key public realm nodes in close proximity to George's Quay and Environs with the areas of the Custom House, Tara Street station, College Green and Trinity College highlighted. Accessibility and connectivity between these areas is encouraged through the strengthening of desire lines and a North – South connection;
- **A height strategy:**
 - Provision for a landmark high rise structure located at Tara Street Station, acknowledging the station as a key city centre transport node and landmark destination;
 - A provision for an iconic mid rise wayfinder building at the intersection of College Street and Pearse Street, marking a key new pedestrian route between College Green and Tara Street Station and assisting to enhance the identity of the study area;
 - Two mid rise wayfinder towers, combined with public realm around the existing City Quay Church, City Quay School and integrating with the existing residential communities in the City Quay area.
- **A response to key desire lines:** The study seeks to strengthen George's Quay around the current street network. In addition, the Plan seeks to establish two new key desire lines through the study area, the first from the College Green area to Tara Street station and the second, the provision of a green route that follows the train line from Pearse station via Tara Street station, crossing the river Liffey at Butt Bridge. These proposed routes enhance the study area and improve the accessibility to the station and key attractors in close proximity to the George's Quay area. The Plan seeks to create through-routes that will assist in "Breaking" up the current large building blocks and allow for greater permeability and connectivity through the study area.

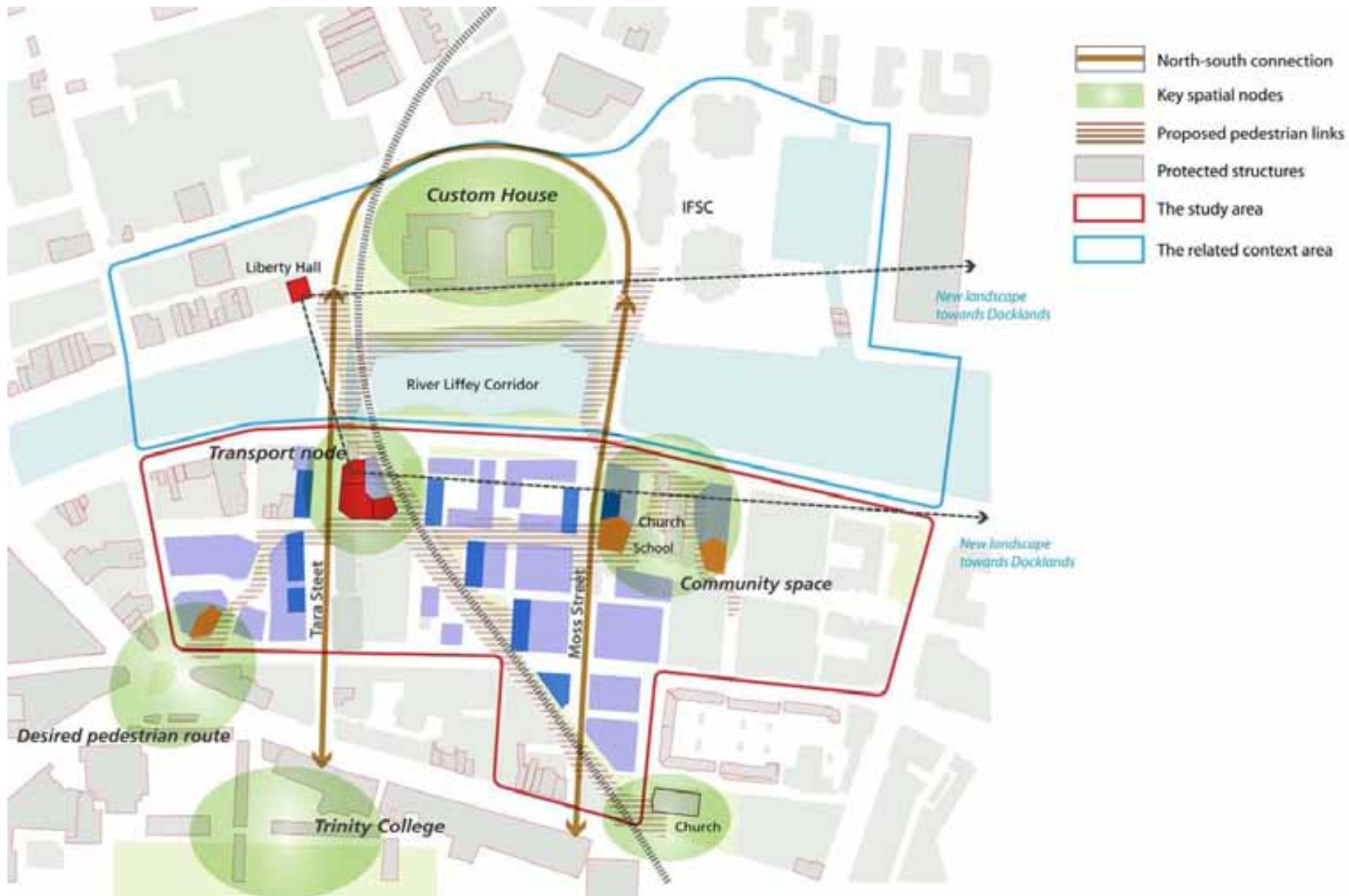


Figure 0.1 George's Quay Plan - Overall Plan Strategy

1.0 Introduction

The George's Quay area occupies a city-centre location on the south bank of the River Liffey directly opposite the Custom House. The area is strategically located between O'Connell Street, College Green and Dublin Docklands. It is well connected, in close proximity to a number of transportation hubs providing mainline rail, suburban and commuter train services at Tara Street and Connolly Stations, and to the proposed Interconnector at Spencer Dock. The Red Luas Line runs nearby with stops at Bus Arus and Connolly and the planned extension of the Luas Green Line is proposed to cross the Liffey on a new bridge aligned with Hawkins Street. It is part of the city which has undergone significant change and redevelopment in the past and contains a number of taller buildings e.g Hawkins House, Apollo House and the George's Quay Development. In terms of use, the area has a strong commercial office component. In addition, the area retains a residential element and a number of community activities.

Despite the central location and high-levels of public transport accessibility, as well as proximity to the IFSC and the traditional office core of the south-east inner city, the area suffers from severance and lack of connectivity with the wider city, which in turn has resulted in a number of vacant and underperforming sites and a lack of vibrancy throughout the plan area. These factors have undermined the sustainable development of the area as an attractive place for residents, investors and visitors. On this basis, Dublin City Council considered it necessary to prepare a plan to address the following issues:

- To determine the potential for the Plan area as a high intensity cluster;
- To improve the viability for a sustainable mix of use;
- To improve the connectivity, public realm and amenity of the area;
- To assess the appropriateness of tall buildings for the area and if so;
- To provide guidelines on the appropriate location and form of tall structures.

1.1 George's Quay Study Area

The George's Quay study area (figure 1.1) is located on the southern bank of the River Liffey between Hawkins Street and Lombard Street and is bounded by Townsend Street to the South and Burgh Quay, George's Quay and City Quay to the North. The related context area lands located on the northern bank of the river include Liberty Hall and the Custom House. The related context area to the north of the River Liffey has a direct relationship and is intrinsically linked to the George's Quay study area. This blue line area contains Custom House and acts as a counterpoint to the study area on the opposite bank of the river.



Figure 1.1 Dublin City Development Plan showing George's Quay Plan Area and Related Context Area

1.2 Key Issues facing the George's Quay Study Area

The George's Quay study area can be characterised as being positioned in a central location with good accessibility to public transport, having a diverse mix of uses and architecture and currently involved in a cycle of redevelopment. However, the study area faces and will continue to face various issues over the coming years. This includes, but is not limited to:

- Lack of identity and sense of place
- Lack of vibrant public realm
- Lack of permeability and connectivity with a poor quality pedestrian environment
- Market driven projects are emerging, that may not contribute to enhancing the urban quality of the area
- Heavy traffic congestion through the site area
- A perception that office use is dominating



Figure 1.2 George's Quay

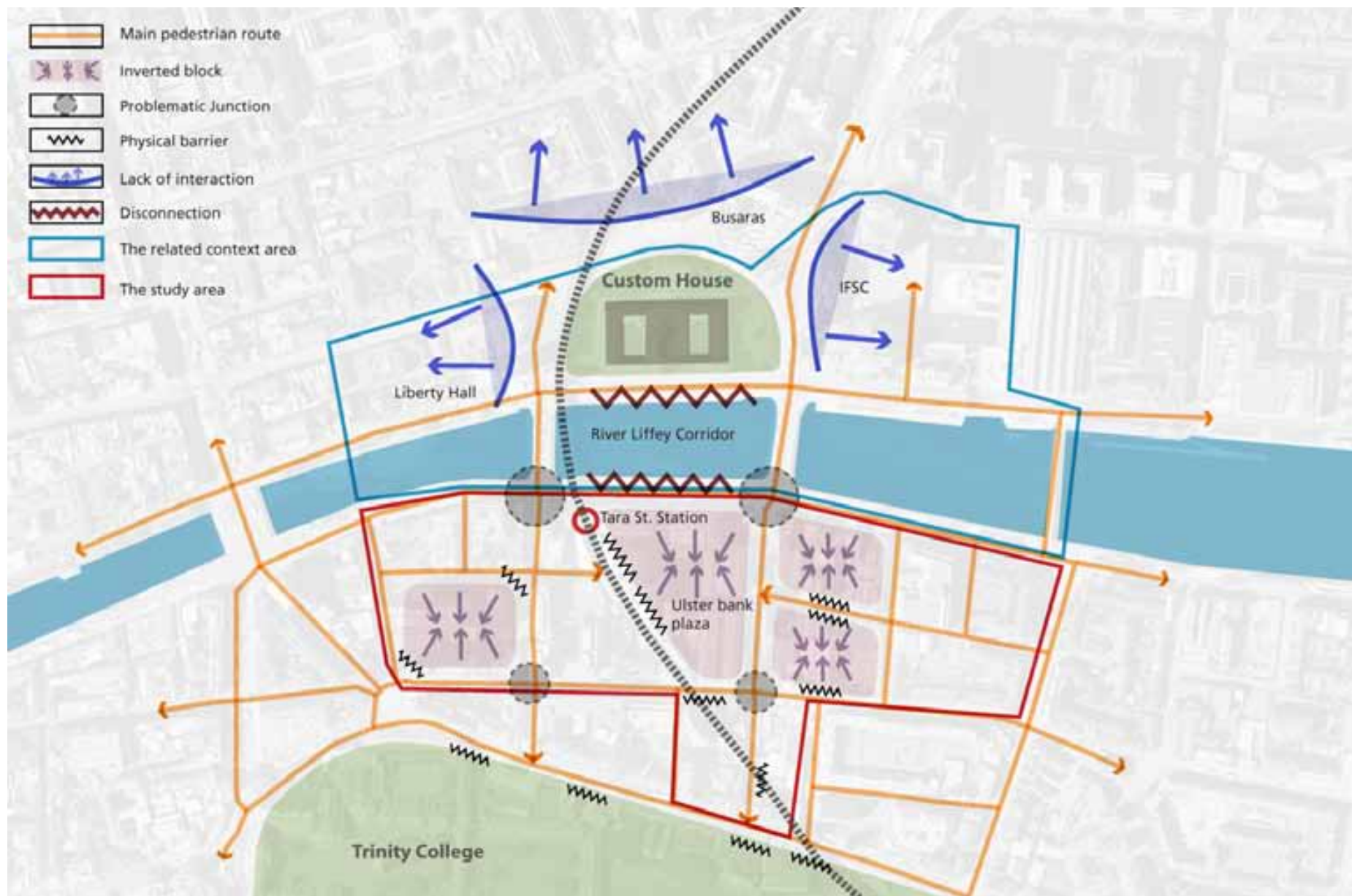


Figure 1.3 Issues and Barriers in the Study Area

1.3 Purpose of the George's Quay Plan

The purpose of this Plan is to encourage the future design of urban spaces to interact positively with all elements of their local environment and the wider city context, whilst promoting social and environmental sustainability. The plan sets out a strong vision for the area, which with the aid of the right design tools, will see the area grow positively into the future. The plan has been prepared to provide a coherent strategy and guidance on how the plan area should intensify and develop into a sustainable mixed-use development.

The Plan for the George's Quay study area builds on DCC's policies and objectives of the 'Dublin City Development Plan 2005-2011'. As a guidance document, the George's Quay Plan will also assist in the planning process by providing landowners and developers with additional guidance developed specifically for the study area. The design guide is set under a series of themes:

1. A strategy for movement, connectivity and public realm
2. A strategy for height within the George's Quay area
3. A strategy for mix of use
4. Key aims towards achieving sustainable development
5. Guidelines for future development of key sites within the study area

1.4 Towards a Vision for George's Quay and Environs

An Integral Part of Dublin City

Located in a key strategic position in the city centre, George's Quay has and will continue to have strong physical and cultural linkages to the rest of the city. The George's Quay area will be made more accessible by enhancing permeability and accessibility through the neighbourhood. This will allow the district to gain maximum benefit from improved pedestrian footfall, and to build an environment that will further enhance the vibrancy of the city.

The design of a quality environment for the area is considered integral to the overall regeneration of George's Quay and Environs. The Plan for the area is also being used utilised as an opportunity to open connections and a public route between College Green and Tara Street Station by maximising the use of the Hawkins House block.

A Distinct Environment

The vision for George's Quay and Environs is responsive to the distinct setting of the area. It aims to create an environment that local persons and visitors alike will be able to relate to and identify with. The integration of existing features within the area such as the Customs House to the north, Trinity College to the south and numerous protected buildings within and surrounding the site will assist in providing a structure for future development that observes historic land uses.

A Great Place To Visit, Work and Live

Enabling people to move freely within and around the area, while undertaking their day to day activities, is integral to building an attractive, safe and user friendly public realm that responds to the basic needs and desires of the people who utilise the locality.

The establishment of good permeability throughout the site in response to the disconnectivity currently experienced will assist George's Quay in becoming a great

place to live, work and visit. Good site access coupled with the establishment of active facades, an evening economy and a ground level mix of use will all aid in the enhancement of vibrancy and safety in the area.

Contemporary and appropriate high buildings should be added to the surrounding streetscape having due consideration to the existing historical context. Any proposed development should also be of a sustainable nature, high quality, constructed with durable materials and finished to a high standard. The establishment of roof gardens wherever possible and maximising the amount of natural light into the vicinity will also assist the study area to become a great place to live, work and visit.

A Sustainable Environment

The George's Quay and Environs Plan envisages a sustainable environment developed through addressing the key sustainability aims of; quality of life, reduction of the carbon footprint, mix of use, diversity of social mix and built form and the environment.



Figure 1.4 City Quay

With regard to movement, the Plan seeks to promote interconnectivity between all modes of transport – vehicular, pedestrian, cycle and public transport – and further seeks to assist in improving the efficiency and performance of connections between George's Quay and Environs and Dublin City.

Movement and Connectivity Throughout the Area

Fundamental to a vibrant and healthy urban area is permeability, movement and access. Accordingly, where appropriate, developments should seek to establish and/or enhance the network of pedestrian and cycle ways throughout the George's Quay Plan area. It is advantageous that these pedestrian and cycle routes form part of the wider network of links throughout the Dublin City area, promoting enhanced opportunities for movement and connectivity in the city as a whole.

2.0 Policy Context

2.1 Managing Intensification and Change, DEGW 2000

George's Quay and its surrounding environs have been identified as being one of the key strategic areas within Dublin City facing ongoing development pressure. The future growth and development of the George's Quay area requires guidance, by conducting a study at a local level. Accordingly, the detailed assessment and area appraisal undertaken in the preparation of this plan, seeks to assist in addressing the urban design issues facing the George's Quay area, including a response to Dublin City Council's height strategy 'Managing Intensification and Change', prepared by DEGW in the year 2000.

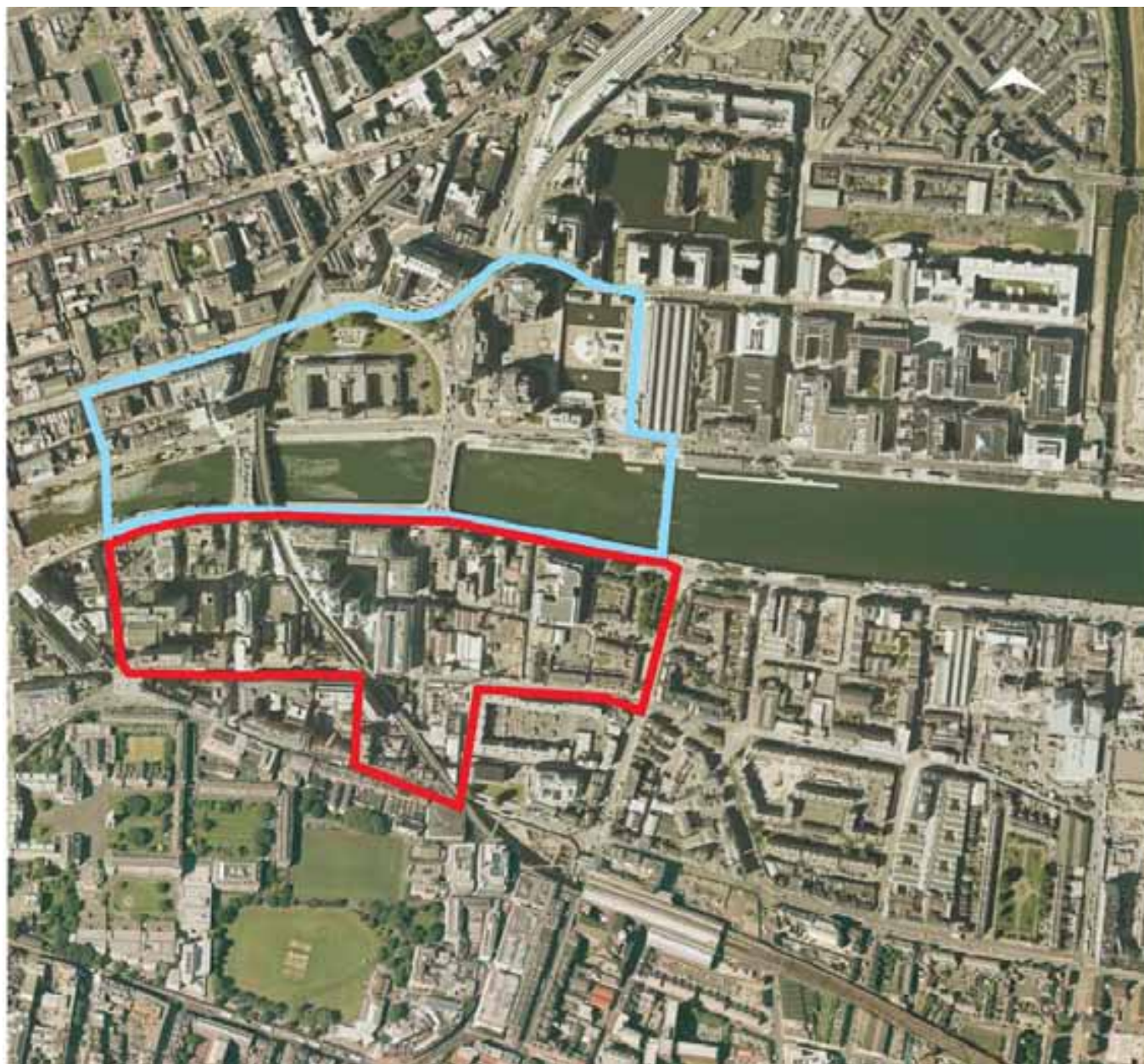
According to the report 'Managing Intensification and Change' (DEGW, 2000), pressure for intensification and new development models can be expected where:

- Activity is increasing, values are rising and there is a shortage of quality accommodation;
- Public transport interchanges occur between regional, metro and light rail (Luas); and
- Large, easily developed sites are available for comprehensive planning and development.

The 'Managing Intensification and Change' report identified the George's Quay area as having the potential for a 'high intensity cluster' due to its high accessibility and as a potential location for a landmark high building at a primary public transport node.



Figure 2.2 Extract from Managing Intensification and Change, DEGW, 2000



KEY

Study Area outlined in red..... 


Related Context Area outlined in blue..... 

Figure 2.1 George's Quay Plan Area

2.2 Dublin City Development Plan 2005 - 2011

The 'Dublin City Development Plan 2005-2011' sets out a new spatial strategy to steer future growth in both inner and outer city areas. The City Development Plan actively encourages high-density development, particularly in city centre locations and in areas within walking distance of public transport infrastructure and employment centres, such as George's Quay. It is also a policy of Dublin City Council to promote Dublin city centre as the primary services and office-based employment location in the region and to provide for the expansion of the sector where appropriate ('Policy E6').

This Plan seeks to evaluate the George's Quay area and identify the optimal location for a high intensity cluster as proposed in the DEGW Study. Fundamental to the study is a clear understanding of the area's context within the wider city area and a strategy for public realm and mix of use, which together will assist in determining whether a tall building or cluster of tall buildings would be appropriate in the George's Quay area. The area is zoned primarily for City Centre Mixed Use (Z5) under the Dublin City Development Plan 2005 – 2011, with an element of Residential (Z1) (figure 1). This city centre zoning seeks to consolidate the city centre and to strengthen and protect its civic design character and dignity. As stated in the Development Plan, *the primary purpose of this use zone is to sustain life within the centre of the city through intensive mixed-use development. This strategy is to provide a dynamic mix of uses, which interact with each other, creates a sense of community and which sustains the viability of the inner city both day and night.*

2.3 Dublin City Competing on a Global Level

Dublin is the capital city of Ireland; it is also the core of an emerging eastern region that has the potential to compete at an international level with the large scale markets of mainland Europe, and the economic and creative driver of the nation. It is imperative that the city continues to grow, prosper and develop. It is also vital that the City achieves the critical mass required for the Greater Dublin Area and the country as a whole to maintain and improve its position in a competitive EU market.

Coupled with Dublin's aspiration to compete and operate on an international scale, Dublin City Council also seek to retain the important character of the city that has built up over time. It is a key objective of the City Council' to plan for the consolidation and intensification of the urban area as a 'compact city', promoting primacy in sustainable mixed-use developments.

2.4 Six Themes for Growth

Dublin is faced with many challenges ahead. Some of the most significant of these challenges will be to attempt to balance the city's two primary objectives of maintaining the conditions for the city to function as a dynamic and competitive economy and providing for an enhanced quality of life - for residents, workers and visitors alike.

The City Council has identified six overarching themes which are integral to the future growth and development of the city. These themes focus on quality of life issues and are outlined as follows:

1. **Economic vision** – Develop Dublin City as the heart of the region and the engine of the Irish economy with a network of thriving spatial and sectoral clusters, a focus for creative talent and creative assets.
2. **Social vision** - Develop Dublin City as a compact city with a network of sustainable mixed neighbourhoods providing a range of facilities and a choice of tenure and house types, promoting social inclusion and integration of all ethnic communities.
3. **Cultural vision** – Make provision for cultural facilities throughout the city and promote awareness of our cultural heritage. Promote a safe and active street use through design of buildings and the public realm.
4. **Urban Form and Spatial vision** - Create a connected and legible city based on active streets and quality public spaces with a distinctive sense of place.

5. Movement Vision – Facilitate the building of an integrated transport network and encourage the provision of greater modal choice. Spatial planning and zoning objectives will be integrated to optimise the opportunities close to transport hubs and corridors.

6. Sustainable vision – Provide for an over-arching framework incorporating key principles, strategies and objectives to drive a vision of sustainable Dublin over the next 20 years, and ensure that buildings can adapt for evolving use requirements and encourage effective waste management strategies.

Given the size, central strategic location and cultural importance of the city centre, this Urban Design Study for George's Quay and its surrounding environs sets out to assist in implementing Dublin City Council's vision for Dublin. This study seeks to set out a framework for the creation of vibrant and sustainable mixed-use developments in the city centre that will contribute to social and economic development, and provide people living and visiting the area with the services, jobs and opportunities required for a high quality urban lifestyle.



Figure 2.3 Burgh Quay

3.0 Plan Area Appraisal

Of importance to the preparation of this study has been gaining a comprehensive understanding of the social, cultural, economic and environmental conditions of the George's Quay Plan area and wider surrounding environment. This section provides an overview of the research undertaken whilst preparing the plan and in doing so, provides an understanding of the issues that need to be addressed during future development of the George's Quay area.

3.1 Historic Analysis of the George's Quay area

Dublin City has a rich history which has played an integral part in the present landscape and built form that makes up the George's Quay study area. The history and growth of George's Quay can be seen in the development maps which outline the key interventions over time that have had a significant impact on the urban form and activities undertaken there today.

The following maps show the development of Dublin City from the early 17th Century to today. Initially the Plan area was downstream of the town centre but over time the growth of the city and the formalisation of the banks of the River Liffey began to establish the area as a pivotal location along the River. The establishment of the Custom House and the growth of connectivity across the banks in the form of ferries and bridges and through the site set the stage for large scale development of the IFSC and Dublin Docklands. This later expansion has further highlighted the pivotal nature of the subject site between the new and the old, at a place where the river changes character and where the modern block structure around the Loopline Bridge results in a distinct lack of permeability.

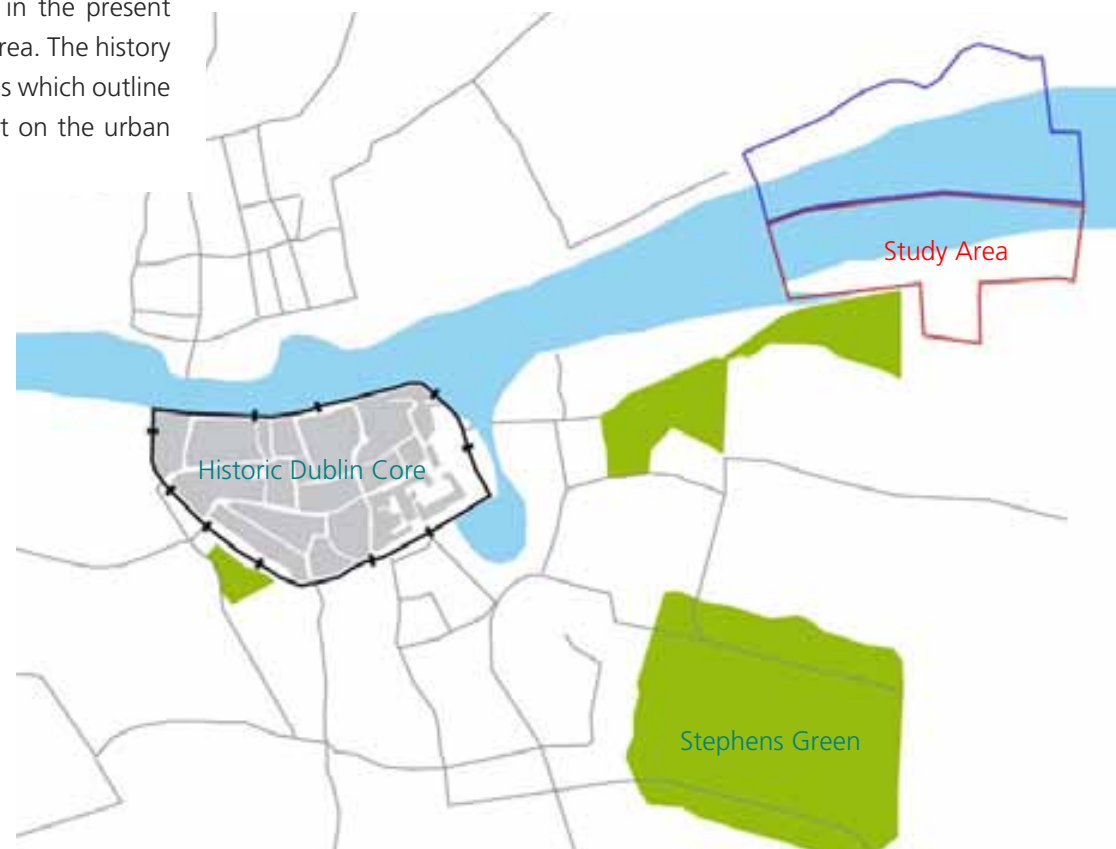


Figure 3.1 – Dublin City Pre1610

1756



1837



1936



1990s



Figures 3.2 - 3.5 – Historic Evolution of George's Quay Study Area and Related Context Area

3.2 George's Quay in the Dublin City Context

The George's Quay and Environs Plan area is positioned at the centre of the Dublin Metropolitan Area and Dublin inner city. The area is highly accessible to and from the wider city environment via main national road routes that extend throughout the city and into surrounding counties. These routes include the M1 which can be accessed through the nearby Port Tunnel and is the main road route on the Dublin - Belfast corridor and to Dublin Airport. The site area is also in close proximity to the key strategic gateways and high intensity cluster areas of Heuston Gate to the west and Dublin Docklands to the immediate east

Tara Street Station, centrally located within the plan area, serves a large proportion of the city's daily commuters from many districts of the Greater Dublin Area by DART and commuter rail. As Dublin city's integrated public transport network improves over the next number of years with the planned advent of the Metro, the Interconnector and the extension of the Luas network, the George's Quay Plan area's connectivity and linkages to the wider city will improve dramatically.



Figure 3.6 Greater Dublin Area Transport Infrastructure - Transport 21

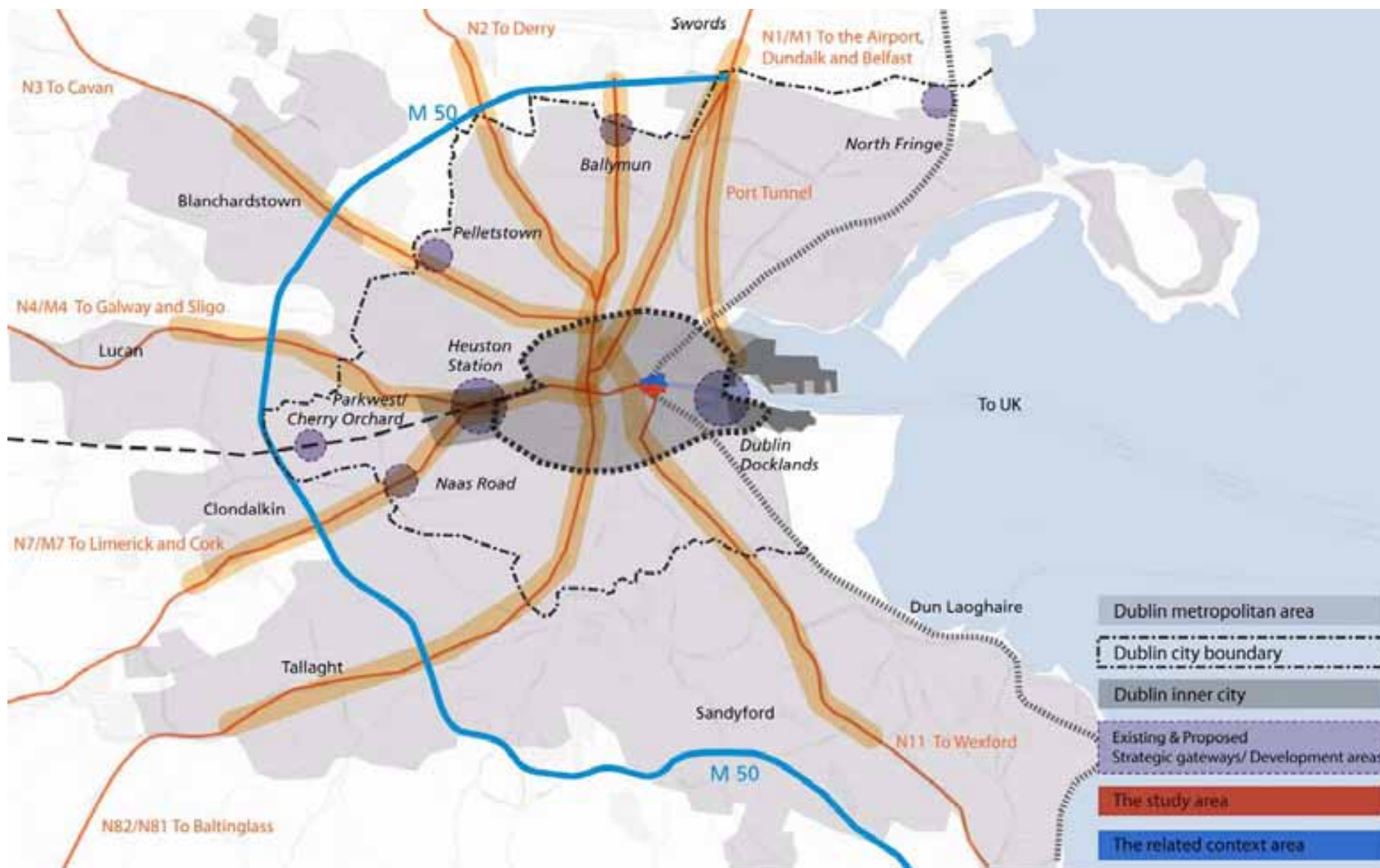


Figure 3.7: Strategic Gateways in Dublin City

The River Liffey

The George's Quay plan area is located on one of the significant turning points on the River Liffey (refer figure 2.10). The turning points on the river aid in the framing of important vistas where historically important buildings have been located. The river frames the contemporary landmarks along the stretch of water at Heuston Station, Liberty Hall, Ulster Bank Plaza, the soon to be completed Point Village development and the potential U2 Tower at Sir John Rogerson's Quay.

At the Custom House, the River Liffey begins to open out and extend to its widest form. This results in wider views along the Liffey corridor. As the plan area is located at the final turning point on the River Liffey before it enters Dublin Bay, the vista westwards from the river mouth and Dublin Docklands terminates in this area.



Figure 3.8: River Liffey Opening out towards the harbour

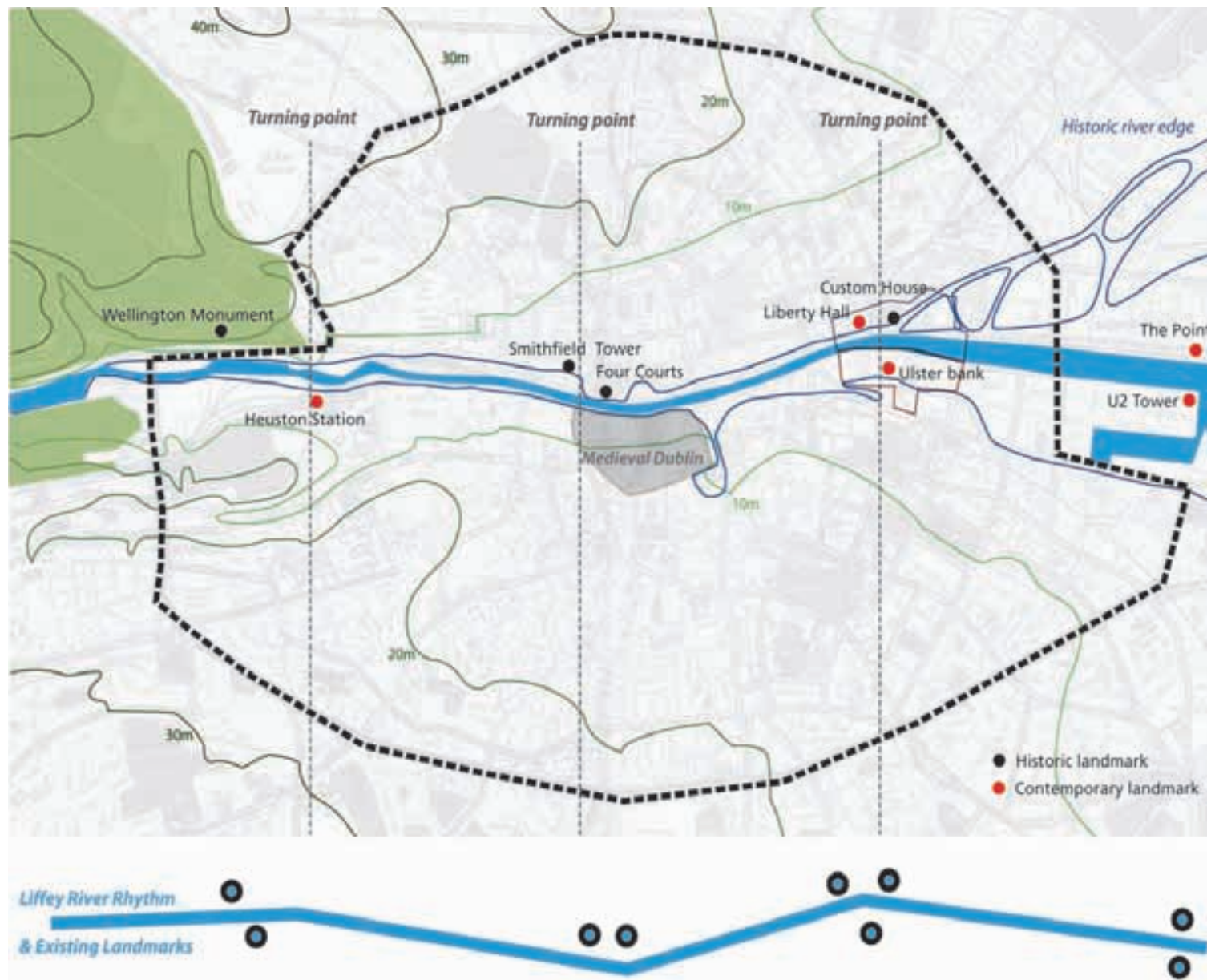


Figure 3.9 Dublin City Landscape

City Structure

Figure 3.11 depicts the main city structure and transition zones primarily within the canal basin of the city, indicating areas that are evolving and localities that are waiting for impetus to develop. The Heuston Gate development forms the western boundary of the city structure with the potential to re-position the city structure and create a new attractor. The western city is characterised by institutional land earmarked for intensification consisting of the soon to be relocated Mountjoy Prison to the north, Grangegorman Hospital and grounds that will become the new Dublin Institute of Technology (DIT) campus, and the areas adjoining the Digital Hub and Dolphin's Barn. To the east of the institutional lands lies the main city centre which is intended to be strengthened while the Docklands continues to undergo large scale regeneration.

These distinct character zones are separated by transition zones where small scale or modest activity has traditionally taken place. The first transition zone is located in the Usher's Quay, Four Courts, Smithfield and Digital Hub vicinity while the second concerns the George's Quay study area and related context area.

Figure 2.12 identifies character forming areas and activities along the River Liffey corridor. The 'Gateway Dublin' zone to the west of the city contains the Phoenix Park, Irish War Memorial Park, Heuston Station and Heuston Gate development. This development along with Heuston Station represents a new gateway into the city centre along one of the busiest routes (N4 and N7). The 'Historic Dublin' zone extends from Guinness St. James Brewery and Collins Barracks areas of the city to lands adjacent to Liberty Hall and D'Olier Street along the river Liffey. The historic core of the city contains such areas of significance as Smithfield, Medieval Dublin, Dublin Castle, and the street market in the vicinity of Thomas Street.

The 'Dublin City Core' contains significant areas such as Temple Bar, O'Connell Street, Dublin Castle, Trinity College, the north and south retail cores of Henry Street and Grafton Street and is also an important office based employment location. The George's Quay area sits on the edge of the traditional office location of the southern Georgian core of the city, within the inner canal area and has now become a prime office destination as a 'transition' area between Dublin's central city core and the new significant development zones of the IFSC and Dublin Docklands. The George's Quay area contains qualities of both the city core and the refurbished Docklands. The area has the potential to act as a gateway to the IFSC and the extensive Dublin Docklands developments including the Point Village, National Conference Centre and proposed U2 tower.

The location of the study area is mid-way between the length of the Liffey defined by the inner city limits and could be described as "Midtown".

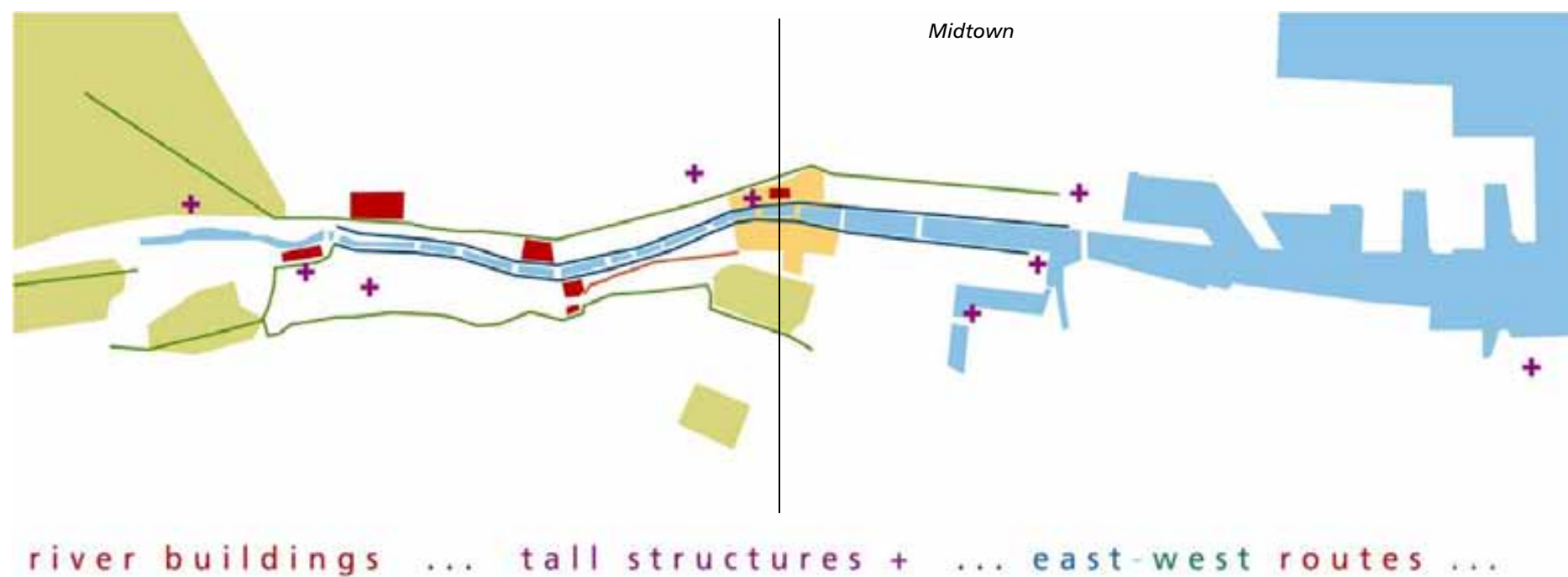


Figure 3.10 Midtown Area within the City

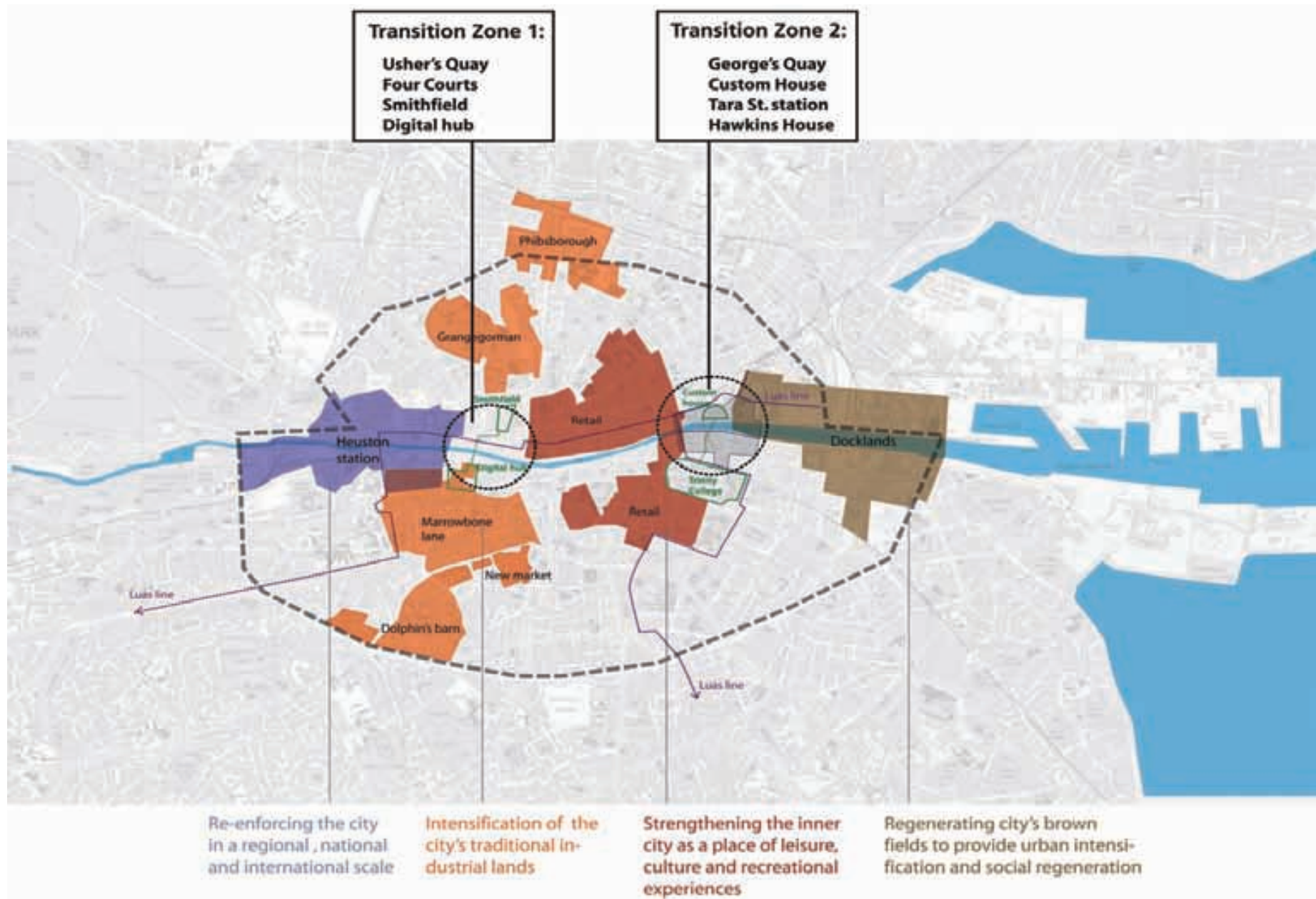


Figure 3.11 City's Future Development Strategy

Urban Structure along the Liffey Corridor

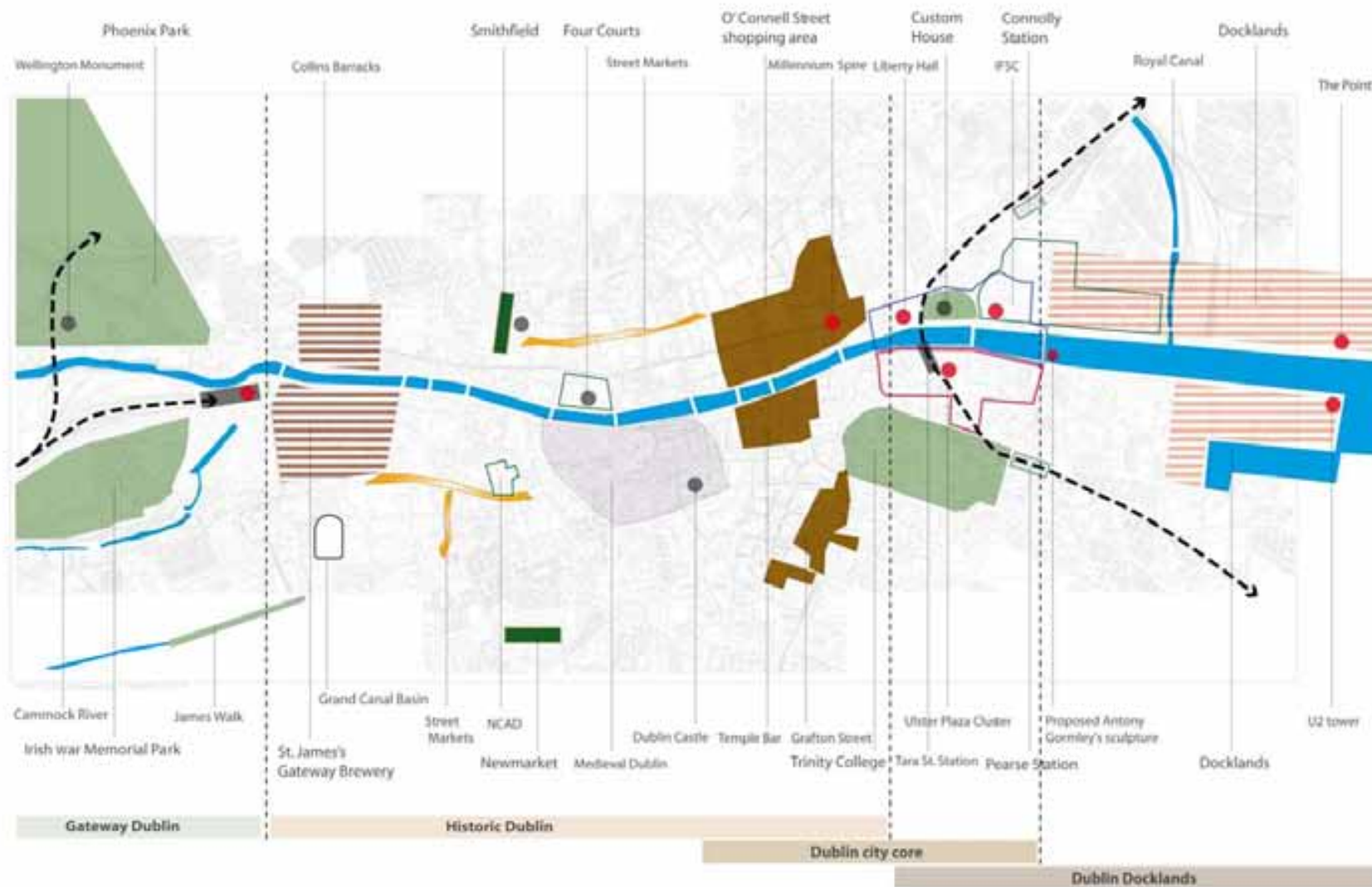


Figure 3.12 Urban Structure along the Liffey Corridor

3.3 George's Quay Local Context

3.3.1 Existing Land Use

Office use is the predominant land use in the George's Quay area, and accounts for two-thirds of use. The predominance of office use does not contribute adequately to street activity and the animation of public spaces, with the result that many parts of the plan area lack vitality, particularly during the evening and night-time hours. Residential use which accounts for one-fifth of the total uses, is considerably low given the area's proximity to mass public transport links and its central location. The plan area also contains one-fifth commercial, public and heritage use. A suitable mix of uses would enhance the vibrancy of the area.

Existing Land Use Mix.

Office use is the predominant land use in the George's Quay area, and accounts for two-thirds of use. The present total of one fifth residential use is considerably low given the area's proximity to mass public transport links and its central location. The study area also contains one fifth commercial and public and heritage use. The current mix of use does not contribute adequately to the vibrancy of the area and, as such, many parts of the plan area lack life, particularly during the evening and night time hours. A suitably enhanced mix of use would assist in enhancing vibrancy throughout the area.

Community and Culture

The area has a small number of facilities of social and community importance. First, second and third level educational facilities in the form of City Quay National School, Westland Row CBS and Trinity College are all in or near to the area, providing educational facilities necessary for the survival and growth of the local community.

Important social and community facilities in the area and its environs include the City Quay Church and Parish, City Arts Centre and St. Mark's Centre, providing community support. The St. Andrew's Resource Centre is situated nearby and is active in the area providing a range of community services and administering community initiatives.

The location of accessible recreational space, suited to the needs of varying ages and abilities within close proximity of the George's Quay area will aid in enhancing the identity of a well-connected, developed and integrated local area. The importance of going beyond education and sporting requirements is also recognised. Varied needs will have to be catered for in order to encompass the wider community and the social and cultural demands of existing and future residents of the George's Quay area.

Character and Built Form

George's Quay and Environs is a nationally distinctive and significant area. It is rich in architectural and natural heritage, comprising the Quayside, City Quay church and fine architectural structures. The area has symbolic, cultural, social and economic importance; therefore its character must be preserved and enhanced to ensure that its amenity and economic value is secured for existing and future generations.

The Custom House plays an important role in the character of the related context area. "The 'new' Custom House was opened for business in 1791. It was built at a considerable distance downstream from the original Custom House at Essex Quay. This noble building, one of Ireland's finest pieces of architecture, underwent a major restoration during the 5 years leading up to 1991. The Custom House is remarkable for many reasons, not least for the length of its magnificent cut-stone façade, which fronts onto the River Liffey." The Heart of Dublin – Resurgence of an Historic City, Peter Pearson, 2000.

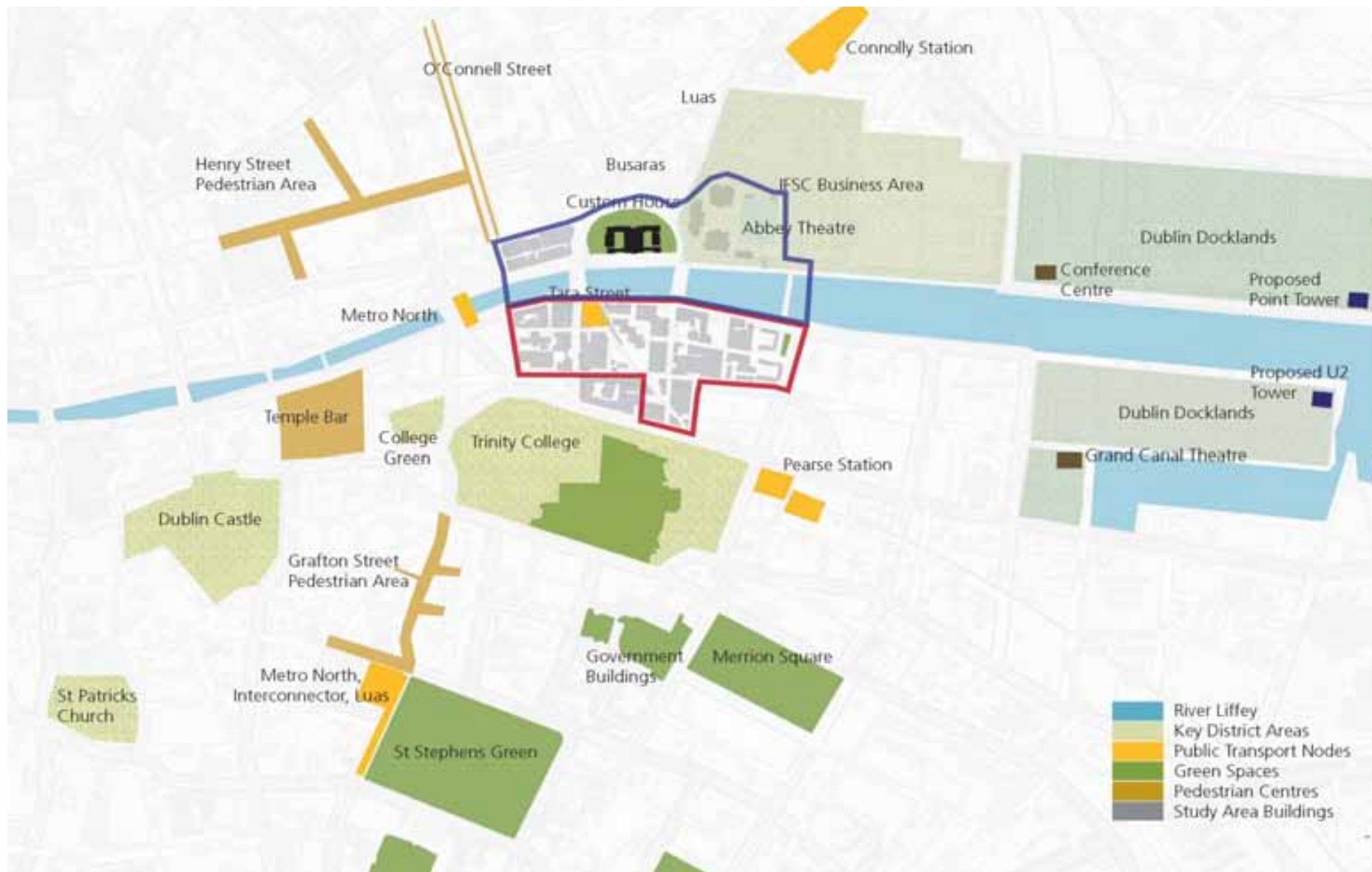


Figure 3.13 – George's Quay Area within the Surrounding City Context

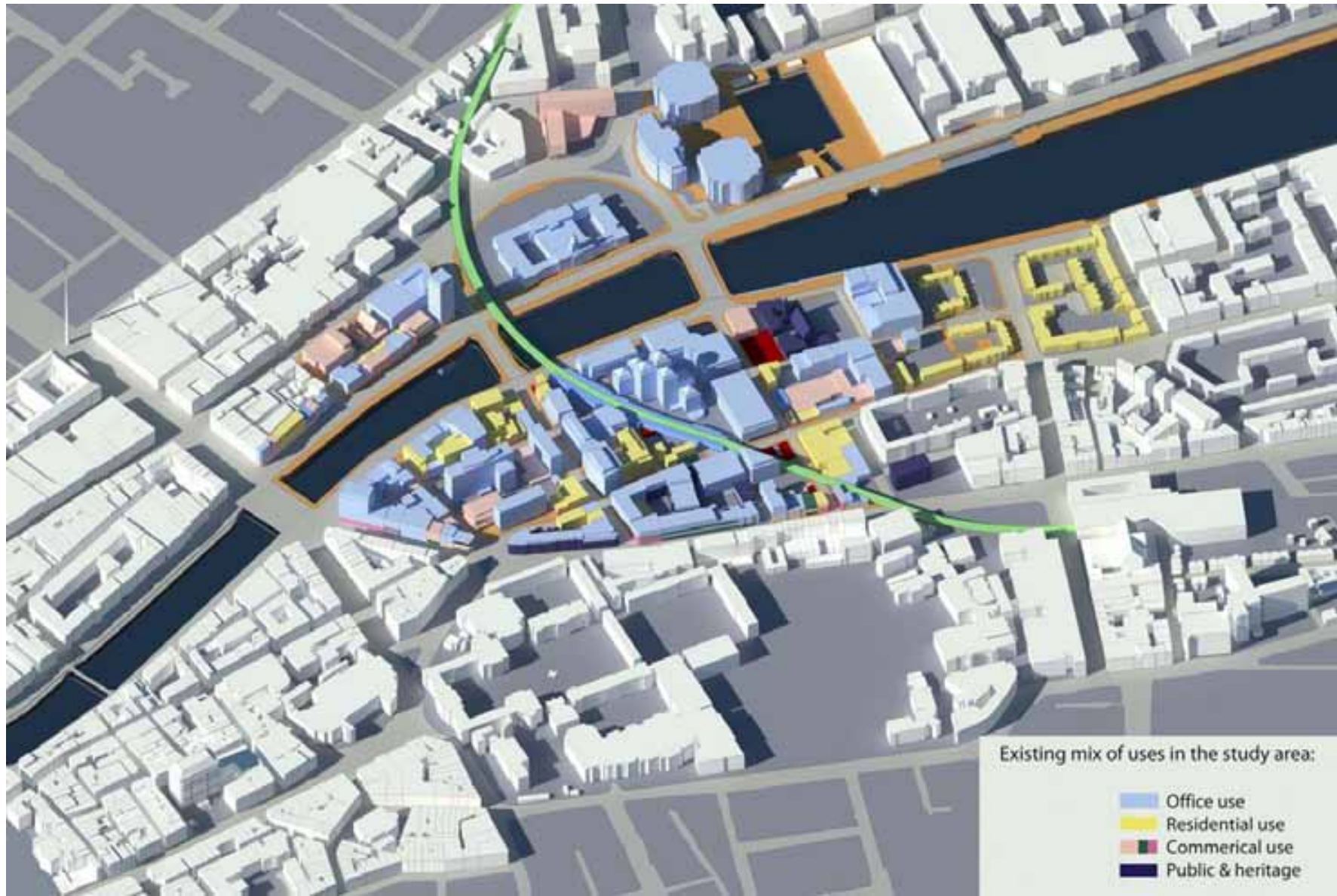


Figure 3.14 Existing Mix of Use in George's Quay Area

It is recognised that the growth of low-rise Dublin and rising land values have caused constraints on space in the city, which has contributed to urban sprawl for the past number of years. It is both national and regional policy to achieve a more compact, sustainable city as a solution to the problem of urban sprawl. The National Spatial Strategy 2002-2020, the Regional Planning Guidelines for the Greater Dublin Area, the Dublin Transportation Office – A Platform for Change 2000-2016 document, and the Dublin City Development Plan 2005-2011 all emphasise that increased density has the potential to combat urban sprawl. The George's Quay and Environs area currently contains buildings of relatively low density and scale considering its proximity to the numerous key public transport links and centre city location.

As previously mentioned the DEGW report 'Managing Intensification and Change' identified the George's Quay area as having the potential for a 'high intensity cluster' due to its high accessibility and as a potential location for a landmark high building at a primary public transport node. The challenge therefore is how to enhance the scale of development in the locality while at the same time enhancing the character of the area.

Liberty Hall is located in the related context area of the study area. It is noted that for all the publicity surrounding the issue of tall buildings, few have actually been built to date, with Charlotte Quay completed in recent years in the Dublin Docklands standing at 45m and One George's Quay Plaza standing at 59m in the main study area. Liberty Hall is the tallest (59.2m) and one of the most distinctive buildings in the capital city. Several other tall buildings have been granted planning permission in recent years; however construction has failed to occur primarily due to economic market conditions.

'The tallest building in the city centre is Liberty Hall at 58m, which is seen as a landmark building in contrast to the tower at Charlotte Quay of 45m which sits comfortably in the context of its surroundings', DEGW 2000.

Given George's Quay and Environs prominent position in the centre of Dublin City, the site area contains numerous significant archaeological and heritage features dating back a number of centuries. The development of the area is closely related to the historical expansion of the city centre since medieval times and the steady shift of development east towards the mouth of the river.

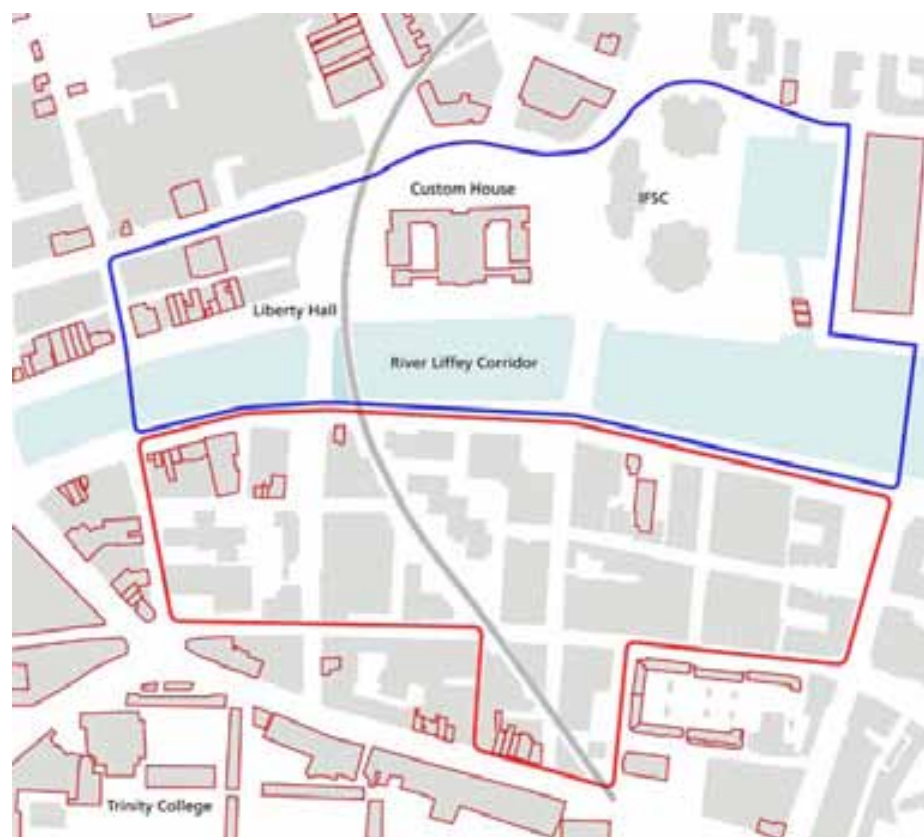
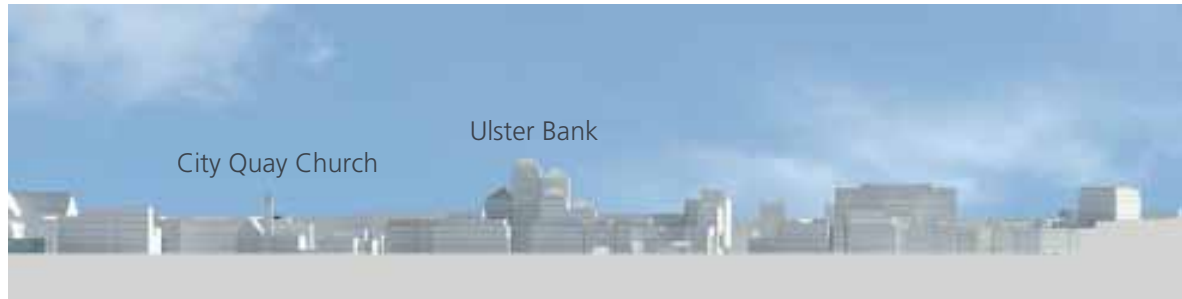
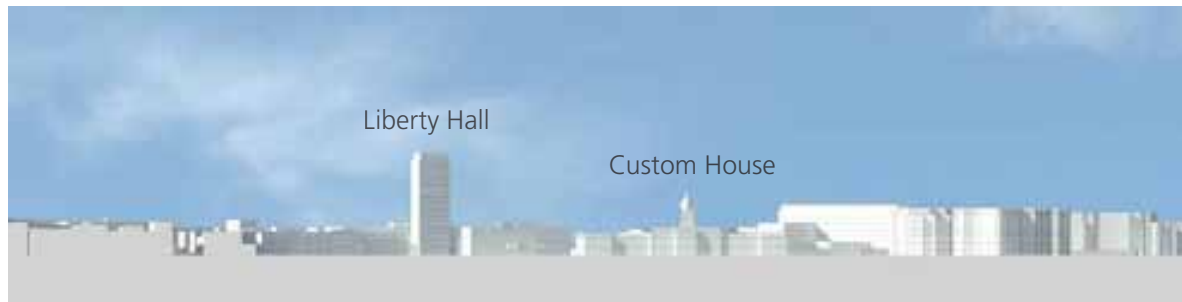


Figure 3.15 Existing Protected Structures



North Profile of the George's Quay and Environs



South Profile of the Custom House and Environs



West Profile of the Custom House and Environs



East Profile of the George's Quay and Environs

Figure 3.16 Existing Scale of George's Quay in the Surrounding City Context

3.3.2 Infrastructure

Figure 3.18 illustrates that the George's Quay and Environs site area is well served by various types of infrastructure.

Existing Transport

There is an array of existing transport links to and through the area. DART and commuter trains service the George's Quay area at Tara Street Station which is one of the busiest stations on the entire rail system and carry a large number of commuters into the study area each working day.

Numerous Dublin Bus routes pass through Pearse Street and Tara Street to Busaras which is located just outside the related context area adjacent to the Custom House and is the termination point for large quantities of daily commuters to the city from outlying areas of the GDA. The current Luas Red and Green Lines are located in relative close proximity to the study area. The Luas Red line terminates at Connolly station and Luas Green line at St. Stephens Green, both of which are within easy walking distance.

The George's Quay and Environs area is dominated by one-way traffic movement and roads that carry a large quantity of through-traffic. This highly congested one-way traffic movement has the effect of dissecting and dislocating businesses, commercial activity and communities. Such streets include Pearse Street, Townsend Street and Tara Street. Pedestrian accessibility and movement between public transport facilities is by and large in poor condition. This is principally due to unappealing streets dominated by heavy vehicular traffic, inadequate and narrow pedestrian facilities and difficult crossing points at a number of key junctions in close proximity to Tara Street station.

The Port Tunnel, which opened in December 2006, has been of benefit to the study area (as well as the city centre in general) by removing large amounts of commercial and heavy goods traffic, particularly from the Quays.



Figure 3.17 George's Quay and Tara Street Station /Loophline Bridge

Proposed Transport

'A Platform for Change: Strategy 2000-2016' and Transport 21 include the construction of a rail corridor (Interconnector Tunnel) through the centre of Dublin and through the Docklands as one of the major national projects. This tunnel is proposed to be completed in 2015 and will link Pearse Station to the recently constructed Docklands station. The Interconnector line will facilitate access into the City Quay/ Westland Row area by improving access with St Stephen's Green to the south and further connections to the north.

The Luas Red Line extension for 1.5km from Connolly Station, through the Docklands to the Point Village (O2 Arena), serving existing and planned high-density commercial and residential developments tracks through the George's Quay and Environs related study area is also proposed and is provided for in the Dublin Docklands Development Authority Master Plan 2003. This Luas extension will serve the study area improving passenger/commuter choice and bringing further interconnectivity to George's Quay and Environs.

A new Metro line (Metro North) from St Stephen's Green to the north of Swords in the vicinity of Lissenhall is scheduled for completion by the end of 2013. Metro North will provide further accessibility and connectivity to the George's Quay and Environs area and present a direct link to Dublin Airport from the central city.

The proposed Macken Street Bridge will provide a link between the North and South Docklands and improve integration within the Docklands as a whole. Macken Street and Cardiff Lane, although located outside the plan area, will become priority distributor routes in the city following the construction of the bridge.

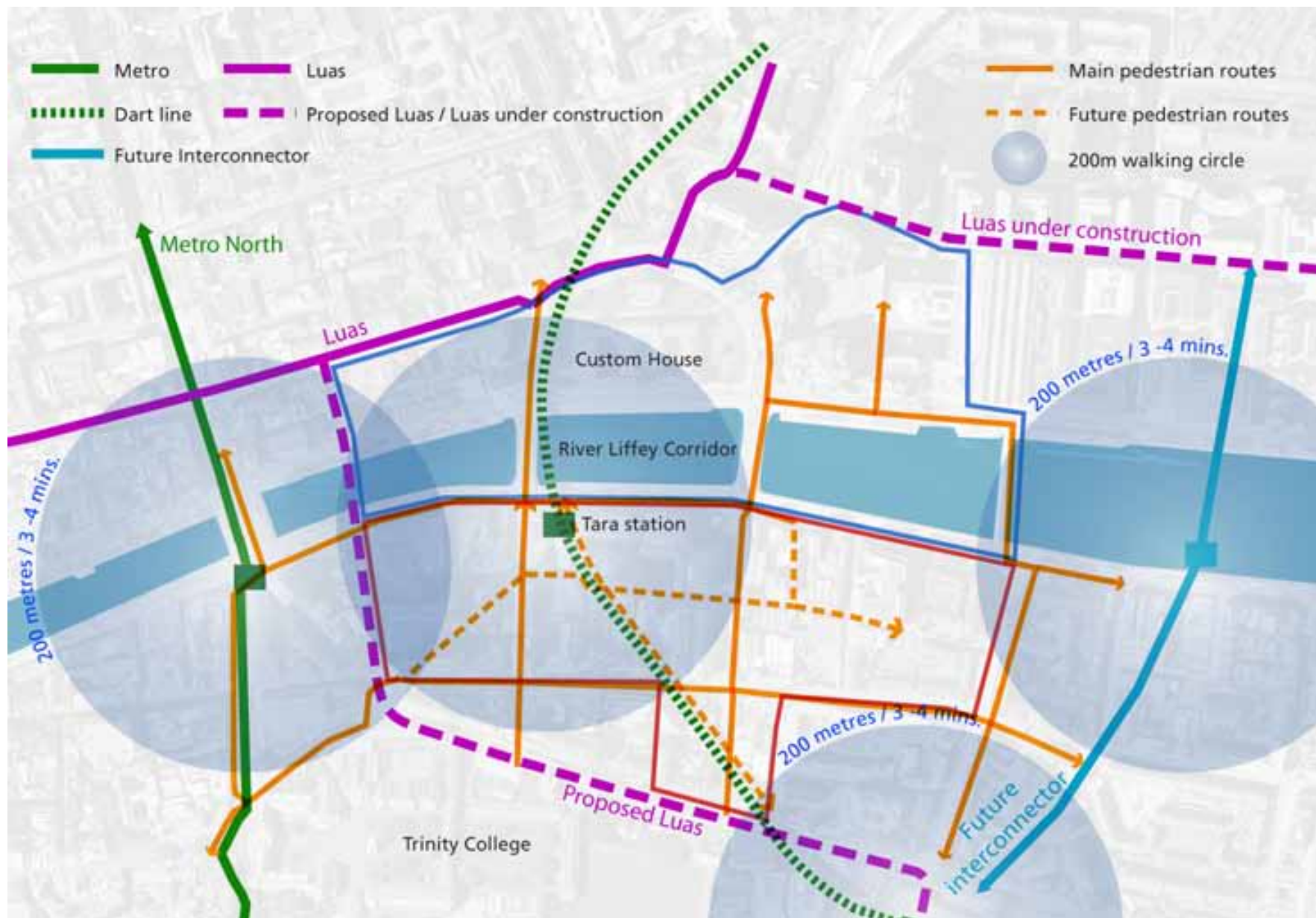


Figure 3.18 Existing and Proposed Infrastructure Map

Socio-Economic Profile

The George's Quay study area encompasses three District Electoral Divisions (DED's) of Dublin City. To the south of the River Liffey is the electoral division of Mansion House A while to the north of the River Liffey are the electoral divisions of North Dock C and North City. The majority of the inhabited study area encompasses the electoral divisions of Mansion House A and North Dock C specifically; therefore analysis of the socio-economic profile of these DED's has been focused on.

Residential Population

According to the Census of Population conducted in 2006, the population of the George's Quay area (as outlined above) is currently 8,641 persons. This area accounts for 2% of the total Dublin City population of 506,211 persons. The number of people living in the George's Quay area has grown steadily in the last twenty years albeit decreasing slightly in 1991 due to a drop in those living in the North Dock C electoral division. In total, the population of the George's Quay area has grown by 53% in the last twenty year period. 52% of the total population or 4,462 persons live in the Mansion House A electoral division specifically, a level which has increased by over 1,400 persons since 1986. The North Dock C electoral division on the other hand has increased by over 1,500 persons since 1986, reflecting a 56% growth in the population in the twenty year period.

Residential Units

The reason for this significant growth in population over the last two decades has been a result of an increase in housing units built in the area. There are approximately 3,754 housing units in the Mansion House A and North Dock C electoral divisions of George's Quay, 2,181 of which have been built since 1981. The largest number of housing units built in a given period were constructed between 1996 and 2000. In this period over 660 units were built in the George's Quay area, 62% of which were built in the North Dock C electoral division. The level of construction in the George's Quay area has contracted post 2001 to half that constructed in the previous four year period, presumably as a result of a scarcity of land available for development in the area.

Household Numbers

The average household size in the George's Quay area at 2.3 persons per household and Dublin City at 2.5 persons per household is considerably lower than the current national average of approximately 2.8 persons per household (Census, 2006). This is undoubtedly a result of the household composition in the area with a large number of apartments developed in recent years, the majority of which comprising two-bed apartments.

Only 13% or 946 households living in the George's Quay area at the time of the 2006 Census of Population comprised 1 person households. The highest proportion, 29% or 2,104 households in the area in 2006 comprised 2 person households, accounting for a larger proportion of this household size than the Dublin City average of 24%. A further 22% or 1,572 households in the George's Quay area comprised 3 people, while 17% or 1,236 households comprised 4 people. 9% or 655 households in the area comprised 5 people while 7% or 486 households had 6 or more people in residence in 2006. There is a lower than average proportion of larger households, particularly 4-5 person households, in the George's Quay area than is in the overall Dublin City area. This suggests that there is a lower than average number of families living in the subject area.

Age Profile

The age profile of the population living within the George's Quay area is currently very young in comparison with the national average with 67% or 4,858 persons aged less than 44 years of age. 11% of the population in the subject area are aged less than 15 years of age, while a further 27% or 2,324 persons are aged between 15 and 24 years of age. As of 2006, the greatest proportion of the population in the George's Quay area, 40%, is aged between 25 and 44 years of age. 16% of the population of the area are aged between 45 and 64 years of age and a mere 6% are aged over 65 years. In comparison to Dublin City, the George's Quay area has a higher concentration of 25 to 44 year olds and a much lower concentration of individuals older than 65 years of age.

Housing Construction by Year Built

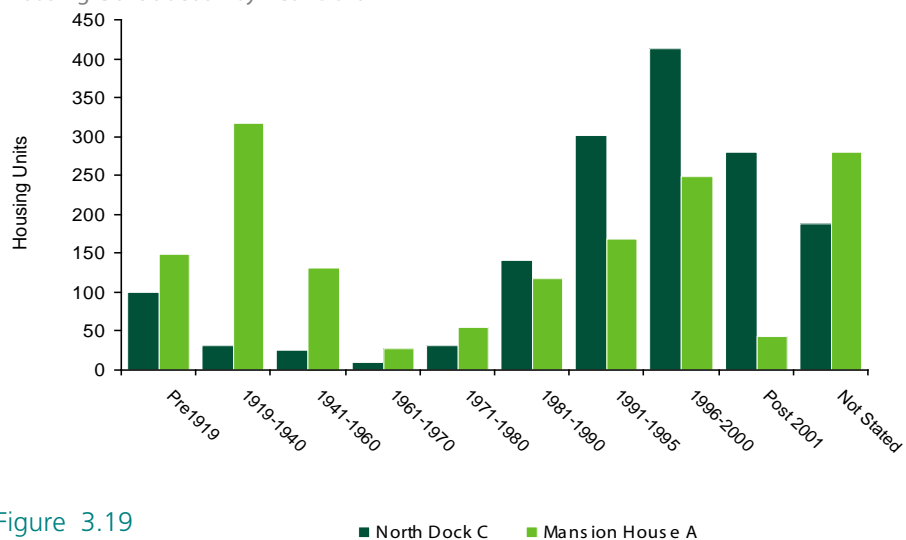


Figure 3.19

Population of Georges Quay Surrounding Area 1986 - 2006

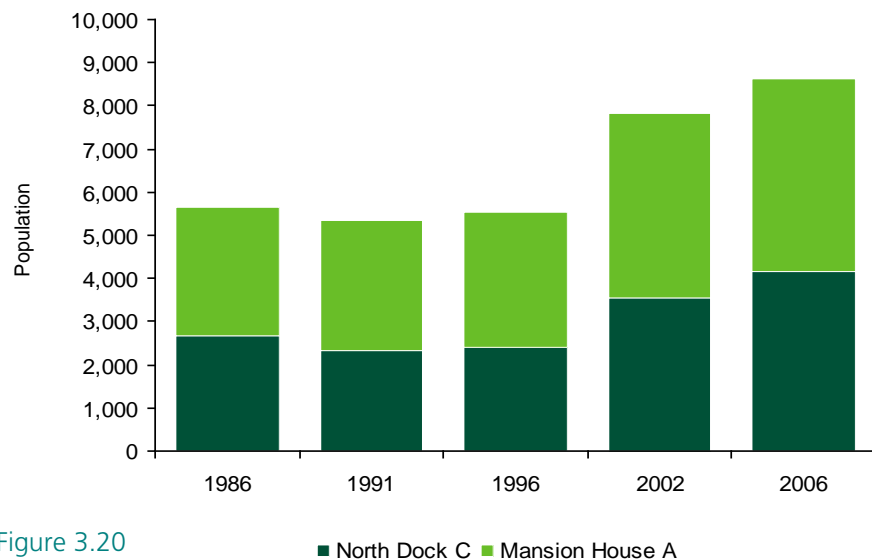


Figure 3.20

Within the last ten years, the age profile of this area has changed significantly. Indeed, an analysis of demographics in the region in the 1996-2006 period shows that while there was a rapid increase in the proportion of population aged between 25 and 44 years of age, increasing from 1,391 persons to 3,475 persons, there has been a decline in the number of people aged less than 15 years of age and also a decline in population of people aged over 65 years of age in the George's Quay area. The decline in the number of people aged less than 15 years of age is important for this study as it highlights the need to encourage more families to live in the George's Quay Area.

Local Employment Trends

According to the Census of Population 2006, an analysis of the employment status of the working age population living within the George's Quay area shows that over 55% of the population in the electoral divisions is classified as working, which is slightly higher than the average in Dublin City. The unemployment rate within the George's Quay area at the time at 6% is less than the rate of unemployment in Dublin City (7%), albeit similar to the current national average of 6.1%. A further 21% of the working age population in the George's Quay area are categorised as students, a level much higher than the Dublin City average of 11%, while 6% are categorised as working in home duties. A much lower than city average of the population in the subject area are categorised as retired at 6%, in comparison to 12% in Dublin City.

Overall the population of the George's Quay area has grown steadily in recent years, comprising a large proportion of young professional persons between the ages of 25-44 years of age. More focus shall have to be directed on retaining the current younger than average population and increasing the household size in the area in order to attract more families to live in the area.

End User Analysis

As part of this Plan an end user analysis was carried out for the George's Quay Plan area. As part of this analysis, the following matters were included:

- Footpaths along Tara Street and Moss Street be widened to increase pedestrian footfall and enhance location from an occupier view point.
- Traffic calming measures; enhanced pedestrian links between major developments and transport hubs; and improved public realm, to attract future residential and commercial occupiers.
- Designation of open space areas, particularly back from the quays, suitable for attracting in families and other residents.
- Current trends show that there is a precedence in demand for river front commercial use (particularly HQ) over and above that of residential use.
- 8 to 10 levels as the optimum height for commercial office activities
- Retail space be provided primarily for local commercial and residential use.
- Introduction of high end retail and cafes along the main axis proposed through the Hawkins House block.
- Potential for cafes and amenities on ground floor within the City Quay church site.
- Potential for local retail and amenities along Moss Street.
- Potential to increase residential units along east side of Moss Street, as a natural extension of existing residential activities.
- The retention and enhancement of a variety of community uses.

4.1 Introduction to the Urban Design Strategy

Since its beginnings, the development of Dublin City has responded to the River Liffey. The river has informed both the geographic spread and vertical form of the city as it has grown. The Charles Brooking drawing of Dublin City from the year 1728 (figure 4.1) depicts the cityscape of that period and shows a high density, low rise city. The city skyline, primarily along the River Liffey, was clearly punctuated by a variety of dispersed tall structures. The structures that are highlighted red in figure 4.1 are predominantly church steeples and resulted in a legible built height and form that can still be interpreted today.

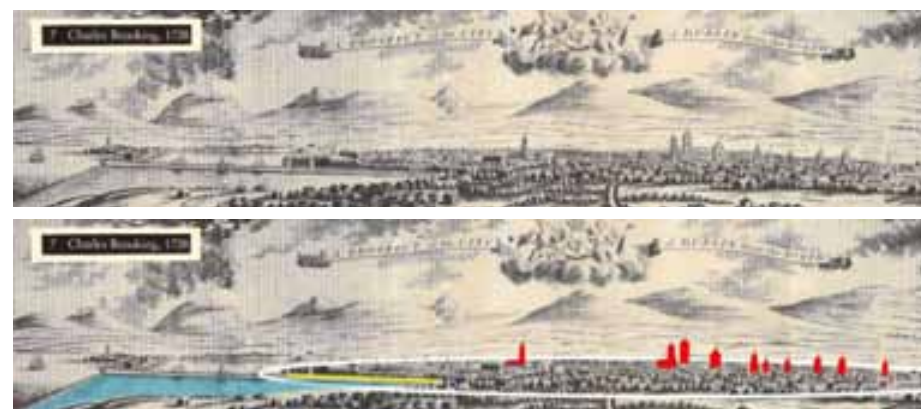


Figure 4.1 Interpreting the Dublin Cityscape – Charles Brooking, Dublin City 1728

Exemplifying the built form portrayed in the Charles Brooking drawings, figure 4.3 illustrates the River Liffey corridor at the beginning of the 20th century. The image portrays the tall dome structure of the James Gandon designed Four Courts, distinguished against the otherwise constant height of the surrounding built form. Deviating from the surrounding built form, and not without purpose, the Four Courts has appeared as a prominent 'marker building' on the River Liffey since construction was completed in the year 1791.

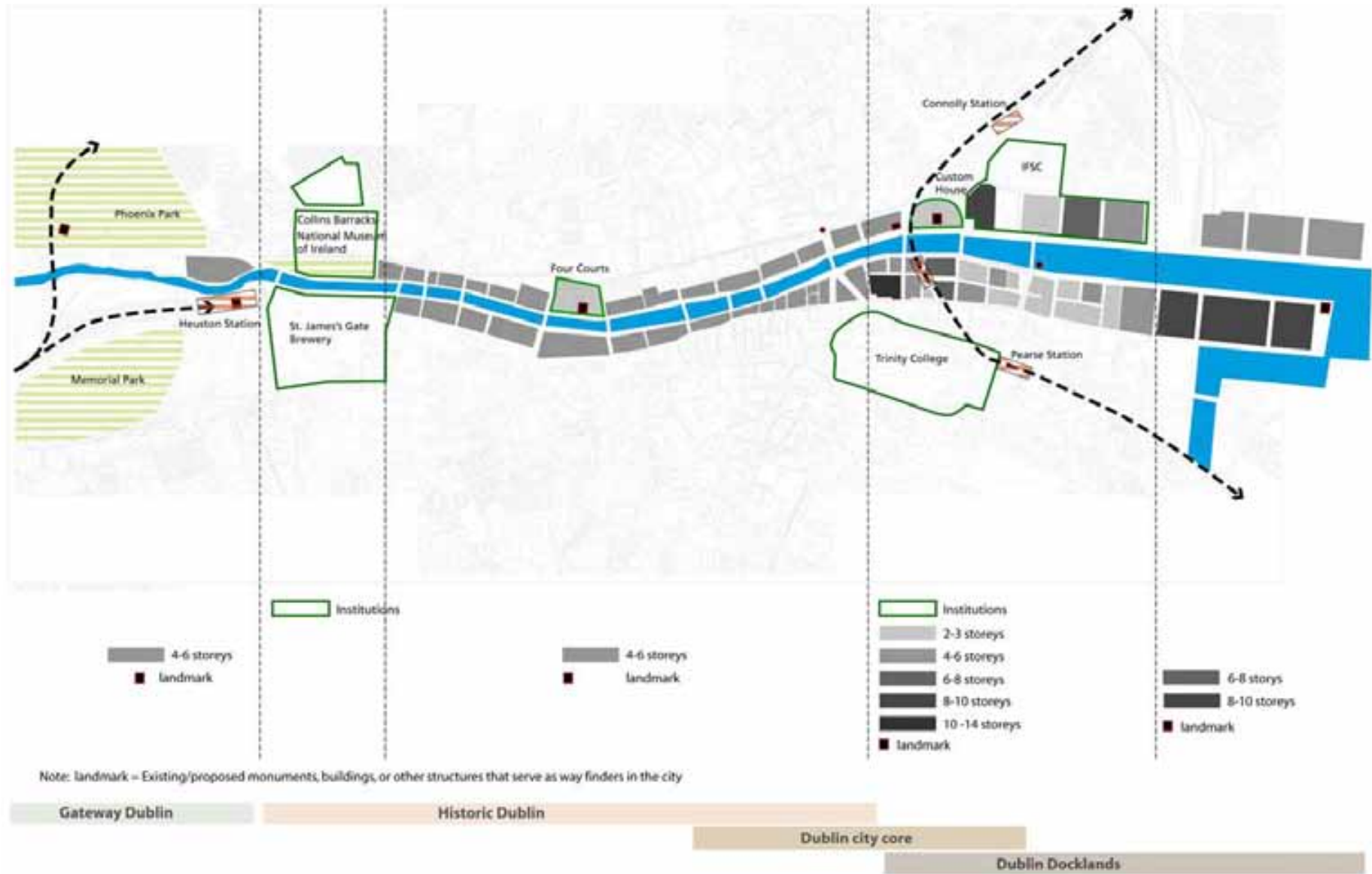


Figure 4.2 Existing River Liffey Corridor Height Data

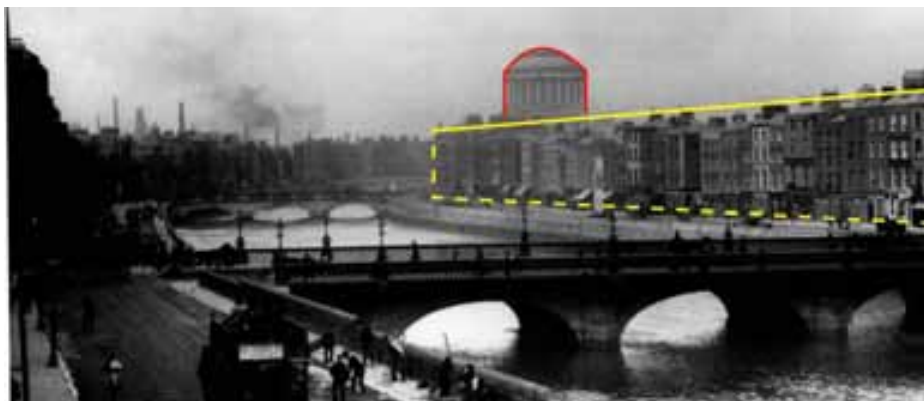


Figure 4.3 River Liffey Corridor, late 20th Century

As the city centre has continued to grow, the need to reconcile proposals for future development in the city centre with existing built form, movement and use, has become evermore necessary. Notwithstanding the overriding urban form that has occurred over time, development adjacent to the River Liffey throughout the city does vary in block structure and height as seen in figure 4.2. The “Gateway Dublin” zone and the “Historic Dublin” zone to the west of George’s Quay generally have a datum of 4–6 storeys. The Historic Dublin zone is punctuated by large institutional lands such as Guinness St. James Gate, Collins Barracks and the dome of the aforementioned Four Courts. The George’s Quay Study area forms a transition area between “Dublin City Core” and the new developments of the IFSC and Dublin Docklands to the east of the city and now sits at the “Midtown” area of the city. This midtown area contains a varied building height datum ranging from 2-3 storeys through to 10-14 storeys. To the east a more consistent datum of 6-8 storeys has been established in the docklands area. Unlike the balance of developed areas along the River Liffey, the George’s Quay or Midtown area currently lacks the coherent urban form that is distinctive to Dublin city.

Significantly, the George’s Quay area is located where the River Liffey turns and widens: it provides a change in scale which, together with previous land uses, has resulted in larger building blocks and, more recently, taller buildings towards the river mouth and Docklands areas. However, the built form within the George’s Quay area generally remains unresponsive to its city context. The built form and urban layout of the area does not recognise or take advantage of the unique turning point of the River Liffey, the relationship with the Custom House to the north, or the strong desire lines that exist between north, south, east and west.

In order for the George’s Quay Plan area to function as a vibrant city centre district between the historic Dublin City core and the area of “New Dublin” (IFSC and Dublin Docklands area), permeability and accessibility must be improved and provided for within a high amenity environment; a suitable mix of use that encourages a diversity of uses into the area must be provided for; and built form must respond appropriately to the surrounding local and city context. In particular, built form must be cognisant of the character described above which has developed throughout the city over time. Further, it is considered that built form and height has a fundamental link to movement, mix of use and the quality of public realm at ground level, all of which combine to assist in creating a legible, attractive and vibrant city environment.

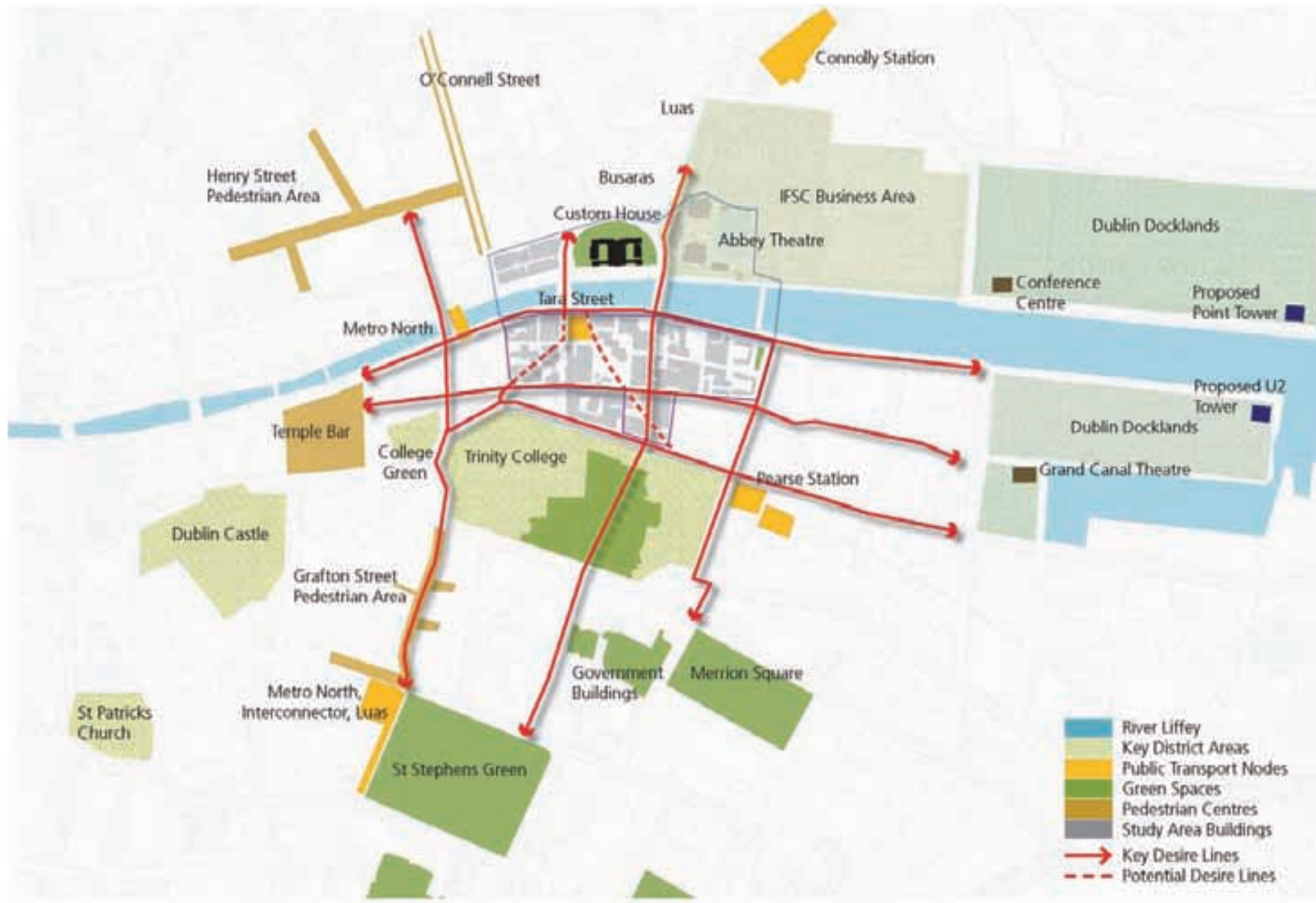


Figure 4.4 Dublin City Centre Desire Lines

4.2 Urban Design Strategy

This urban design strategy for the George's Quay area must contribute to the making of a great place for people to live, work and visit. Each future development within the George's Quay area should be carefully considered and should be measured against its adherence to the vision, policies and guidance of the Dublin City Development Plan as well as this Urban Design Study. The following sections set out to provide for an urban design strategy for George's Quay that responds appropriately to the existing city context while assisting to reenergise the area and provide for its sustainable growth into the future. In particular, the following sections seek to outline:

- A strategy for movement, connectivity and public realm;
- A strategy for height within the George's Quay area;
- A strategy for mix of use;
- Key aims towards achieving socially and environmentally sustainable development; and
- Guidelines for future development of key sites within the study area.

4.2.1 Movement, Connectivity and Public Realm

Desire lines can usually be found as shortcuts in places where constructed pathways take a circuitous route. Figure 4.4 depicts key desire lines within the George's Quay study area. In addition to revitalizing existing desire lines and key routes within the area, this Plan seeks to establish key desire lines in the plan area on the routes from the Grafton Street and College Green areas to Tara Street station (the College Green Route) and a green route following the train line from Pearse station via Tara Street station, crossing the river Liffey at Butt Bridge (the Loopline Route). At present the link from College Green to Tara Street station suffers from a lack of permeability, accessibility and from priority given to vehicular traffic. The improvement of this route to Tara Street Station along with the provision of a quality public realm will enhance the amenity of

the area and improve the accessibility to the station and other attractors in the area, such as the River Liffey and the Custom House.

It is proposed that existing east west routes between the Dublin Docklands and the Historic City zone (e.g. College Green area and Temple Bar) be responded to as important desire lines that will assist in connecting and opening up the George's Quay "Midtown" area. The first of these routes is the Townsend Street Route – running from Hawkins Street and College Green towards South Docklands. As previously mentioned the loopline (train line) has caused a perceived visual and physical barrier to the areas east of the bridge including Dublin Docklands development. There is an opportunity to create a permeable route to South Docklands through the George's Quay Plan area. This route could potentially be a main pedestrian link through the core of the city's Midtown area to the Docklands and, provided it is appropriately designed, will also assist to reduce the visual and physical impact of the loopline.

Opening up a second east west route – the Poolbeg Route – that runs along and extends upon the existing Poolbeg Street will further enhance east west connections. Currently the Ulster Bank development site breaks the historic block pattern and reduces permeability through the centre of the Midtown area of George's Quay. Seeking to open up this block in the medium to long term will enhance permeability on a local and city wide scale.

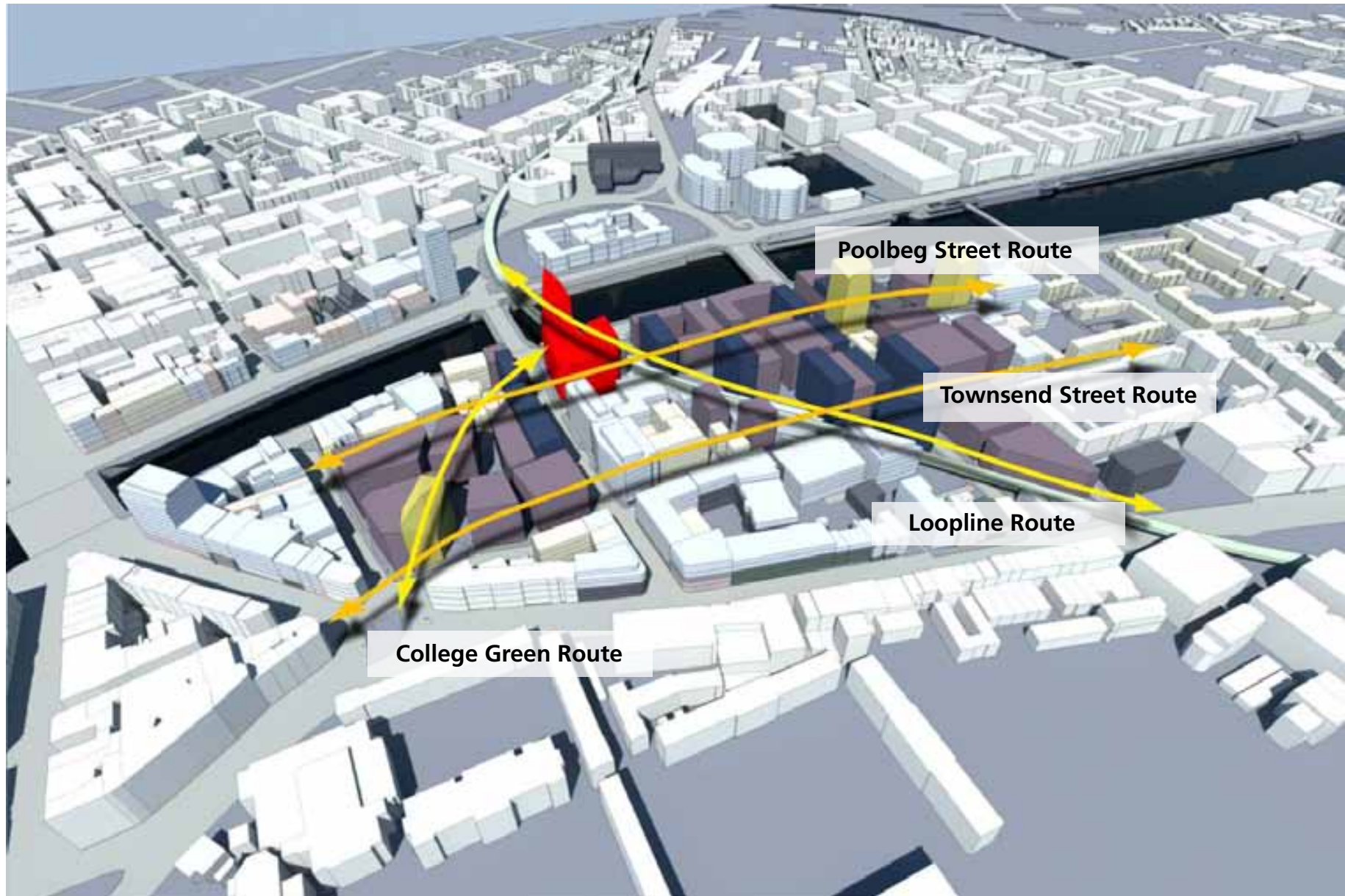


Figure 4.5 Urban Design Responding to City's Desire Lines

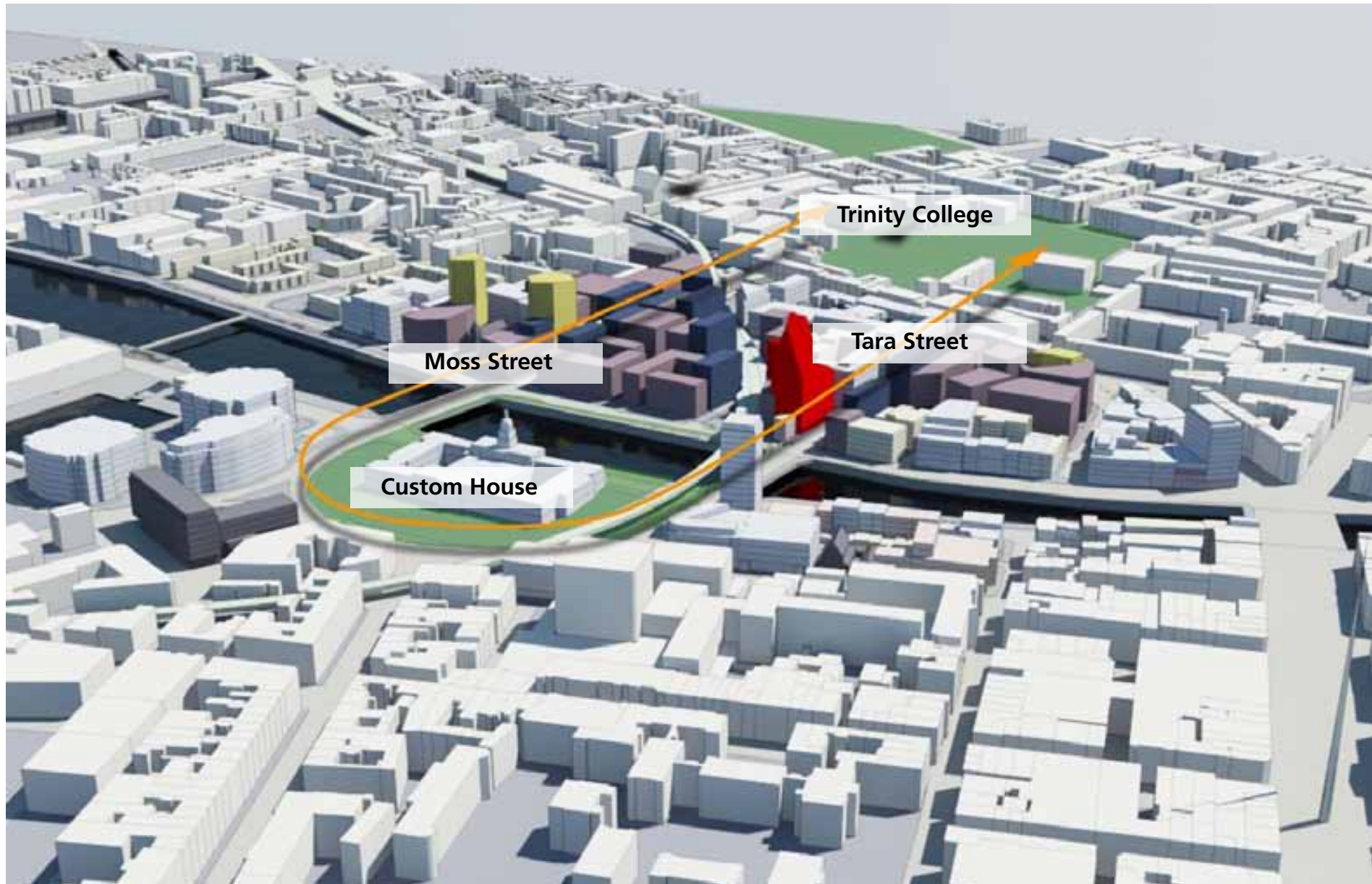


Figure 4.6 Linking the City's Open Space Set Pieces

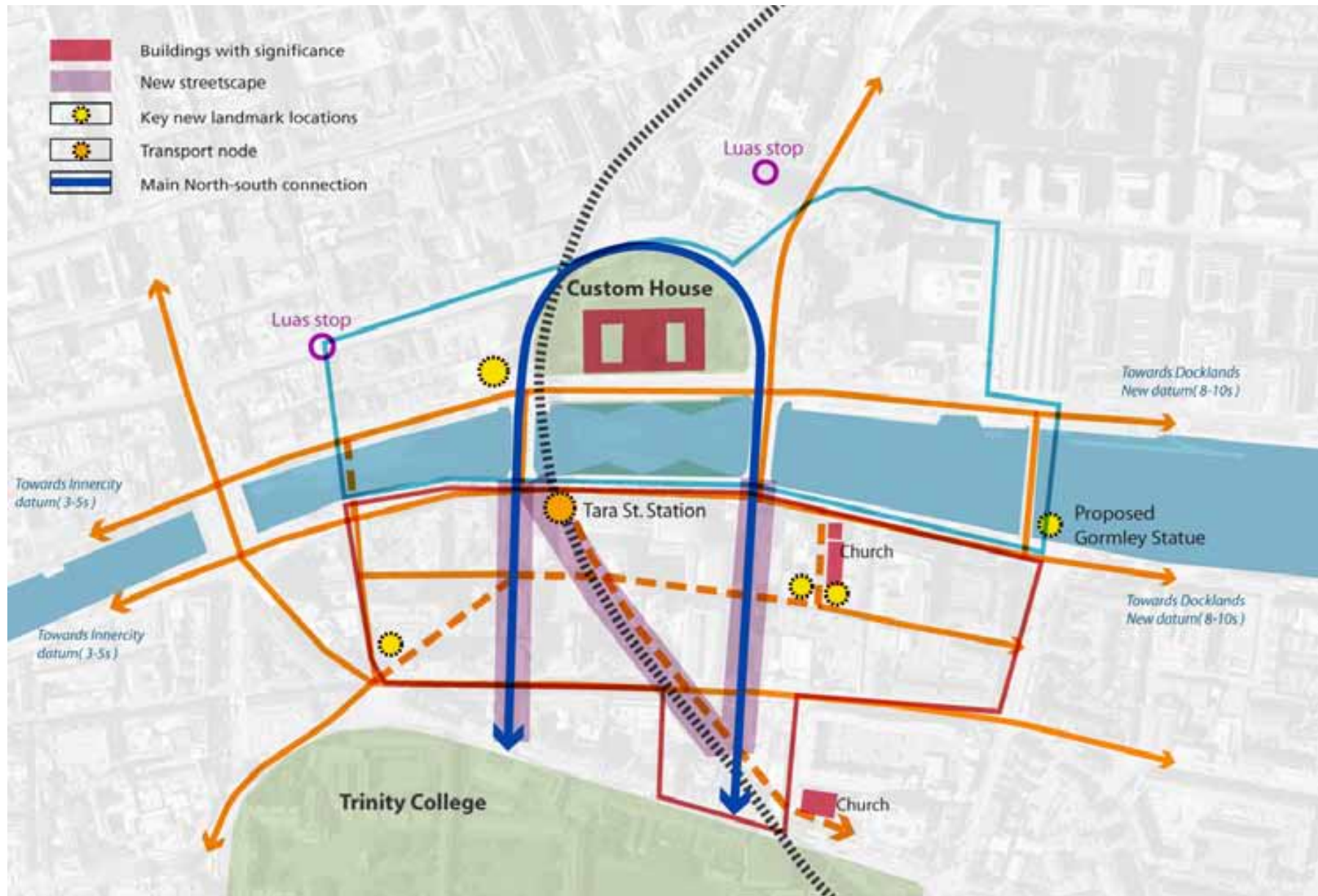


Figure 4.7 Re-establishing the Custom House Set Piece

There is an opportunity to create high quality north south connections between the Custom House and Trinity College via Tara Street and Moss Street, assisting to establish a set piece and linking the Custom House with the city. The north south connections along Tara Street and Moss Street as indicated in figure 3.6 will form the main public routes through the area and both streets should be enhanced through measures that:

- Reduce traffic demand and prioritise walking, cycling and public transport
- Enhance land use efficiency
- Enhance public realm
- Promote a mix of uses
- Promote quality of life, providing amenity, safety and convenience
- Promote an evening economy to aid in the provision of 24 hour surveillance
- Provide easy access, legibility and wayfinders

The vision for the George's Quay Plan area advocates a permeable urban grain that contains key public realm nodes and responds to the cityscape. A permeable urban grain describes urban areas where the buildings and private spaces are arranged in modest sized blocks, therefore creating a frequent and extensive network of routes. The network of routes will:

- Provide a choice of routes on foot through the area.
- Avoid overly long routes for pedestrians.
- Seek to inter-connect as many places as possible.

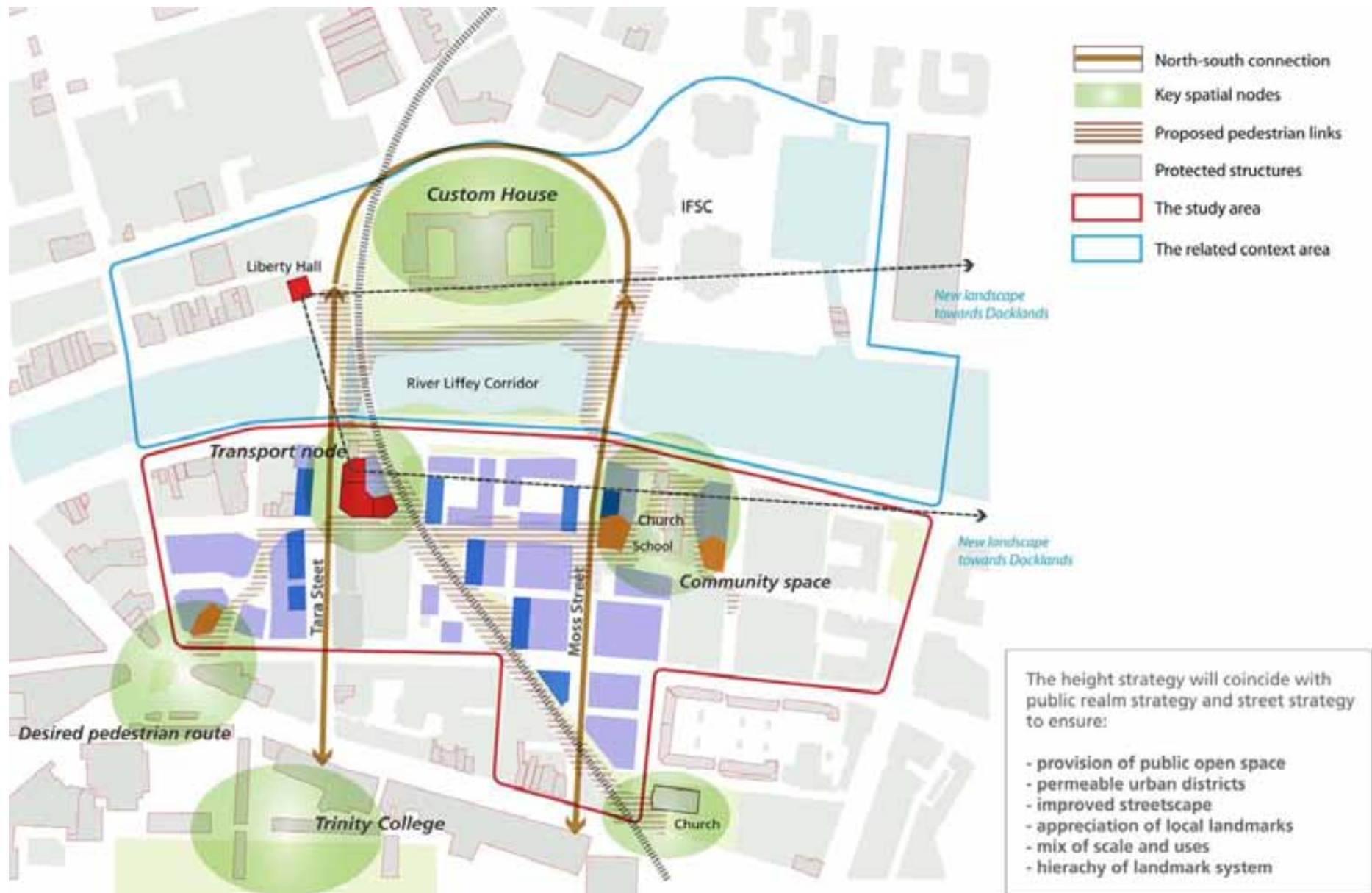


Figure 4.8 Responding to the Cityscape - Public Realm Strategy

The provision of appropriate movement routes along desires also has the potential to assist in developing a dialogue which can be expressed through the built form of the city. Appropriate building structures can be used to demarcate key routes and destinations or important moments in the cityscape.

The future design of the entire George's Quay Plan area requires due regard to creating a safe and user friendly public realm around the site area and should include:

- Provision of enhanced streetscape.
- The implementation of a cycle ways through the area, in accordance with relevant Dublin City Council strategies (refer Appendix 6 of the Dublin City Council Development Plan 2005 – 2011);
- Enhanced pedestrian crossing points
- Provision of a quality public realm
- Provision of adequate night time lighting
- A mix of soft and hard landscaping including trees and street furniture, with surfaces and edges designed to allow universal access; and
- Retention and provision of a variety of community uses, suitable for local residents and workers and visitors to the area.

4.2.2 A Height Strategy for George's Quay

The height strategy set out for George's Quay is two fold: to strengthen the base datum along the River Liffey between George's Quay and Townsend Street, to assist in enhancing continuity and character along the river corridor and within the city centre; and, where appropriate, to provide for tall buildings that respond to the existing cityscape and assist in enhancing the legibility of the city.

The 'Dublin City Development Plan, 2005-2011', actively encourages high-density development, particularly in city centre locations and in areas within walking distance of public transport infrastructure and employment centres. Having regard to this, a new higher datum for the area that is set back from the river has been proposed, however along the quayside of the study area, it is proposed to retain and strengthen a similar datum to that of buildings along the River Liffey to the west, which will preserve the character and coherence of the Liffey corridor.

A datum of six levels is proposed on sites adjacent to the river, whilst a datum of eight levels is proposed on sites located one block removed from the river. This datum should only deviate at locations where important buildings in the city context are situated.

It is considered that where buildings deviate from the proposed datum they would be located at primary transport nodes, or located so as to signify important points or positions in the cityscape, such as at the end of a key movement / desire line. Further, the position of tall buildings in the landscape need to be considered in relation to the wider city context, such as how they may align with other important buildings (e.g. Custom House, Liberty Hall), and how they will be viewed (such as from commonly visited public areas like O'Connell Bridge or Christchurch). A visual analysis of the proposed scheme from key public areas around Dublin City was undertaken and a summary of this analysis is included in Appendix A.

It is important to recognise that high density does not always equate to high-rise. The height strategy for the George's Quay and Environs area was fundamentally formulated in conjunction with a public realm and street strategy and puts forward a proposal for a consolidated city centre that provides for the needs and desires of people visiting, or working and living in the area. Additional building height in the George's Quay area has been proposed where the overall integrity of the urban form that has developed over time and now characterises much of the River Liffey corridor and Dublin City has not been compromised.

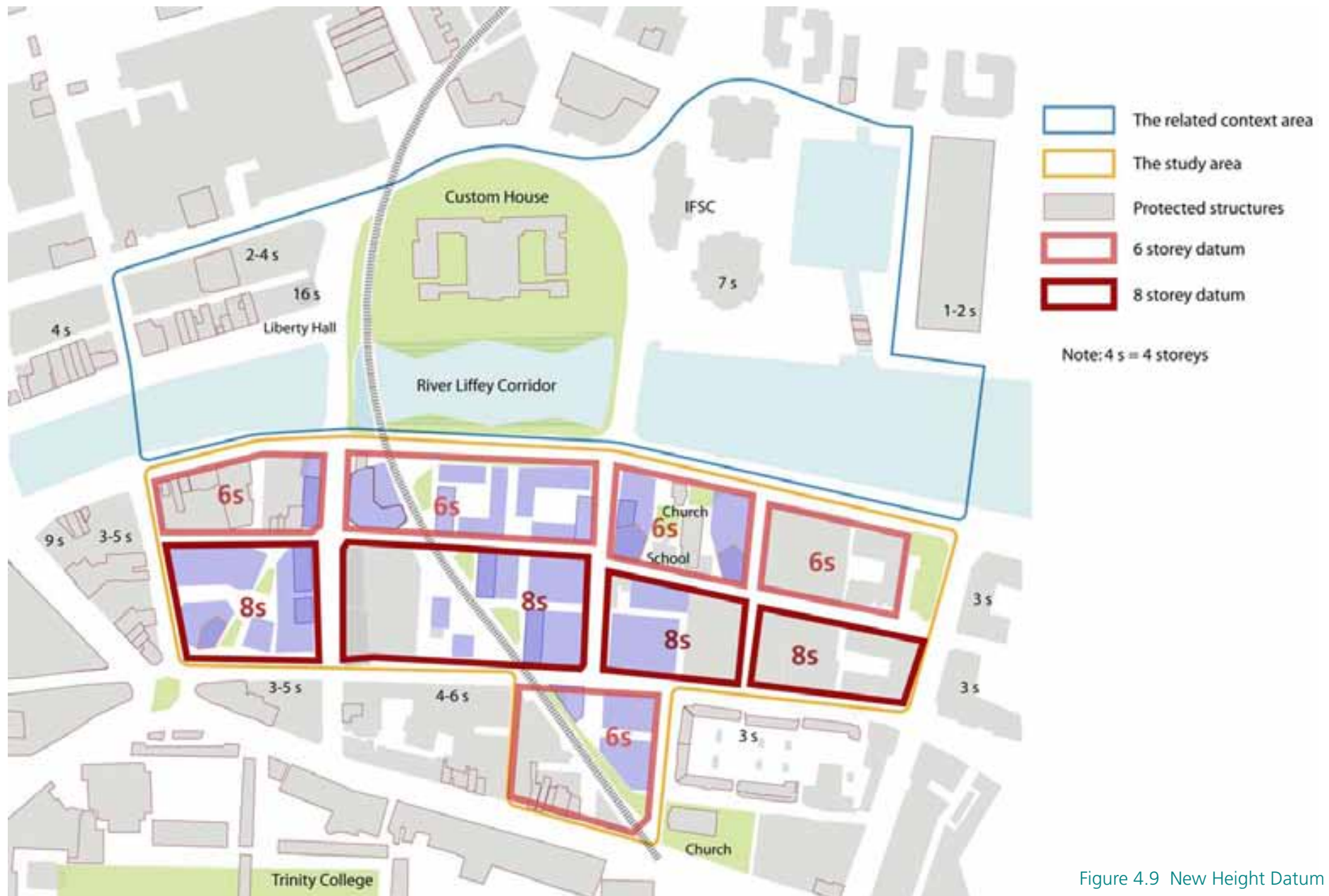


Figure 4.9 New Height Datum

Contemporary buildings should be added to the surrounding streetscape with due consideration to the existing historical context. While new buildings should be innovative, of their own time in appearance and should not replicate the style and detailing of the aforementioned historical buildings, they should also remain sensitive to the immediate surroundings: the scale, height and position of buildings should seek to complement and, where possible, enhance existing built elements and spaces, forming a modern response to the analysis of the historical and existing conditions of the area. Having consideration to the above matters, the following opportunities for tall buildings have been identified (refer figure 4.10):

- Tara Street Station: A primary transport hub located adjacent to the River Liffey as it starts to open out towards the harbour opposite the Custom House and Liberty Hall.
- City Quay: Two residential towers set to the rear of the City Quay Church site: framing the Church; building upon the community nature of the area; set back from the Quays to assist in retaining the six-eight datum; and allowing Tara Street Station to read as a distinct feature at the turning point on the River Liffey.
- Moss and Tara Streets: Eight level building height, allowing for greater building setbacks and enhanced streetscape down these primary routes between Custom House to the north and Trinity College to the south.
- Wayfinder Buildings: At each end of the desire line between College Green and Tara Street Station on the Hawkins House Block, and along the Loopline, to assist in providing for enhanced public realm and legibility of these key routes.

The design of tall buildings in the George's Quay study area should seek to:

- Allow for higher permeability of views within the area;
- Minimise the effect of overshadowing onto adjacent sites;
- Enable attraction of and potential for diversity of occupiers (e.g. office, retail, visitor accommodation, conference facilities, community and transport facilitation);
- Assist in breaking up the mass of the building to relieve bulkiness of design;
- Provide additional height in relation to areas along the rail line;
- Ensure that all facades are subjected to sunlight at sometime during the day
- Provide variety in built form and height, such that exposure of facades to sunlight is maximized; and
- Incorporate atriums wherever practical to allow natural lighting to indoor spaces.

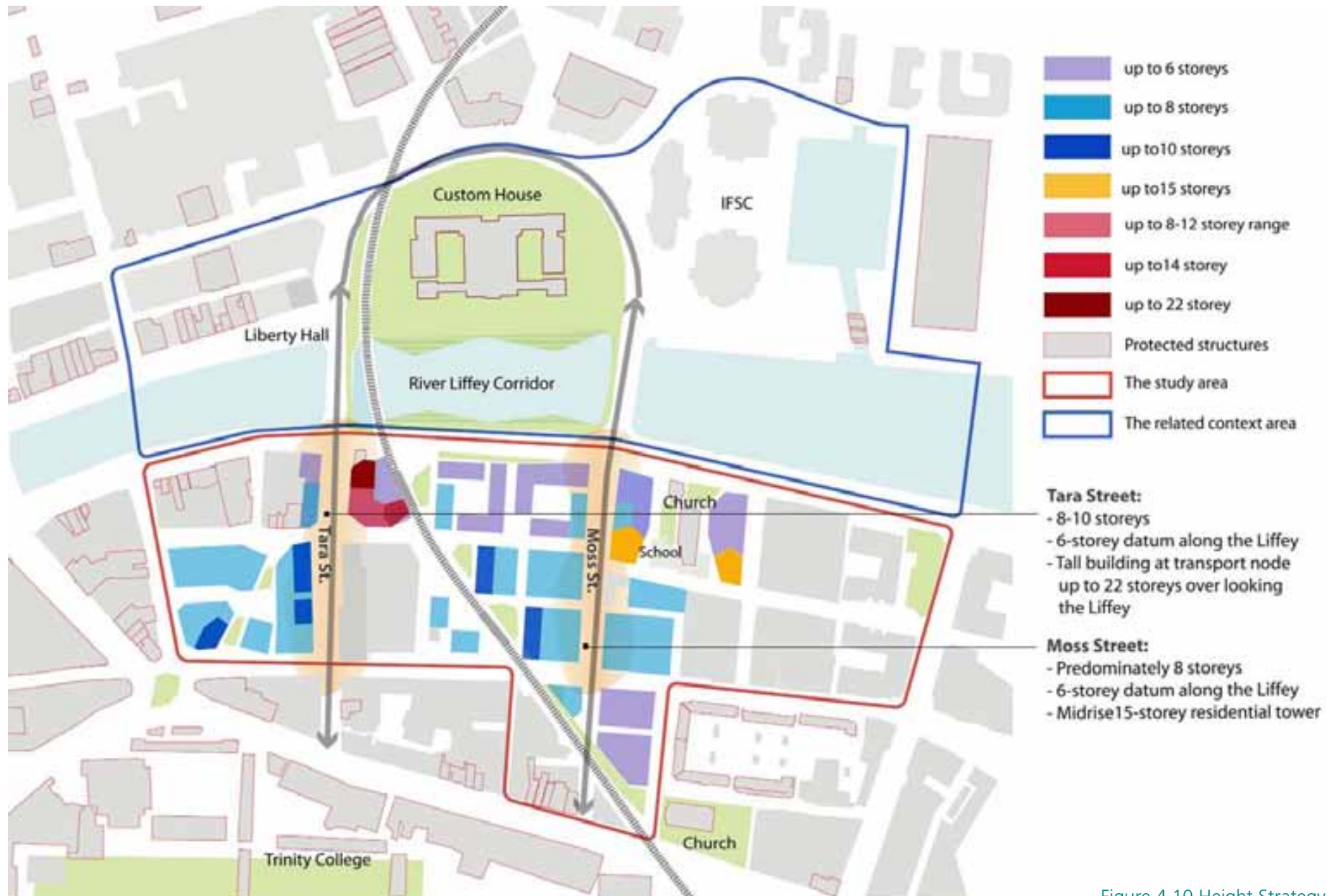


Figure 4.10 Height Strategy

4.2.3 Mix of Use Strategy

Achieving the appropriate level of density is important in order to generate a compact footprint that brings different land uses together in close proximity. This in turn allows for a more pedestrian friendly and accessible urban area. Ideally all the central services, amenities and facilities that are communally used will be within five to ten minutes walking distance of where people live.

A compact urban footprint is economically advantageous as higher densities generate population catchments to support more services and community facilities and generate the conditions for animated lively streets and open spaces. It is important that future development is designed with a focus on 'integrated mixed-use components' as opposed to 'single use developments', such that social integration, via mixed tenure, housing types, community and commercial services within a compact area, is achieved. Accordingly, design of buildings and the surrounding site shall be undertaken to implement a locational approach to residential density such that, in principle, higher residential density developments are located within close proximity (five minute walking distance) of the main public transportation modes and other important transport routes which have the potential to accommodate large scale public transport services.

The Plan has identified three general sectors (Burgh Quay Sector, George's Quay Sector and City Quay Sector) in the study area where it is envisaged that certain uses will have precedence. Figure 4.11 identifies the Burgh Quay sector as having the potential to cater for a commercial and residential mix given the areas close proximity to the main thoroughfares of College Green, Grafton Street and Temple Bar. The George's Quay sector has been identified as a primarily commercial use area. The lopline bisects this sector and the area has a direct relationship with the Custom House which is located on the opposite bank of the River Liffey.

The City Quay sector to the east of the plan area has been outlined as a residential, community and small commercial area and currently contains City Quay Primary School. This area has a direct relationship with the existing communities to the east of the study area and it should be the aim to utilise the City Quay sector as an area where the integration of new and existing communities could take place.

The following are potential benefits of mixed-use development in the George's Quay Plan area:

- Greater urban vivacity and street life
- Greater opportunity for social interaction
- More convenient access to facilities
- Visual stimulation and enjoyment of diverse buildings within close proximity
- Greater feeling of security, with passive surveillance of streets
- Improved and increased viability of urban facilities and small businesses / firms
- More efficient use of space and buildings

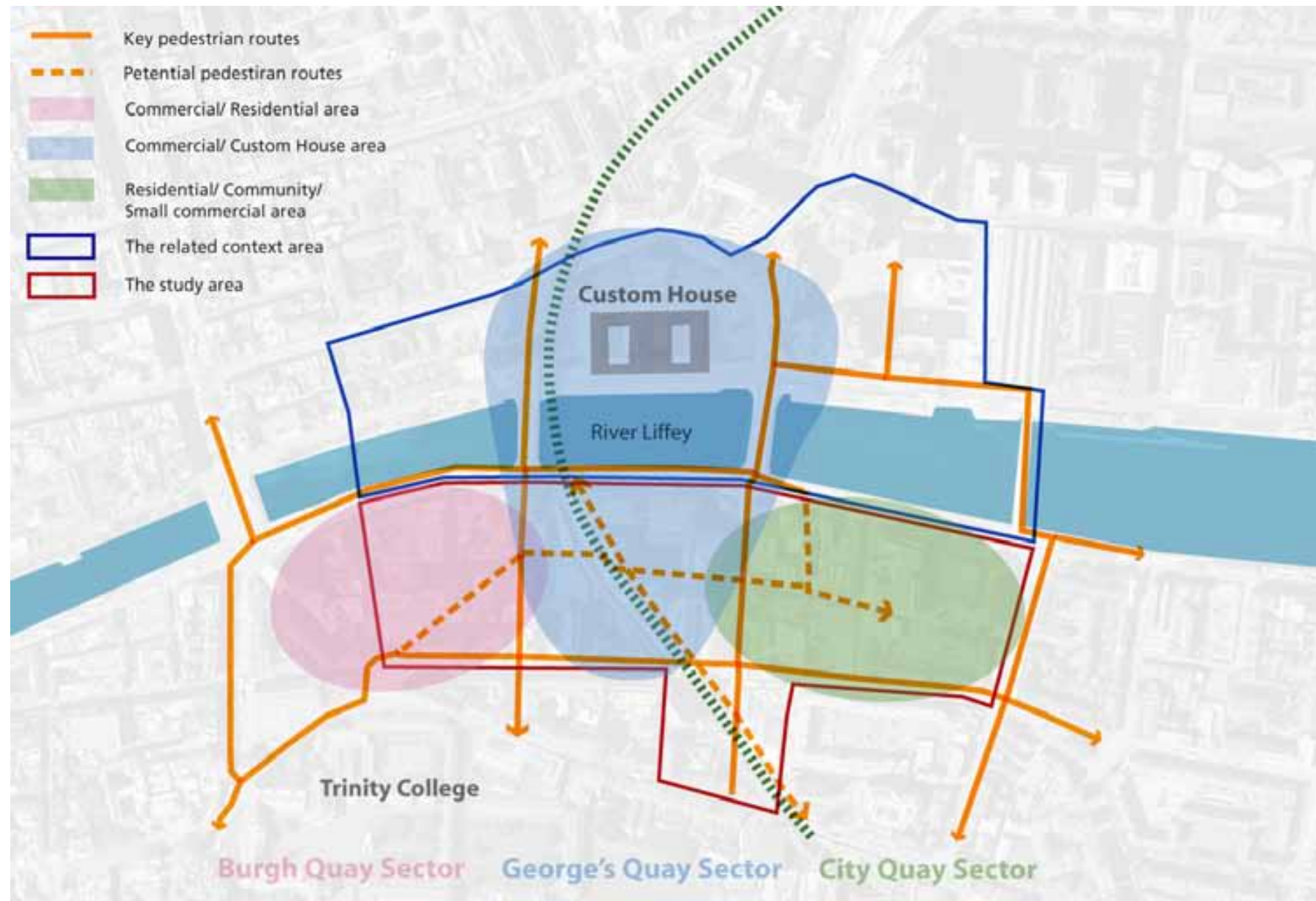


Figure 4.11 Mix of Use Strategy

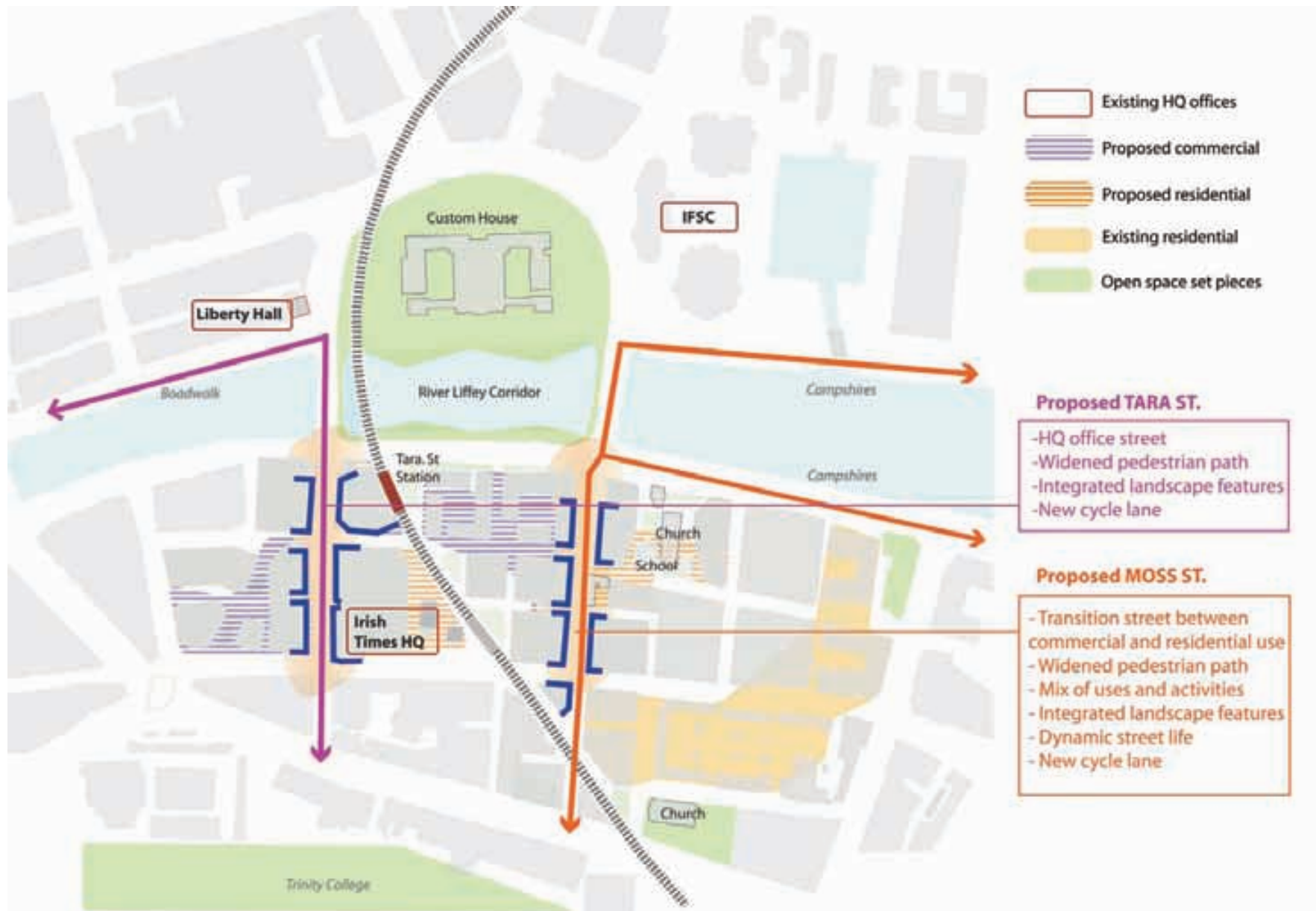


Figure 4.12 Potential Street Characters

4.2.4 Key Aims Towards Achieving Socially and Environmentally Sustainable Development

Buildings can be designed so as to respond intelligently to the existing topography and climate. For maximum effect and economy the aim should be for integration of appropriate design and technology into the overall building form and not simply to apply technology as an afterthought. Sustainable building technologies and sustainable use of resources in the construction of buildings should be demonstrated within all new development proposals within the George's Quay study area. In this manner, new developments should, where possible, seek to maximise energy efficiency through their location, layout, design and/or make appropriate use of energy conservation techniques.

The aim of sustainable design is to achieve best practice levels of environmental performance at the design, planning, construction and occupation phases of development.

The key Urban Design Sustainability objectives in this area are:

1. Quality of Life
2. Reduction of Carbon Footprint
3. Mix of Use
4. Diversity of Social Mix

1. Quality of Life

Any development should look at the life patterns of people using it and seek to address ways to increase that quality in measurable steps. These would include the following headings:

- Sustainable Communities: The mix of housing and commercial should foster a balanced approach to integrate a wide variety of uses on the site.
- Housing Mix: The development should seek to ensure a balanced community comprised of private, affordable and social housing choices, as well as the retention and protection of existing community areas and their surrounding amenities.
- Adaptability: the development should allow floor plates to be changed to allow for future requirements and changing circumstances of the residents.
- Community gardens: semi private areas should be seen as an opportunity to engender a feeling of community among the residents.
- Private open space: Any intensification of the sites should look to address the positive balance of spaces in the provision of private open spaces. The availability of external space around and close to the residential units is one of the key aspects affecting the quality of life of the occupiers. The external space can be a private garden as well as a shared garden, balcony or roof terrace. The green space to the roofs should also be addressed from an urban point of view, given its prominent and strategic location within the city.
- Public open space: Streets, squares and social spaces can be enhanced through the positive integration of planting. Not only do they enliven the area, they are essential in balancing the air quality, relative humidity and sound quality of their inner city microclimate.
- Daylighting: As described in the building form, the urban block should be modelled to take account not only of positive orientation but the optimum aspect for day long passive lighting of spaces, streets and internal floor plates. Through careful and studied sun path analysis, the Northern Quay aspect of the Study can be enlivened through appropriate cut-outs in the built form.
- Integrated amenities: The ground floor activities should seek to create a range of commercial and community facilities in order to sustain urban living.

2. Reduction of Carbon Footprint

By utilising existing city centre sites and allowing a sustainable diversity of mix, the development should have an inherently low carbon footprint. That is to say the daily movements of occupants to and from the development and the proximity of local, well established amenities should lessen the transport needs in the area. It should also focus people's needs on using sustainable forms of transport, given their proximity to a well-established network infrastructure. There are recognised European best practice benchmarks for this such as Code for Sustainable Homes (UK), commercial BREEAM excellence ratings and The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™. All these criteria encourage and accelerate global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. By building on the city centre location and its proximity to transport nodes, developments in this area should rate highly in these measurable outputs. This would form a platform for increasing their ratings in the use of appropriate building materials and forms and the proper waste management of any development here.

3. Mix of Use

The commercial and community mix on the sites should be balanced by a sustainable community residential mix to allow the area to react to its inner city location and integration into the daily pattern of inhabitants across the working and living day. The mix of use should act to enliven the area through the day and night time in order to produce a vibrant living and working environment within a the city. The three general sectors (Burgh Quay, George's Quay and City Quay Sector) build on the established uses within those sectors in order to consolidate and improve on the mixed use.

4 Diversity of Social Mix

To achieve a sustainable community, it is essential that there is a mix of households to cater for families, single and mixed households. This requires a mix of housing units to be provided across the site to enable a healthy demographic mix and opportunity for all. Three elements can act together to further this:

- Recent piecemeal developments can give way for current landowners to work together through planned development in larger blocks.
- The predominance of one and two bedroom apartments constructed in the study area discourage family living. Larger residential units with high quality private and public space would encourage families to live in the area.
- There is a high concentration of 25 to 44 year old and a low concentration of persons older than 65 years of age. An upgrade or provision of community/elderly facilities would aid in the retention and attraction of older persons to the study area.

Built Form and the Environment

CHP (combined heat and power) on site production of heating, lighting and cooling has been shown to be the most sustainable in terms of efficiency. This should be an option to be considered for implementation. This is best suited when there is a suitable mix of uses for energy centres. In terms of sustained energy demand, the use of compatible uses such as day and night-time loads and cooling and heating - ie commercial and residential use respectively lends itself to the use of energy centres or CHP. The benefits have been seen in the Dublin Docklands and Temple Bar West End to good effect, reducing power loads, creating energy in situ at a much greater efficiency and reducing the carbon footprint and energy demand of the whole development. Going forward, on-site energy centres comply with A rated residential developments and best practice commercial BREEAM rating.

Low Carbon Developments

Current legislation in Building Regulations is heading towards low or zero carbon developments past 2013. This is in line with EU policy to promote energy efficiency in the construction industry. Ireland has already implemented 40% energy and Carbon emissions in its building regulations, with a 60% improvement to be introduced in 2010. It is clear that sustainable building technologies as well as integrated renewable energy sources have to be incorporated in the planning of any new development. The careful selection of building materials with a low embodied energy will also reduce the emissions during the fabrication of materials and the construction.

Waste Management

New developments bring with them an increased loading on the existing treatment facilities. To prevent undue loading, best practice suggests that waste be dealt with at source. The development should promote the sustainable collection and on site retention of surface water for delayed discharge to the local water system and use as an on site resource. It should also promote the collection and use of greywater as a resource. In terms of physical waste, the provision of a community recycling site that will facilitate recycling of a wide range of materials and include a domestic composting facility should be encouraged.

Long Life use and Adaptability

In the George's Quay study area, this strategy promotes an approach to building design and technology that is flexible and allows for adaptation and for change of use in the long term. For example, the potential for office and retail space can be converted to living space and vice versa. Equally, the long term life of residential apartments should be considered through design that provides them with potential to be adapted over time. A building should not become obsolete on cessation of an activity, but should be capable of facilitating new activities without onerous renovation.

Long life use and adaptability can be assisted through application of the following:

- Floor to ceiling height for residential developments can be higher than the norm (e.g. higher than 2.45 metres) to allow for possible conversion to office or retail use later, in particular at ground floor level.
- Floorplates that would allow cross ventilation to passively ventilate the office thereby reducing office cooling loads. This will also have a future proofing role, reducing carbon emissions.
- Floor plans should take into account 'soft spots' for service risers and larger duct sizes should the ground floor uses change or residential units become amalgamated in future.
- Internal arrangements should take cognisance of changing needs of the inhabitants - ie provision should be made at the onset for accessibility throughout the floor plans to take account of impaired mobility of its users, thereby creating extended occupation of residential units and the positive integration of all sectors of the community.
- Good load bearing capacity in structural walls, floors and columns to facilitate change of use.



Microclimate

Urban design should be responsive to climatic factors in a manner that conserves the amount of energy used to light and heat buildings and creates sunlit and comfortable public open spaces. The design and arrangement of buildings on a site result in the creation of a microclimate, influencing the effects of temperature, sunlight and wind movement. Certain orientations and design can enhance comfort on exposed sites and maximise the potential of daylight and solar gain. The orientation, massing and landscaping aspects of buildings can contribute significantly to the overall energy budget of a building through conservation, heating and cooling. The objective should be to optimise the amount of solar gain in developments, whilst balancing this objective against other urban design considerations including the promotion of 'live' frontage to all sides of a block, enabling active streets, supervised and well overlooked spaces. Achieving this balance will require an evaluation of the solar gain opportunities provided by development blocks through computer modelling. The evaluation should seek to optimise solar gain, minimise overheating and balance the benefits of solar gain against the other urban design considerations for site development in the plan area.



Energy and Building Materials

Addressing the minimisation of heat loss, encouraging greywater recycling, minimisation of resources used to heat and light buildings, and the use of materials and construction processes that reduce the impact on environmental resources, will all assist in leading to greater sustainability and longevity of the current and future George's Quay and Environs community.

Particularly within residential developments, this strategy seeks to see opportunities for energy conservation applied within any design. As this has now been inacted into law through both Part L of the building regulations and BER (Building Energy Rating), any future development should future proof new units to aid in the conservation of energy and maximise solar gain and renewable technologies.

The embodied energy content of the materials, toxicity and the expected life of the components should be considered both at the onset of the design stage and also at the specification stage. Measurement tools such as BRE's (Building Research Establishment) green guide for housing specification provides a tool to aid specifiers in considering the environmental implications of their choices. The green guide and BRE's environmental profiles methodology are based on a 60 year building design life. Included in this is any repair and maintenance over the 60 year life, and impacts relating to an assumed dismantling/ demolition of the building at the end of its life.

4.3 Guidelines for future development

This section seeks to provide urban design guidance on the three main strategic nodes within the George's Quay study area, namely:

1. Tara Street Station;
2. Burgh Quay (Hawkins House area); and
3. City Quay.

Particular emphasis is given to enhancing the public realm throughout the area, particularly along Tara Street and Moss Street, and on the appropriate mix of use considered necessary to achieve a vibrant and living city district.

4.3.1 Tara Street Station

As a key transport hub within the city centre, Tara Street Station must, at least in part, be considered as an extension to the wider public realm. Facilitating the function of a concourse, the ground floor is proposed as an extension of the street – a direct response to the flow of pedestrians and public space. The concourse should therefore seek to foster a relationship with the surrounding public realm, albeit subject to the normal ticketing requirements. Accordingly, it is essential that the design of the ground floor level allows for movement through the station from north to south.

Permeability must also be provided for along the eastern elevation and around the corner to Poolbeg Street. In addition to opening up further options for movement by pedestrians, permeability around and through the station site will facilitate future desire lines between Tara and Moss Street (along the Poolbeg Street axis), and beside the lower concourse of the Dart Line as it moves south.



Figure 4.13 Model Images of Georges Quay Plan

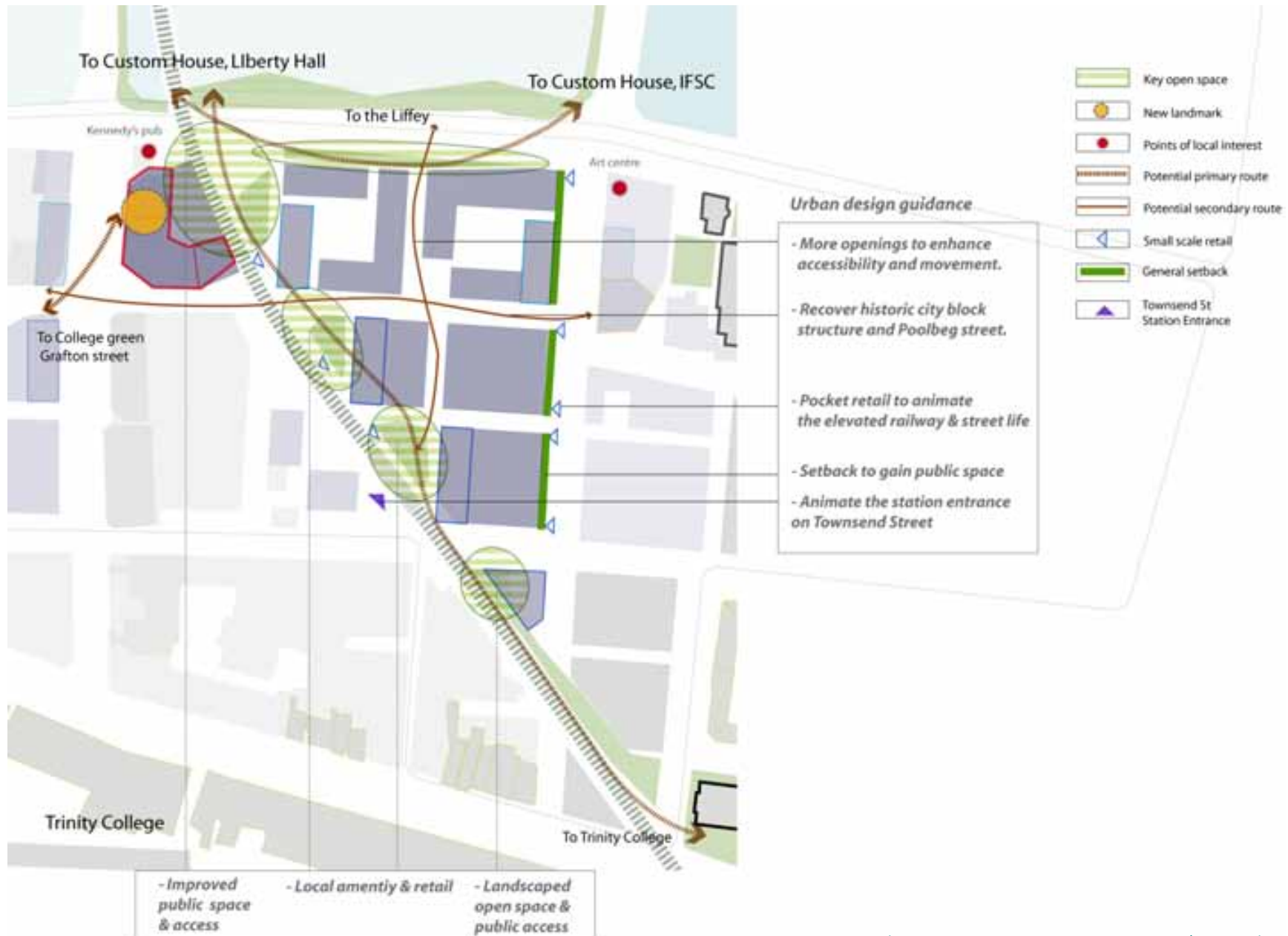


Figure 4.14 George's Quay Sector Urban Design Guidance

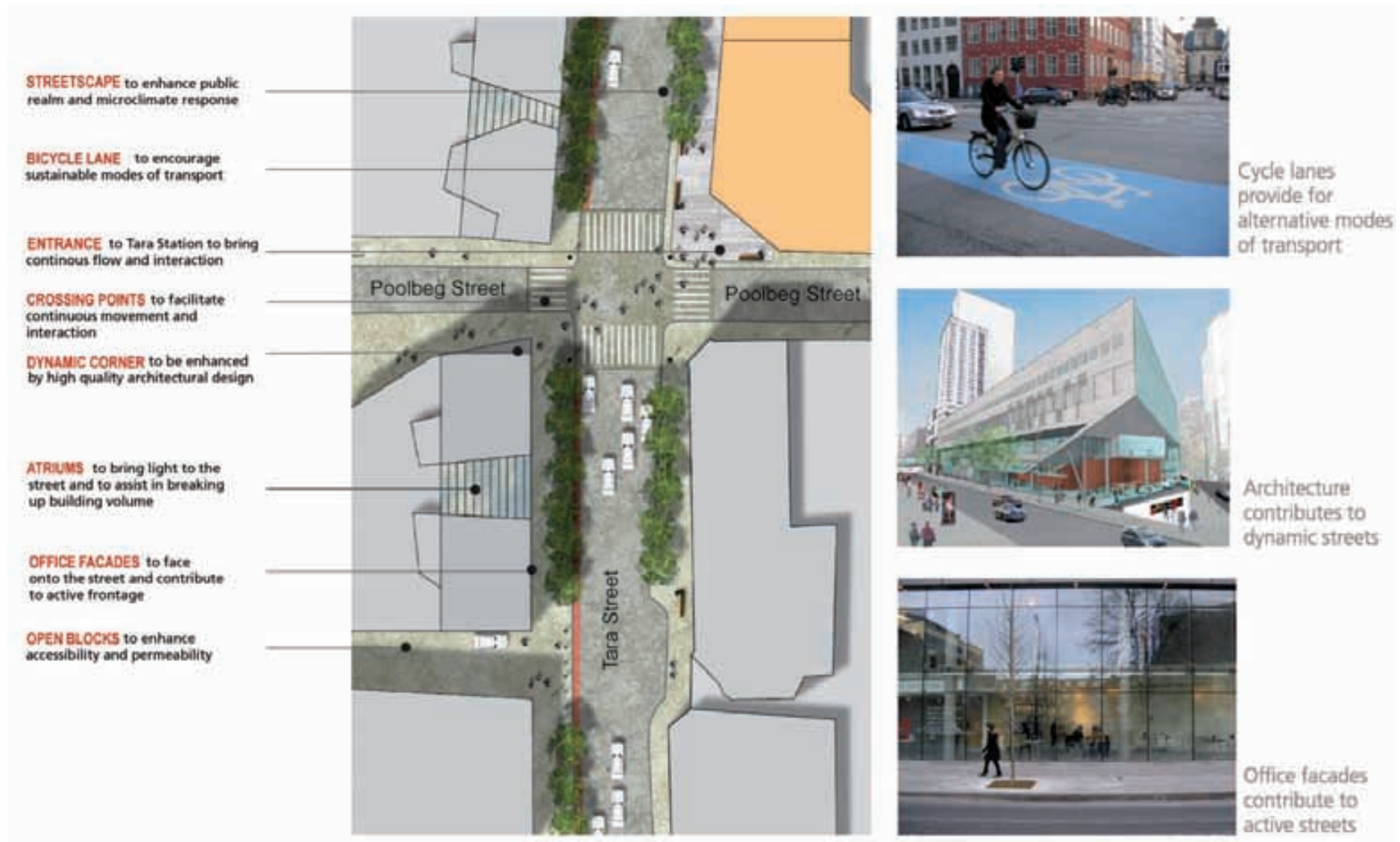


Figure 4.15 Tara Street Streetscape Guidance



Figure 4.16 Indicative Tara Street Section, looking south

It is recommended that a mix of uses be implemented at the Tara Street Station area of the study area. Such uses would include CIE rail operations, retail and commercial offices at lower levels, and commercial offices (including headquarter offices) at the mid to upper levels.

The primary use of the ground floor level should be that of a concourse, well connected with the surrounding public realm. A dynamic relationship should be fostered with Tara Street and George's Quay through the establishment of active street facades. In particular, it is encouraged that:

- Design of primary entrances conveys openness
- Design and placement of secondary entrances contribute to the vibrant nature of the public realm at street level
- Appropriate design and use of materials (e.g. glass) be implemented, such that visibility between street level and uses within the station site is facilitated.

Where appropriate, land uses that facilitate vibrancy should be enabled along primary pedestrian routes. Such uses may include convenience shops, retail outlets, or reception areas providing for access to upper level uses. Opportunity exists to configure uses such that they have a relationship with the street, which may include active entrances or a visual connection. Notwithstanding this, visually open facades between the concourse and street level would be actively encouraged should commercial units not be desired or necessary.

It is considered that the concourse or existing railway arches offer a good opportunity for small commercial offices or retail uses within the lower arches, facing either inwards towards the lower levels of the concourse or towards a public open space to the east of the site.

With reference to building height in the Tara Street station area, this strategy proposes a new concourse at the lower levels, with large office space to the mid levels, juxtaposed by two towers at the upper levels, roughly equal in area, rising to 14 (mid rise) and 22 levels (high rise, 75 – 80m) respectively. It is proposed that the lower levels would rise to six levels along George's Quay, thus remaining consistent with the overall built form of the mid to upper quays. Built form at the south western corner of Tara Street station could be expected to rise to eight to ten levels, consistent with the balance of development envisaged along Tara Street. Additional building height in the Tara Street area is provided for in return for additional public realm.



Figure 4.17 Indicative Height for Tara Street Station



Figure 4.18 Indicative Block Modelling of Potential Built Form,
East – West Elevation



Figure 4.19 Indicative Block Modelling of Potential Built Form,
North - South Elevation

The division of the upper levels of the proposed development into two distinct towers is considered to provide an appropriate design response to the site and surrounding context, while enabling an appropriate plot ratio to be achieved over the city centre site. In particular, the design seeks to:

- Serve as a distinctive landmark building for a primary transport node within the wider city landscape; and
- Enable taller built form with minimal visual impact on the wider environment, including the surrounding historic quarters.



4.20 George's Quay Sector

4.3.2 Burgh Quay (Hawkins House Area)

The design of a quality environment is considered integral to the regeneration of the area while maximising the use of the Hawkins House site area as a public route between College Green and Tara Street Station. In response to the disconnectivity experienced within and around the Hawkins House site, any future intervention should also seek to enhance pedestrian access and flow through the site – the College Green Route. It is suggested that a primary public pedestrian link be created between College Green and Tara Street Station, allowing for substantially improved access between these two key nodes within the city.

The future design of the site should include:

- Existing bus stops and future Luas lines on Hawkins Street should be integrated with the pedestrian environment to relieve traffic congestion and enhance the area as a transport node;
- Traffic calming measures and enhanced pedestrian crossing points;
- Provision of a quality public realm in the vicinity of the existing Screen Square; and
- Provision of a quality public realm at the corner of Tara and Poolbeg Streets (opposite Mulligan's Pub)

During the design of the site, consideration needs to be given to the provision of public space in close proximity to protected buildings. In particular, protected buildings on Poolbeg Street should be allowed 'breathing space' in conjunction with a quality public realm.

The new public route will serve as both a physical and visual connection, and be composed of a 24 hour public space, surrounded by local amenities, commercial uses, residential living opportunities, and other appropriate uses. It is acknowledged that the entirety of the site may not be developed at once. Accordingly, as each landowner/stakeholder undertakes redevelopment of their part of the site, the formation of the proposed route should take place within their respective

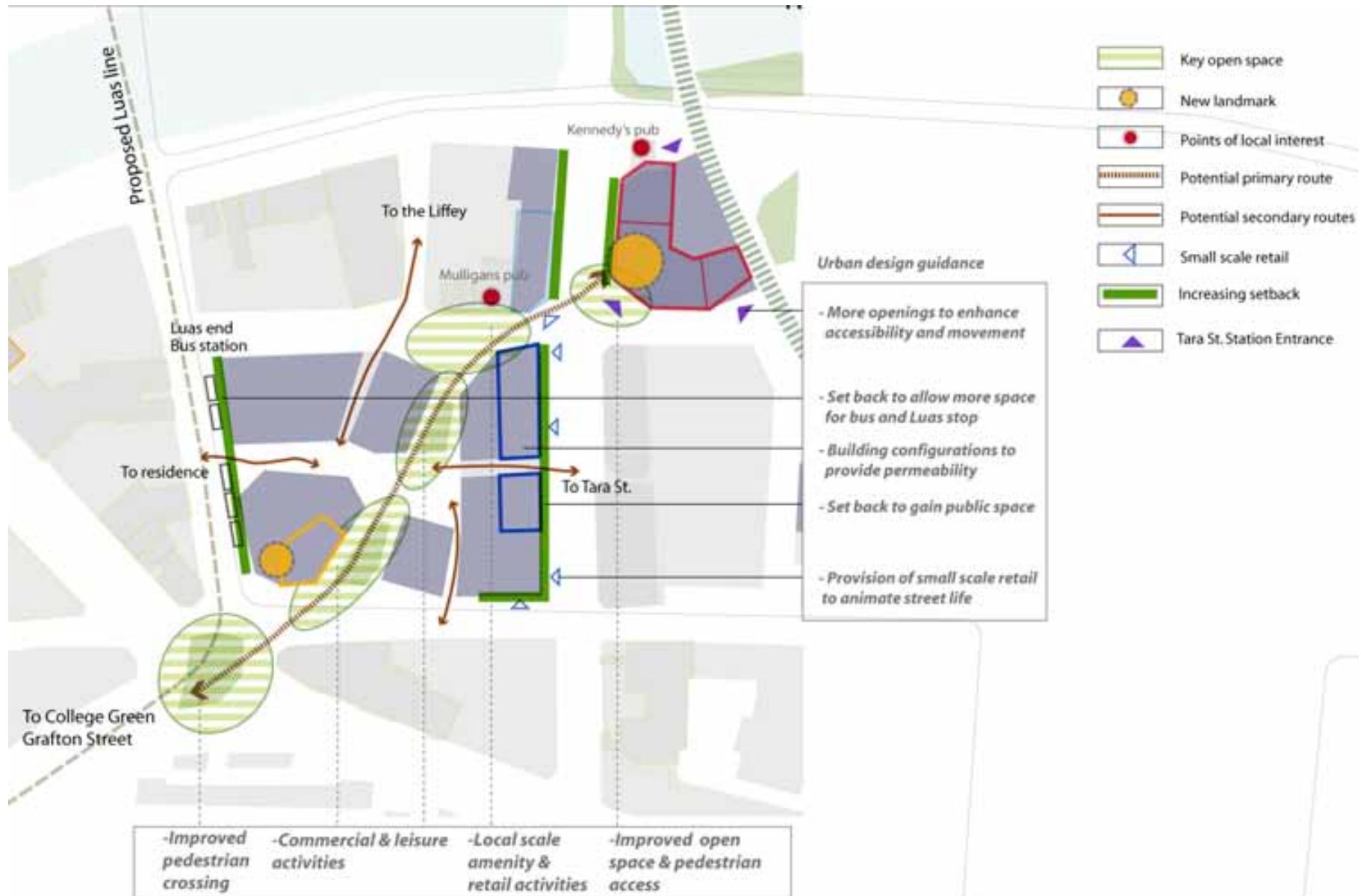
landownership boundaries, seeking to open up the site in their own instance and also move towards anticipating future connections to be provided by adjoining landowners. As has been discussed earlier within this report, development over key sites should be undertaken, wherever possible, in a holistic manner.

Integral to the success of the proposed Hawkins House route is its consideration as an extension to the wider public realm. In this manner, facilitating a functional public realm is necessary. Accordingly, it is essential that the design of the primary pedestrian route allow for clear and unimpeded movement through the site. The permeability provided by such unhindered access will work as an extension to the wider public routes provided for between Tara Street Station, Custom House and the River Liffey to the north, and Trinity College, College Green, and Dame Street to the south. Integral to successful permeability will be:

- Full public access 24 hours/day and promoting an evening economy
- Provision of adequate night time lighting
- Provision of mixed use activities appropriate to a busy pedestrian route

In addition to the primary public access route between College Green and Tara Street Station, it is considered appropriate that a number of other secondary routes would be provided for within the site. These routes would have the potential to be combined with both public and private areas. As a secondary route, the provision of public space between Tara Street and the Luas/bus stops on Hawkins Street is strongly encouraged. Additional routes, assisting in breaking up bulk of built form and allowing light penetration, would also be encouraged throughout the site.

The Plan for the George's Quay area aims to gain maximum benefit from improved pedestrian footfall in the area and to build an environment that will enhance the vibrancy of the city centre. Accordingly, layout and mix of use in the Hawkins House vicinity of the study area should seek to incorporate and facilitate vibrancy by creating an attractive, interesting and safe environment.



Integral to creating an attractive, interesting and safe environment is the mix of use. As shown in the indicative plan (Figure 4.21), it is suggested that the site incorporate the following uses:

- Primarily Residential – Predominately residential use combined with live/work units, retail and local amenities (e.g. health care) at lower levels
- Primarily Commercial and Retail – Predominately commercial office use at upper levels and retail at lower levels; inclusion of headquarter offices with entrances to the outer edges of sites; and convenience and comparison shopping, public amenities and cafes with entrances off the primary pedestrian route.



Where appropriate, land uses that facilitate vibrancy should be enabled along primary pedestrian routes. Such uses may include convenience shops, retail outlets, or reception areas providing for access to upper level uses. A dynamic relationship should be fostered between public realm and built form through the establishment of active street facades. In particular, it is encouraged that:

- Active street facades be provided for at street intersections and pedestrian entrances to the site
- Active street facades be provided, at a minimum, at regular intervals along streets and primary pedestrian routes
- Design of entrances conveys openness and contributes to the vibrant nature of the public realm at street level
- Appropriate design and use of materials (e.g. glass) be implemented, such that visibility between street level and public space is facilitated.

Figure 4.22 Hawkins House Sector

The strategic positioning of entrances along the primary pedestrian route and surrounding streets will assist in establishing vibrant and safe streets in what has the potential to become a revitalised mixed use area in Dublin's city centre. It is suggested that:

- Retail entrances be located along the primary pedestrian routes, and potentially at intersections between the surrounding street network
- Office entrances, particularly for large and/or headquarter offices, be located on Tara Street and the southern end of Hawkins Street
- Residential entrances be located at Poolbeg Street and Hawkins Street, in close proximity to public transport and local amenities.

Within the vicinity of the Hawkins House area, it is important that building orientation is considered alongside public realm and open space. The proposed pedestrian link from College Green through to Tara Street Station is well orientated to receive afternoon sunshine and should not be adversely affected by shading during these hours. In the same manner, it is important that alternative routes through the site be well placed to receive sunshine during different times of the day, thus offering opportunities for people to occupy the outdoor areas.

For the most part, height of built form is provided for at up to eight levels over the site, a direct response to the surrounding context. Notwithstanding this, built form at the north eastern corner of the site could be expected to rise to ten levels, consistent with the balance of development envisaged along Tara Street. Further to this, and as part of the wider strategy for the George's Quay area, it is suggested that a mid rise building be established at the corner of Townsend and Hawkins Streets (in the vicinity of the current Screen Square). Designation of this mid rise building as an orientation device will assist in identifying the significance of the site in the city context through its contribution as a major pedestrian route between Trinity College, College Green and Tara Street Station.

It is suggested that built form of the south east corner of the Hawkins House site would be appropriate up to 10 stories. The building should not disrupt views along the key pedestrian route, but rather act as an attractor to the area. Thus a relationship will be formed between key buildings in the George's Quay area and Dublin city, which will enhance the legibility and accessibility of the area, particularly between Trinity College, College Green and Tara Street Station.

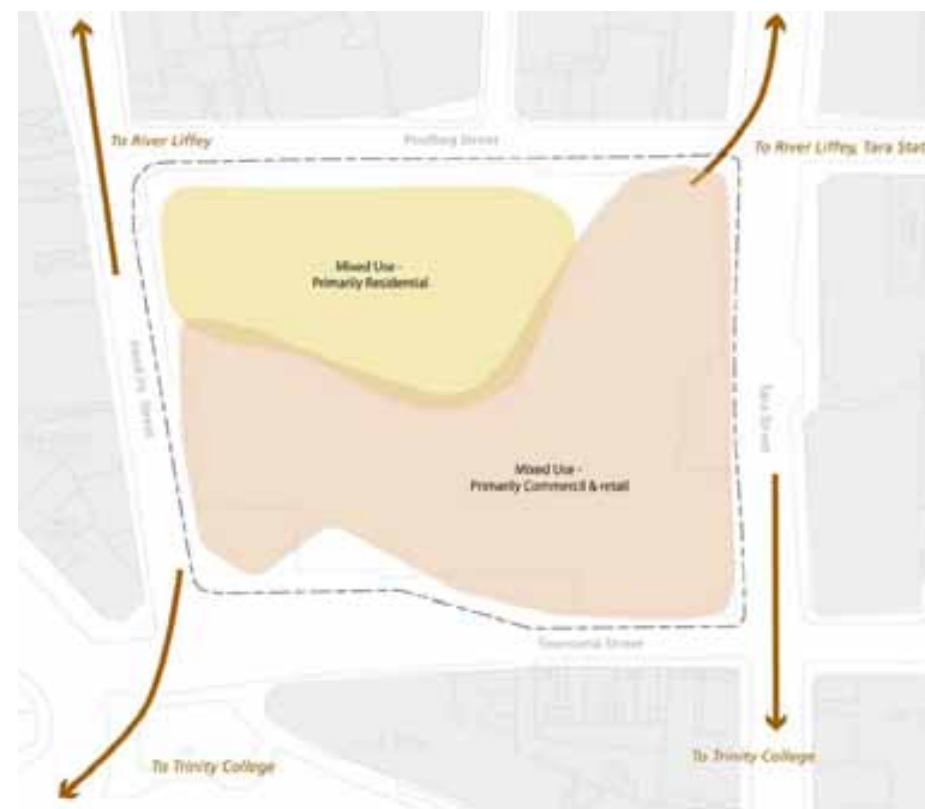


Figure 4.23 Primary Land Use areas

4.3.3 City Quay Area

It is considered that the City Quay area will benefit from a number of initiatives relating to public realm and connectivity. The first of these relates to the enhanced provision of public realm around the sites, particularly along City Quay, Gloucester and Moss Streets.

In response to the dis-connectivity experienced within and around the City Quay area, any future intervention should also seek to enhance pedestrian access and flow through the site. It is suggested that a primary public pedestrian link be created past the existing church, from Gloucester Street to City Quay, composed of 24 hour public space, surrounded by local amenities, commercial uses, residential living opportunities, and other appropriate uses. A quality Public Domain is critical to connecting people and place. Future design of the site requires due regard to creating safe and user friendly public realm around the site and should include:

- The implementation of cycle ways along Moss Street (in co-operation with Dublin City Council)
- Enhanced pedestrian crossing points, in particular at the corners of Moss Street and City Quay, and Moss and Gloucester Streets
- Traffic calming measures, particularly along Gloucester Street and in the vicinity of the church and school
- Provision of open space at the corner of Moss and Gloucester Streets, acting as a node on the wider east west axis along Gloucester and Poolbeg Streets

Integral to the success of the proposed route is its consideration as an extension to the wider public realm. In this manner, facilitating a functional public realm is necessary. It is essential that the design of the primary pedestrian route allows for clear and unimpeded movement through the site. The permeability provided by such unhindered access will work as an extension to the wider public routes,

particularly as pedestrians move from the quays back towards Trinity College. Integral to successful permeability will be:

- A clear, safe and attractive route, accentuated by the provision of public space
- Full public access 24 hours/day
- Provision of mixed use activities appropriate to a busy pedestrian route

In addition to the primary public access route between Gloucester Street and City Quay, it is considered appropriate that secondary routes would be provided for within the site. These routes would have the potential to be either public or semi public (i.e. open at certain times or to certain users) depending on associated and surrounding land use. Notwithstanding this, the routes should assist in the functionality of the site overall, enhancing permeability and access to particular land uses (such as the school, residential or commercial uses), and, where possible, increase the amenity of the site through the provision of additional light and space.

The layout and mix of use within the City Quay vicinity of the study area should seek to facilitate vibrancy by creating an attractive, interesting and safe environment. Integral to the success of the site will be the incorporation of the following activities:

- Presbytery and existing church
- Primary school
- Crèche
- Residential / Live-work Units
- Public open space
- Commercial offices
- Community amenities such as art gallery and health care
- Local retail, including café or similar uses



Figure 4.24 City Quay Urban Design Guidance

Integral to strengthening the existing community qualities of the area is the retention of the existing church, presbytery, and school. In this regard, the design of future development should seek to sensitively integrate the school alongside other uses, either in its present location or as an integrated part of the surrounding development following further consultation between all affected parties including the school.

The proposed public open space within the site has the potential to serve as amenity/play space for the school and/or the surrounding communities, thus enhancing the desirability of the area for living.

The central location of the site along the River Liffey would be well supported by further activities open to the public. Accordingly, it is suggested that consideration will need to be given to the provision of amenities on site, such as a gallery or other activities that may be frequented by the public. The establishment of residential living on site is integral to creating a living community throughout the wider George's Quay area. Residential living within the site will assist in:

- Increasing vibrancy of the area throughout the day and evenings
- Enhancing passive surveillance in and around the site
- Reducing the need to travel and reliance on vehicular use
- Enhancing local social and cultural identity
- Providing the site with a strong identity.

Given the potential gains to the wider area through the provision of residential use and the retention of a school on site, it is considered that additional density is appropriately provided for through the facilitation of two towers at the south part of the site. As residential buildings, these tall buildings will evoke the importance of community in the area.

The strategic positioning of entrances along the primary pedestrian route and surrounding streets will assist in establishing vibrant and safe streets in what has the potential to become a revitalised mixed use area in Dublin's city centre. Accordingly, it is suggested that retail entrances be located along the primary pedestrian routes, and potentially at intersections between the surrounding street networks. Furthermore, other keys entrances should be located as follows:

- Office entrances, particularly for large and/or headquarter offices, be located on Moss Street, City Quay and Prince's Street South.
- Residential entrances be located at Gloucester Street and on secondary internal routes.

Within the vicinity of the City Quay section of the study area, it is also important that building orientation be considered alongside public realm and open space. The proposed pedestrian link from Gloucester Street to City Quay is well orientated to receive afternoon sunshine and should not be adversely affected by shading during these hours. Built form should maximise the potential for natural light penetration throughout the area and within buildings.

To remain sensitive to the datum of the Liffey Corridor, the proposed mid rise buildings have been set back from the Quays. The height datum along the Quays remains at six stories.

For the most part, the height of built form is provided for at up to six levels in the study area, which is a direct response to the surrounding context. It is considered appropriate that two mid rise buildings (12 – 15 stories) be established on the site, designed appropriately to frame the church and proposed open space. Together, and through their residential nature, they seek to add character and identity to an area that should continue to grow with a community focus. The height and design of the buildings should seek to differentiate these two towers from the smaller buildings that form the majority of the Quays, emphasising the strategic importance of this location.

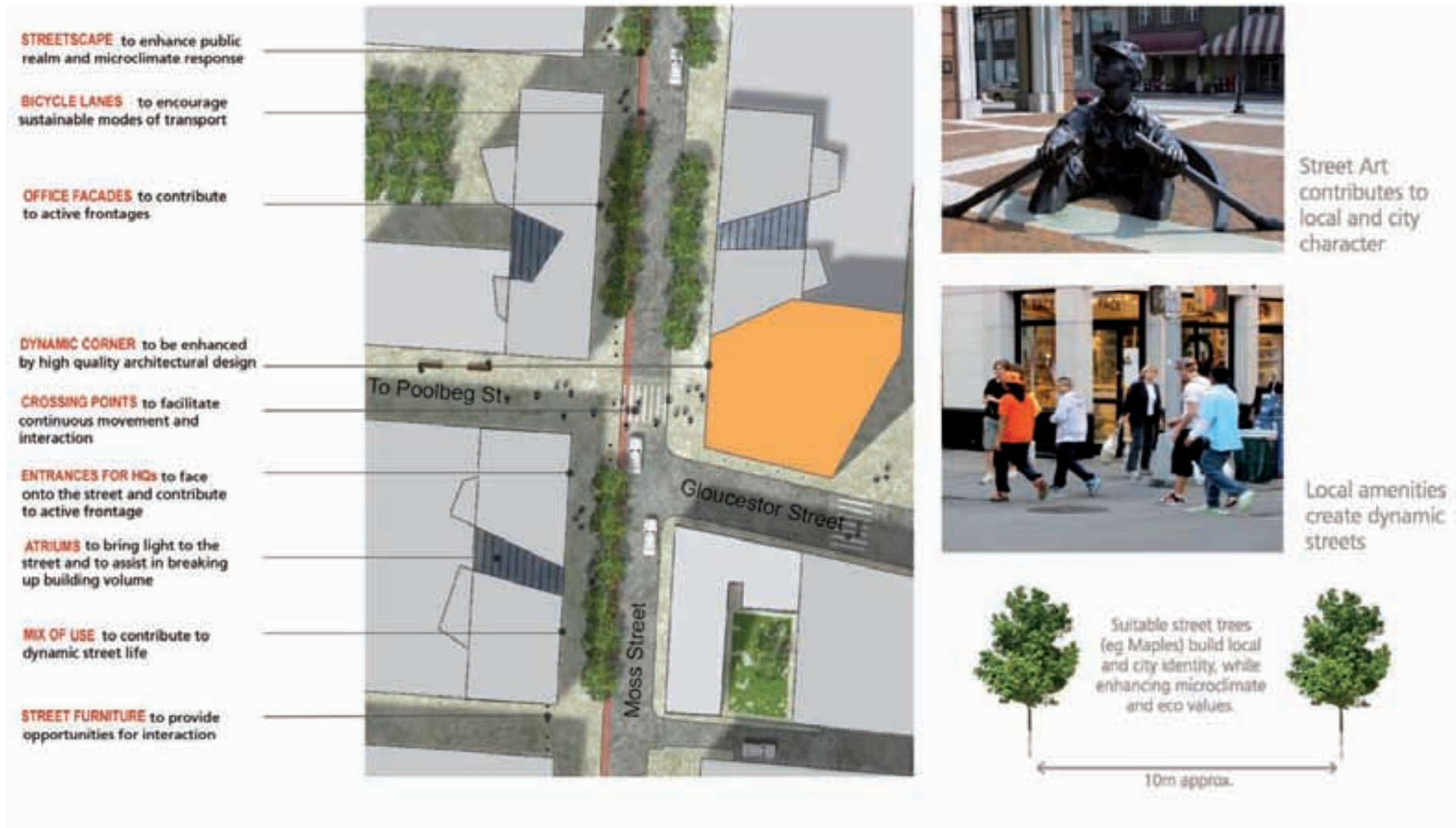


Figure 4.25 Moss Street Urban Design Guidance

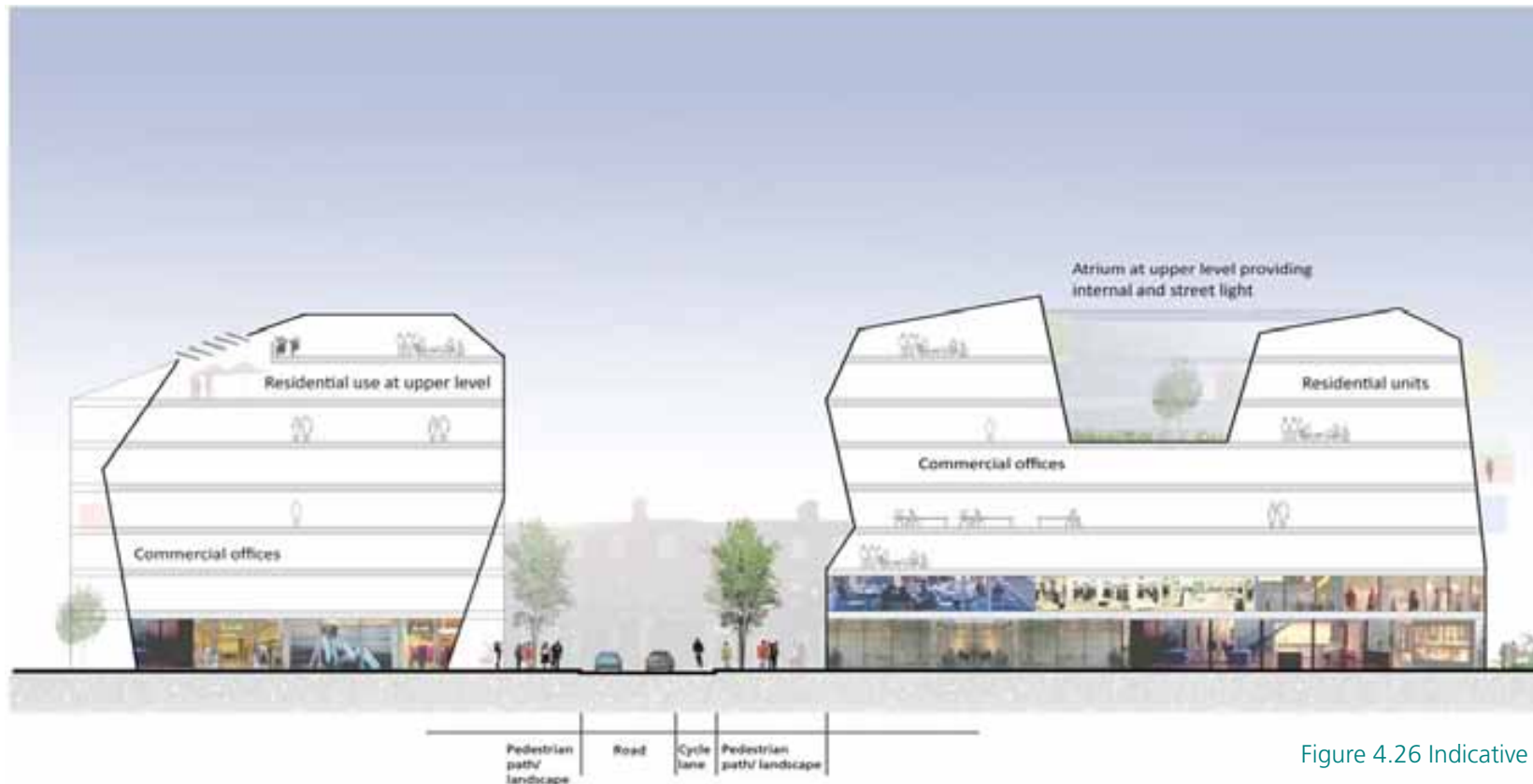


Figure 4.26 Indicative Moss Street Section, looking south

It is considered that built form of the south west corner of the site along Moss Street would be appropriate up to 8 stories (i.e. 26 – 30m). This proposed height gives regard to the built form envisaged along Moss Street as it runs down to meet the Liffey and crosses over to meet Custom House. Similarly to Tara Street, additional building height is also provided for in return for additional public realm.

Regardless of the heights provided for over any site, it is considered that an allowance for a higher permeability of views within the area is provided for.



Figure 4.27 City Quay Sector

4.4 Timeline for Implementation

The potential phasing and implementation for the George's Quay & Environs Plan will largely be reliant on the intentions of stakeholders in the area over the short, medium and long term. It is acknowledged that redevelopment of the area will take place over different periods of time and therefore this Plan must be seen as providing aims for the short to long term.

It is envisaged that in the short to medium term Tara Street Station, the Burgh Quay (Hawkins House area) and City Quay sectors are likely to be redeveloped, as shown in figure 4.28. This Plan seeks to encourage development of these areas in a holistic manner whilst having a high regard for the surrounding public realm. While these areas may not be redeveloped in their entirety over a single period of time, it is nevertheless important to ensure that the overarching concepts for movement and connectivity, mix of use and built form are adhered to, thus contributing to achieving the aims of Dublin City Council in the long term. By way of example, it is essential that key routes proposed, such as that between College Green and Tara Street Station, be provided for in part by respective landowners even if further development of adjacent sites is not anticipated in the immediate future. Wherever possible, it is encouraged that adjoining landowners work together with one another to achieve the outcomes sought within this Plan.

In the longer term, it is envisaged that the current Ulster Bank Plaza will be also be redeveloped. This redevelopment should be carried out holistically and in a manner that encourages connectivity and permeability. However, it has been acknowledged as part of the phasing and implementation timeline that it is important to establish methods to incorporate the longer term phase of redevelopment in the area alongside short to medium term potential redevelopment areas, as shown in figure 4.29. This diagram indicates the potential to open up and enhance connectivity and permeability through the existing Ulster Bank Plaza. This would enhance connectivity between Tara Street Station, Townsend Street, City Quay and Moss

Street and provide a link in the direction of South Docklands and existing communities east of George's Quay study area.

Integral to the enhancement of public realm initiatives within the George's Quay area will be the provision and delivery of public realm initiatives by stakeholders within the plan area. It is expected that as various areas develop, the developers will contribute to ensuring that the strategy for public space (including movement networks and quality of public realm). Accordingly, it will be a requirement that public realm improvements will be delivered in advance or in tandem with each development. Development proposals must also accord with the appropriate built form and mix of use as shown in the urban design strategy of the Plan.

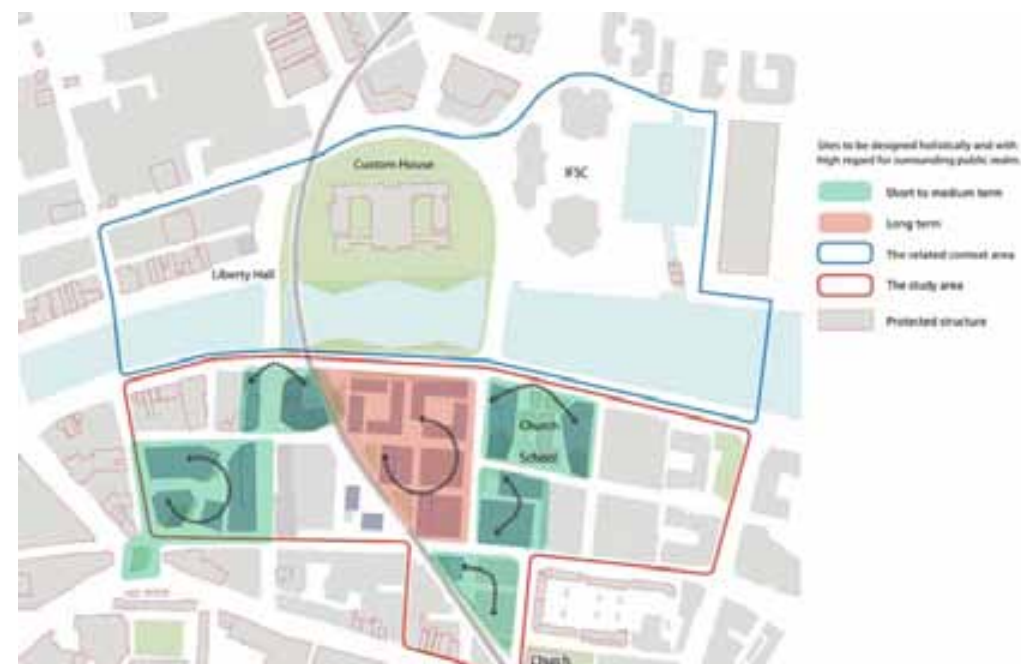


Figure 4.28 Implementation Strategy

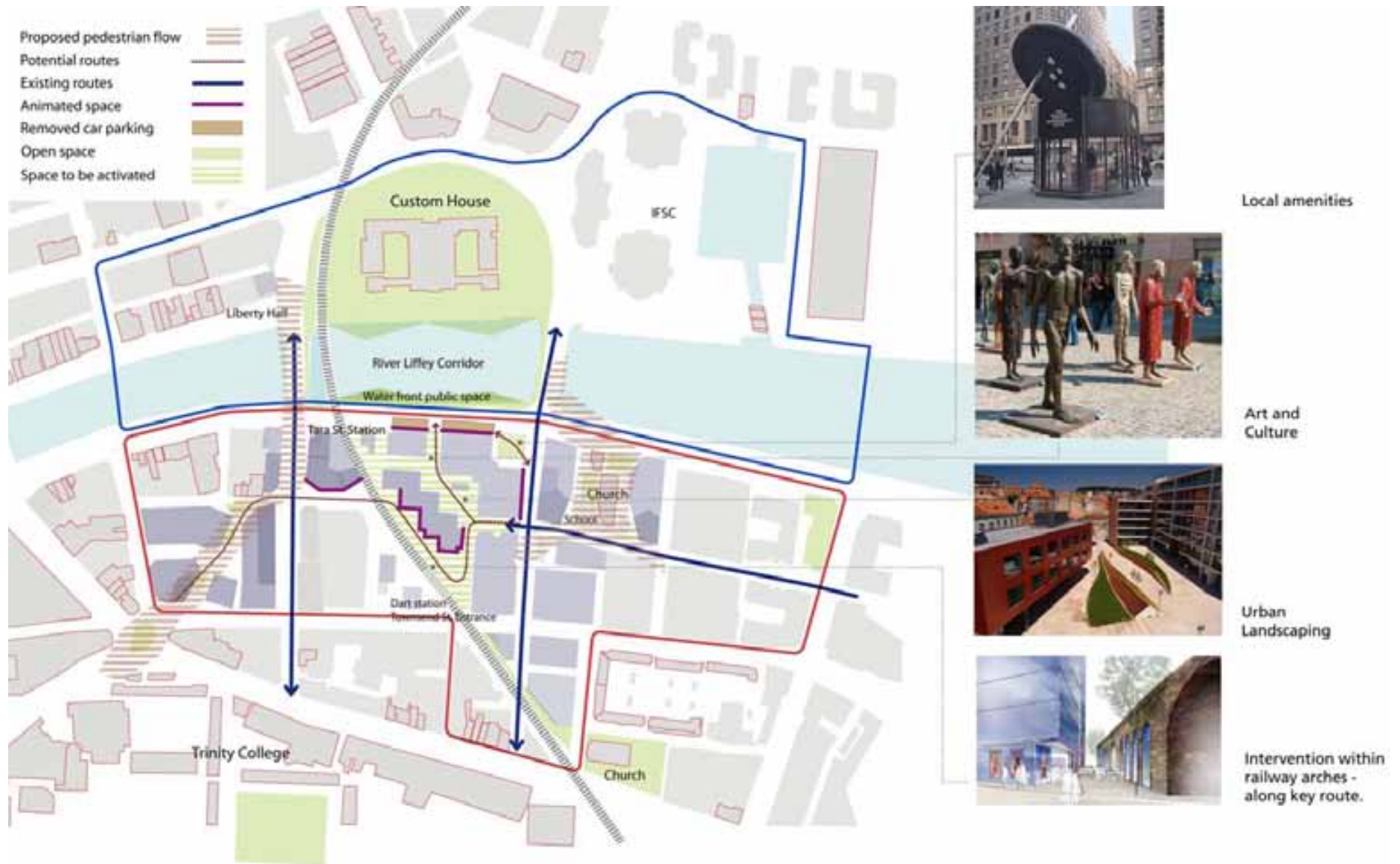


Figure 4.29 Incorporating Existing Development into the Plan

Part 5 VIA Study (City View Photomontages)

1. What is a VIA Document?

A VIA document clearly illustrates and explains the process used to achieve Verified Photo montage Images. The purpose of the document is to provide proof that the resulting photo montaged images are as accurate as possible.

2. How is this Achieved?

The CGI company enlist the services of a Surveyor, and if required a Professional Photographer,

The Architect instructs the CGI company where the key views are that are required. They supply an OS CAD Plan with the required viewpoints clearly marked.

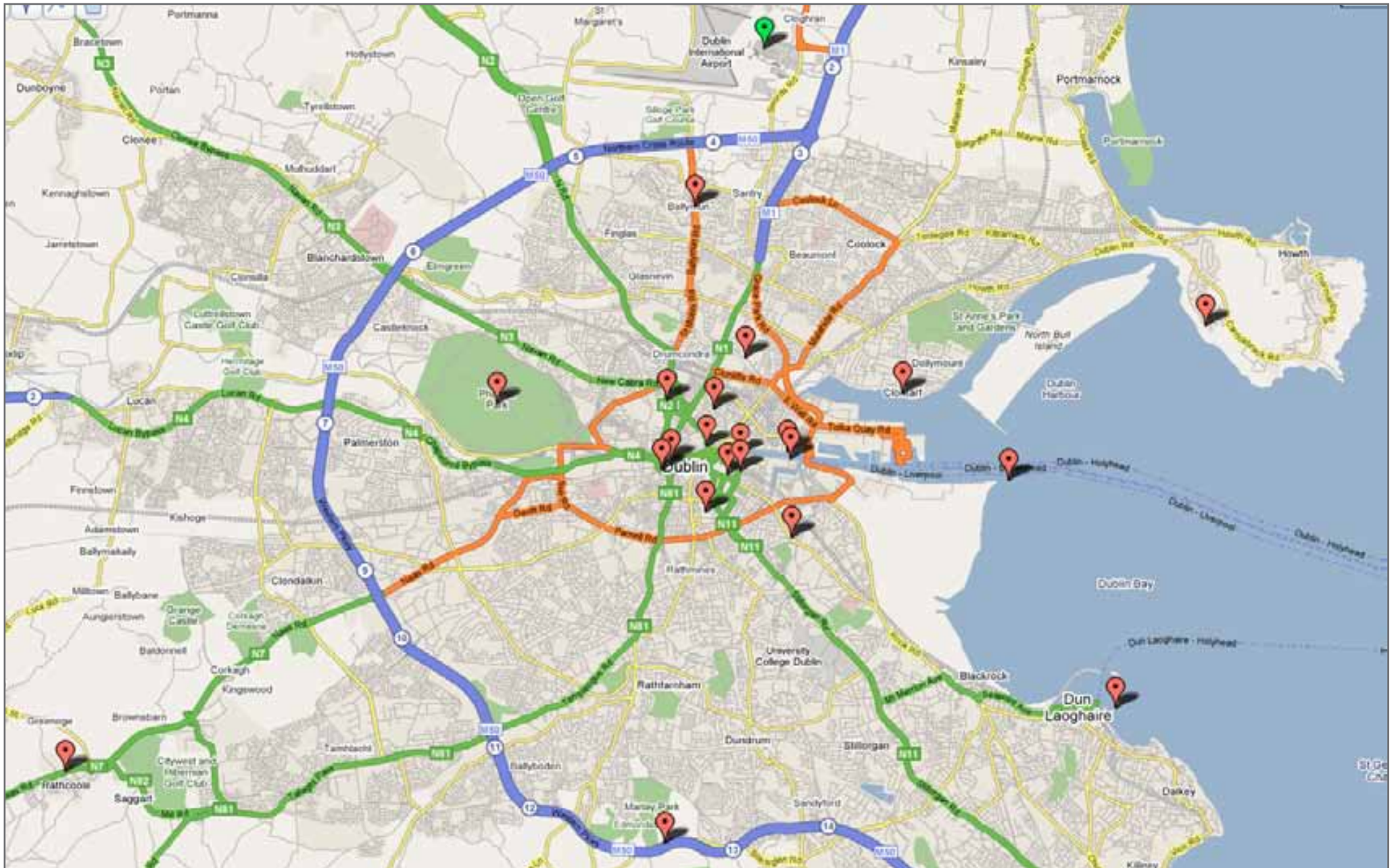
A series of test photographs are produced along with a block model showing the context and proposed new development, these views will then be reviewed with the Architect who will then finalise the exact views to be verified.

The photographer will be issued with a "photographers log sheet" so that the necessary info can be recorded. This document will contain preview photographs, a site plan and instructions for the photographer. There will be an area available for the photographer to record all relevant data for each shot. Data such as the exact time, lens used, and dimensions drawn on the plan to indicate the tripod position. They will also place a surveyors pin in the ground, directly under the tripod centre.

The Photographers Log sheet assists the CGI company during the camera matching stage.

The Surveyor will visit the site, locate the photographers survey pin, and using GPS survey equipment they will cross reference the Surveyors document issued by the CGI company to record 30 points in the photograph view in 3d space. They provide an Autocad drawing with the 3d survey points clearly indicated. These points are overlayed on, and aligned to an OS Plan and matched in 3d space cross referencing the photograph.

Through inputting the recorded camera data, using the photo as a backdrop and importing the surveyors 3d point data, an accurate camera match is achieved.



City map with viewpoints



VP01.11

Gardiner street. VP02



VP02.11



VP03.11

Ballsbridge. VP04



VP04.11



VP06.11

Christ Church. VP06



VP07.11



VP08.11

North Wall Quay. VP08



VP09.11



VP10.11

Ballymun. VP10



VP11.11



VP12.11

Sutton. VP12



VP13.11



VP14.11

Blackglen Road. VP14



VP15.11



VP16.11

Fairview. VP16



VP17.11



VP05.11

Trinity College 2. VP18



VP18.11

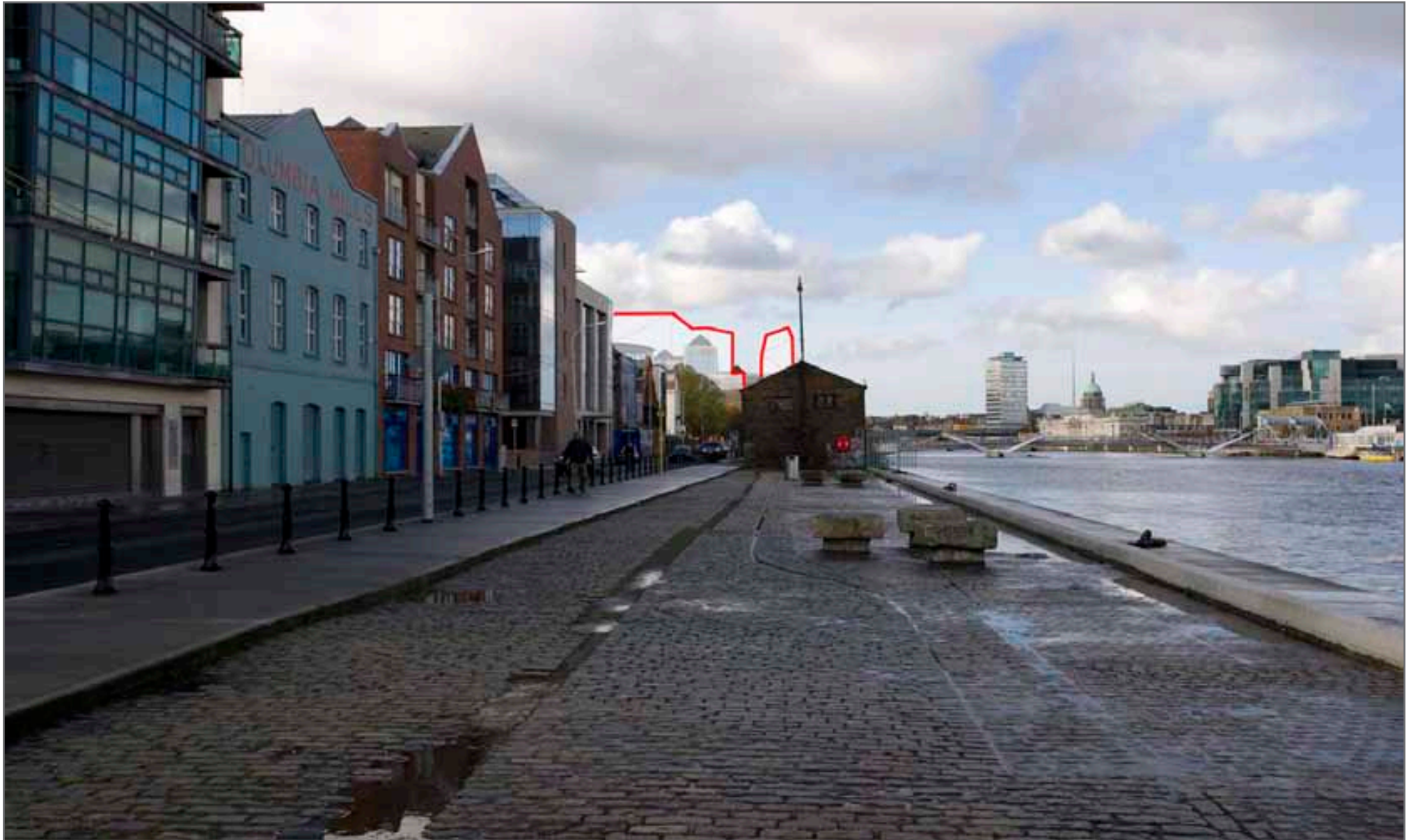


VP19.11

O'Connell Bridge. VP20



VP20.11



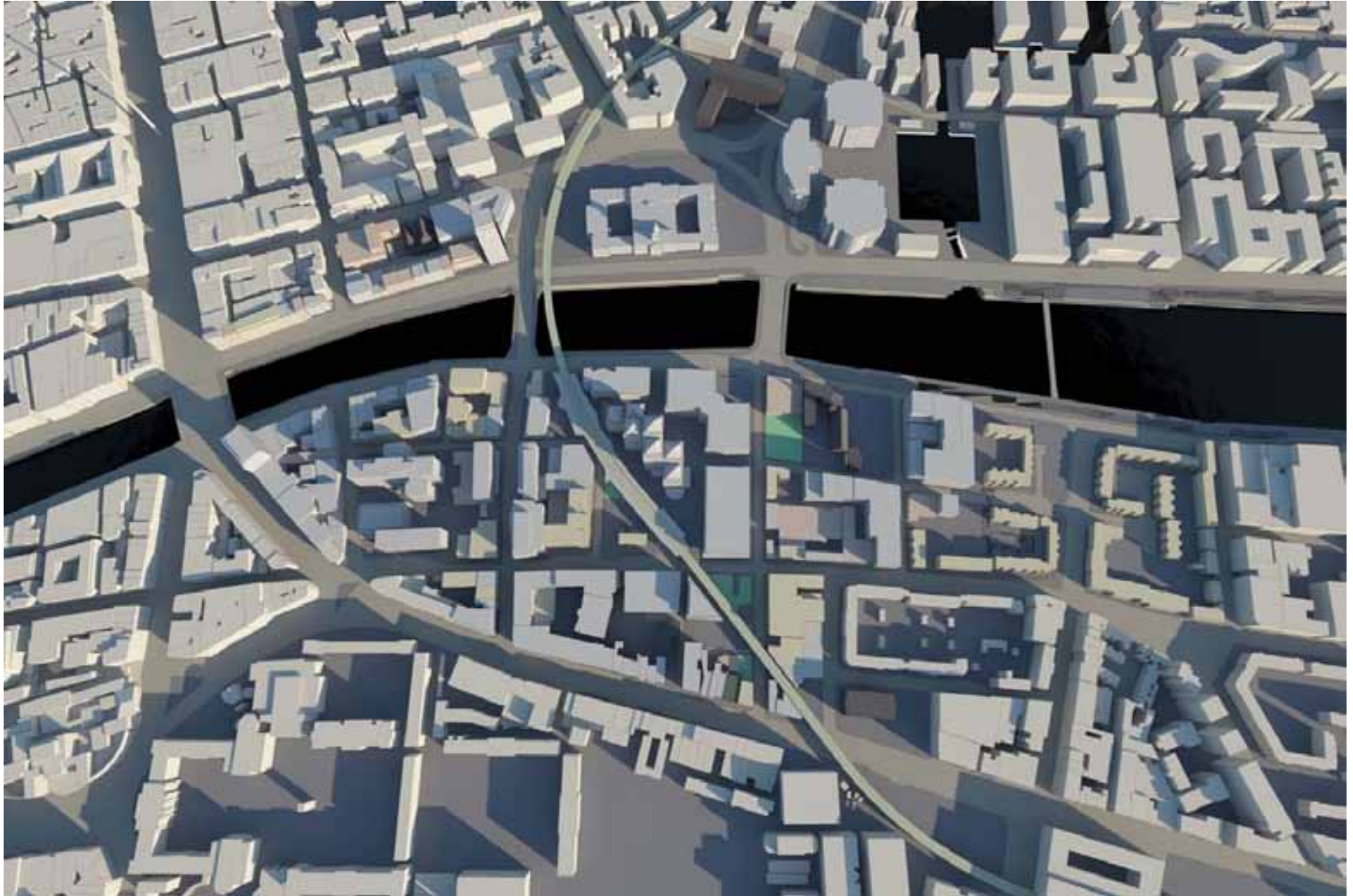
VP21.11

Markievicz House. VP22



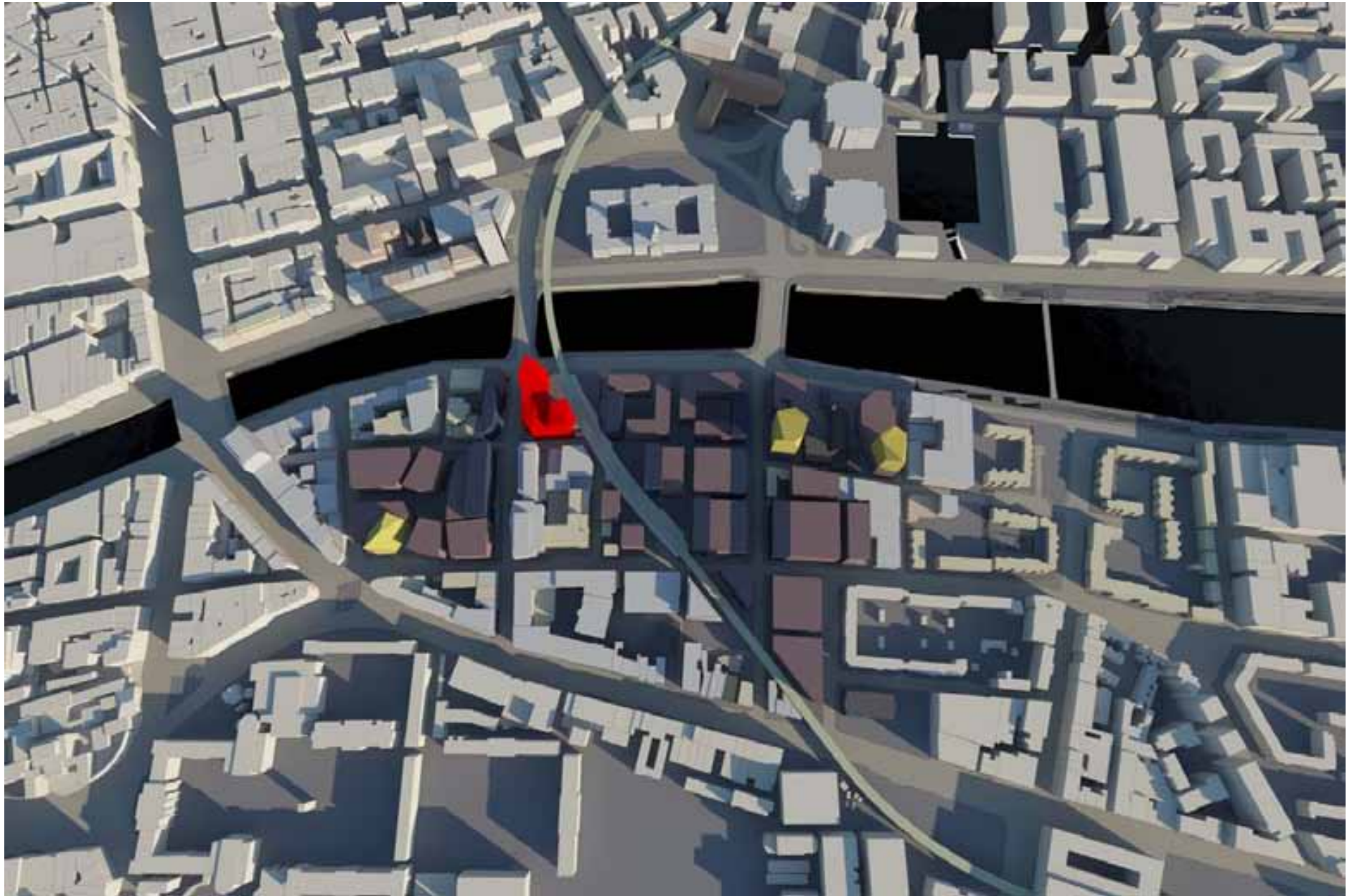
VP22.11

Appendix A Shadow Analysis



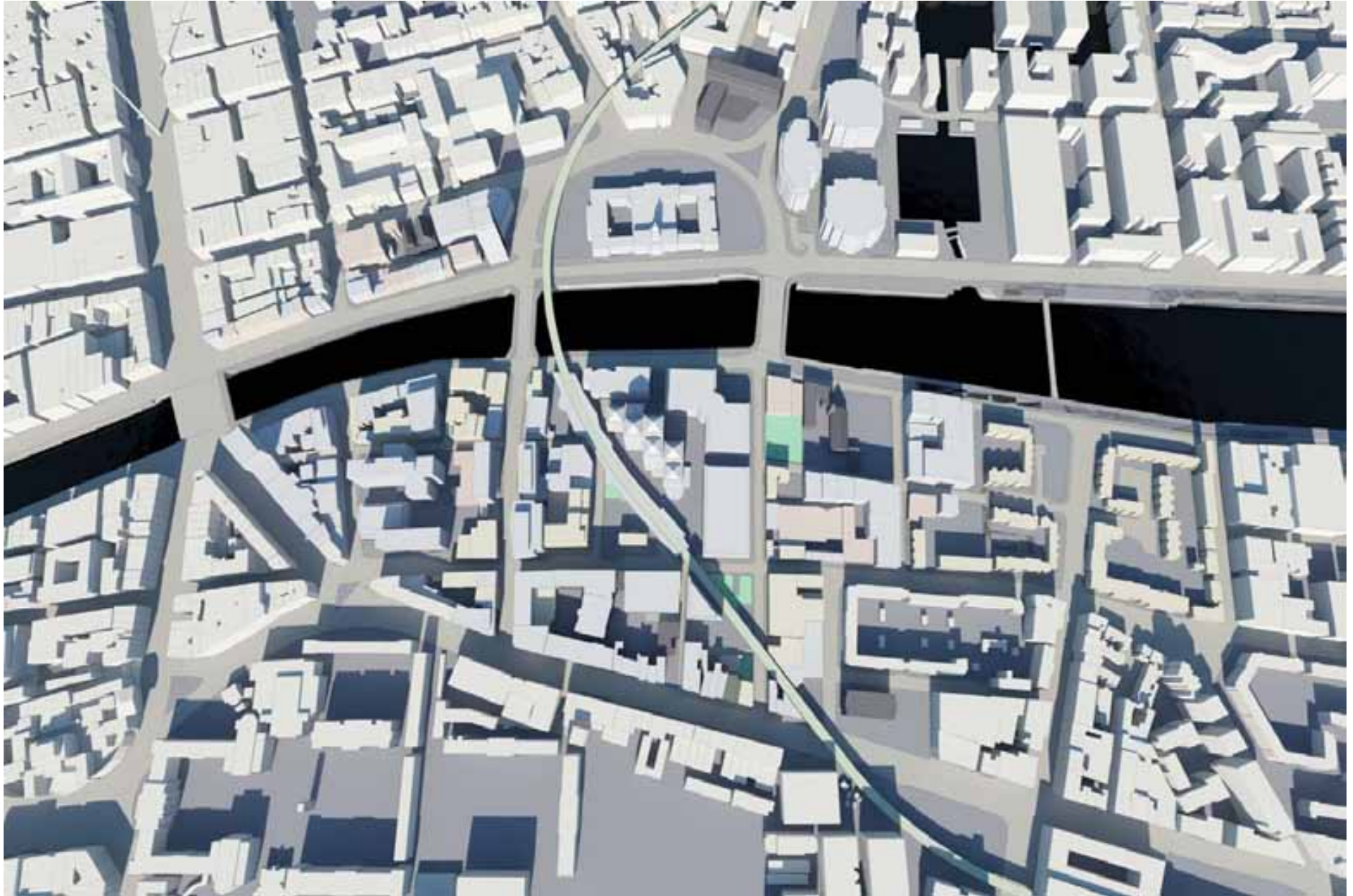
Existing

9 am, 1st March



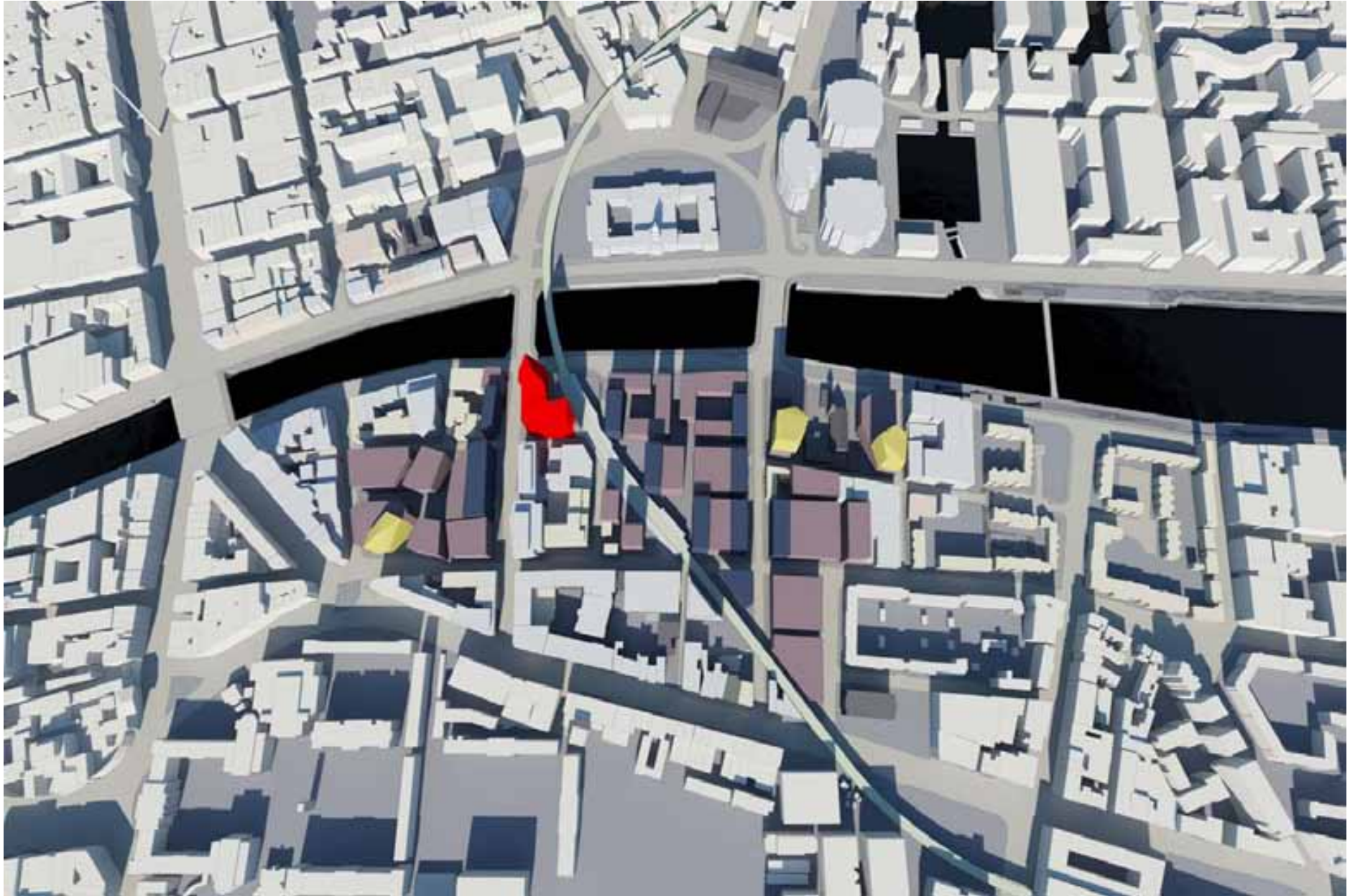
Proposed

9 am, 1st March



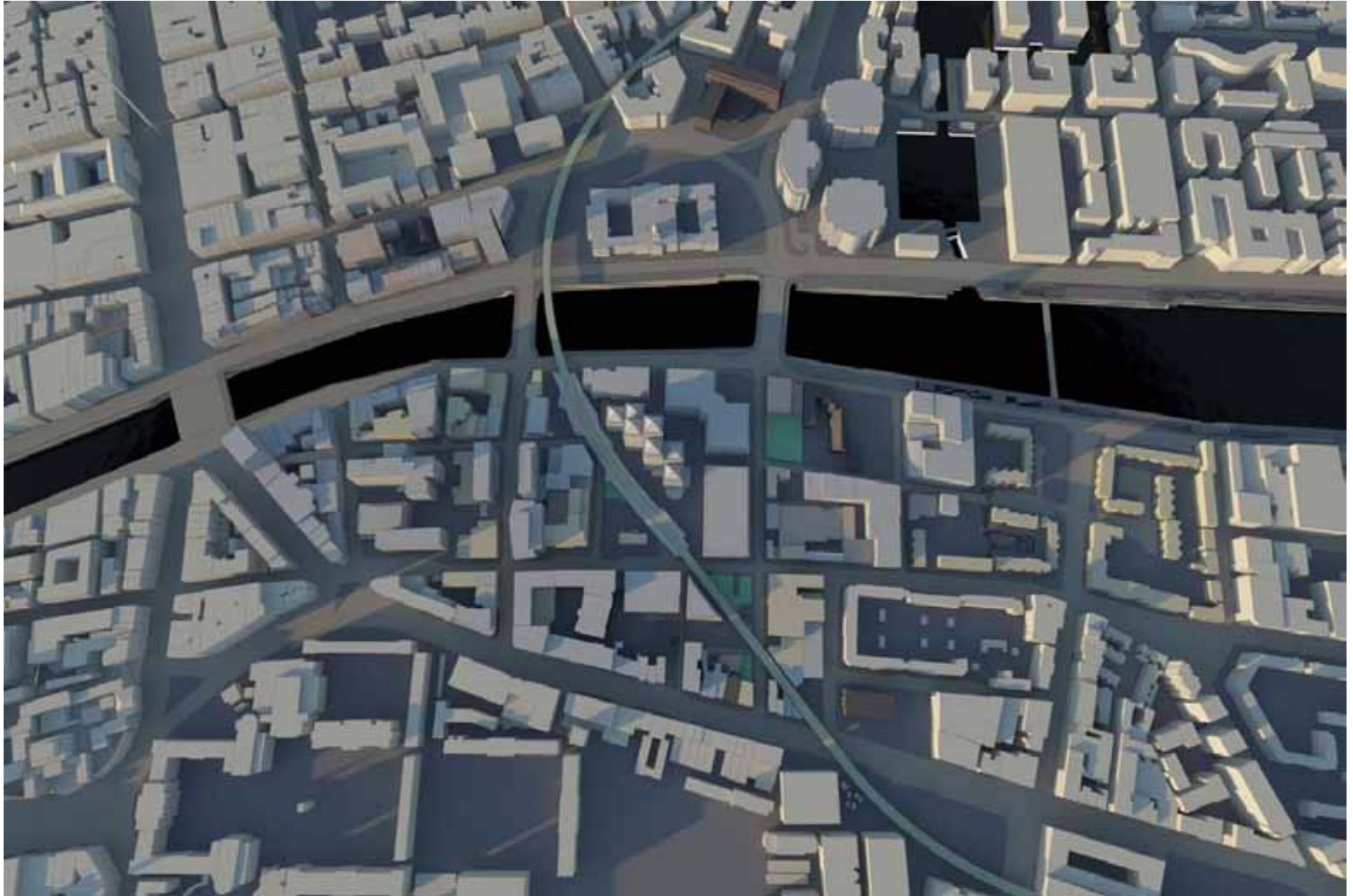
Existing

1 pm, 1st March



Proposed

1 pm, 1st March



Existing

5 pm, 1st March



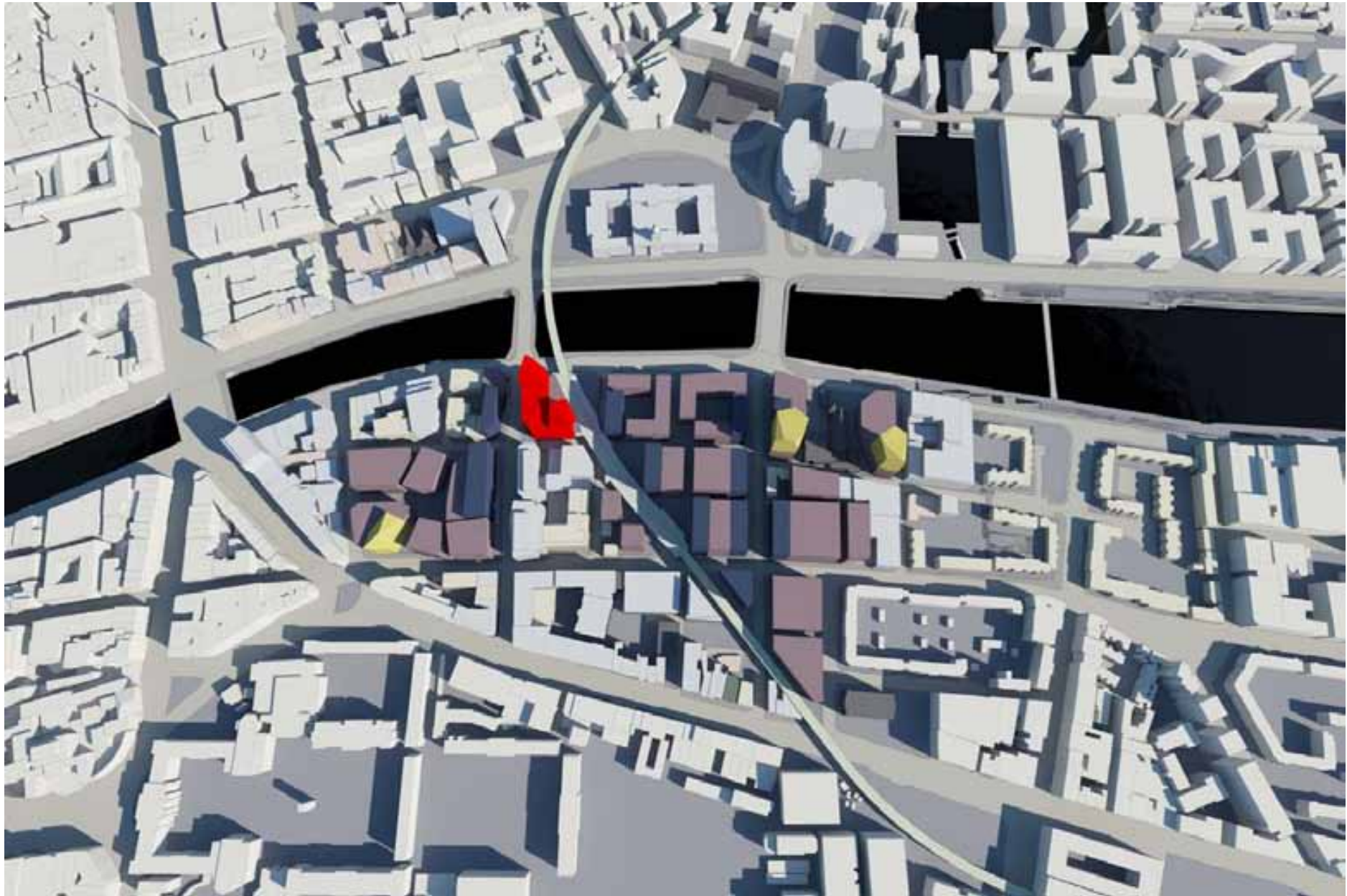
Proposed

5 pm, 1st March



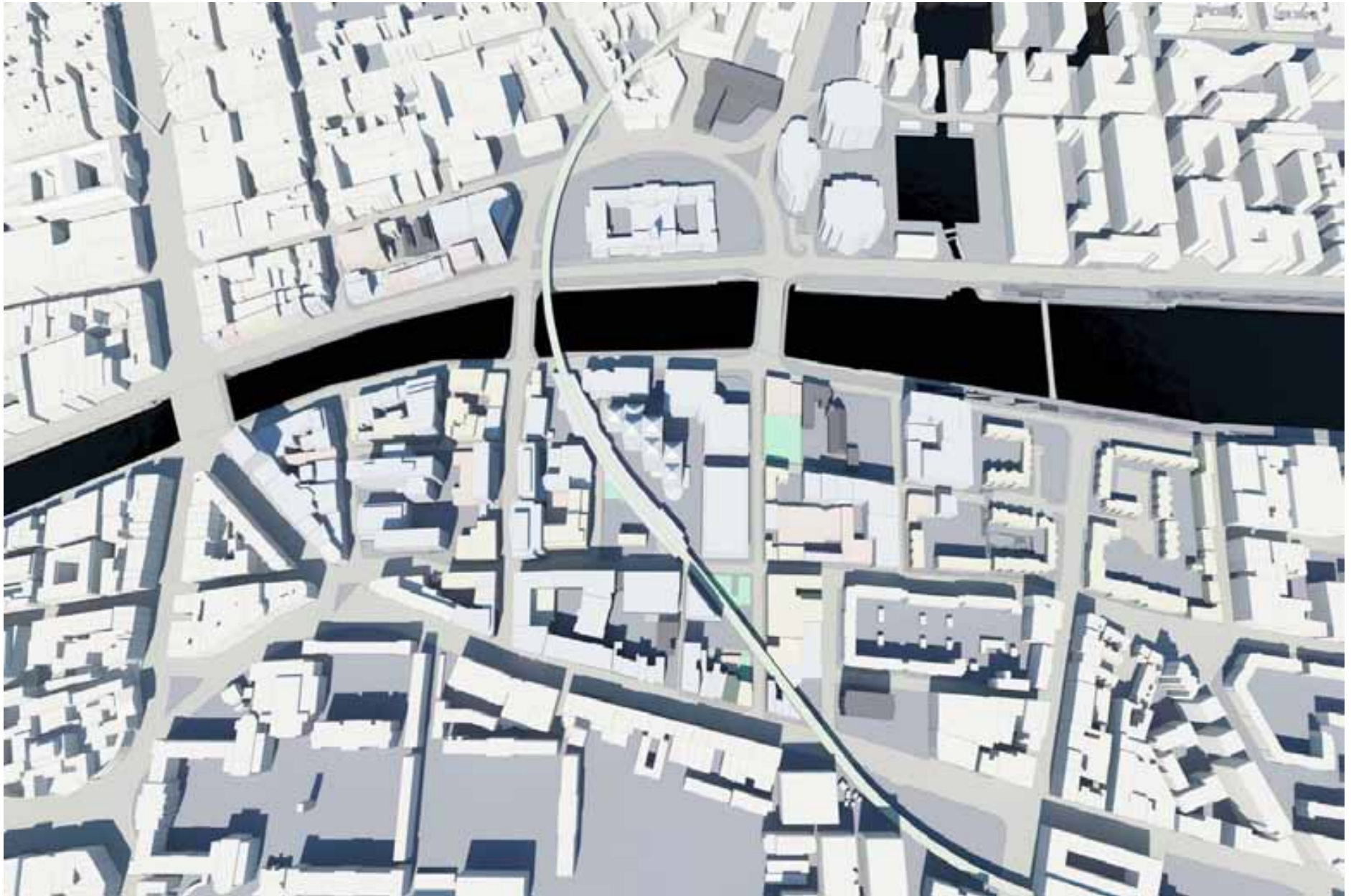
Existing

9 am, 1st September



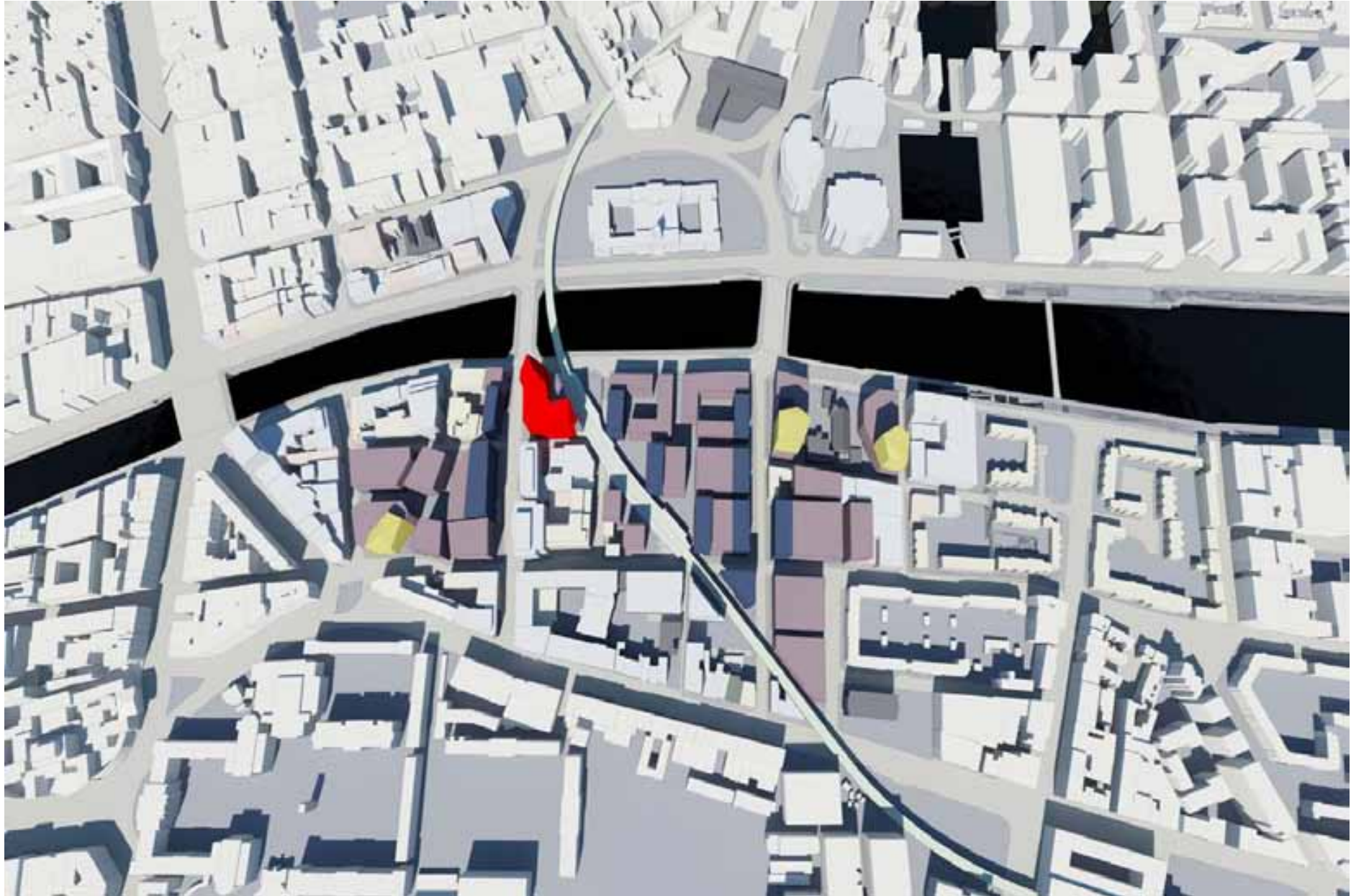
Proposed

9 am, 1st September



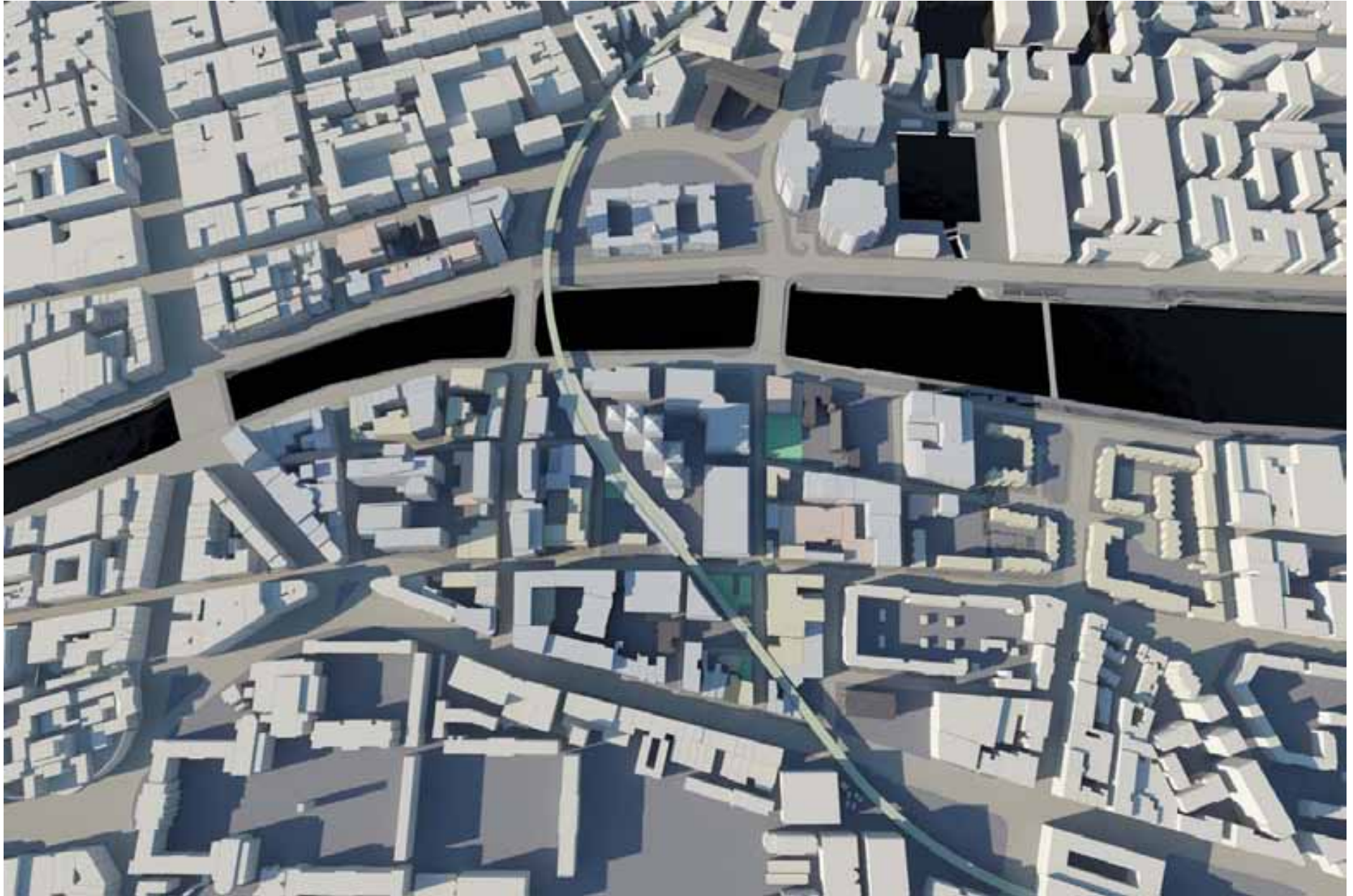
Existing

1 pm, 1st September



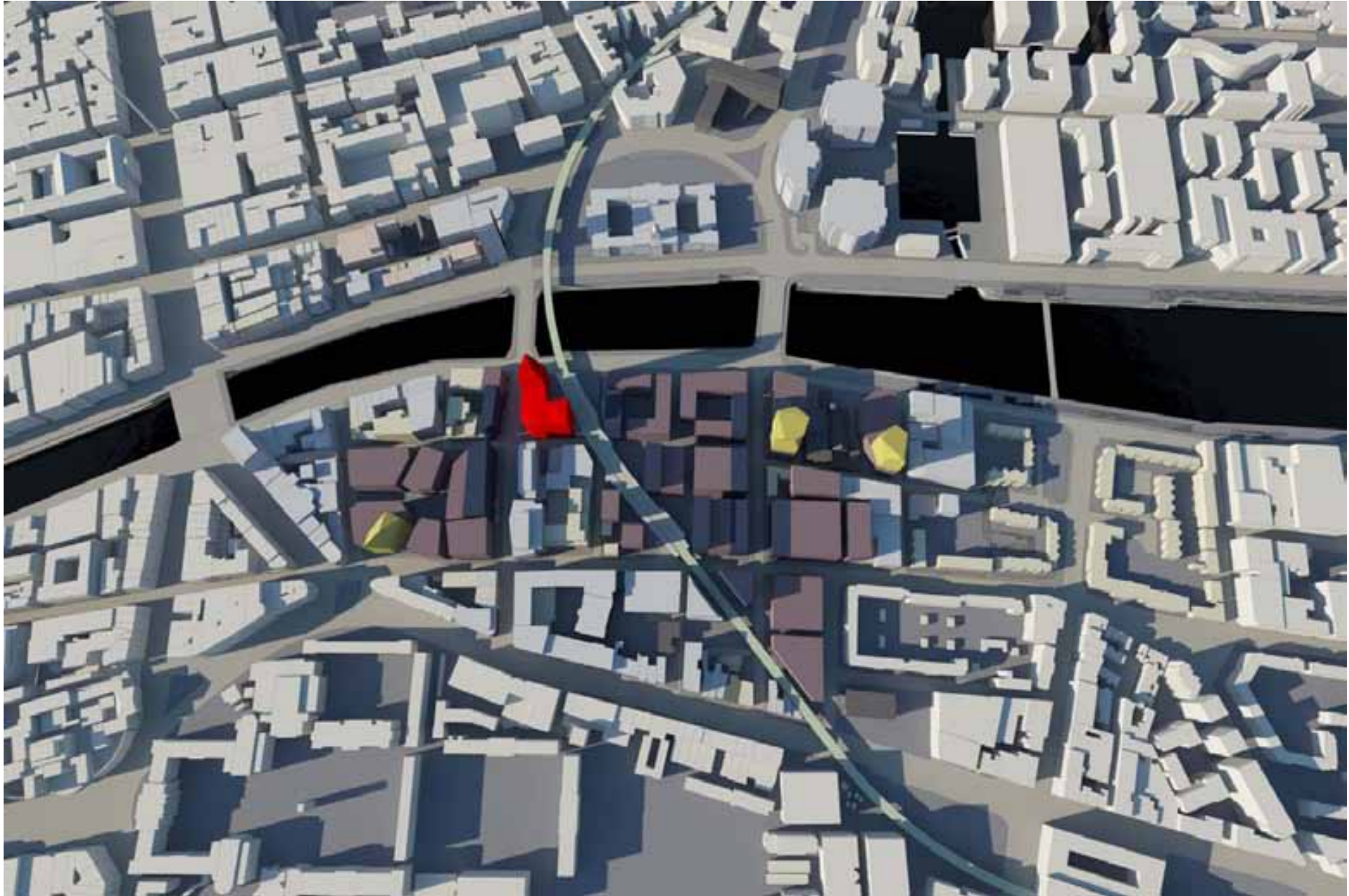
Proposed

1 pm, 1st September



Existing

5 pm, 1st September



Proposed

5 pm, 1st September