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**The development strategy of Dublin. Urban development and regeneration of
the urban district North Fringe in Dublin**

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In recent years, developed many new urban concept of the city, this Greater Moscow, Greater Paris, Greater London, and others. Unfortunately, these large, complex and interesting work is no clear concept of the development of residential areas from the perspective forming of comfortable housing and a socially oriented urban environment. Formation and development of residential areas with the prevailing function is not in the city-forming component of these concepts, opposite are solved more "priority tasks", such as optimization and development of transport infrastructure, increasing the number of green areas, etc.

Therefore for formation of a "liveable city" needed an alternative approach, in which the issues of forming a modern and comfortable living environment would be based on a comprehensive, integrated approach to urban transformation of their territories.

Creating sustainable residential structures is one of the main directions of development of urban areas. This is clearly proved by the example of foreign urban planning practices, for example - the Swedish and Irish.

The example of the urban development of Dublin - capital of Ireland, which today is one of the cities of Europe which has consistently carried Urban Development Policy to improve the living conditions of for all categories of its inhabitants, and it is primarily related with the needs of the city to its sustainable development.



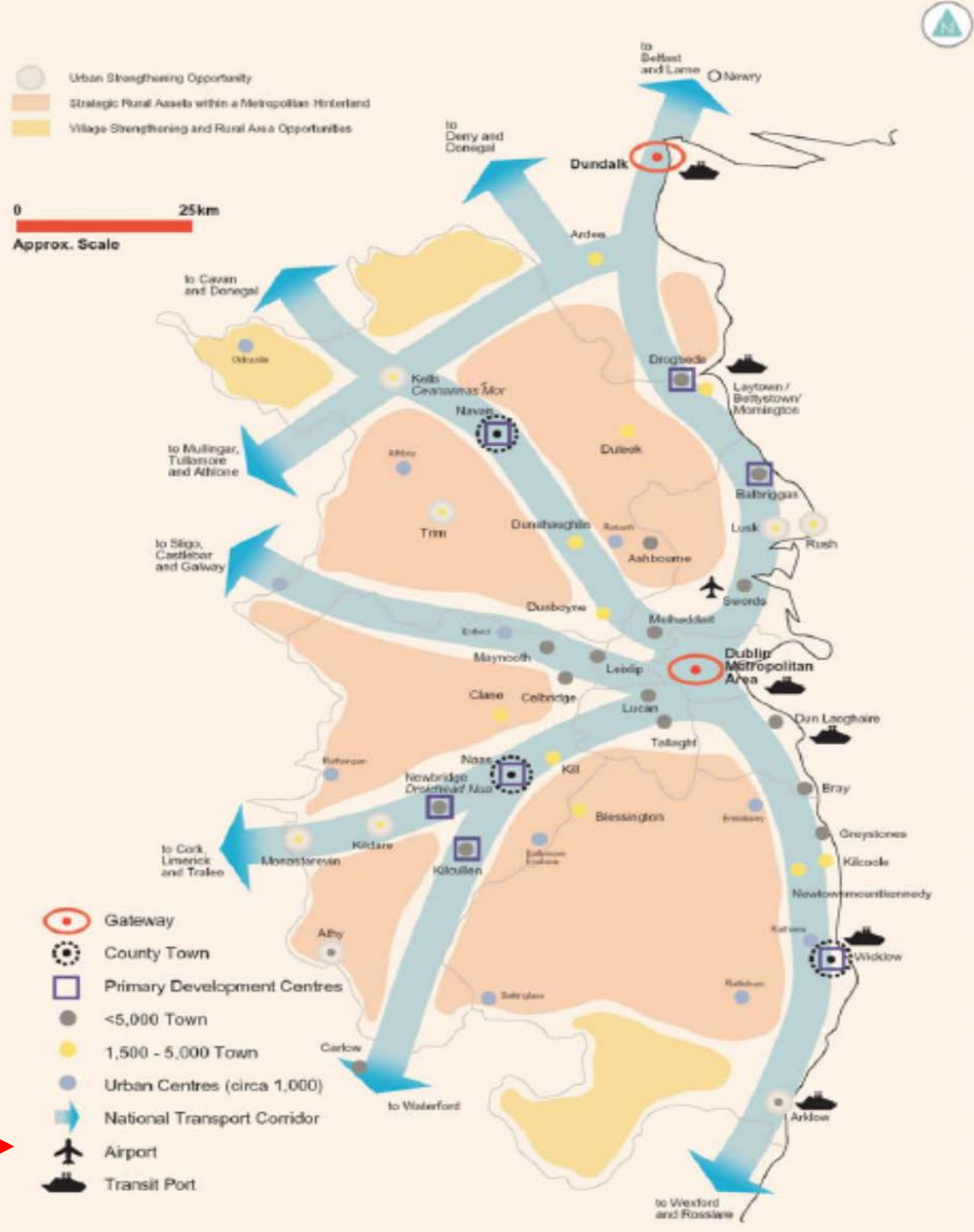
In July 2013, in Dublin there was the Congress of the Association of European Schools of Planning - (AESOP). This congress was devoted to contemporary problems of urban development and new approaches to expand interdisciplinary innovative approaches to teaching urban design and spatial planning. Leit motif of the Congress theme was "Planning for resilient cities and regions». Venue of the Congress, been chosen not casually as Dublin -the capital of Ireland, is today one of the cities of Europe, which has consistently carried out town-planning policy to improve living conditions for all categories of its inhabitants, and it is primarily due to the needs of the city to its Sustainable Development. The basis of this urban policy is the "National Spatial Strategy for Ireland 2002-2020: People, settlements, potential", which was developed by the Ministry of the Environment and Local Government in Ireland. The priority direction of the spatial development of the territories is not an increase in the growth of new settlements and the concentration production and economic activity in the zone of influence of the "Greater Dublin". Region "Greater Dublin" in terms of population is about 40% of the entire population of Ireland, out there population comprises 1.5 million people out of 4,581,266 people across the Republic of Ireland. Within the National Spatial Strategy proposes the formation of 4-zones of the regional and national growth for intensive integration into the global economy based on the urban and economic development of cities of Cork, Limerick, Galway, Waterford ..

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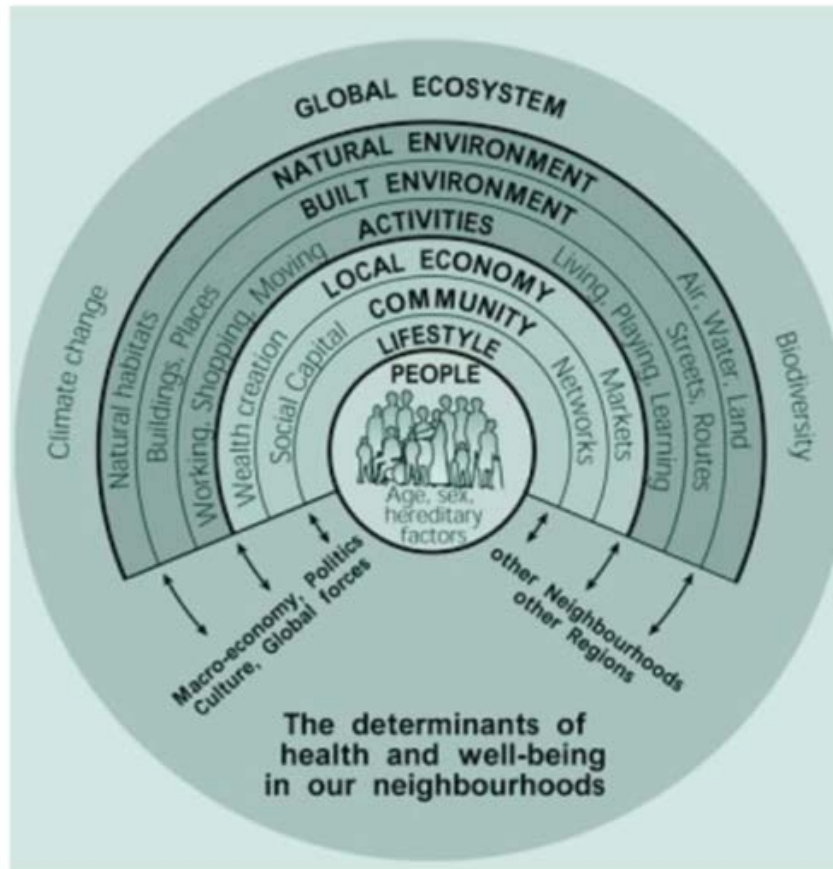
The main directions of the urban development of Dublin is a compact city with the formation of high-quality urban environment and good transport infrastructure. The strategy of development of Dublin until 2020, it focuses on the concept of "Smart City that promotes real economic development," it is primarily the use of energy saving technologies to improve the energy of the city. Creating high-quality, socially-oriented, cultural urban environment for all categories of residents of the city and adjacent to Dublin populated areas, is based on the urban transformation of Dublin, this is reflected in all strategic plans for the development of its territories.

National Spatial Strategy (NSS) for Ireland 2002-2020



For example, in the concept of the urban development of Dublin 9 key areas are allocated, the development of which is related with the overall priorities of the urban development of the city, one of them is the area of **Clongriffin-Belmayne-North Fringe (Northern suburbs)**

Environmental Report of the Draft Clongriffin- Belmayne (north fringe) LAP Strategic Environmental Assessment



(derived from Whitehead, M and Dahlgren, G, 1991))

Development Plan Consistency with the National Spatial Strategy (NSS) & the Regional Planning Guidelines (RPGs)

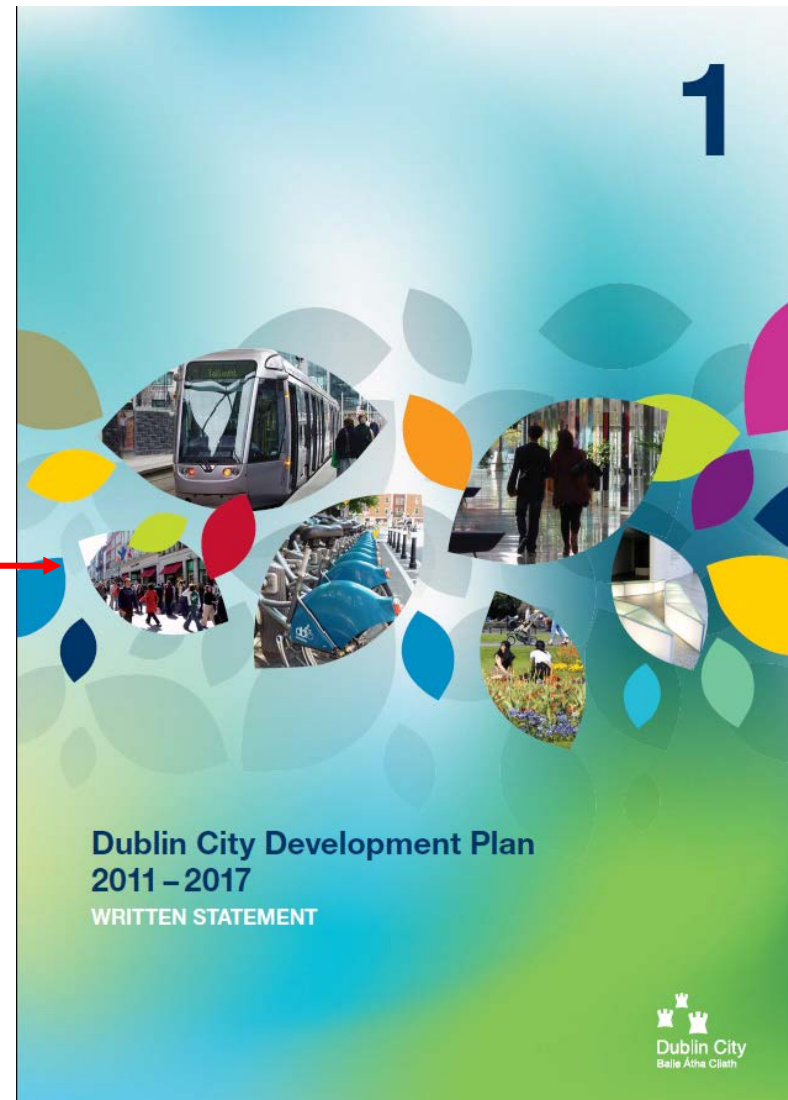
National Spatial Strategy

The National Spatial Strategy (NSS) sets out the strategic planning framework for the future development of Ireland. It recognises that Dublin, as the capital city, plays a vital national role and that the performance of its economy is essential to the success and competitiveness of the national economy. In order to sustain this role as the engine of the economy, it advocates the physical consolidation of Dublin, supported by effective land-use and transportation policies, as an essential requirement for a competitive Dublin.

The NSS places particular emphasis on the physical consolidation of the metropolitan area, which incorporates the entire functional area of Dublin City Council. This necessitates the sustainable development of all vacant, derelict, and under-used lands with a focus on areas close to public transport corridors as well as areas of under-utilised physical and social infrastructure. There is also an emphasis in the NSS on supporting the city's capacity for employment and innovation and achieving intensification without compromising amenity or environmental quality.

Regional Planning Guidelines

The Regional Planning guidelines for the Greater Dublin Area 2010-2022 (RPGs) translates the national strategy to regional level with an emphasis on Dublin as the driver of national development and the need to physically consolidate the growth of the metropolitan area, with clear direction for greater integration of land-use and transport planning. The RPGs settlement hierarchy seeks to prioritise and



Core Strategy

City Centre

Key Developing Areas

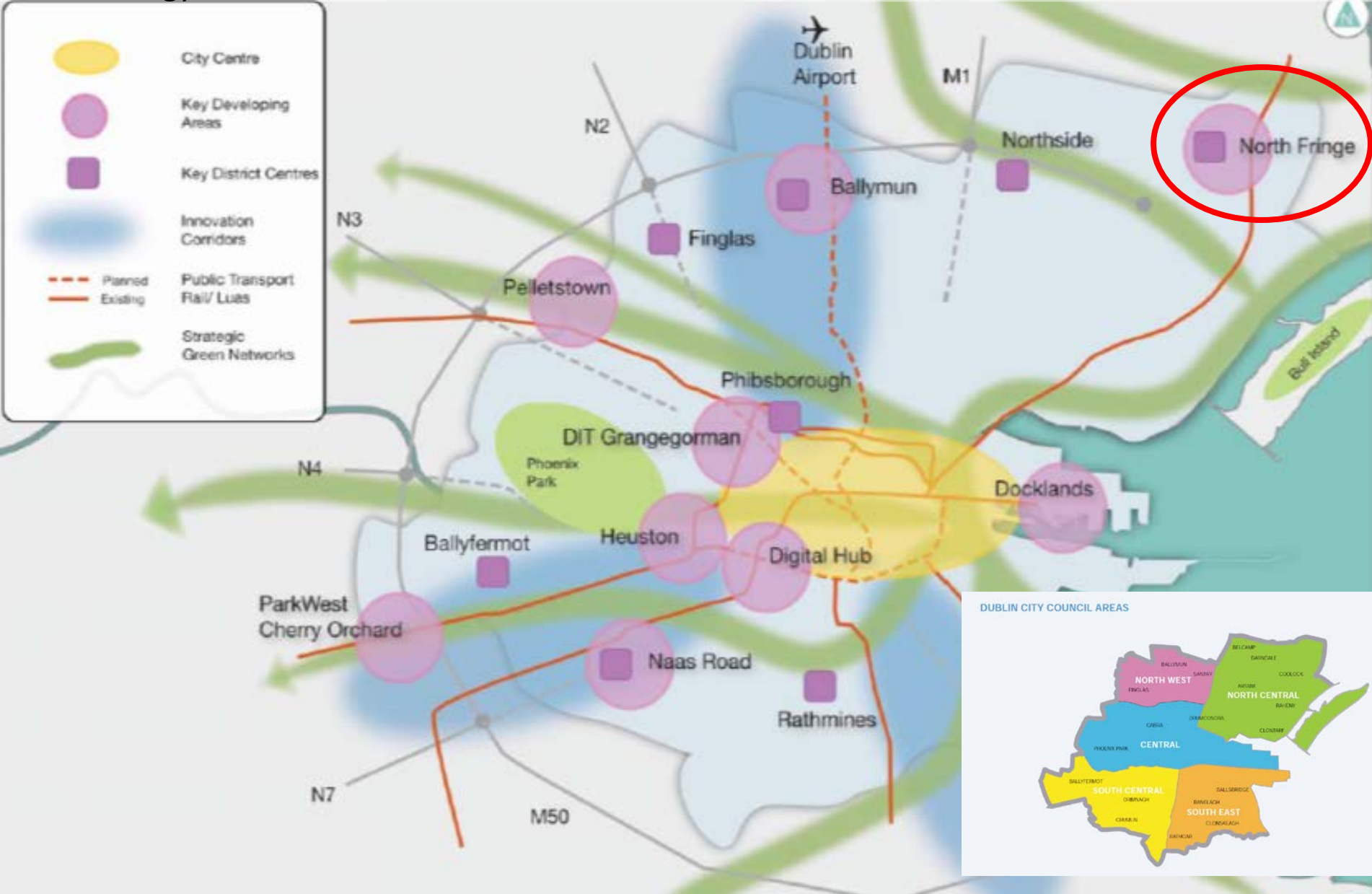
Key District Centres

Innovation Corridors

Planned Public Transport Rail/ Luas

Existing Public Transport Rail/ Luas

Strategic Green Networks



DUBLIN CITY COUNCIL AREAS



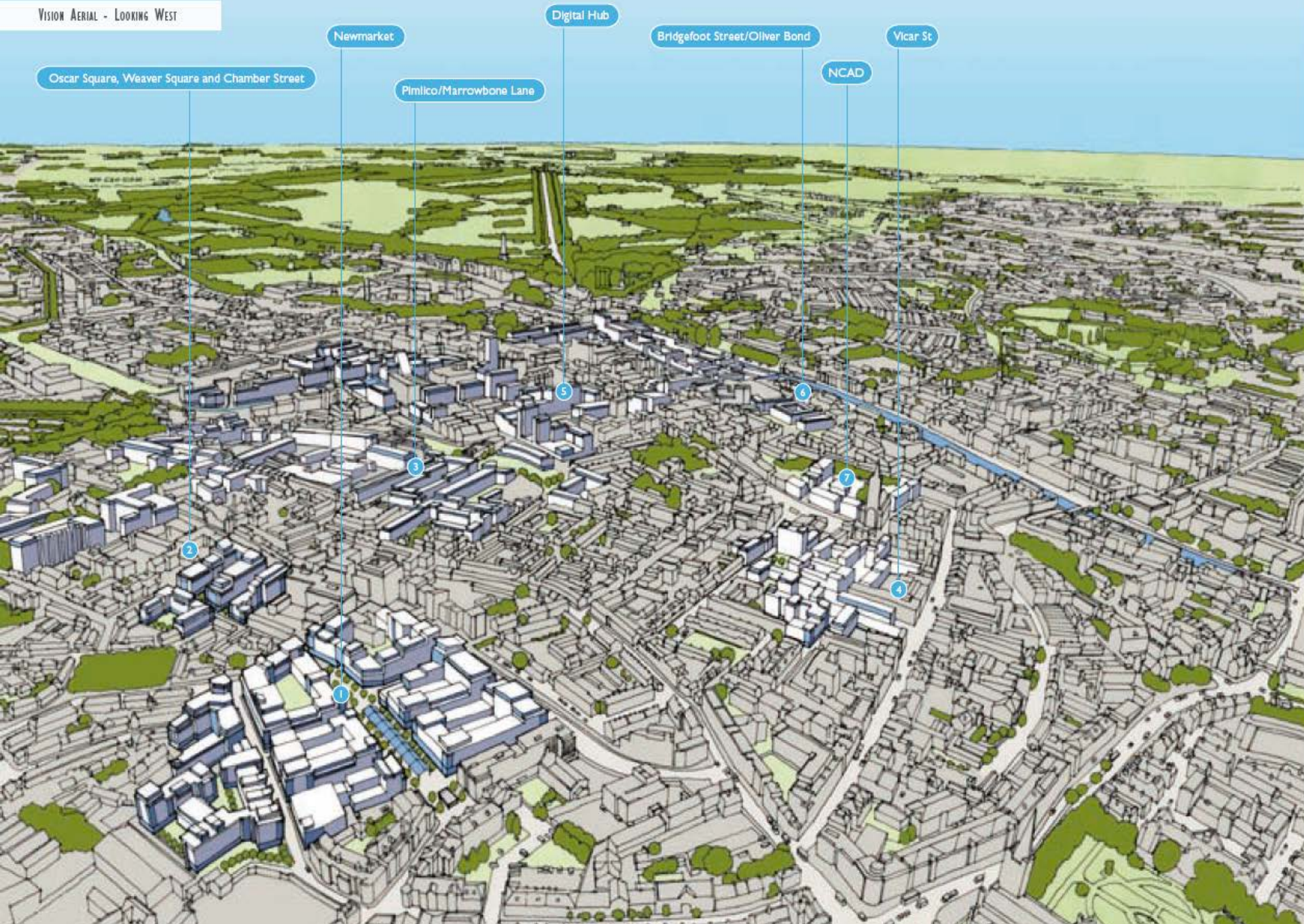
The main strategic directions of urban development in Dublin

Administrative division of Dublin on the 5 municipalities.





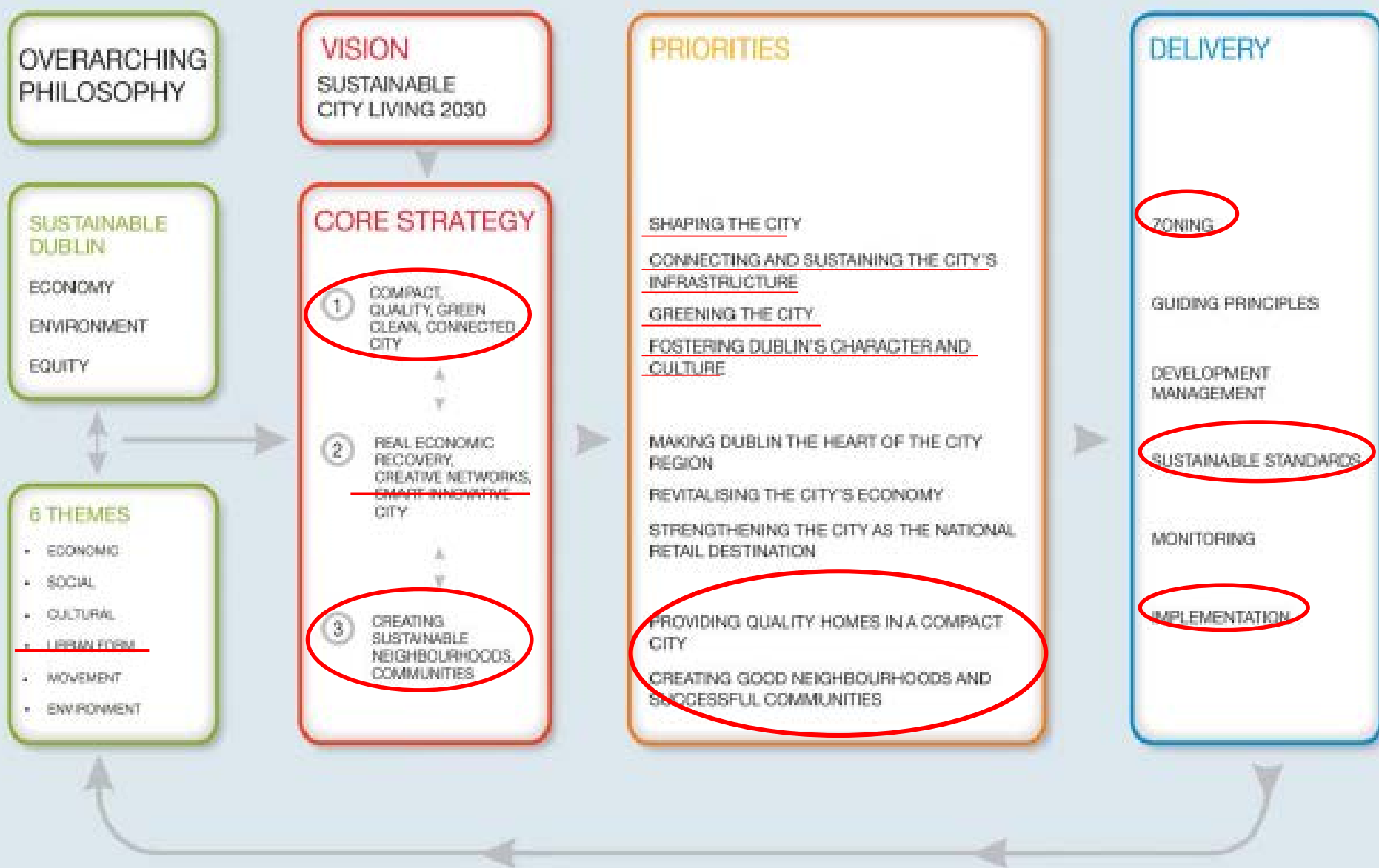
VISION AERIAL - LOOKING WEST



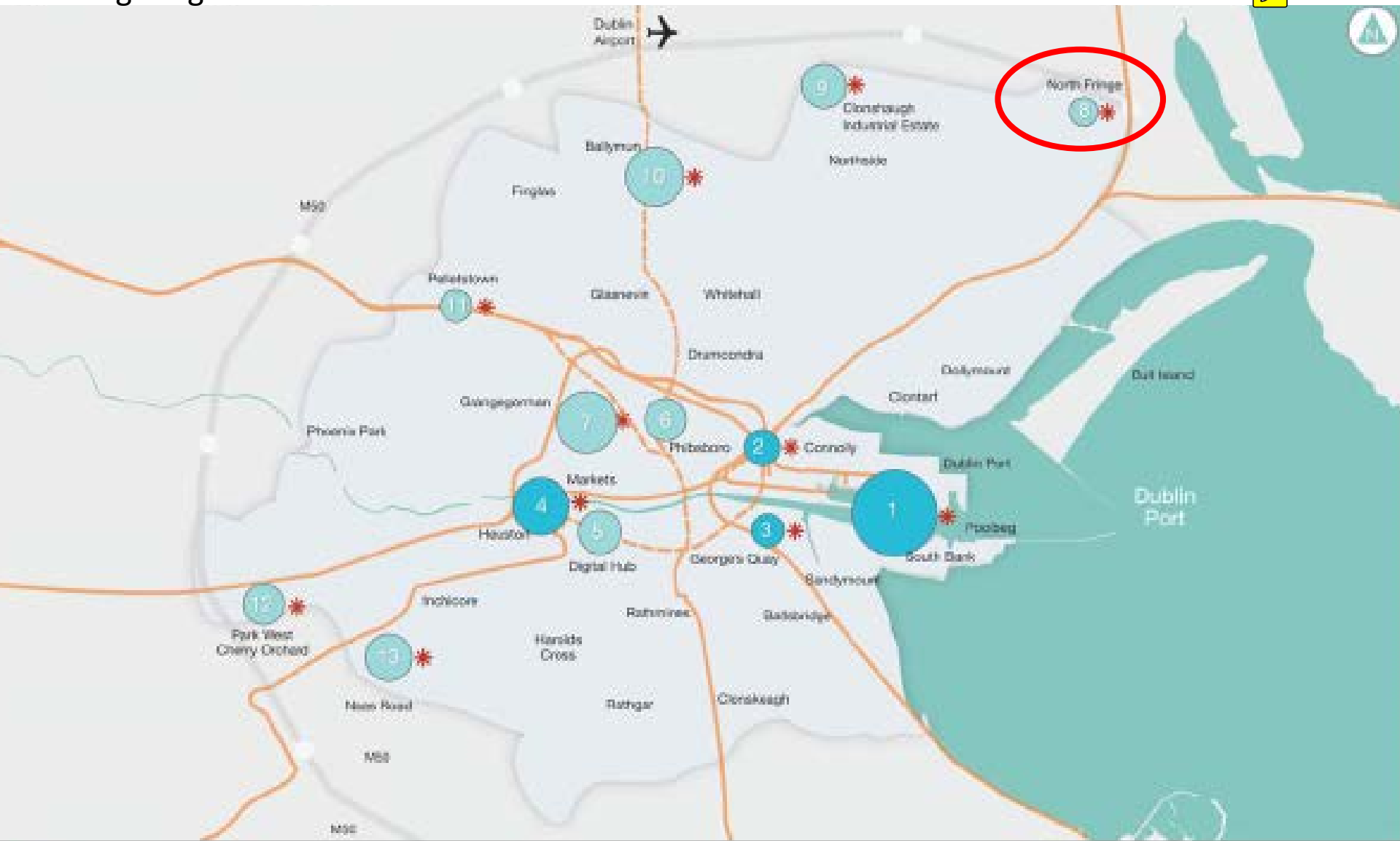
City Centre Green Routes



Existing or Previously Proposed Green Route Proposed Green Route



Building Height in Dublin



High Rise

Medium Rise

Low Rise

Main public transport routes: Rail, LUAS, Q.B.C., Main Radial

Existing

Proposed

Low Rise pending LAP / SDZ / Section 25 Scheme

17.6.2 Definition of a High Building

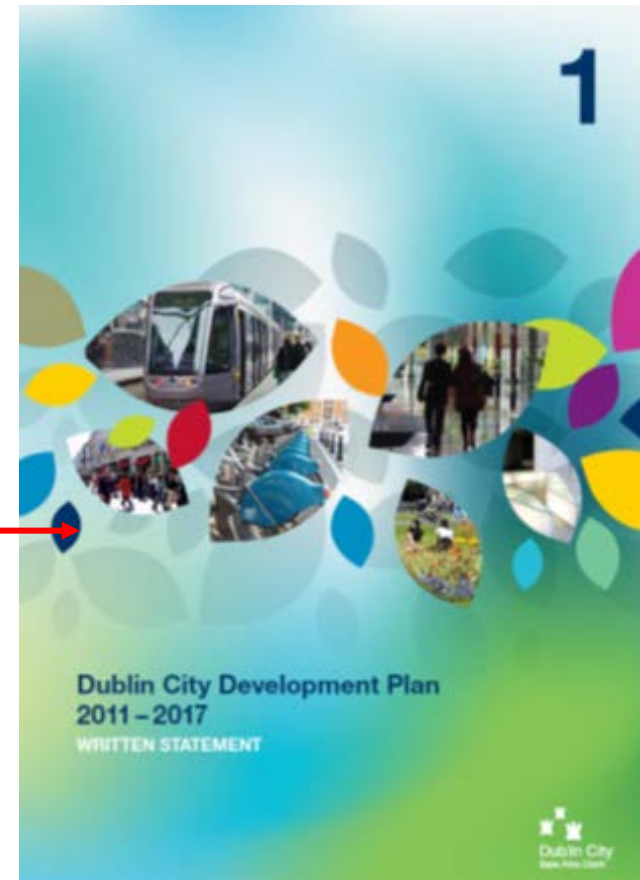
The definition of height for various areas in the Dublin context is as follows – unless otherwise approved in a local area plan, Section 25 Planning Scheme or Strategic Development Zone (SDZ), to be agreed by the local area committee.

Category	Area	Storey Res/Office (m)
Low – rise (relates to the prevailing local height and context)	Inner City	Up to 6 res / 18/22 up to
	Rail hubs	6 res / 18/22 up to 4
	Outer City	res / 4 of Below 13/16m
Mid – rise	Inner City Phibsborough	Up to 16 res / Up to 12 office
	Grangegorman * Digital Hub	
	Outer City	
	North Fringe* Clonsillaugh	
	Industrial Estate *	
	Ballymun* Palletstown*	
	Park West / Cherry Orchard*	
	Naas Road*	
	Inner City Docklands Cluster*	
	Connolly *	
	Heuston*	
	George's Quay *	
High – rise		16 res and above / 50 office and above

* Low-rise pending LAP/SDZ

(see Guiding Principles for each potential mid to high-rise area: Chapter 16.4)

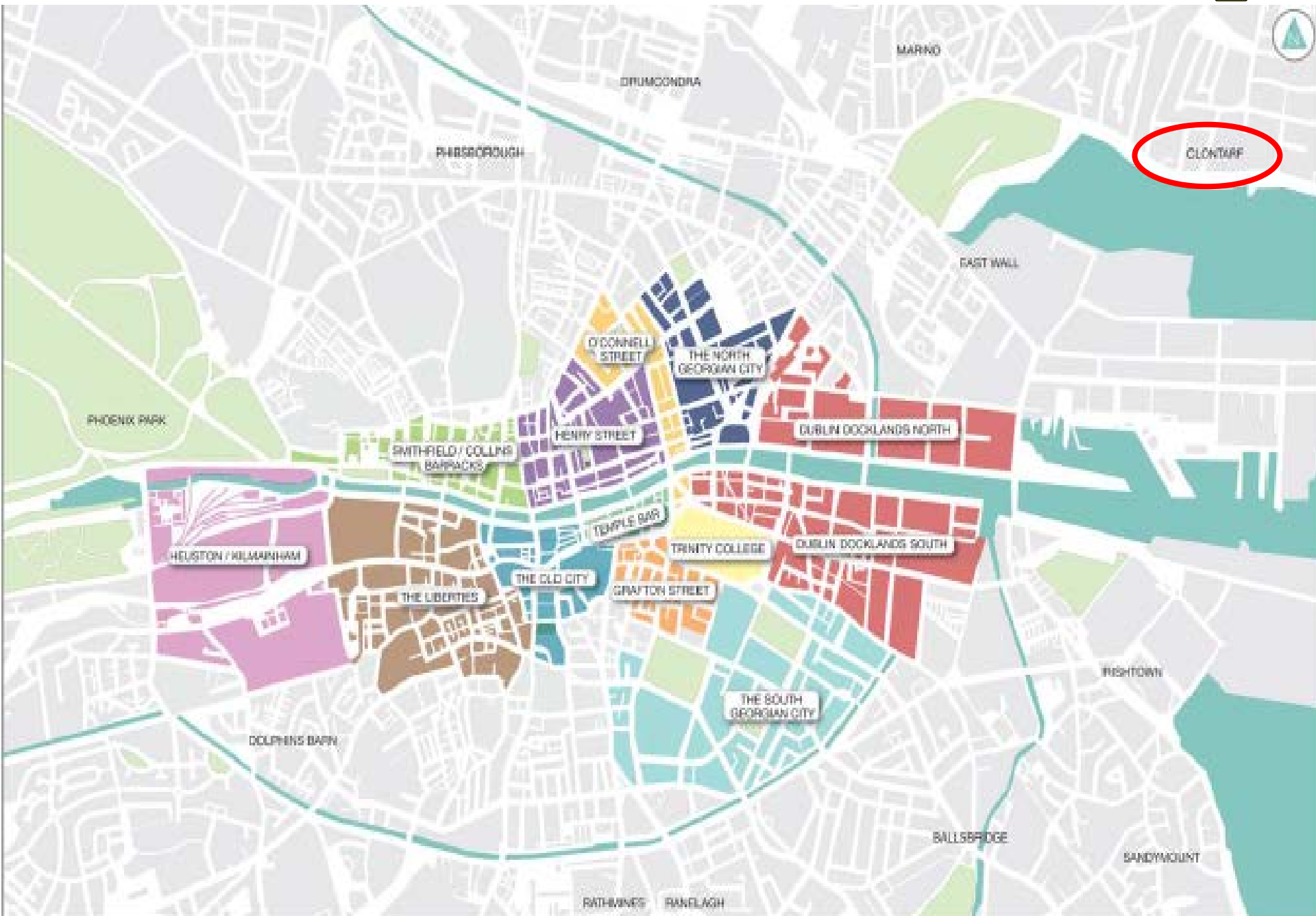
For all areas in the development plan identified as either mid-rise or high-rise, a local area plan shall be prepared, except where an up to date Section 25 Planning Scheme or an SDZ is proposed and in place. In high-rise areas, the local area



Context for the High Building



Character Areas



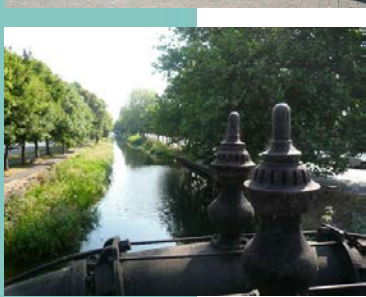
Key Views and Prospects



Making and Legible City. Key Space and Connections



Strategic Green Network



Urban development strategy Dublin example of the integration the basic principles and approaches of the New Urbanism and Landscape Urbanism



Main Inner City Regeneration Areas



11.0 INTRODUCTION

The global city needs to be attractive as a place to live for all people. Providing homes that are adaptable to changing circumstances throughout people's lives, are affordable, pleasant, connected to areas where people work, relax and socialise, do not place an undue burden on the environment contribute to making attractive residential places.

Catering for the needs of residents, the City Council has introduced standards to improve the quality and liveability of individual apartment units in the city and, through this development plan will seek to broaden the scope of these standards to improve the quality of the built environment within residential developments and the wider communities in which people live.

11.1 ACHIEVEMENTS

New policies and standards for apartment developments seeking to create liveable sustainable new apartment homes were introduced under Variation 21 of the Dublin City Development Plan 2005-2011 (Achieving Sustainable Apartment Living). The aim was to promote the optimum quality and supply of apartment housing in the city for a range of housing needs including families with children.

The population of Dublin city grew from 495,781 in 2002 to 506,211 in 2006. The delivery of 26,796 housing units between 2005 and 2008 contributed to the goal of achieving the intensification and consolidation of the city.

The provision of social and affordable housing through Part V of the Planning and Development Act peaked in 2007 with the creation of 315 social units and 467

affordable units which together represented almost 12% of total housing completions in 2007.

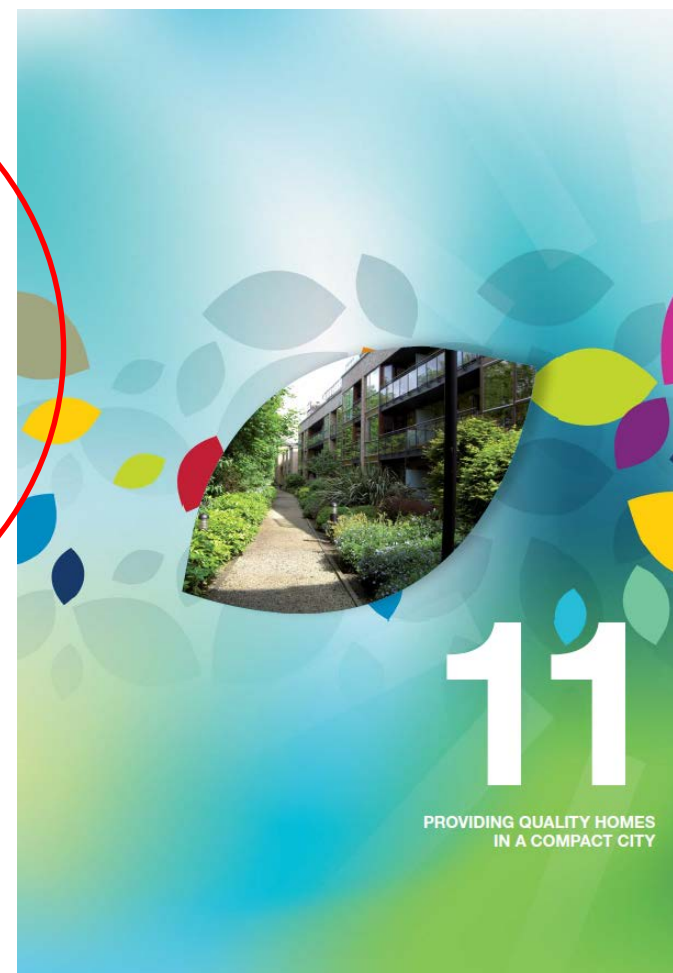
New neighbourhoods were created whilst meeting demand for housing in developing areas such as Pelletstown and the North Fringe. The public private partnership mechanism was used to replace the Fatima Mansions local authority housing complex with a range of high quality social, affordable and private dwellings, together with community and leisure facilities and retail and enterprise units.

Substantial progress has been made regenerating and building a sustainable community in Ballymun through a combination of social, educational and economic initiatives and rejuvenating the built environment including public and private housing and the construction of a new Main Street.

11.2 CHALLENGES

The Regional Planning Guidelines for the Greater Dublin Area (2010-2022) provide a settlement hierarchy for the region and housing allocations for relevant local authorities. The guidelines take a long term view regarding demand and need, however, there is an acknowledgement that the scale of house building experienced in the Greater Dublin Area in the past number of years is unlikely to be repeated in the short or medium term.

It is important that the city has housing that is affordable and attractive to all who want to live in the city including: high quality spacious housing units with good levels of amenity in terms of green open space and daylight and sunlight; adaptable and flexible units that readily provide for changing needs over time including the needs of families with children, high quality well designed communal areas;





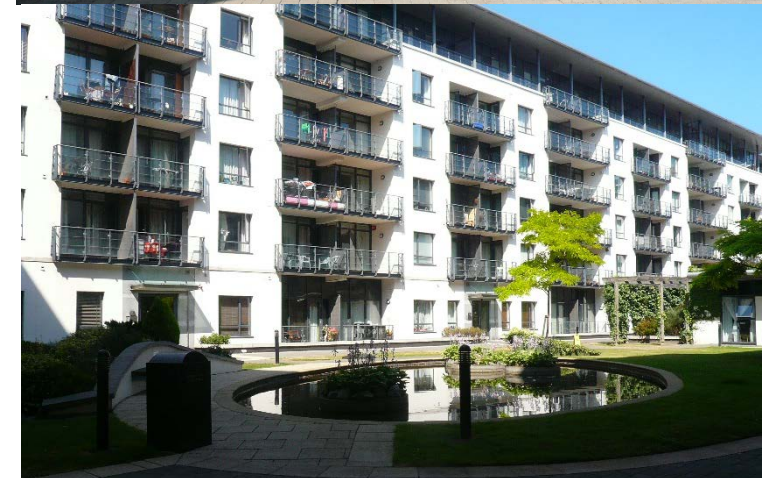
11.4.4 Quality Housing for All

Housing with long term adaptability and potential for flexibility allows for change as circumstances alter or families grow. Adaptability that allows for the alteration of the fabric of a building and flexibility which allows for spaces to accommodate a range of uses are key considerations in the design of a home.

Dublin City Council will have regard to the Lifetime Homes guidance contained in Section 5.2 of the Department of Environment, Heritage and Local Government 'Quality Housing for Sustainable Communities – Best Practice Guidelines for Delivering Homes Sustaining Communities' (2007).

It is the policy of Dublin City Council:

- QH11 To ensure that all new housing is designed in a way that is adaptable and flexible to the changing needs of the homeowner as set out in the Residential Quality Standards and with regard to the Lifetime Homes guidance contained in Section 5.2 of the Department of Environment, Heritage and Local Government 'Quality Housing for Sustainable Communities – Best Practice Guidelines for Delivering Homes Sustaining Communities' (2007) ([see section 17.9.1](#))
- QH12 To promote the provision of appropriate accommodation for older people in accordance with the housing strategy ([see Appendix 3](#))



Residential complex in Dublin Docklands North, foto 2013



The land-use zoning objectives and control standards show the boundaries between zones. While the zoning objectives and development management standards indicate the different uses permitted in each zone, it is important to avoid abrupt transitions in scale and use zones. In dealing with development proposals in these contiguous transitional zone areas, it is necessary to avoid developments which would be detrimental to the amenities of the more environmentally sensitive zone. For instance, in zones abutting residential areas or abutting residential development within predominately mixed-use zones, particular attention must be paid to the use, scale, density and design of development proposals and to landscaping and screening proposals in order to protect the amenities of residential properties.



The following sections set out the objectives and requirements of the planning authority for the main categories of land-use. In total there are 14 land-use zones as follows:

Table 15.1 Primary Land-use Zoning Categories

Land-use Zoning Objective	Abbreviated Land-use Description
Z1	Sustainable Residential Neighbourhoods
Z2	Residential Neighbourhoods (Conservation Areas)
Z3	Neighbourhood Centres
Z4	District Centres (incorporating key district centres)
Z5	City Centre
Z6	Employment/Enterprise
Z7	Employment (Heavy)
Z8	Georgian Conservation Areas
Z9	Amenity/Open Space Lands/ Green Network
Z10	Inner Suburban (Sustainable Mixed-Use)
Z11	Waterways Protection
Z12	Institutional Land (Future Development Potential)
Z14	strategic development and regeneration areas
Z15	Institutional and Community

The following sections outline each of the above zoning categories in more detail and set out the general role of each zone in land-use terms, and the specific land-use zoning objective in each case.



Residential institution, Residential, Restaurant, Science and technology-based industry, Training centre.

Open for Consideration Uses

Boarding kennel, Car park, Civic and amenity/recycling centre, Funeral home, Industry (light), Municipal Golf Course, Nightclub, Office, Outdoor poster advertising, Shop (neighbourhood).

15.10.13 Strategic Development and Regeneration Areas – Zone Z14

LAND-USE ZONING OBJECTIVE Z14:

To seek the social, economic and physical development and/or rejuvenation of an area with mixed use, of which residential and “Z6” would be the predominant uses.

These are areas, including large-scale public housing areas, where proposals for comprehensive development or redevelopment have been, or are in the process of being prepared. These areas also have the capacity for a substantial amount of development in developing areas in the inner and outer city. A number of the Z14 areas relate to public housing important regeneration areas and in the case of each, a number of development principles to guide the development of each area have been identified. These development principles are set out in the guiding principles for strategic development and regeneration areas (SDRAs) (see section 16.3).

It should be noted that not all of the identified strategic development and regeneration areas (SDRAs) are zoned Z14 in their entirety. Ballymun has different zoning objectives and uses; the relevant zoning objective for each area shall be applied to any development proposals.

These are areas capable of significant reuse development; therefore, development must include proposals for additional physical and social infrastructure/facilities.

The development principles, the relevant land-use zoning objectives and development standards should be complied with in the making of development proposals (see section 16. and Chapter 17).

The following areas have been identified as strategic development and regeneration areas in the plan:

SDRA 1.	North Fringe
SDRA 2.	Ballymun
SDRA 3.	Pelletstown
SDRA 4.	Park West/ Cherry orch
SDRA 5.	Naas Road
SDRA 6.	Docklands (Spencer Dock, Poolbeg, Grand Canal Harbour)
SDRA 7.	Heuston Station and Environs
SDRA 8.	Grangegorman
SDRA 9.	St Michaels Estate
SDRA 10.	Dominick Street
SDRA 11.	O'Devaney Gardens
SDRA 12.	St. Teresa's Gardens
SDRA 13.	Dolphin House
SDRA 14.	Croke Villas

ZONING OBJECTIVE Z14:

Permissible Uses

ATM, Betting Office, Buildings for the health, safety and welfare of the public, Childcare facility, Community facility, Conference centre, Cultural/recreational building and uses, Education, Embassy office, Embassy residential, Enterprise

16.3

PRINCIPLES FOR STRATEGIC DEVELOPMENT AND REGENERATION AREAS

This set of guiding principles relates primarily to former strategic Z14 sites and the former strategic Z13 sites which are now combined.

The majority of these sites are important components of the key developing areas set out in the core strategy. However, some of the former social regeneration sites do not fall within the key developing areas. Nevertheless, all of these sites can deliver significant quantum of mixed-uses to create synergies to regenerate their respective areas.

16.3.1 Strategic Development and Regeneration Areas

(see sections 16.4012 and 16.4)

SDRA1 North Fringe

1. To create a highly sustainable, mixed-use urban district, based around high quality public transport nodes, with a strong sense of place.
2. To achieve a sufficient density of development to sustain efficient public transport networks and a viable mix of uses and community facilities.
3. To establish a coherent urban structure, based on urban design principles, as a focus for a new community and its integration with the established community, comprising the following elements;
 - A central spine route, in the form of a boulevard or high street, linking the Malahide Road with the proposed train station to the east
 - Two high quality urban squares (one at the junction of the Malahide Road with the Main Street boulevard and

the other adjacent to the rail station) as the main focus for commercial and community activity

- A series of smaller urban squares as significant place markers and activity nodes e.g. a recreation square adjacent to Father Collins Park
 - A flagship urban park in the redesigned Father Collins Park
 - A new perimeter route running north from the Malahide Road via Belcamp Lane, relieving traffic pressure from the N32 and from the proposed Main Street boulevard.
 - An interconnected network of streets and public spaces:
4. To promote the creation of a high quality public domain by establishing a high standard of design in architecture and landscape architecture.
 5. To develop the amenity potential of the Mayne river in the creation of a linear park.
 6. To develop an Urban Design Strategy for the lands at St. Michael's Cottages that is co-ordinated with the overall strategies for the developing areas.
 7. To include a phasing programme to ensure that physical and social infrastructure is provided in a timely manner, using a sequential approach.

SDRA 2 Ballymun

1. Maximise the economic potential of Ballymun and its surrounding areas in accordance with its strategic location, the proposed Metro North and its designation as a Key District Centre (KDC).
2. Enhance existing, and establish new and appropriate land-uses that support a growing mixed-use community, and



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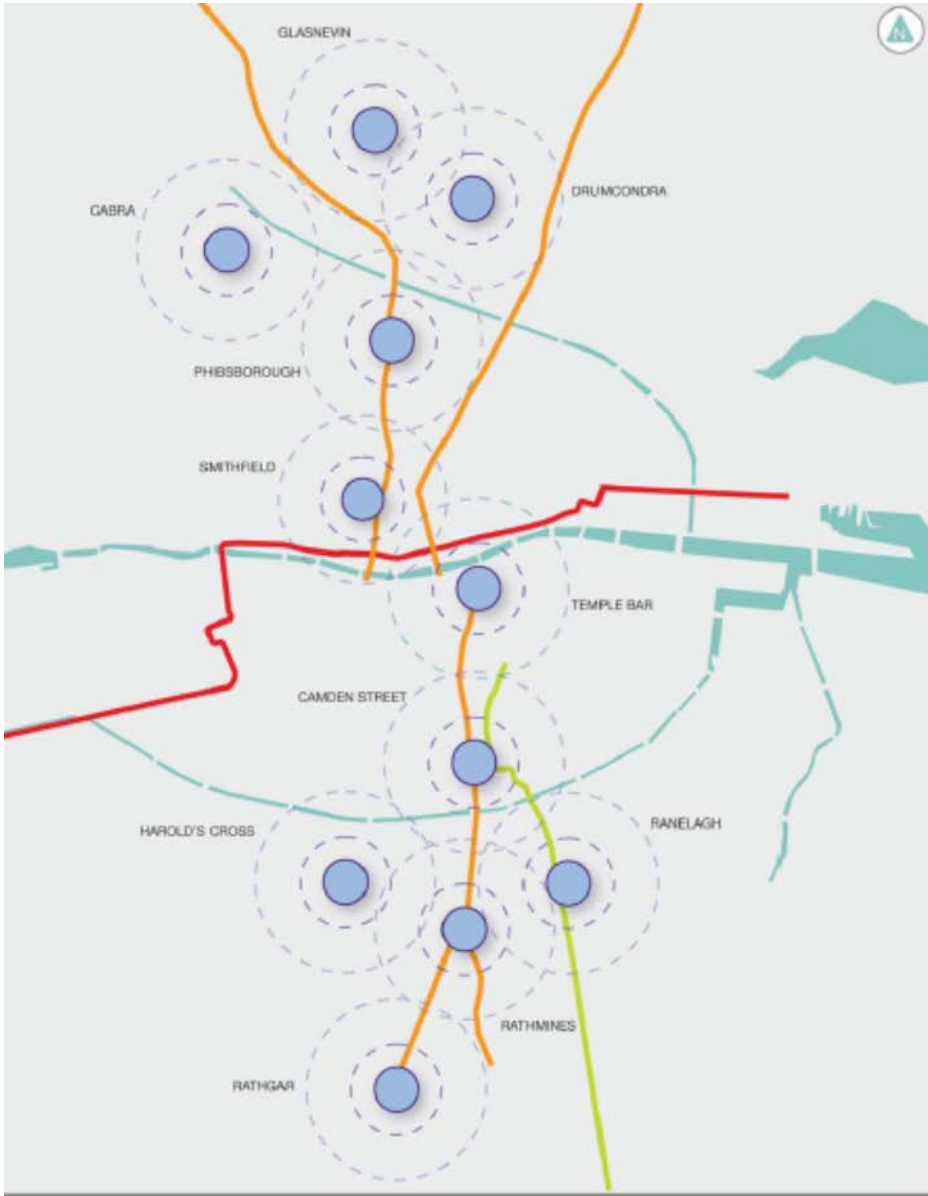
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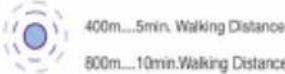
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Connecting Neighbourhoods



PROXIMITY TO LOCAL CENTRES



- LUAS Green Line
- LUAS Red Line
- Main Vehicular Routes



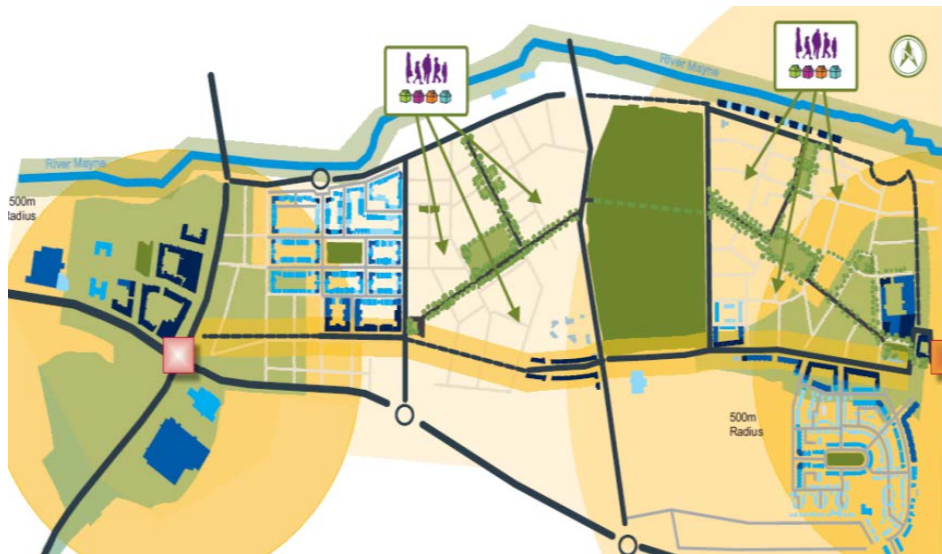
Development of the area North Fringe is based on the creation of new urban environment, which is aimed at giving a new impetus to the development of this part of Dublin, on the basis of ensuring broad variability typological solutions in the formation of the architectural and planning concepts residential development, related to the conservation of specific features and identity of the territory, which should be harmoniously integrated into an existing urban context. Formation of housing in the area of North Fringe is based on the use of the mixed integrated typological structure of residential buildings and is an example of a collaborative approach to the creation of identity and the identity of the urban environment. Thus the application of different types of houses in a residential area, on the basis compliance with the stylistic and compositional unity and harmonious combination of different types of houses is one of the modern trends in the formation of resilient and sustainable residential structures. Modern types of housing, such as the houses of the mixed typology, neutral home, communal housing, home-hybrids, houses, designed on the basis of the conversion and renovation of industrial buildings and complexes, create the possibility of typological variability in the formation of identical architectural and spatial environment of habitable formations in the city structure .





Dublin. Urban district the North Fringe, 2013

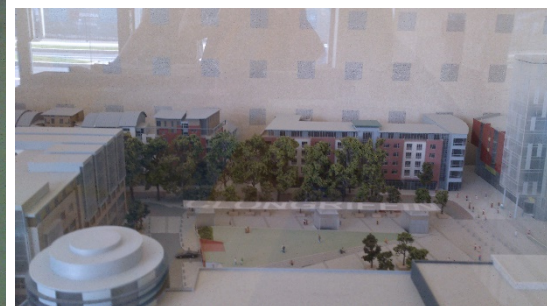




Prospective space-planning solution forming a housing estate in Belcamp Line Site - part of the district North Fringe (Dublin), which reflects the principle of urban resilient and variability

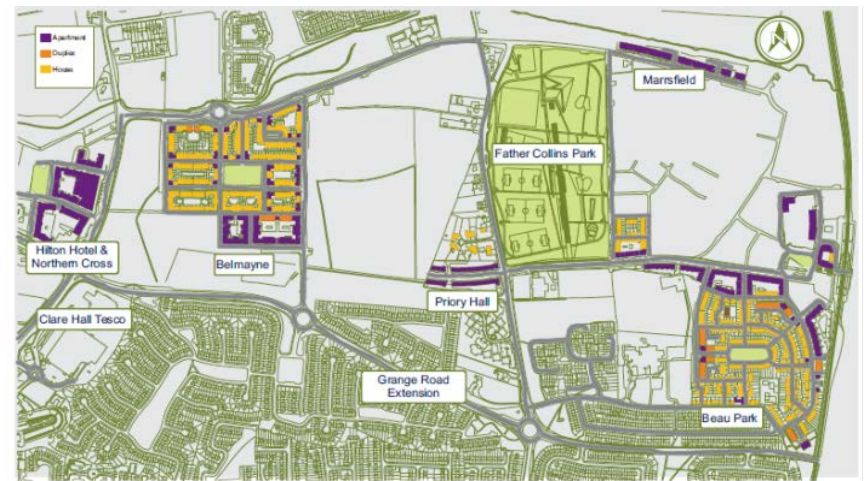


Detail scale model of the part of the district Forth Fringe



Urban development strategy of the Dublin is based preservation and development of a system of open green space the extension of their functional structure to create a comfortable and environmentally sustainable city environment. Therefore, an important aspect of urban planning regeneration is active inclusion nature areas in the residential structures. Examples of this approach is the formation of the landscape structure of the district North Fringe. Currently, the main social and recreational dominant landscape structure of the district is the park Father Collins Park.

The park was renovated in 2009 and is considered the first Irish park built on the principle of complete stability. Opening of the park was held on 27 May 2009, and was a bright and memorable event in the cultural life of Dublin, since the park's opening ceremony were the Lord Mayor of Dublin Eibhlin Byrne and the Archbishop of the Roman Catholic Church of Dublin Diarmuid Martin. Park covers an area of 26 hectares and is located on farmland of medieval monastic settlements, which since the Reformation were located in the north-eastern coastal areas of Dublin. The park is named in honor of the once popular and highly respected the parish priest father Joe Collins, who was instrumental in the creation of this park. Since the early Middle Ages, the park was originally a vast natural area occupied by forests and monastic lands. Currently Dublin City Council continues to own and control the territory of monastic settlements, so the question of the preservation of these historic agricultural landscapes was one of the main directions in the development of the job for the reconstruction of the park. In 2007, Dublin City Council announced an international competition to design for this park. Winners of competition were Argentine architects from Buenos Ayres - Abelleyro and Romeo Architects (Ar. Arq.). The idea of Argentine architects has been the most socially and environmentally oriented, as the authors set themselves the task to create a "self-sufficient" public park. Budget for the creation of such a unique recreational facility in the structure of the peripheral part of Dublin was 20 million. Euro.



Схемы формирования транспортно-пешеходных связей между парком Father Collins Park и прилегающими территориями

The idea of creating a "self-sufficient" Park Argentine architects and brought to life in the Father Collins park, is an example of the use of alternative energy sources, which enable around the clock use of public recreational space. Father Collins park, is an iconic landmark of sustainable technologies in the newly developed area of Dublin. Five wind turbines located on the central promenade of the park provide energy not only the park, but also the surrounding area. Dissipated energy turbine provides all outdoor lighting, security systems, maintenance of transportation facilities and water installations park. Turbine in perfect harmony with the design of the park, and are an example of a promising new direction for a sustainable approach to the development of the image of a modern fleet, - the unity of technology, architecture and the natural landscape.



Father Collins park. Abelleiro и Romeo Architects (Ar. Arq.). Foto 2013

During the period 2009 to 2011 the park has won a number of prestigious awards. In 2009, the park was awarded a prize in the field of sustainable development -Sustainability Award by the Society, in 2010, the park was recognized RIAI (Royal Institute of Architects of Ireland), the best social and recreational space in Ireland, and in the same year, the influential Association of Local Authorities of Dublin (LAMA) awarded the prize for the best park environmentally friendly technologies. In 2011, the park entered the shortlisted for the European Union to the best of modern architecture.

Thus, an integrated approach to the use of modern environmentally sensitive approaches to urban planning regeneration areas gives a real opportunity to create sustainable habitable formations in the city structure.



Dublin, North Fringe. Father Collins park, 2013

More detailed information on urban development strategy in Dublin, you can get:

<http://www.dublincity.ie/sites/default/files/content//Planning/DublinCityDevelopmentPlan/Documents/DevelopmentPlanWrittenStatementUpdate.pdf>

URL:<http://www.dublincity.ie/Planning/OtherDevelopmentPlans/LocalAreaPlans/Documents/ClongriffinBelmayneLAP3.pdf>

<http://www.dublincity.ie/main-menu-services-planning/planning-search>

[http://www.dublincity.ie/Planning/OtherDevelopmentPlans/LocalAreaPlans/Pages/Clongriffin%E2%80%93Belmayne\(NorthFringe\).aspx](http://www.dublincity.ie/Planning/OtherDevelopmentPlans/LocalAreaPlans/Pages/Clongriffin%E2%80%93Belmayne(NorthFringe).aspx)

www.dublincity.ie/main-menu-services-planning/city-development-plan

<http://en.wikipedia.org/wiki/Clongriffin>

http://www.tara.tcd.ie/xmlui/bitstream/handle/2262/67612/v1n12002_8.pdf;jsessionid=C8856526AE5F9C27EBAD92793E8DA8AA?sequence=1

http://www.pivotdublin.com/index.php/stories/case-study/ballymun_regeneration

<http://www.reflectingcity.com/>

<http://www.reflectingcity.com/docu-archive/>

Planum - The journal of Urbanism - www.planum.net

https://www.google.ru/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.planum.net%2Fdownload%2Fplanum-no-25-vol-2-2012-moore-cherry-vinci-urban-regeneration-and-the-economic-crisis&ei=a4FMVMCAC-m_ygP5vIDQCg&usq=AFQjCNGaT0yaeRU0OQW6QChRCIfYtVHt3g&sig2=0AUvI8fqLpyWP70ULvPNPw&bvm=bv.77880786,d.bGQ&cad=rjt

Krasil'nikova E. E., Rusanov V. A., Kuzina L. A. Modern tendencies in formation of flexible and sustainable residential structures,- Bulletin of Volgograd State University of Architecture and Civil Engineering Series: Civil Engineering and Architecture, Volgograd, - VSUACE, №35(55), P.275-283. <http://www.vestnik.vgasu.ru/>

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